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The Development of Urban Patterns in Stockholm

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Abstract
The paper describes the development of the gridiron patterns in the inner city of Stockholm related to different historical periods. The first historical period can be related to the city planning of the 17th century. The gridiron patterns define and shape a physical form followed the topography of the site and adapted after the functions and needs of the time. The second historical period is related to the 19th century. This period is characterized by large building programs for different institutions. The general plan proposed for Stockholm in 1866 concerned not only about the extension of the old grid-iron pattern but also the regulation of the existing built environment where new streets, parks, and monuments were developed.

Introduction
With the exception of the historical city center, the Old Town, the dominant urban pattern of Stockholm's inner city is a gridiron system, which emanates from the Royal Palace. The inner city gridiron pattern was laid out during the 17th century and extended and reorganized during the second half of the 19th century. These two gridiron patterns still characterize the urban form of today's Stockholm and define two different kinds of urban blocks. The gridiron patterns form two morphological periods, each period with its own characters illustrating ideals and planning ideologies of the time.

The first morphological period corresponds with the 17th century planning of the "Malmarna" (Norrmalm, Östermalm and Södermalms), the areas within north and south of the Old Town. The topography of these areas was not appropriate enough to the implementation of a gridiron pattern plan, especially in Norrmalm, the area northwest of the Old Town. Örnehufvud's plan presents a gridiron pattern laid out on the existing organic street pattern.

Later in 1637, Anders Torstensson, proposes a new plan for the area, which was based on Örnehufvud's main ideas as the centrally placed axis, which became the actual Drottninggata Street. However, the tow plans differ from each other on several issues, principally on the size of the blocks, which were of equal dimension in the first plan and of mixed sizes in the second. Furthermore, Tortensson's plan is provided with several squares and open spaces. Torstensson's plan was implemented almost as it was proposed, and still today characterizes an important part of the inner city. The construction of the Drottninggata Street, which was the central axis of the 1637 plan, was completed at the end of 1641 (Råberg, 1987).

Tostensson continued his work on the regulation of the areas north of the Old Town, and presented it in 1640 as "the general plan for the north suburbs", which means the areas of Norrmalm and Östermalm (Fig. 1). The general Lindhagenplan proposal and the 19th century town planning ideals. These were the Government Building Ordinance of the 1874 and the Stockholm Building By-Law of the 1876 – two documents that gave regulatory directives for wide-open spaces, widths of the streets, height of buildings, etc.

The seventeenth century
The first implementation of a gridiron pattern in Stockholm occurred in 1926 in the southwest district of the Old Town. The plan presents a grid-iron pattern with equally rectangular blocks on both sides of a new created street, Nygatan. Again, in 1936, the city authorities expressed the need of another regulation plan for the areas in the north of the Old Town (Hall, 1999).

In September 1636 the new nominated chief for fortifications Olof Hansson Örnehufvud was commissioned to plan the western part of Norrmalm, the area northwest of the Old Town. Örnehufvud's plan presents a gridiron pattern laid out on the existing organic street pattern.

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Tostensson continued his work on the regulation of the areas north of the Old Town, and presented it in 1640 as "the general plan for the north suburbs", which means the areas of Norrmalm and Östermalm (Hall, 1999).
plan contains two districts in Norrmalm, one on each side of the Brunkeberg ridge, and Östermalm. Every area was organized around centrally placed axis, which are the streets: Drottninggata, Regeringsgata and Storgata. The implementation of an orthogonal street pattern north of the Old Town was difficult, especially the crossing points of the roads at the Brunkeberg ridge. The difficulties encountered at the junction of the east side of Norrmalm to the west side remained until the beginning of the 19th century.

The planning of Södermalam, the area south of the Old Town, presented topographical difficulties combined with the necessity to incorporate the existing buildings and monuments in the new regulation plan. The first sketch, which is probably proposed in 1641 or 1642, shows two perpendicular axis, one stretching from East to West (along the actual street, Hornsgatan) and the other stretching from North to South (along the actual Götgata street). The land division is organized by a street pattern of different width and blocks of different size and orientation.

Several plans for the area were produced during the 1645. All these plans were based on the first sketch, and present only few differences related to some adjustment to the topography and to the two churches Maria kyrka and Katarina kyrka.

The final period of the 17th century's regulations of Stockholm coincides with the planning of the island of Kungsholmen, an area that was unsettled until 1642. A deed of gift from the Crown dated from 1642 states that the area should be developed according to the existing plan (Andersson, 1998). The existing plan shows that Kungsholmen was not planned, while in a series of four plans carried out by the mid 1640s, show that the east part of Kungsholmen was planned. On one of these plans, which might be the first, a gridiron pattern defines rectangular blocks oriented from north to south. The three other plans show differently oriented blocks and the street pattern.

Very often, a gridiron pattern plan encountered topographical difficulties, that demanded important financial support and hard labor efforts to be solved. The areas that were planned during the 17th century were not totally plane. Each area had its own topographical differentiations. The gridiron pattern was implemented in all areas, but when the plans met a ridge, a rocky hill, or a lake, they were left untouched as a landmark or a park. The gridiron pattern was often rich in the variations through the street widths, block sizes, and orientations and not the least through the squares and open spaces delimited by monumental buildings. The regulation ideals of Stockholm during the first half of the 17th century came to dominate in almost two centuries.

The nineteenth century

After a long period of stagnation of economy and decrease in population, a number of reforms were initiated in the 1840s, which provided a better condition for the development of cities in Sweden, especially Stockholm (Hall, 1999). In 1863 the need of a regulation plan for Stockholm was expressed by the urban authorities, which decided that the plan should include both the existing physical structures as well as the undeveloped areas. A first general plan proposal was presented to the Stockholm's Finance Department in 1863. The plan was not adopted and the Department set up a committee to evaluate it. In 1866 the committee presented a new general plan proposal for Stockholm called Lindhagenplan (Fig. 2). The general plan opted for the improvement of communications between the different areas of Stockholm, for the creation of large open spaces and parks, wider streets and planted avenues. The major part of the street pattern presented in the general plan were the extension of the existing streets, but new ones were also created on the undeveloped land in the periphery of Stockholm.

Two new components introduced in the general plan of 1866 generated important changes of the existing physical structures, one of them is the 70 meters large Sveavägen avenue and the other is the parks, planted streets and forecourts that were planned in close connection to each other. The Sveavägen avenue was planned to be the main artery of the city, broad enough to support an intensive traffic on both sides of a planted alley. Its length of about 2.5 kilometers runs through the city from its periphery to the center (the Old Town), where it ends at the Royal Palace. In its northern part the avenue was planned on undeveloped land while in its southern part it cut through the Brunkeberg ridge and the existing buildings. The general plan provided a system of parks.
and planted streets not only on the undeveloped land in the periphery, but also within the existing built up areas. For instance, the western part of Norrmalm was provided with many parks, planted streets and forecourts.

The Lindhagen plan was not adopted by the city council. It was considered to be very ambitious and grandiose project, which could not be realized at that time. The discussions about the need of a general plan for Stockholm were taken up again in 1874 and a plan for Östermalm, the area in the east of the Old Town – based on the same block subdivision as the Lindhagen plan – was adopted in 1875. Between 1876 and 1880, a series of plans for Norrmalm, Södermalm, and Kungsholmen were proposed, debated and finally adopted by the city council. From the first general plan made for Stockholm in 1866, the Lindhagen plan, only few elements remained and were adopted.

**Plot-patterns**

The extensive planning of the Malmarna enhanced in the 1630s begun as a regularization effort but became soon an expansion factor of Stockholm. The plans made for the Malmarna from 1637 to the 1640s reflect the planners’ intentions to develop a gridiron system of streets based on large roads running out from the Royal Palace (Tre Kronor). The orthogonal streets delimit rectangular blocks of different sizes and orientation, but smaller than the 19th century blocks. Even the streets that were meant to be the main roads, for example the 11 meters wide Drottninggata Street remains of modest dimension when compared to the 19th century’s 40 meters wide Sveavägen.

The strictly rectangular shaped blocks were subdivided in tow parallel rows of plots, placed parallel to the street, with their small side turned towards it. Sometimes the plots were larger, formed by the uniting of several plots, especially at the streets corners. The ordinary size of a plot was about 12 x 35 meters. The authorities gave priority to those who were able to build larger stone-houses, which often resulted in the uniting of several plots (Nevéus, 1967).

The 17th century plot size was smaller compared to the plots of the 19th century, and consequently the sizes of the blocks were also bigger. The 19th century gridiron plans were laid out as the continuation of the 17th century gridiron pattern, but the blocks were bigger and the streets wider, some of them were planted. Stonehouses were a common phenomenon in the city, and this building-type requested bigger plot size than the ones existed during the 17th century. A normal plot size of the 19th century was about 21 x 36 meters. The subdivision of the block in plots followed the same pattern as in the 17th century, the plots were lined parallel to the street. The uniting of plots was also common during the 19th century, and a single building could take the entire block.

The 19th century oversized blocks made it possible to have a large open courtyard, but the increasing demand for housing in the city generated an intensive exploitation of the courtyards, where back apartment buildings were developed (Selling, 1960). The intensive exploitation of the courtyards during the 19th century minimized the space and the light in the courtyards. It was the Government Building Ordinance from the 1874 that made an end to the development of back building, and gave clearer directives for the limitation of buildings highs in relation to the street width, and finally banned the exploitation of courtyards.

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The Structure of Difference:

A Comparative Case Study of Mariemont and Lebanon, Ohio

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One of the major challenges facing the contemporary American urban landscape is its pervasive “sameness.” Part of this dilemma can be attributed to extensive urban renewal projects of the 1950s and 1960s, which created “barren urban landscapes” (Southworth, 1989) and disrupted socially and physically distinct enclaves. Planners and designers were blamed for neglecting socio-cultural values in their designs that contributed to the rise of “placelessness” (Relph, 1976) or what Kunstler (1993) calls “geographies of nowhere.” Cookie cutter building forms, strip developments, and the rise of urban sprawl contribute to the loss of sense of place, loss of meaning, and loss of community character.

While some lament this sense of loss, the importance of ‘difference’ and diversity and their role in creating identity is being increasingly recognized. Madanipour (1996: 344) considers “Losing ability to live with difference a major problem of contemporary city.” We remember landscapes that invoke different emotions in us better than the ones that look the same; we prefer to live and work in areas that have a strong sense of place and unique identity; certain landscapes are more meaningful than others. It is time to examine structure of ‘difference’ and what constitutes it in urban landscape. How is ‘difference’ — using Lefebvre’s (1991) expression—“experienced, perceived, and imagined?” Attempt to answer these questions requires a framework that incorporates both socio-economic and physical distinctions.

Difference, Imageability, and Meaning

The perception of ‘difference’ in the urban landscape has to do with ‘imageability’ and ‘meaning’. People perceive different landscapes based on distinct images they evoke and their different (social) meanings. These concepts should be distinguished. This distinction is subtle. Imageability as Lynch (1960) showed purports specific physical elements. Meaning, on the other hand, is a social construct and varies from community to community; what is meaningful in one community may not necessarily be meaningful to other communities.

‘Image’ and ‘meaning’ have separate literatures. The broad, “fuzzy,” “vague,” and “confused” literature of sense of place (Shamai, 1991) focuses primarily on meaning. Meaning as rhetoric deals with the degree to which a place means to people and the emotional strength of their feeling toward that place. Due to the subjective nature of the concept and reasons of operationalization and measurement this literature is far from monolithic.

The literature of urban imageability is the legacy of Kevin Lynch (1960). Cognitive mapping is a technique that examines people’s perception of the environment and its elements of imageability. Configurations of these elements vary from place to place and constitute distinct place-based identities. While Lynch (1960) used cognitive mapping techniques to measure urban perception, others extended his work to examine other perceptual categories including the relationship between urban form and activity (Steinitz, 1968), urban livability (Appleyard and Lintell, 1972), landscape and social identity (Duncan, 1973), reality and image (Milgram, 1976), environmental cognition (Evans, 1980), and urban “likability” (Nasar, 1990).

Other scholars examine ‘meaning’ less as rhetoric and draw instead from planning documents, i.e. the comprehensive plans and zoning ordinances (Southworth, 1989; Shirvani, 1990; Barnett, 1982). Having examined 70 cities across the US and criticizing “boilerplate urban design solutions” Southworth calls for solutions based on “unique” and “special” aspects of the city. Evaluating planning documents of a number of cities across the US, Shirvani (1990) too, criticizes duplicating the (urban design) procedures of other cities and calls for adopting processes based on each individual case.

Another body of work that bemoans the loss of meaningful landscapes emphasizes certain elements of urban form, i.e., public space. These writings examine the political economy of place and the historical roots of the loss of public space and eventually public realm (Banerjee, 2001). Walzer (1986), for example, distinguishes between the “single-minded” and “open-minded” spaces and advocates the latter because they accommodate ‘differences’ in terms of “unforeseen uses, and used by citizens who do different things and are prepared to tolerate, even take an interest in, things they don’t do” (p. 470). Recognizing the “benefits of differentiation,” Rustin (1986) emphasizes ‘social space’ more so than Walzer’s open- versus single-minded space. To Rustin, social space is conducive to “a more inclusive pluralism” (p. 493) in which different life-style may coexist. Others (Berman, 1986; Sennett, 1988) seek differentiation through social diversity and spaces that are open to the underclass.

This research has examined the perception of ‘difference’ or what can be called “territorial uniqueness” by comparing two separate communities in Ohio. The distinction between territorial uniqueness and spatial ubiquity or “sameness” contributes to better understanding of sense of place and how it differs from “placeless.” Uniqueness depends largely on the degree to which a place is perceived to be ‘dif-
different from other areas by its residents. Four categories were employed to describe the unique characteristics of two selected case studies in Ohio as experienced by their residents. These categories involved outlining: Areas that were and/or looked very ‘different’ from each other; Areas that were most ‘meaningful’; Areas that don’t ‘belong’ to those communities; Areas that are ‘home’ to their residents.

Methodology and Respondents’ Demographics

Field interviews and observations were carried out in the Village of Mariemont and the City of Lebanon, Ohio. This is a pilot study using cognitive mapping and “mall” type and street interview techniques and does not pursue statistical significance. Respondents were selected based on “convenience sampling” and “snowball sampling” (Patton, 1987). Two stages of this research include: 1) detailed, in-depth interviews lasting between 15 to 90 minutes with 30 residents in Mariemont and 27 respondents in Lebanon; 2) post-interview observations of the areas outlined by respondents in the study areas.

Each question in the interview reflected one aspect of the above-mentioned categories, though some overlaps may exist in the participants’ responses. The questions involved both graphic representations of differences on each community’s map as well as respondents’ narratives about the ways in which they believed those areas were different (or similar) from other areas.

Seventeen females and thirteen males in Mariemont and eighteen females and nine males in Lebanon participated in this research. About 35% of the interviewees in Mariemont were between 20-34 years old, 31% between 35-50, 17% between 51-64, and 17% were 65 and older. Some 26% of those interviewed in Lebanon were between 20-34, 48% between 35-50, 22% between 51-64, and 4 % were 65 or older.

Study Areas: 1) Mariemont

The history of the Village of Mariemont, Ohio dates back to early 1920s when Cincinnati ranked among the top three most ‘congested cities’ in the United States. In response to “bad city planning,” which reflected poor housing, and congestion, Mary Muhlenberg Emery founded and envisioned a new community based on the tenets of Modern town planning. Addressing the environmental, architectural, and engineering concerns the Mariemont plan embodies principles that have turned it into a “National Exemplar” (Mariemont Preservation Foundation, 1995: 8). Mariemont has been designed as “an entire neighborhood” and according to comprehensive architectural and planning guidelines set up by John Nolen.

It was described by a New York Times article as a “new experiment in town planning to fit the motor age.” Inspired by Ebenezer Howard’s ‘Garden City’ at Letchworth, England, the Harvard-educated landscape architect and planner John Nolen who designed 33 new towns and 400 projects in his career developed a master plan for Mariemont in 1922. Attention to topography, form and function, utilization of natural resources, and adherence to “organic arrangement rather than by more embellishment or adornment” were among the principles that influenced Nolen in his design for Mariemont. Nolen’s plan emphasized distinctive neighborhood identities by paying attention to landscaping and architecture. Twenty-five architects from across the nation collaborated with Nolen to design its buildings. Occupying more than 420 acres of land, “80,000 trees and shrubs” were purchased and planted in Mariemont (Mariemont Preservation Foundation, 1995: 9).

2) Lebanon

Located between Cincinnati and Dayton Metropolitan area, Lebanon Ohio has an area of 11.9 square miles and 15,000 population in 2000 (City of Lebanon, 2001). Popular for its antique stores, restaurants, and scenic topography Lebanon is accessible through interstate highways I-71 and I-75 and Routes 48 and 42, 63, and 23. Originally grown as a stagecoach community, its early history dates back to 1790s when its first cabins were constructed. Marking its town center, its historic Broadway and Main Street were surveyed and laid out in 1802. Brick sidewalks, a Main Street with a number of antique shops, famous restaurants, law offices, banks, and ice cream parlors draw tourists to Lebanon Historic Downtown with over 80 specialty shops from the whole region. Restaurants such as the Golden Lamb and The Best Café are among popular local landmarks.

Even though Lebanon Downtown has a fairly significant architectural heritage, some of which date back to pre Civil War era, some concern is expressed over the rate at which its historic buildings are torn down. With its over 800 diversified businesses, Lebanon has experienced tremendous industrial, commercial, and residential growth since 1990 with 2,200 industrial jobs created and home to three industrial parks (Harmon Industrial Park, Norgal Industrial Park, Columbia Industrial Park, and the Lebanon Industrial Park). The Lebanon Comprehensive Strategic Plan predicts the local employment to peak at 10,700 by 2007.

Findings

The composite maps based on the respondents’ outlining areas of differences,
meaningful areas, and areas respondents marked as “not belonging” to their communities reveals the structure of “difference.” Respondents have used the following indicators to describe the ‘uniqueness’ of their communities: the nature of activities (land use type), distinctiveness of architectural form (building type, size, condition, age), perceived socio-economic status indicators (individual and architectural), and personal experience (place of birth and memory). It is striking that the same analytic structure emerged for two different communities: one, Lebanon, an example of a relatively large sprawled community and Mariemont, a nationally or even an internationally known, small planned community. Our future research will analyze data from Tehran and Lahijan, to begin to assess cross cultural validity and generalizability of these four categories.

More important than differences between the two towns are the observed similarities. The four categories used in coding emerged on the basis of a “grounded theory” approach (Glaser and Strauss, 1967). Two interviewers coded the categories; one coded Mariemont and one Lebanon. The experience of someone coding Mariemont would not influence coding Lebanon and vice versa. Problems in the coding were resolved between the two coders and the study director. This helped ensure that the two coders were following similar coding schemes.

Percentages of mention of each category rather than the percentage of respondents were used. Therefore, we can speak not of how many people used the same category but which characteristics were used more often. Based on this rationale, personal experience did not turn out to be a major determinant of the characterization of difference; nor was distinctiveness of urban form. However, the nature of activity is the leading determinant. Perceived socio-economic status (individual and architectural) followed closely by the nature of activities. The coders met together, considered the characterizations of the areas and by consensus reached four broad categories; an appropriate basis for classifying the various designations. For example, business type, industry, library, restaurant, fairgrounds were put into the nature of activities; poor areas, rich areas, lower income, middle income, upscale homes, or affordable housing were put into perceived socio-economic status indicators (individual and architectural); single family homes, older buildings, townhouses, or big mansions were put into distinctiveness of architectural form; and place of birth and memories of childhood were put into personal experience.

Although exigencies of situation including the need to use the map precluded random techniques, i.e., telephone or mailed surveys, the use of convenience sampling and snowball sampling add some robustness and breadth to the research method and the results are less entirely dependent on a single method.

Endnotes

11 A Tour of Mariemont.
13 Percentages of mention of nature of activities, perceived socio-economic status, distinctiveness of architectural form, and personal experience were 38%, 41%, 15%, and 6% for Mariemont and 32%, 40%, 8%, and 20% for Lebanon respectively.
Jakarta Urban Form: Reflection of Uncertainty and Economic Development in the Fast Lane

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Abstract
This paper looks at the similarity of present day urban form compared to the past, in the cities and towns of Indonesia, using Jakarta as a case. At the same time, the stages of transformation of urban form can be seen in today’s Jakarta. It is concluded that, with the exception of the introduction of skyscrapers in the last 30 years, there is a very close similarity in mixtures of urban forms between today and yesterday in the built environment of Jakarta. This is caused by uncertainty and past rapid economic development.

Indonesian Urban Forms
Scholars categorised urban areas in third-world cities as formal and informal settlements, each consist of a homogeneity of forms and socio-economic conditions. These categories developed based on their physical features, especially on the provision of public facilities and urban infrastructure.

In Indonesia, urban areas have been divided into two categories: kampung and non-kampung. These two types of urban forms have existed side by side since the end of forced agricultural planting during the Dutch colonial times in the 18th century, when the function of cities and towns started becoming more and more commercial rather than being merely administration centres for the colonial government (Rutz, 1989). The inability of the formal sector, including municipalities and central government, to provide housing and commercial land is the main reason for the continuation of kampung development after the colonial government left the country.

What are kampung? The word “kampung” means village. A group of houses with some social infrastructure such as a mosque and greens or a small grass field in the middle of agricultural land and rice fields. The village itself is sometimes as crowded as an urban area. This term, kampung, also applies to subdivisions in the town and city that physically, culturally and socially, resemble a village in the rural areas. Usually the kampung doesn’t meet the city plan requirements, lacks urban infrastructure and most of the buildings have no building permits. However, property and land tax are paid to the municipality or township. Some kampung in the city can reach a density of more than 500 persons per hectare, which leads to environmental problems.

Non-kampung areas of the city and town are planned areas with adequate urban infrastructure. Some of these areas were developed during the Dutch colonial times and real estate companies have started to develop them further since the 1970s. Unfortunately these formally planned non-kampung areas sprawl throughout the city fringe, and are still far out numbered by the kampung areas.

Jakarta
Jakarta, the capital city of Indonesia, which covers 65,214.52 hectares of land, is also known as a big village. In this city of more than 8 million people by night and about 11 million people by day, there are both formal and informal socio-economic activities occurring simultaneously. These activities result in a mixture of urban forms of both a modern pattern and a traditional pattern known as kampung. This kampung pattern is the urban form that characterises most Indonesian towns and cities.

Kampung (mid-ground), between Jakarta’s two main avenues, Jalan Jend. Sudirman and Jalan H. Rasuna Said (November 2000).
the land in Jakarta was in the form of kampung, officially known as Perumahan Tidak Teratur or unplanned residential areas.

**Economic Development and the City**

At the end of 1980s, Indonesia, along with other Asian tiger countries, experienced very rapid economic development. In the case of development in Jakarta, policies to boost property development such as the introduction of strata title ownership, floor area ratio increases and incentives were introduced. This led to speculative developments in the city and its neighbouring townships.

The very high interest rate in the country during the economic boom in the 1980s and the early 1990s, as well as signs of uncertainty also led to the utilisation of offshore loans for property developments especially for large projects such as super blocks and large residential developments.

The procedures of obtaining development permits in Jakarta prevented medium and small developers from participating in the large-scale developments of above 5000 square meters of land. To avoid lengthy drawn out procedures and monetary expense, many developers prefer utilising middlemen services which offer ‘the package’ to acquire the permits and to conduct land appropriation. This leaves small developers only able to engage in shop house development, small clusters of residential development within the kampung and new residential developments outside the city’s boundary. Only large developers, who are mainly conglomerates, are able to develop the larger projects within the municipal boundary.

**Jakarta’s Urban Form**

Recent examination has found that urban form in Jakarta is not merely kampung and non-kampung, but also includes small planned urban areas within the kampung. The planned urban areas also include: the planned urban area developed by the Dutch colonists, the new residential areas, the new super blocks, and the shop house developments. Squatters, which had previously disappeared from the city in the late 1980s, also have been on the increase again since the economic problems of the late 1990s. These squatters have mostly re-occupied public and government land, such as along the railway tracks.

The inner city of Jakarta has experienced many transformations of kampung into super blocks. The size of these super blocks range from 4 to 50 hectares that include modern high-rises of office buildings, apartments and commercial centres. This transformation has occurred mostly with the help of large-scale developers. However, due to the economic problems at the end of the 1990s, not all of these super blocks have been successfully completed. This has left large tracts of land in the inner city as wastelands and many sub-districts have lost their population, which has mostly relocated to the city fringe and to neighbouring townships.

Beside super block developments, the inner city also has seen the rise of many shop house developments. The existing houses, mostly along main roads in the fixed plan areas were converted into shop houses of up to four stories, the most favoured of property developments by the banks, the developers and the end users. Residential lots, which are facing busy roads, are often converted into shop-houses. One lot with an approximately 12 meter wide front can be converted into three individual multi-storey shop-houses. These developments can escape strict building regulations especially the requirement for the provision of parking space since most of these developments are utilising land less than 5000 square meters in size. However, Shop house developments are not only occurring in the inner city areas but also in most strategic locations in the city and its neighbouring townships, along the main roads.

Due to the expensive price of land and the costly development permit application fees within the jurisdiction area of the municipality, since the beginning of 1980s, most residential developments, which are in the form of landed houses, are located outside of the city. Three levels of size of developments occur based on the size and the cost of obtaining the permit. These are: small developments of up to 15 hectares, medium developments of up to 200 hectares and large developments over 200 hectares. These developments are haphazardly sprawled amongst agricultural land and rural kampung and are connected to the main roads that lead to the city centre as well as the main regional arterial roads.

Small planned residential developments with a land area less than 5000 square meters exist within kampung on the city fringe. These include developments in the Kemang area in the Southern part of Jakarta, an area favoured by expatriates. These developments are in the form of walled in clusters of houses popularly known as ‘townhouses’, and meet all city-planning requirements. Similar to living in any other kampung, outside the development wall, there is a lack of urban services, infrastructure provision and open space.

Along the city fringe, as a consequence of the conversion of inner city kampung into super blocks, large numbers of people moved to areas planned for very low-density developments. With money from selling their small...
inner city kampung property, these people could buy several small lots in the rural kampung for themselves and possibly rent or sell the remaining lots to new comers and new young families who need housing in Jakarta. After learning the business for about two decades, the locals have also begun to pursue similar businesses. Local authorities hesitate to prevent these small-scale business transactions since land law does not prohibit land transfer and also, the dissemination and awareness of the city master plan is very limited to people close to the authority. Solidarity to the poor also is used as an excuse by the local authority. Gradually the non-urban land within the city boundary and the neighbouring townships is converted into urban kampung, repeating a process similar to that of the formation of the inner city kampung three or four decades ago.

Conclusion
It appears that development in Jakarta is primarily driven by economic motives. These often undermine social and environmental concerns. The pattern of physical development, which is trying to fix the problem in the inner city, is, at the same time, creating problems in the city fringe.

The implementation of the Jakarta city master plan should consider the existence of the large tracts of kampung and should include other alternatives for the inner city kampung rather than only super block developments.

The development of new super blocks in the inner city should consider the impact of these developments on the city fringe, which is experiencing the development of new kampung, that ultimately are contra productive to the municipal plan for the city fringe which is intended for very low density development. A realistic plan is much better than an inexecutable overly ambitious plan.

Questionable short cuts by the stakeholders, from the formal sector, such as the practice of using unscrupulous middlemen to obtain speedy development permit approval, and from the informal sector, such as unrecorded land subdivision, create the present chaotic urban form of the city, which is aesthetically, socially and economically far less than ideal.

References
1. Introduction

The design of complex architectural projects in the cities are generally handled on context limited to their sites without consideration to the context of the city as living organism, also planning and urban design are managed without looking into the pattern of historical development of the city.

The Hypothesis of using scientific methods (based on fractal geometry) in the study and design of architecture and urbanism will lead to identify the morphological elements as genetic codes, which repeat themselves and reused in new designs. For the purpose of the research the city of Irbid is chosen for study.

2. Chaos and fractal geometry

Chaos is a scientific discipline based on the study of irregular nonlinear systems. The term complex systems theory describe chaos is accepted a theory for application in many fields of our daily life. The system looks random at first; it will retain its shape and space, thus displaying order. This gives researchers a way to investigate the way a system changes its behavior in response to change in parameters describing the system and its environment (3).

While the classical Euclidean geometry deals with objects, which exist, in integer dimensions, Fractal geometry works with objects in a non-integer dimensions, known as fractal dimensions. The former is a description of points, straight lines...etc. The latter is described in algorithms, or a set of instructions on how to create a fractal, which reveal self-similarity no matter how deeply you look into the forms (Fig.1).

3. Fractal theory and variation index (D)

3.1 Fractal Cities: The city is a mirror of society and culture. Its physical form is considered to be the ultimate result of a multitude of social and economic processes constrained and shaped by the geometry of the natural and man-made world. The discovery of fractal geometry engendered a shift between the old view (that sees cities as simple, ordered structured, expressible by smooth lines and shapes which described their overall morphology and the disposition of their elements towards a view (that cities are complex organisms, evolving and changing according to local rules and conditions which manifest more global order across many scales and times). Thus, geometry is no longer conceived in terms of straight lines (the geometry of Euclid) but can admit irregularity without abandoning continuity.

3.2 Characters of Fractal Cities: These are four, self-similarity, Hierarchy, Irregularity and Fractal Dimension. Cities manifest self-similarity of market areas, neighborhoods, and commercial centers in repeating orders. Self-similarity is very important character base to make the mathematical models of (D) value (3).

3.3 Variation Index (D): The value of (D) is fixed for every city like fingerprint, its value usually between (1.26-1.7).

Michael Batty (94) calculated (D) values for few world major cities, London = 1.774, New York = 1.710, Paris = 1.862, Tokyo = 1.312.

D is variation factor of filling area, i.e. the ratio of built area to the total area of city. It’s significance in design and planning is like controlling factor for density and two-dimensional scale. If (D) is identified as fingerprint of the city growth of urban pattern, then this is a genetic code of the city, it is a function of it’s historical evolution.

4. Human biology and fractal geometry

4.1 Genes at Molecular Level:

Deoxyribonucleic acid (DNA) is the genetic material of all living cells. A cell’s DNA is the repository of information needed to construct the cell and direct the countless chemical reactions necessary for life and reproduction. Just as blueprint drawing is used selectively, one part at time, to build a house, so too the hereditary information in DNA is used selectively by the cell, is depending on its stage of development and its environmental conditions. DNA has two polymer chains, or strands. The strands are held together by hydrogen bonds between opposing nucleotides. DNA is housed within the nucleus of the cell (1).

Our human body contains nearly 110 billion cells and each cell contains 50,000 – 100,000 genes. The weight of DNA is \( (6.6 \times 10^{12}) \) gm in each cell, which is very small, and its length nearly 2 m. The total length of DNA in all the human body cells is, \( (2 \times 11,000,000,000) = 220 \) million kilometers which is a scale of measuring the distances between stars in space. The DNA is compactly located in very small space of the cell nucleus, which cannot be seen without the microscope.

4.2 DNA and Fractal Geometry:

DNA formation is Fractal and efficient in using and filling the space of the cell’s nucleus, its D value is very high. DNA shape is similar to spiral stairs if it is compared to man made element.

5. Fractal in mind

Mikiten T., Salingaros N., and Sing Yu H. (97), stated, "The brain is known to be a structured system of hierarchically-organized modules. These interacting modules communicate with one another. In turn, the modules contain within them yet other sub modules, which communicate among themselves. This pattern is repeated at several different levels of scale, cul-
minating in what is a molecular and biochemical fractal of interacting and communicating systems. In a similar way, we can conceive the mind as consisting of self-similar complexes of hierarchically arranged modules linked together in a way that can be expressed according to some algorithms. The relationship of mind to brain can be characterized as a mapping problem in which mind and brain map onto each other.

6. Study of Irbid

Tal Irbid is the oldest part of the city, and the focal point of modern city, its visible from considerable distance as a landmark. The Tal is an artificial Hill with fortification of massive wall built of large basalt (black stone) boulders. The Tal and surrounding area were the center of extensive occupation during the Bronze Age, Iron Age, Roman, Byzantine and Islamic periods. During the Roman period the town called ARABILLA, and was one of the allied ten towns of the Decapolis, formed to protect the earlier Hellenistic culture, and to defend the southern and eastern borders of the new Roman Empire. Non of the ancient buildings of the Hill survived the destruction caused by the earthquakes and the construction of administrative buildings during the last two centuries [2].

Analyses of The City Form (Fig. 2, 3) shows, except the central part, the present tissue of the city reflects a village scale. This phenomenon indicates the early social influences (families and tribes) where the city formed of two villages. The city has two major centers, one is near the ancient town, which represents the main commercial activities, and the other is mainly for student’s services near Yarmouk University. The first is active during the day and the second is active during the night. The distance between these two centers is 800 meters.

7. Calculation of variation of index (D) of Irbid

Three Methods can be used for the calculation of (D) these are, Levels of Koch Curve, Diffusion Limited Aggregation (DLA), and Richardson of Varied Measured Lengths (The structured Walk of the city boundary), the last one is selected for application [3].

The method is a typical scale approximation for the length of boundary. Walking on the city edge line with a division length of segment \( r_0 \) and calculate the number of divisions (segments / \( N_0 \)), then repeat this step by taking another proportional division to the first one \( r_1 \) and calculating number of divisions \( N_1 \). We continue these processes till we get a visually appropriate matching between the segments and the edge line. Thus we can approximately calculating the length by multiplying number of segments by the length of each one at that level, and then apply the following formula.

\[
D = \frac{\log N_1}{\log \frac{r_0}{r_1}}
\]

Where:
- \( D \): Fractal dimension.
- \( N_1 \): Accumulative number of segments at level (1).
- \( N_0 \): Accumulative number of segments at the original level.
- \( r_0 \): Length of each segment at level (1).
- \( r_1 \): Length of each segment at level (2).

Ten Readings have been carried out, and
\[
D = 1.256
\]

8. Evaluation of Irbid study

8.1. The value of \( D = 1.256 \) is on the lower limit of fractal cities of (1.26-1.7), it indicates lower built area (density) as an effect of rural context.

8.2. Expansion of the city have been irregular unbalanced throughout the different periods, despite this and the effects of influencing factors, especially the large influence of refugees maintained proportionally balanced circular form around the center with irregular boundary lines. If we exclude the southern bulge (effect of the strong south axis) the city indicating an inner system working to organic fractals (Fig. 3).

8.3. The city has grown fractal (according to multi-focal with multi-fractal dimensions). The city itself fractal at every level of its historical evolution and hierarchy.

8.4. The calculated (D) value is only two-dimensional indicator. The third dimensional indicator is needed to evaluate the vertical scale of the city. However N. Salingaros proposed in his (A scientific Bases for creating Architectural form), a scaling hierarchy based on natural objects having scale differentiations of factors about 2.7 from the largest down to the very small. Salingaros goes further by stating that (Buildings Satisfying this rule are subconsciously perceived as sharing essential qualities with natural and biological forms. As a consequence, they appear more comfortable psychologically).

We have applied this factor to the buildings of Irbid and found, that old buildings conformed to the values of this factor, in contrary to modern buildings.

8.5 Three Major historical elements have been identified in the morphology of the Irbid settlement, these are the (city center and sub-centers) scale of (4-10) story, the (Village) scale of (2-4) story and the (Rural) scale of (0-3) story.

9. Formulation of new theory of city genetics

Salingaros various papers on scientific approach for the design of Human environment using mathematics, concentrated on the relationship of man and his natural environment. He clearly states that (Human Mind is
structured to create forms in certain ways). If we take this as reality, then this will raise the issues of, does man creating his environment as reflection of genetic codes? Or does man do this as reflection of his own biology. However these two issues are related directly. It seems quite right to conclude this as result of scientific evidence. The value of (D) as constant fingerprint for each city, is its phenotype.

The hypothesis of Man creating his environment as reflection of his genetic code, will open the way to new interpretations of the relationship between man and his environment in particular, the relationship between the Human genetic map and creation of space, i.e. can we create a parallel map of (genetic space grammar) to the Human map?

10. Examples of application

10.1 Application of the three Genetic Elements of Irbid by Mazin Canan (97-98)

He selected a site with a triangular shape inside the city, along the main North-South axis of the city, for the design of cultural center. The project includes theatre, library, museums, restaurants, commercial areas, multi-media information, offices, and recreation park with a lake.

The architectural solution expresses very well the gradual change in the scale of the masses, from the high mass, city center, to the lower masses and of open park. In this project the scaling factor of 2.7 was used, which resulted in Varity of scales with the range of the genetic scale of town center (High) village (medium) and rural (low), and historical reference is clear in the spaces of the project (Fig. 3).

10.2 Application of Fractal Geometry for Architectural complex in Open Coastal Site of Aqaba – Red Sea (00/01). By groups of students, each group made of two students, whom carried the design of commercial facilities (car exhibition) water bark and sea aquarium.

The students given lectures on fractal geometry and instructed to use this in their design. Because the site is empty, students turn to natural forms of cost lines, sea waves, sea animals ... etc. The result is amazing. The significant results of this project, is that the mass shapes are fractal as well as the plans, also forms for the first time resembles biological cell clusters of the human body.

11. Conclusions

11.1 The city evolution pattern contains important formative elements, which contributed to the development and physical growth in fractal manner as genes. These elements can be reused after adaptation to current needs.

11.2 The use of fractal geometry will reveal many qualities of the city nature and relationship of man mind to his environment; this relationship is biological in many ways.

11.3 The phenomena of man shaping his living environment as expression of his genetic codes, leads to the formation of genetic theory identifying compositional grammar of shapes, pattern and volumes ... etc.

11.4 As a result of the new human genetic map, another parallel map of compositional grammar like urban genetic map of our cities can be developed in future.

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Transformation of the Tenement Building Types During the 19th and the 20th Century in Riga

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The paper is a study of the tenement building morphology in the area between two fringe belts – that of the 16th – 19th century fortification system and another of the 19th century railway – industrial zone in Riga. This area nowadays the centre of the city but former suburbs – from the very beginning had been used mainly for housing purposes. Housing architecture here experienced striking changes during the last two centuries. The building density as well as volume and style of houses, preserving the same urban planning and the same sizes and shapes of parcels, changed dramatically. These changes were determined by several factors: 1) abolition of the less significant status of suburbs of the fortified city by amalgamation of the both parts; 2) quick rise of industry and trade followed by enormous increase of number of inhabitants in the city since the middle of the century; 3) continuous foreign influences leading to the development of the local architectural and urban thought and skill in Riga.

There were two extensive periods of suburban development in the 19th century Riga. The first of them took place after the great fire of 1812, which caused an enormous shortage of housing in the city. Between 1813 and 1815 a new, orthogonal street planning network for suburbs was implemented according to engineer I. Truzson’s project. In 1819 the municipality issued building regulations for the area. Due to the defensive strategy of the main city the regulations limited development of the suburbs permitting here low, one-storey houses without cellars. Suburban houses had to be built of timber and follow patterns already accepted in the other towns of the Russian Empire, the part of which Riga was since 1710. Within few following years large areas were quickly built up with one-storey small wooden houses situated close by the street line, each having a spacious garden. There was not shortage of land there and building parcels were large and of different sizes. The suburban built up area in 1828 reached 485 hectares.

The second phase of the 19th century suburban development took place in the second half of the century when the rapid grows of foreign trade and industrialisation caused enormous increase in number of inhabitants in Riga. The fortress ramparts were levelled down in 1857 – 1863 and former glacis was redeveloped into park and boulevard semicircle around the medieval city. In 1858 the building regulations for suburbs were changed allowing multi-story masonry house building there. New building regulations were issued in 1866, which determined use of building materials in different zones of development, appearance of street facades, height and width of houses as well as width of streets of the suburban area. The height of masonry buildings should not exceed 24.43 metres or six stories. The length of the street façade should be 30 – 35 metres. By the end of the century mainly the northern and the western suburban areas were extensively rebuilt from the previous low-density wooden structures to higher density masonry ones. Classicism style wooden houses, which previously occupied less than one fifth of the parcel, were replaced by Eclecticism style houses, which occupied one half or two thirds of the building site. A small garden or simply a yard was left in the background of the site or between the street and background house. Houses usually had one or two staircases and two apartments with 6 – 10 rooms on the each floor. Main rooms faced the street but some bedrooms, kitchens and bathrooms - the garden. Close to the industrial and railway belt of the housing district, regulations permitted building of two or three storey wooden houses for people with low incomes. This kind of housing was much different; tenements here consisted of only one room and kitchen for family. Every storey had a toilet, shared for several families and situated next to the staircase. Till the end of the century the building density in suburbs continued to increase and former garden areas were built up leaving only tiny light wells for insulation needs of the subsidiary rooms. At the end of the 19th century the building density in the housing area between the two fringe belts reached 88%.

During the turn of the centuries a new and different trend in architecture replaced the previous Eclecticism and Historicism style. The remaining low-density areas of suburbs were redeveloped in the Art Nouveau style. This new trend introduced different façade and interior decorations, wide variety of building materials and changed the former planning of the tenement buildings, which became more flexible. Different kinds of flats, large and expensive in combination with small and cheap, were provided in the same house. To improve the inner insolation of buildings new building regulations were issued in 1903. These regulations determined the size of the inner yard, which should not be less than 136.6 square metres. To enlarge the yard and at the same time to
make the maximal use of the building site for the house owners of neighbourhood parcels co-operated. Together with architects they stipulated enlarged yards in between the two building sites so each owner could provide for these purposes only a half of the required space. It was regarded that at the beginning of the 20th century Riga had the best building regulations in the whole Russian Empire. Nevertheless building density was high, the height of buildings large and tiny yards in the middle of the house could not serve well particularly for the lowest parts of houses which remained dark even in sunny days. During the period of 1908–1913 60% of housing in Riga was built in the area between the two fringe belts and these were six-storey masonry buildings. The density of inhabitants per hectare in this part of the city reached 800. Inhabitants complained about living conditions that forced municipality to establish special commission in 1910 to survey the state of tenements and to improve building regulations for this part of the city.

First innovations in tenement building architecture appeared some years before the World War I. Several new proposals for improved apartment house planning were worked out, paying more attention to a possibility to arrange some greenery inside the block. Such approach was possible in case of complex block redevelopment. Buildings in this case surrounded the block leaving inside a spacious area for recreation needs and greenery. This trend continued during the inter-war period leading in consequence to the modern approach to the planning of new housing districts. The modern approach abandoned traditional urban planning based on dense street network and relatively small block system, where each block was divided into several building parcels. Free standing large buildings floated in an area of greenery like ships in the sea, not dependent on building line or any other former urban planning regulation. Once this approach was implemented on free, rural lands, it was acceptable. But it was very destructive in those cases where the new planning method affected already built up sites of the city, as it did in some parts of Riga in the second half of the 20th century. Not only historic parcels but also several blocks were amalgamated, streets, buildings, gardens and small architecture levelled down and substituted with large concrete structures, which did not and could not get on with historic urban environment. During the last quarter of the 20th century large scale redevelopment of the historic urban environment of the mentioned area was prohibited, and list of the most valuable buildings under state protection prepared. The list included selected Art Nouveau style buildings but did not protect the urban area as a whole (street network, size and shape of parcels, height of buildings).

In 1990-ies the ownership of tenement buildings changed from the state property to a private one. This caused extensive rebuilding process not only inside buildings but also affected their outer appearance. One could say that the formative process of this part of the city changed into a process of transformation. The building density tended to be increased using yards and roof spaces for extension needs. There were also several samples of addition of another storey to the old buildings and tendency to ignore the restricted height of built up structure of the area. Former cellars tended to be rebuilt for garage needs and yards together with two lower floors of buildings - for shop and market purposes. A large number of former apartment houses were rebuilt for office needs preserving only outer volume and historic facades. Investors were not interested in rebuilding of the Soviet period tenement houses. As a rule they chose much more valuable Eclecticism or Art Nouveau buildings and afterwards insisted on complete rebuilding of their inner space instead of restoration. Because the state, municipality and local owners had no funds for extensive improvements of the large stock of the valuable buildings they agreed on investor’s conditions. The choice should be made between complete deterioration of the buildings or its rebuilding according investor’s proposals. Thus the privatisation has caused a quick damage to the historic environment although simply for the visitor of the city it could seem that the outlook of the city has improved.

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Science and Tradition in the Processual Development of Peoples: The International Township Project of Auroville (Tamil Nadu, India)

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What's the difference between the child of 2000 and his prehistoric forefather? Probably the real knowledge of the human and physical context; surely the different way of living, even if both have the same elemental properties (the biologic prerogatives of genetic).

What's the difference between an hybridized flower and its prehistoric ancestor? Perhaps only its genetic evolution.

Undoubtedly it's easy to detect the connection between the two children and the two flowers respectively, utilizing science as an instrument. But surely we've to consider, in order to realize the complete processual development, the temporal circumstances: infact it's impossible, for instance, to understand the different reasons for using the same material (wood of trees) in the same way from our prehistoric forefather like from some our contemporary peoples.

Then we're meaning by time like an increased whole of values, from knowledge to civilization. Therefore, when we speak of science, we've to understand in what moment of science: when she was an extraordinary discovery of the progress (in sense of coming time) or later, when she has become a patrimony of tradition (in sense of past time)? One of the traditional discoveries of our forefather, the wheel, has assumed different requirements in a period like our human history. Therefore it's easy now to consider science like a part of tradition if we consider the processual development like something to realize after his evolution and in this way like a maker of tradition. On the contrary, if science become only the future, forgetting her own continuos becoming, she uses the only way possible for killing herself.

An extraordinary example of this connection between science and tradition is the international township project of AUROVILLE, placed in the subtropical region of Tamil Nadu - INDIA: “The City of Dawn” was inaugurated on 28th February 1968, when youth representing 121 nations and 23 Indian States placed a handful of earth from their home lands in a marble-clad urn near the site of the Matrimandir, at the centre of Auroville, symbolising the creation of a city dedicated to human unity and international understanding.

The purpose of AV is to realize Human Unity and the Charter of the town consists of 4 points:

- Auroville belongs to nobody in particular. Auroville belongs to humanity as a whole. But to live in Auroville one must be a willing servitor of the Divine Consciousness.
- Auroville will be the place of an unending education, of constant progress, and a youth that never ages.
- Auroville wants to be the bridge between the past and the future. Taking advantage of all discoveries from without and from within, Auroville will boldly spring towards future realizations.
- Auroville will be a site of material and spiritual researches for a living embodiment of an actual human unity.

Auroville is located 8 kilometres north of Pondicherry and 160 kilometres south of Madras in South India. The present ‘community’ of Auroville consists of nearly 80 settlements of varying sizes, separated by village and temple lands.

When Aurovilians first came to the area in 1968, they found a picture of poverty, both economic and environmental. To the eye, a bleak expanse of barren red earth scarred by gullies and ravines, with only an occasional palm or lone banyan to do the horizon. And to the heart, a mass of thin people complaining of not enough food, no money, of sickness and hopelessness.

The area includes about 40 villages and hamlets, with a population of around 55,000.

The activities of the inhabitants are multifarious, and include afforestation, organic agriculture, educational research, health care, village development, appropriate technology and construction, small and medium scale businesses, town planning, cultural activities and community services.

Auroville has gained national and international acclaim for its wasteland reclamation and reforestation work. There are currently over 130 wells in Auroville. About 65% of these are pumped by conventional energy sources and 35% by wind, solar, and hand pumps. There are about 600 households currently serviced by the Auroville Water Service.

Auroville uses ground water for all drinking water and most domestic, gardening and irrigation purposes. An extensive network of bunds and check dams prevent run-off and recharge the underlying aquifers during the rainy season.

Municipal solid waste is a major environmental problem in India and in the world. Improper disposition of this waste contaminates the soil, water (both surface and groundwater) and when burned, the air. The Eco Service was started in 1995 out of a concern and need to do something about the problem of growing amounts of household, commercial and industrial solid wastes generated by the growing township. A service was created by providing two local rag pickers with sheds and cycle rickshaws. Each of the two Eco-servicemen cover roughly half of Auroville.
Auroville's aims regarding drainage are to conserve and protect the quality of the groundwater by promoting wastewater recycling and preventing run-off for use in gardening and irrigation.

Concerned with the ecological implications of energy consumption, Auroville has been experimenting with the use of renewable energy sources from the beginning. “Renewable energy” refers to energy sources like the sun and wind that are continuously available, as opposed to fossil fuels (coal, oil, etc.) and nuclear fuels which are limited in supply and also cause pollution. Auroville aims to become energy independent and self-sufficient, with all its energy requirements met from renewable sources.

At present Auroville consumes approximately 1.75 million Kilowatts per year of energy from the grid (Tamil Nadu Electricity Board). In addition, approximately 150 houses use solar photovoltaic electricity and solar water heaters for their energy requirements. There are about 140 solar water pumping systems and 30 wind pumps operational in Auroville for gardening and irrigation purposes. Specially designed ferro-cement biogas systems process animal and vegetable wastes to produce methane gas for cooking and organic fertilizer.

Presently there are five Auroville workshops which produce and market different types of renewable energy systems. In 1997, Auroville, in cooperation with Development Consultants Ltd. (D.C.L. – Calcutta) installed a 36.3 KW solar photovoltaic power plant to take care of lighting and part of the pumping requirements of Matrimandir. This is one of the largest stand-alone solar power plants in the country.

From the point of view of air pollution, Indian cities have an unenviable record. Auroville, in its 35 years of existence, has employed many measures to conserve and protect the quality of the air, such as promoting bicycling and the use of local public transportation.

The RESIDENTIAL ZONE will be the largest of the four zones, comprising a 189 hectare area, 600 meters wide. This zone is a site

The aim of the Master Plan of Auroville (2000-2025) is to develop the town taking the following objectives into consideration:

- ensuring a harmonious growth of the area in order to provide for a healthy socio-economic development of human settlements in the whole bio-region
- promoting material researches in all fields of development
- providing a satisfying framework within which a diversity of cultural and social expressions can take place
- creating replicable development models that are relevant for other parts of India and the world.

The PEACE AREA, the center of Auroville, serves as the dynamic center of the City’s radiating outward manifestation, and contains the following elements: the Matrimandir, the Banyan Tree, the Gardens, the Urn and Amphitheatre and the Lake.

The INDUSTRIAL ZONE is a 109 hectare area located to the north of the Peace Area.

The development policy will include:

- establishing only clean industries;
- establishing a range of small, and medium scale industries to process the variety of available resources;
- to test and establish routines for attaining energy efficiency and zero-pollution;
- to train youth in vocational trades and entrepreneurship;
- to expand employment, both direct and indirect, to at least 25,000 persons from the surrounding region;
- to create a new generation of local human resources to spread the technical and human aspects of productivity in the area based on Auroville culture.

The CULTURAL ZONE is planned for a 93 hectare area mainly situated to the east of the Peace Area. The remainder of the Cultural Zone has been planned to accommodate primary and secondary schools for an estimated 5,400 children, sports, and training and research centers for each of the faculties (physical, vital, mental and psychic), and apprenticeship activities. Crèches for 2 to 4 year olds will be located almost entirely in the Residential Zone, as will 70% of the kindergartens.

There are currently 386 children in Auroville between the ages of 2 and 21. Projecting another 10,000 residents in the next 10 years, that number will increase to an estimated 3,500, including 875 primary and 700 secondary school students. The Cultural Zone is already planned to accommodate the educational needs of 12,000 children when the total city population of 50,000 is reached.

The RESIDENTIAL ZONE will be the largest of the four zones, comprising a 189 hectare area, 600 meters wide. This zone is a site
of material and social research in sustainable, collective living.

**The development policies will include:**
- limiting living space per person to a maximum of 60 m²;
- providing a range of densities and architectural forms;
- establishing 55% of area as permeable surface;
- use of eco-friendly practices in water and waste management, recycling and reuse of resources;
- design of local access roads primarily for pedestrian and cycle use;
- initiatives for creating an economic, healthy, aesthetically designed harmonious environment and spaces for collective and community use;
- carefully designed landscaping and tree planting.

One of the primary purposes of the INTERNATIONAL ZONE, comprising of 74 hectare area, is to give the possibility to all countries/cultures assembled on the land of Auroville to manifest, illustrate and display their contributions to the global evolution of humanity.

The GREEN BELT will be an extensively planted 1468 hectare zone surrounding the City area, sustaining healthy growth of natural life for the entire area.

**The development policies for the Green Belt aim at:**
- creating a healthy, productive environment for the bio-region;
- creating a field laboratory/study area for best practices of other regions for application here in India;
- establishing partnerships with local farmers to achieve better productivity, environmental sustainability and food security for the region;
- establishing partnerships with renowned agroforestry research institutions for ground testing and replication of appropriate technology;
- instituting steps for protecting and securing the lands in the green belt from unaligned development and land speculation for non-conforming.

Mirra Alfassa, called The Mother by Sri Aurobindo, was born on 1878 in Paris and she lived in Pondy since 1920 until her death on 1973: she had the vision of Auroville, the City of Dawn, in a dream on 1954, and today this intuition has become a wonderful and growing reality.

Auroville received the unanimous endorsement of the General Conference of UNESCO in 1966, 1968, 1970 and 1983. Governmental and non-Governmental organisations in India and abroad have funded various development programmes, and donations have been received from foundations in Europe and the United States, from Auroville International Centres and from private donors around the world. The Aurovilians themselves have also made a major contribution of their resources and energy to the project.
The Modernization of Multifamily Housing in Sweden 1970 – 2000

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Technical and cultural aspects on renovation and renewal
Modernization of multi family dwellings on a large scale started in Sweden at the beginning of the 1970’s. Renovation activities were supported by the state, both financially and in other ways. The purpose was to modernize the extensive non modern housing stock. The program was in the beginning concerned with the oldest and most rundown buildings, and technical improvements were the main focus.

Buildings from 1880 - 1920
In buildings from around the turn of the century and up to the twenties, modernization included the installation of central heating, bathrooms and modern kitchen equipment. The installation of lifts in order to achieve accessibility for handicapped people was also of great concern. Those measures were easy to classify as modernization, since the standard level obviously was increased.

Buildings from 1920 –50
When the renovation process later on concerned buildings from the 1920’s 30’s and 40’s, many of the apartments already had what could be considered modern standard, i. e. there were well equipped kitchen even if they were very small, bathrooms and central heating.

Some of the qualities in houses from this period are:
* small flats with effective layouts
* diningrooms separated from kitchens
* flats with windows on both sides of the building, giving through-views
* bathrooms with windows
* balconies and open hearths
* carefully designed details like entrances and staircases
* sturdy woodwork adapted to room dimensions and ceiling heights
* parquet floors in living rooms
* secondary lightning in hallways
* skirting boards, interior plaster decoration, tiled stoves
* sturdy, profiled woodwork, paneled doors and small paned windows
* polishable wooden floors of parquet and/or planking

Buildings from 1950 and later
Multi-dwelling buildings from the 1950’s and -60’s, and even later, are now in focus for repair work.
The rich qualities in housing from this period include among other things:
* well equipped, fairly spacious, well planned flats
* good materials and technical finish
* high kitchen and bathroom standards
* most of the flats have balconies
* often good accessibility to and in flats
* considerable groups of socially stable and well-established households

Most of what has been carried out in houses from this period, such as the renovation of front doors, windows and balconies, the renewal of drainpipes and the replacement of old stoves, should be considered pure mainte-
nance. At the same time, some measures, like totally renovated bathrooms, improved electrical equipment, and triple-glass window-panes, could be considered modernization. Thus the work carried out in those buildings and areas contains a blend of modernization and management, but with more emphasis on maintenance. And the tenants had great difficulty in understanding the reasons for making more than the necessary works when high quality materials and components were destroyed.

Social aspects of renovation and renewal

When the renovation program, supported by the state, had been underway for some years it became apparent, even to the authorities, that modernization had great effects on peoples lives. A primary feature of renovation and renewal was that the action directly affects buildings and areas that people have made their own. They are interventions in functioning social and cultural contexts. The buildings are occupied and the dwellings have been transformed into people’s homes. The inhabitants have also assimilated the physical environment with the result that practical and emotional ties have been formed.

The overall existing problem in the renovation of houses from any period of time is therefore how to deal with shortcomings and bring about necessary physical improvements in buildings and areas without causing damage to architectural, human and social qualities. The social aspect also includes the possibility for people to stay in their homes and not be forced to move away because of higher rents after renovation.

Careful renovation

During the renovation activity in the 1970’s and beginning of the 80’s the values of the existing buildings were in most projects not respected. In order to support a more protective way of treating the existing building stock a change was made in the Swedish Planning and Building Law, adopted in July 1987. In the 10th par. of the 3rd chapter is stated that “all changes in a building should be carried out carefully, in a way that takes into consideration building characteristics and pays attention to technological, cultural, historic, environmental and artistic values”.

Careful renovation can never be a defined level of standard or interference. It is rather a method or a way of approaching work which can always be applied when some action is to be taken in existing buildings. Careful renovation involves identifying conditions and qualities, and making as much use of them as possible in meeting needs and objectives. In other words, it means achieving maximum benefit and well-being with the minimum of intervention and disturbance.

Therefore careful renovation must be based on a comprehensive view covering all the elements concerned - the building, the neighbourhood and the tenants - and what is to be achieved, that is new and restored functions. Careful renovation means taking into account the people living in a building and of the vulnerable social networks often found in older buildings and housing areas. Demands for careful renovation are based on social objectives, interest in conservation, the necessity of reducing costs and effective use of resources.

Conclusions

Studies of modernization in a great number of research projects show very clearly that good results concerning social, architectural, technical and economic aspects are achieved when both decision-making and realization are made under two conditions: 1. Participation from the people living in the houses, and 2. Respect for their opinions about what should be done or not done. The results of the projects reveal the fact that “good” examples of renovation, concerned with both the processes and the results, are characterized by an open dialogue with mutual respect concerning arguments and wishes between the housing company and the tenants. This way of acting follows the implication of the definition of “renovation with care” and can be seen as an application of it in practice.

It seems as though the present situation, with reduced economic resources and greater awareness of the need for recycling, could lead to the development of new approaches to renovation projects, approaches reflecting the greater respect for existing values in the housing stock.

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The Italian Contribution to Type-Morphology Studies: Theories and Methodologies of Urban Design From the Twenties to the Thirties

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Since the end of the First World War Italian architectural culture has contributed decisively to the elaboration of theories and methods of architectural projection. This contribution may be analysed by taking as its main reference the theoretical and practical research of Saverio Muratori, a paradigm of the course taken by Italian architecture, from his adhesion to the Rationalism of the thirties, through Neorealism, to the maturation in the fifties and sixties of his original typological-morphological approach to urban projects.

Gustavo Giovannoni and the Aesthetics of City
The research carried out by Gustavo Giovannoni at the end of WWI, the period of Muratori’s formation, constitutes a cultural antecedent to the latter’s theories.

At a time of maximum affirmation of the functionalist city-machine Giovannoni bases his theories on the idea of the city as an ‘organism’, a hierarchical space constituted by diverse, yet collaborating parts in an on-going ‘dialogue’ with the environment and in continual transformation. While the Movimento Moderno attempts to resolve the crisis of the 19th century city by projecting ideal models for its replacement, Giovannoni does not call into doubt the real city; and this is not for nostalgic reasons, but because he maintains that the city contains an organic principal which has matured with time and which cannot, therefore, be replaced by an abstract and controlling rationalism. The problem is to rediscover the compromised organic structure beneath the apparent contradictoriness of the real city. The lost unity may be regained by steering the architectural project back to art and science; that is, to historical awareness, artistic sensibility and technical knowledge.

Giovannoni extends the concept of the work of art from the single monument to the city as a whole, in the sense of a collective creation. The building continuum assumes a value which is both aesthetic and that of a historical document. Urban planning is understood as environmental restoration; a restoration which conserves historical stratification. This notion is taken up by Muratori and becomes the cornerstone of his methodology. An acceptance of the real city is at the heart of Muratori’s theories. Yet, while Giovannoni assumes its ‘aesthetic’ as a reference model and as a value in itself, Muratori attempts to understand its ‘structure’, the internal logic at the origin of its form.

In his essay Vecchie città ed edilizia nuova (1931) Giovannoni clearly illustrates the practice of ‘building reduction’ (diradamento edilizio) for the functional adaptation and spatial revaluation of minor urban fabrics. An exemplary case is the Renaissance Quarter in Rome, not by chance the same milieu chosen by Muratori at the beginning of the sixties for his didactic experiments. ‘Reduction’ is an act of cautious demolition and reintegration which respects the texture of the pre-existing fabric. Replanning the urban space is achieved essentially through perceptual control, which must guarantee a ‘variety of movements and contrasts’ and a ‘sense of proportion’, while respecting the ‘environmental conditions’ and the ‘artistic atmosphere’ (proportion, colour, form, etc.) determined by the ‘permanent’ elements that characterise a given place, above and beyond style and historical period. Giovannoni’s approach, based on empirical perceptive criteria, assumes a ‘scientific’ character in Muratori, as well as a methodological rigour made possible by an understanding of urban structure.

The Rationalist Experience: the functional/monumental dialectic
Although Giovannoni’s thought was a decisive factor in the development of Muratori’s theories, due to its recognition of the value of the real city as an organism, Muratori’s first projects in a Rationalist milieu constituted an important step in his future criticism on Modernity.

The ‘functional’ character, centre of a dialectic between mere building and architecture, which even Giovannoni had accepted as a founding matter of the town, finds, according to Muratori, a partial answer in the rationalist experience.

These projects are emblematic of the specificity of Italian Rationalism which, from the beginning, attempted to reconcile the ‘classical spirit’ with a ‘modern attitude’, within a ‘new archaism’, a ‘new order’.

The compromise between tradition and innovation was fruitful for the urban project. The Italian Rationalists did not absolutely call in doubt the idea of the inherited city. The search for abstract models and typological studies with a functionalist matrix were flanked by a tension towards a representative identity for urban spaces. Projects for new cities, like Sabaudia, the fruit of a unified action which renders it almost an architectural object in itself, did not see the building continuum as a process. Nevertheless, they were articulated around themes like the piazza (square), the strada (street), metaphysical spaces evocative of the forms of a classic tradition.

In the Aprilia project of 1936, Muratori attempted to discern a hierarchy within a serialised and uni-directional system. The projects of the late forties for piazze architettoniche in Corchio, Amaseno, Cecina and Messina were a further attempt to establish a gradient between buildings, a dialectic between the linearity-seri-
ality of the ‘long, encircling, rhythmic walls’ and the polarity-organicity of the ‘polarised special blocks’.

The Neorealist Experience: aspiration to reality

Muratori matures the idea of ‘type’ at the end of the forties, during the post-war reconstruction, in a climate of rethinking the Movimento Moderno legacy. In this period, even though Muratori gives a clear theoretical elaboration of the concept of ‘type’ (directly affiliated to his idea of ‘organicity’ expressed in his writings in Storia e Critica dell’Architettura Contemporanea of the mid-forties), he still doesn’t manage to put it into practice in his architectural projects.

The Neorealist experience, in which Muratori participates directly with various projects, among which the Tuscolano Quarter in Rome of 1950, constitutes a moment of further self-critical reflection. The projects for Ina-Casa of the major Italian architects of the fifties are motivated by a profound aspiration to reality, particularly in the Roman milieu. The suggestions furnished by Ina-Casa prompt the project architects to refer to the scale and episodic character of small urban nuclei. Popularism is associated with a decentralising and anti-urban ideology of Anglo-Saxon matrix. The Tiburtino Quarter in Rome, on which Ludovico Quaroni and Mario Ridolfi collaborate, is exemplary in this sense.

Fulfilling the identity of place and setting up relations with the existing city become the tasks of the sociological disciplines. These experiences lead Muratori to understand that an imitation of the formal layout of the spontaneous city creates an artificial naturalness, a simulated typological search. In reality, the type to which he still refers is that of the atypical and atemporal ‘cell’ inherited from Functionalism. Aggregative logic is still the mechanically additive logic of Functionalism, even though a variety of plans is sought. The layout, the relation between open spaces and buildings, does not find its full resolution in these experiences, since at a certain point the project architects move towards a search for reproducible, reiterative patterns, and courtyard plans replace more informal ground plans. The new quarters are presented as self-sufficient units devoid of process. The identity of place is entrusted almost entirely to the personal interpretation of a popular lexis.

Saverio Muratori: the relation between type, building layout and urban plan

During the fifties Italian architectural debate concentrated on the relation between ‘pre-existing environments’ and new architecture. The rebuilding of historic centres posed architects the material problem of the relation between environment and history, a problem dealt with by Muratori in his essay Vita e storia delle città (1950) and concretely tested in his projects for Palazzo Sturzo in Rome and the Sede Enpas in Bologna.

Muratori was to become increasingly convinced that the relation between place and history could be satisfied exclusively through a recognition of the concept of ‘type’, as the only one which could guarantee the city a spatial-temporal continuity.

Already in his theories of the forties Muratori associated ‘type’ with ‘organism’, thereby moving away from the Enlightenment-Positivist meaning. Type is an ‘internal structure’ that unites [different] elements; it is an ‘energetic, dynamic nexus that reveals why one part stands in relation to another’. Type is both a synthesising concept a priori and a real organism, linked to a specific time, or historical moment, and place. It is the generating principle of a process, a forma formante (forming form) which changes while remaining itself. Type is, moreover, a collective creation and expression. Muratori’s thought finds its mature expression following his analysis of the real city (Studi per una operante storia urbana di Venezia, 1959 and Studi per una operante storia urbana di Roma, 1963) and his didactic experiments at the School of Architecture in Venice between 1950 and 1954, and later in Rome until 1973, the year of his death.

The attention to the real, which in the fifties was translated into the intellectual creation of a ‘simulated’ reality, leads Muratori to search for logical principles, type laws of an historical, environmental nature that govern the apparent causality of urban and architectural phenomena. This inclusive rationalism of the complexity of the real may only be understood through an historical vision of urban phenomena. History, in the Hegelian sense of a complete vision of reality, contains in nuce the principles of future action. Herein derives the concept of ‘operative history’: that is, historical knowledge as a means of reading the processes of transformation and variation of the real and thus as the operative basis of architectural and urban projection. Especially in his studies on Rome, Muratori realises that the city is an organism in perpetual transformation. Stratification is not accidental; it is the constitutive condition of the city. The project captures and fixes a moment in this transformation of reality. Through these studies Muratori becomes aware of the relation between building type and layout, between urban fabric and plan. Type contains within itself the logic of aggregation, and thus the potential to co-form the pattern of which it is the matrix; it also contains the spatial, functional and structural module.
The relation type-layout guarantees an architectonic approach to urban planning, thereby overcoming the abstract and strictly technical logic practised by the majority of urban planners at the beginning of the sixties. Thus Muratori may be seen as a precursor of the research into urban morphology and building typology of the late sixties.

With his hypothesis for the urban expansion of the Ina-Casa Quarter in Magliana of 1957, for the first time Muratori deals systematically with the notion of urban fabric, using open plans in fieri, capable of generating a continuum. Moreover, he links the urban plan to the geomorphology of the area; a link consisting not only in a simple adaptation of the building to the orography of the site, but in the recognition of typical geo-forms (promontories, ridges, valleys, etc.) which are accompanied by anthropomorphic forms, or modes, themselves typical. Two years later, the competition for the Barene di San Giuliano in Mestre (Venice) becomes an occasion for the major exponents of contemporary Italian architecture to compare and exchange ideas. Muratori’s project is articulated in three successive solutions, crystallisations of the process of gradual replanning, which correspond to different moments in the evolution of the Venetian urban fabric, itself characterised by increasing levels of organicity.

The projects of the sixties for the riammagliamento (a kind of suturing) of the Tor di Nona Quarter in Rome, elaborated in Muratori’s lectures on Composizione Architettonica (Architectural Design), when he was a professor in the Faculty of Architecture in Rome, are exemplary in this sense. The empirical praxis of Giovannoni is replaced by a method of gradual replanning based on a careful ‘reading’ of the existing structures; an analysis which allows one, with the aid of documentary sources, to re-examine critically the typological processes of spontaneous urban development in order to arrive at the project in an almost deterministic way.

Aldo Rossi: building typology and urban morphology

Since the late sixties, following the debate over new project strategies and urban models on a large scale, to which Ludovico Quaroni attempts a reply with his town-design (see the project for the competition for the Barene di San Giuliano in Mestre), Italian architecture, for the most part, has adopted the type-morphology approach as the basis for its theoretical and practical research.

Recognising link between architecture and city has become the means of defending the disciplinary autonomy of urbanism, in particular, now at the mercy of the interdisciplin-
Raj Rewal:
Negotiating the Center and the Periphery

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Rewal defines the problem of architectural production in a monograph titled ‘Raj Rewal’ published in 1992 as:

“India is an ancient civilization with a rich heritage, a poor third world nation and modern developing country…. Modern building prototypes, based on industrial techniques for commercial exploitation and developed for cold climates seem inadequate and sterile. At the same time the traditional designs based on handcrafted building methodology, seem unable to cope with the infrastructure required for a modern industrializing nation.” (Taylor, Rewal et al. 1992)

In an essay titled ‘The use of tradition in architecture and urban form’, Rewal defines the cultural problem as: “Intellectuals in Indian sub-continent have a difficult task. They have to fight against bigotry and fundamentalism in their own backyard and simultaneously face up to silly imitation of superficial western models percolating through the media. This is also a period of searching for values within our tradition which have relevance today and assimilating aspects of global technology which can solve our problems.” (Rewal 1997)

The irony of all of Rewal’s definition of the ‘problems’ is that his notion of self; India; tradition; ‘us’ and the region are all derived from a colonial discourse upon India, which is a discourse formed under unequal conditions of power. Yet he uses those very concepts that are grounded in a western epistemology to propose an ‘Indian’ architecture. Rewal’s definition of India as a “Third world developing country” is situated discursively in the domain of what Escobar argues is developmentalism and the study of development is akin to Said’s study of the discourse on the Orient. (Escobar 1995)

Rewal’s conception of the West as a monolithic, climatically uniform, industrially developed terrain and the notions of ‘ours’ and ‘us’ are problematic conceptions in regional terms and refer to a colonial geography. Rewal’s perception is predicated upon the binary categories of modern/traditional; West/non-West; developed/developing; colonizer/colonized; temperate/tropical and center/periphery. The problem as formulated by Rewal is how to negotiate and formulate an architecture within this political economy. This geopolitical imagination that forms the basis of Rewal’s concerns, inherently defines the periphery as that which forever will be defined and framed within the discourse generated by the ‘center’. What Rewal terms as ‘Western influence’, is the globalization praxis that emerged in the 80’s. I will argue that in proposing Modern regionalism, Rewal is responding to the debates that emerged in the West at that time.

He writes: “...It is important to reinvent a modern vocabulary of design in terms of our own traditions and cultural heritage. I started studying the typologies of North India with close affinities with Iran, Central Asia and the Mediterranean to explore the underlying principles...Jaisalmer is one of the better preserved prototypes of dense urban development in a hot climate which has influenced my works. The narrow winding alleyways, cool and shady, converging into enclosures...” (Rewal 1997)

What Rewal states as the problem of an appropriate Indian architecture is that it is polarized between what ought to be privileged at the level of representation: the indigenous or the Western. Here it would be important to note that the so called indigenous in India always already a highly hybridized phenomenon. This architectural debate originated in between T. Roger Smith, and William Emerson at the meeting of the Society of Arts 1873 on ‘Architectural Art in India.’ Metcalf in ‘An Imperial Vision’ notes that, “A debate was thus joined that was to continue unabated for over forty years: whether in their building in India the British ought to look to their own, or to India’s architecture traditions.” (Metcalf 1988) Rewal’s concerns are indeed a direct descendant of this debate, which he fails to acknowledge in his writings.

The choices upon he which predicates his choice of a region, from where it would be appropriate to be architecturally inspired, is not clearly articulated. Bernard Cohn argues
that “there are regional differences in South Asia, just as there is reality to thinking about South Asia as a geographic and historical entity, or Indian civilization as a cultural unity.” (Cohn 1987). It is assumed that regions of similar climate can have similar architecture, privileging climate over other determinants of regional architecture. Rewal’s sense of a climatic zone is indeed informed by the discourse on tropical architecture. Climate was one the phenomenon by which the colonial discourse, defined the ‘other’. The colonial anxiety with tropical climate informed the architectural discourse as early 1868, when T. Roger Smith gave a paper at the R.I.B.A, on what was to become Tropical Architecture later. (King 1995) The contemporary appropriation of climate in determining an identity of ‘self’ is rather ironic in the Indian architectural debates.

Rewal writes: “From a rational point of view the traditional morphology of Rajasthan’s cities had important lessons for mass housing schemes and has inspired my design for the Asian Games Village of five hundred housing units in New Delhi (1982).” (Rewal 1997)

He invariably looks at the morphologies and typologies of what would be understood as ‘pre-colonial’ towns and settlements. These towns are also popular tourist destinations. He is trying to reclaim a pre-colonial past as an authentic ‘Indian’ tradition. In romanticizing narrow, shaded streets, Rewal does not mention any reason for not acknowledging the wide street and isolated building block practice of colonial planning. Robert Home in ‘Of planning and planting: The making of British Colonial cities’ argues that the of colonial planning practices were predicated upon sanitarian concerns and opening up the spaces to the gaze of power, quite the reverse of the dense native towns, which would not lend themselves to surveil lance so easily and would be impossible from the point of view of Hygiene. (Home 1997). In his design, Rewal privileges a spatial layout, which would be understood to have been suppressed by colonial planning practice. There is a complete repression of the memory of colonial cities and architecture in Rewal’s work, which raises the problem of how deal with the memory of colonialism? Colonial culture is a contested site, where the two forces: of repression of the native culture, instrumented by the colonizer and resistance offered by the colonized, intersect. A national culture in the process of freeing itself from the erstwhile colonial oppression is often reactionary in order to assert its decolonized national status of power. The desire to regress into a pre-colonial past is viewed as a cultural statement of decolonization and is indeed based on a linear conception of time and history.

It is assumed that the modern is always already that which takes place in the West; hence the ‘pure’ modern will always be out of place in India. Rewal’s understanding of the modern, is clearly informed by what Sibel Bozdogan argues is a Gideonesque notion, namely that twentieth century European modernism is the unique and rational statement of modern industrial society and the teleological destiny of architectural development everywhere else. (Bozdogan 1999) Curtis’s history of modern architecture later included a chapter ‘Modernity and the developing world’. If you look at the manner in which Rewal presents his arguments and juxtaposes the images of Jaisalmer with his work, it is very similar to how Curtis presents the work of Le Corbusier in his history book, where he juxtaposes a sketch by Corbusier with an image of Fateh-pur-Sikri on p 277 in ‘Modern Architecture since 1900’(Curtis1996)

The assumptions, that the memory of a pre-colonial past can represented by architecture and that this gesture can reclaim a lost past. The idea that objects can really represent memory is itself problematic. I use Adrian Forty’s argument in ‘The art of forgetting’. Forty problematizes the relationship between memory and objects. He challenges the Western tradition of memory since Renaissance, that material objects are analogues of human memory. (Forty 1999)

Regional architecture is considered place specific in terms of its causal relationship with the attributes of place. Since there is a rupture in the causality, the architect now intervenes to represent the regional features; the resultant architecture is not truly regional, but a nostalgic representation of that regionalism through familiar elements. Colquhoun states, “The doctrine of regionalism is based on an ideal social model, one might call it the ‘essentialist model’…. That is why the architecture of regionalism put forward by the romantics could not be that authentic thing of which it had formed a mental image, but only its
representation.” (Colquhoun 1997)

Modern Regionalism is the very foreign import and western influence that Rewal criticizes. The privileging of regionalism as a determinant of local identities is a global phenomenon that formed part of debates beginning in the post-WWII period. The late capitalistic concept of regionalism in the West coincides with several events, beginning with so-called crises of modernism. In the 80’s the disenchantment with the enlightenment and the progressive notion of history, as Anne McClintock has argued in ‘The Angels of Progress’, what collapsed in the mid-1980s was the notion of ‘progress’ as a linear teleology that underlay both the capitalist and the socialist worldviews. (McClintock 1994) The modern/regional category is a manifestation of the debate between the enlightenment/romanticism. (Colquhoun 1997).

I would argue that Rewal’s concept of modern regionalism is informed by these debates in the West and the place-making literature that emerged during these times and therefore epistemologically located in the West.

Frampton argues in ‘The predicament of place-form’ “It is obvious that technological maximization is antithetical to the creation of the place-form.” (Frampton 1997) Therefore, the lack of universalizing technology then makes the third world architecture place-specific. Therefore, problem of place-ness in the third world is always already solved because the architecture is not mass-produced, but specifically produced in that place for that place. Then all architecture in the ‘developing’ world, would then always be place-specific, without a deliberated negotiation between the modern and the regional. This raises the question, not about the place-ness of Rewal’s architecture, but his location. Where does Rewal belong as an architect?

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The 1920’s

A significant event in the development of modern Swedish housing typologies was the investigation “Practical and hygienic dwellings”. It was presented by the a governmental commission in 1921 and it had a great influence on the design of flats built afterwards. The interest was focused on housing for low income families and on small flats mainly of one room. The flats were well planned, with a kitchen and all hygienic facilities. They were to be situated in pleasant and healthy surroundings. The proposal presented for the first time what came to be known as “slab block”, a narrow 3-storey building with small flats facing large sunny yards.

Another important moment was the foundation of the housing cooperative, HSB, in 1923. Again the intention was to provide dwellings for workers’ families. Type-plans of small flats and even standard solutions for the kitchen furniture were developed. During the 1920’s the transition between classical and modern Swedish architecture occurred. A period of great housing need was starting in the main cities due to migration from the countryside. It was also the time of rationalization, standardization and state initiatives to take control of the future development of the town and to improve workers living conditions. At the same time the Modern Movement and Rationalism were growing all over in Europe.

The 1930’s

The 1930 Stockholm Exhibition marked a dramatic moment in Swedish architecture and the breakthrough of Functionalism in Sweden. Architecture and planning reflecting socialist ideologies became part of the social debate aiming at providing good living conditions for all social classes. Functionalism represented in Sweden the ideologies of the Modern Movement, but it was given that name to strengthen the importance of function studies to make dwellings more comfortable and more practical. The intention was to create an architecture closer to its occupants by studying not only the functions but even psychological aspects of dwelling.

The housing projects presented at the exhibition wanted to inspire “good” well planned, functional and healthy dwellings for everyone. The Housing Commission appointed by the government in the ‘30s focused its work on housing for large low income families. The goal was to improve workers’ living conditions and to stimulate a higher birth-rate by providing larger, low rent flats for families with at least three children.

The slab block was the housing type of this time and for a long time afterwards. Two main variations can be distinguished in the outskirts of Stockholm: the “thin slab” model, 8-10 meters wide with two flats per floor and per staircase, usually 3 floors high, and the “fat slab” model, 15 meters wide, with four to six flats around the staircase on a square plan and several floors high. Building rich in children” was a special slab block with slightly larger flats (two rooms and kitchen), built on municipal ground and with playground and child care centers nearby.

Housing areas were not planned following urban schemes, but rather with “houses in the park”, placed in natural surroundings, exposed to air, sun and light. The buildings were built in groups with similar shapes, colors and materials. However, they were never identical and the grouping was adapted to the landscape: the morphology of the ground and the vegetation. The planning schemes varied with time, while the earlier plans gave a shape and a character to the area, the street, the front-yard and the backyard, later plans were more geometrical and had a more sterile definition of the space.

Another housing type that was proposed in this period was the “row house” presented as a cheaper alternative to private homes. Row houses had gardens and they could provide a more satisfactory family dwelling than the anonymous block of flats. Each flat had a private entrance and a private garden, while plumbing pipes and electrical cable systems were collective.

The 1940’s

Social housing policy became more and more important in the 40’s. Series of studies and research formed the basis for new quality standards and state subsidy rules. All the space of the flat was now related to functions and every space was reduced to the minimum area and the simplest form. However good materials, good technical equipment and careful detailing were included. The most common housing type was still the slab block, but planning was now inspired by the Neighborhood Unit theories arriving from England.

Housing was organized around a community center with a series of services and commercial activities, different hierarchies of streets and gathering places. Even neighborhood planning was inspired by the democratic ideals of providing a good living environment, with housing, services, space for meeting and for leisure for all social classes. New housing types proposed in this period were the “point block building”, 9-10 storeys, with 4-5 flats per floor and the “star building”, 2-3 storeys, with three exterior walls for each flat. Groups of “point block buildings” rose out of the ground and gave shape to the whole open site. The “star
buildings” were formed by breaking up and reassembling the slab block and they could be composed in different patterns giving shape to many different more intimate yards. To the same period belong the model of the “terrace house”: here three story slab blocks were placed against a hill and in such a way that each flat had a terrace on the roof of the flat below it.

The 1950’s

The 1940’s and 1950’s are known in Swedish architecture as the years of the “Folkhem” that is “people’s homes”. A good national economy and the political will to provide good standard housing for everyone led to a new Swedish housing policy. Swedish housing, based on years of research, became a reference model for architects in many other countries. Flats were no longer planned with minimal sizes and they became more spacious. Better materials and refined details, as well as good technical equipment were used. Flats had windows on two sides of the building and blocks were planned around large common gardens or courtyards, sheltered from wind.

During the 1950’s a new plan for Stockholm proposed a new organization of the town in different functional zones and it provided a distinction between the city and the suburbs. New developments should occur in “new towns”, as in England. In contrast to the repetitive developments of the ‘30s and ‘40s, point buildings, star buildings, slab blocks, row houses and single houses were alternated in the new towns. Together with commercial centers, office buildings, green spaces, pedestrian spaces and traffic lanes they formed the structure of the city.

The 1960-70’s

The period 1965-1974 is known in Sweden as the “Million Program” period. The State supported a program to build one million flats in ten years in order to solve the housing shortage. Housing from this period continue to reflect years of studies and research, started in the 1920’s, aiming at providing good dwellings for low income families.

The change that occurred in Swedish housing in the 1960’s was mainly determined by new systems of industrialized production. Planning and building were adjusted to new techniques and machinery that allowed quicker and cheaper construction. Natural landscape and site character were no longer taken into account. Architectural expression was neglected in preference to the advantage of modern building techniques and standard solutions repeated all over the country. Time and cost efficiency replaced the social commitment and search for quality that had characterized Swedish housing in former decades.

The 1980’s

Criticism of the mass production of housing and reactions to the large scale developments – soon associated to social problems – stimulated new thinking in the housing architecture of the 1980’s. Social-psychological effects of design started to be considered. Variation, attention to the individual and to small scale development became relevant. Small towns and villages of countryside provided inspiration and ideals.

Housing research became less concerned with functions, standards and measures and more concerned with non measurable elements like the interrelation between the inhabitants and their environment, the perception of dwelling, the psychological value of people’s homes and the concepts of “home feeling”, “safety”, “integration” and “identification”.

A series of factors, including the stagnation of the housing market, the need for maintenance of older buildings, new norms regarding energy saving, accessibility and waste handling meant that housing renewal became more important than new building. Along with renewal the debate about the qualities in older housing, that had been neglected in the last decades became important. The re-evaluation of older city centers and of the qualities in older housing, the search for historical references and for meaning in architecture and planning, can be read in the new residential areas built in the late 1980’s and in the 1990’s.

The 1990’s

After some years of neither need nor money for building, housing production had lost its central role in the Swedish political debate. Housing projects built at the end of the 1990’s are mainly in the large cities, as infill projects, or in dismissed industrial areas and mainly in attractive, rather central sites.

Housing produced at the end of the 1990’s is characterized by strong architectural expression, sometimes full of historical reminiscences. It is also featured by simplified building regulations, fewer state subventions, and increasing environmental concern.

The goal is no longer the good dwelling for any social class but attractive, often spectacular, dwelling to be put on the market. With a housing stock mainly consisting of “good standard dwellings for everybody” the interest has shifted towards a broader range of different users: not only the traditional family with children, but many variations of singles, couples without children, families sharing children and part time children, students and young, senior and old, disabled persons or groups, green fingers and IT freaks, part time residents and persons working at home. Open plan solutions
and unfinished flats are becoming more and more common.

2000 and on for the new Millennium

Today the key word in Swedish building is “sustainability”. Now commitment concerns planning processes and building technology related to environmental aspects and social issues. Ecological matters have to be considered at both a local and a global level. Social aims demand to avoid segregation and support the integration of different cultures. The inhabitants have to become more aware and responsible of their living environment. Participation is seen as a necessity in order to achieve social stability and get livable spaces.

Sustainability is also concerned with people’s health. Problems with “sick buildings” demand a more careful and responsible approach to building technology and to the choice of building materials. Many projects today, in both new construction and renewal, are targeted as environmental projects. Renewal provides a way of better utilizing existing resources while maintenance / modernization projects give the opportunity for improving existing buildings in relation to environmental and social issues.

Many governmental initiatives have been taken to support environmental concern in the building sector. The European Union has financed a number of Research and Development Programs meant to support experimental projects with special environmental technologies. In 1994 the Swedish Environmental Agency supported a grant program in favor of ecological turnover projects. In 1996 the Swedish Government decided to invest a billion Swedish crowns over a period of five years to subsidize job-creating investments in the ecologically sustainable renovation of buildings and plants.

15 Environmental quality goals were formulated by the Government in 1998 to be achieved within one generation, that is by 2020-2025. One of the goals is “a good urban environment”. Actually a number of projects are “under construction” with the support of the “Local Investment Program” allocating 6.500 million Swedish crowns for the period 1998-2002 for municipal programs aimed at increasing ecological sustainability. The intended effects are – besides increased employment – reduced pollution load, more efficient use of energy and other natural resources, increased use of renewable resources, increased re-use, recovery and recycling, improved biological diversity, safeguarding of cultural environmental values, and better functioning of natural plant nutrient cycles.

Most of the multifamily housing projects that have been financed until now concern the renewal of large housing areas built in the 1960's and 1970's, that is under the “million program”. Environmental measures concern the energy systems and architectural devices to improve energy efficiency, water and sewage systems with measures to save water and to locally clean day-water, new systems for waste disposal and selective collection, the choice of healthy and renewable materials, reuse and recycling of building elements, environmental education, and measures to stimulate participation of the inhabitants.

Ecological retrofitting of housing is generating a new housing type, unfortunately not always coherent with the original character of the building. Some typical elements are: facades recovered with new materials and new colours, roofs with new forms and materials, solar energy devices, new energy saving windows, glazed balconies, green houses, new spaces for waste disposal and collection and green areas for local treatment of water. In conclusion, if sustainability is the common denominator of Swedish building activities at the beginning of the 21st century, there are two directions distinguishing the actual development of Swedish housing. Renewal projects are meant to maintain the qualities of buildings built after standards and norms developed through many years of research and social ideals. They are generally addressed to their inhabitants and they are meant to raise the social image of the areas.

New housing projects are addressed to the market and to a wide spectrum of users, often with good economical possibilities. They look for strong architectural images, and they exhibit less concern about standards and costs.
The Need to Investigate the Processes of Elaboration of Urban Forms

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The merits of typo-morphological analysis

Typo-morphological analysis takes into account the city as a whole, without putting the objects studied into any kind of hierarchy. It also provides a way of analysing the forms of architecture and the city - one that focuses on the phenomenon of urbanism, and combines the geographer’s methods with those of the architect and the urban planner. The radically levelling nature of this approach brings out some fundamental features of the urban fabric, such as the three essential constituents of the city: streets, land division and buildings. The state of knowledge is currently being updated in line with this observation.

Its limits

Right from the origins of the typo-morphological school, in the 1960s and '70s, it was necessary to harness the spatial approach to an historical perspective. This has developed according to two methods, both of which seem to me to be subject to non-negligible difficulties. The first of these methods consists of identifying the successive forms generated by cities in the course of their history, bringing to light what I would call the “successive results” of urban evolution, but saying nothing about the mechanisms that might explain its genesis. The second method attempts to synthesise the general (political, social, economic, etc.) history of urban phenomena and their successive forms, and to establish a cause-and-effect relationship between the former and the latter. This is an indispensable step, but quite inadequate to a comprehension of the way in which urban forms have developed. For example, a combination of heavy demographic pressure and economic prosperity can perhaps explain rapid urbanisation, but not the forms it takes. Although this type of analysis has become widespread in urban studies, in most cases it leads to shortcuts that lack detail. Typo-morphological analysis is ill-suited to going behind formal observations in order to identify the complex historical processes that give rise to particular forms. In the end, this type of analysis is most closely related to purely historical disciplines.

A new theoretical position

Following this analysis, I decided that, rather than study urban forms themselves, as is usually the case, I would study their processes of elaboration. In this I followed the pioneering initiatives taken by Marcel Roncayolo, André Chastel, François Loyer and Pierre Pinon (to name but the most outstanding figures). And in order to give a better definition to my field of research, I decided to set aside the history of the great architectural and urban models (avant-gardes, stylistic schools, prominent architects, major projects), and to think in terms of “the making of the ordinary city”. Rather than developing one or more of the themes that have remained unexplored in this huge field, I felt it was more relevant to work towards an overall approach. I was already moving in this direction at the start of the 1980s, and the doctorate that I completed in 1999 gave me an opportunity to test out my hypotheses in a more systematic way. My research project was modest in scope, but ambitious in terms of its problematic. Starting with a study of a defined urban area, I worked back through a large range of parameters in order to arrive at a determinate form of its physical reality. As my point of departure I took the three main constituents of cities - streets, land division and buildings - and investigated the processes that shaped them. The idea was threefold: to isolate the processes in question, to clarify their origins and relationship to general history, and to determine their mutual correlations. The chosen period, 1781-1914, preceded the massive application of the Modern Movement’s principles, which constituted a radical break with regard to the set of rules I had set myself to identify.

Lyon, an exceptional test-case

For this wide-ranging problematic, the city of Lyon (one of the three major French conurbations, located between Paris and the Mediterranean) proved a fertile terrain of experimentation. The idea was to carry out a long-term observation of a context outside a capital
city, namely an unremarkable district that had been influenced neither by leading architects nor major projects. It also had to be a district that was rich in information about its elaboration and evolution; and the large property holding of the Hospices Civils, on the left bank of the Rhône, satisfied the conditions for this kind of natural laboratory. The records of its formation comprised an exceptionally rich source of both texts and plans, and one that may well be unique in terms of urban data. These records form a coherent corpus of information about the shaping of an urban territory over the course of two centuries.

Results

One of the most important results of this work was to demonstrate that the processes of fabrication of the ordinary city make up a set of identifiable “laws”. This should not be taken to imply a long-standing, immutable system that would define the traditional city and isolate it from more innovative mechanisms. The laws in question are evolutive; in other words, they show that over time there are both variables and invariables. And it is highly probable that these continue to govern the construction of cities. Nor does the study of the pre-1914 city preclude a deliberately contemporary, forward-looking point of view. On the contrary; given that it looks at the pre-modern city, this type of study provides a valuable comparative method for arriving at a better comprehension of the present-day city, as well as foreshadowing ways in which the city of tomorrow might be an improvement on the city of today.

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Building Types and Urban Fabric of Rome’s Outer Suburbs: From Reading to Planning.

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Two topics above all frequently recur in architecture and town planning debate today. One is the problem of how to conserve and develop historical centres, while the second is how to recuperate the outer suburbs of our cities, reconnecting them with the historical city and giving them the architectural identity that is peculiar to each city. Actually, these are not two problems, but one: how to recuperate the rules and values of the city as an “urban organism” that is the product of past historical and structural phases and the matrix of future expansion. In this sense, each city shows continuity in the growth of its various correlated developments, conserving and explicating its own architectural language.

Italy’s cities have expanded rapidly over the last fifty years, but in doing so have steadily lost their cultural identity, because they have imported unsuitable and inadequate types of building and fabric from other areas and, above all, because planning interventions have been on a size scale that is out of keeping with an historical environment like that of Italy. Rome today, for example, has reached such a degree of stratification and complexity that it can contain a multitude of dimensional and typological variants in the structural scales that make up the urban environment: buildings, fabric, urban organism. One of the fundamental reasons for the identity crisis of the outer suburbs, in fact, is the loss of continuity with the older parts of the city - the structure and style of the buildings are different, as are the fabric and layout of these suburbs, and it is these elements that give a district its identity.

This paper aims to reconstruct the typological development of the urban fabric and buildings of Rome, through a critical reading of the quarters and suburbs of Rome that were planned and those that have grown spontaneously (i.e. without planning permission) since 1930. This reconstruction will provide a critical and working tool for replanning the building and fabric types of the outer suburbs, ensuring continuity with the traditional urban fabric of the Rome area.

Understanding the urban organism: from the territory to the form of the city today

The analysis of the urban organism as it is today traces the evolution of the city since 1900. Based on past and present maps, it looks at the most important historical and structural stages in the city’s growth. Each new stage has produced an urban organism that not only contains the preceding ones but also forms the matrix for the next stage, thus providing continuity: the new fabrics of each stage remain in the subsequent ones, collaborating with new structures and new hierarchies to form renewed urban organisms.

The analysis, then, is a diachronic reconstruction of the city’s expansion, from simple urban organisms to complex ones, which should help to understanding the “structures” (streets, axes, hubs and poles) and the “systems” (fabrics and quarters) of the city as it is today. It should be remembered that an analysis on the urban and territorial scale is in itself a form of planning. The existing structures are such a conditioning factor that planning usually consists of deciding which urban components should be reinforced or integrated with new structures, so that the city will grow organically.

The first step was to study the I.G.M. 1:25000 map in order to identify the components of the Rome territory, which have obviously been conditioning factors in its creation and subsequent expansion.

The next stage was to examine the expansions that have taken place, showing how and why the new suburbs have been formed and how they are connected with the existing city. This typological analysis of the urban growth process shows how the new areas of the city have expanded along radial axes (the consular roads being the most important of these) and counter-radial axes. It also shows how the structures of the new quarters in each growth phase of the urban organism have followed modular distances, and that they are developments of pre-existing territorial hubs or “specialisation” of pre-existing settlements.

“Reading” the fabric of urban expansion: “planned city” and “spontaneous city”

In the consolidated historic city, different types of fabric can be distinguished, each of a different character that corresponds to the various stages of development of the urban organism. In the same way, the outer suburbs display different types of fabric, organised according to various rules, calling for just as many planning variants for interventions on the existing fabric and buildings. There is a clear distinction between more “urban” suburbs, contiguous with the city, where the main features, road networks and division into lots are consolidated, and outlying suburbs that are more detached from the city and have grown episodically. Here, the underlying structure is still of a territorial and agricultural type, which, because of its historical authenticity, must be a determining factor when drawing up any new plans for the area.

A distinction must also be made between planned suburbs and districts that have grown “spontaneously”. While the former display all the possible variations in plan, depending on the intentions of the planner, the latter have typical common characteristics, demonstrating their
continuity with a local building language.

The first step was to examine some quarters, selected as significant examples, that have been planned since 1940, in order to identify the typical features of their fabric and buildings.

In the quarters built in the 1950s (Tiburtino, Tuscolano), together with the traditional building types, row houses and houses in line, there are already signs of the crisis in fabric design that had its roots in the blocks of the 1930s. In particular, the Tuscolano district, with its building-aggregation at Largo Spartaco, anticipates the large constructions - neither buildings, nor blocks, nor fabric - that typify Spinaceto, Laurentino and Vigne Nuove districts built in the 1970s. The apex of this crisis in the language of building and the environment was reached in the 1980s, with the Corviale district, an enormous construction 1 kilometre long that is itself both urban fabric and building and yet negates the scale of both of these.

The next step was to examine the fabric of the areas that have sprung up spontaneously, which are distinguished from the former by common elements showing continuity with the historical building fabric of the city.

In reality, the structures that make up the “spontaneous”, unplanned suburbs represent the last stage in the typological process of the built-up environment in all the size scales of its components: building, fabric, urban organisation, territory. In fact, it is important to understand that all the districts, that have sprung up without planning permission in the area around Rome over the last fifty years, show the same characteristics of spontaneous growth that are to be found in the fabric of the historical centres of the same area.

The old fabric of the outskirts as a “substratum” consists of the agricultural fabric, which conserves and shows strong historical elements in the layout of its roads and division into lots, and these have conditioned the form and growth of their subsequent urban development. The agricultural fabric follows the same laws of aggregation, and similar typologies, as those of the building fabric. What this means, simply, is that the current urban fabrics and building types have been laid over the pre-existing agricultural fabric.

A comparison between the IGM maps of 1890 and 1949 and the situation as it is today shows that the buildings and districts built without planning permission are directly based on the pre-existing agricultural divisions of the land. In the change from agricultural fabric to built-up fabric, the streets and lots follow the same rules of formation as the building fabric: one can easily distinguish the development of the block in the interaction of main street, side streets and linking streets, with a gradual change in lot size with the move from parcels of land to building lots.

In the buildings, one finds all kinds of continuation of and derivations from the original agricultural buildings (farmhouse, “courtyard house”) and all the variants of the consolidated urban types: row-houses, detached houses, houses in line, etc.).

From “reading” to planning the outer suburbs

Villanova has been chosen as a typical example of recent spontaneous urban growth. It has been formed recently on the Via Tiburtina, in an area marginal enough to display greater conservatism in its formation and development.

Villanova is a territorial hub at the cross-roads of the Via Tiburtina, a radial axes which connects Rome and Tivoli, and the Via Maremmana, a counter-radial axes. Via Maremmana is the matrix-street of this new urban settlement. The cadastral maps of Villanova show that the division of the area into lots closely follows the pre-existing parcelling of the agricultural land, which was based on the original Roman lot centurium and heredium (1 centurium = 100 heredia, 710x710 m.). In the passage from agricultural lot to building lot, there was a change to rectangular lots of half a heredium, based on the jugerum, which measured 35.40x71 m.; this, in turn, was divided into two actus of 35.40x35.40m.

This process was accompanied by various phases of formation of the fabric, up to the creation of the block, as had become consolidated practice in the urban areas, with a main street, side streets and linking streets.

The transformation from agricultural area to built-up area is therefore based on gradual remodulations of lots and blocks, producing an extremely serial, repetitive fabric. The building types are linked to the type of lot, with all the variants of a building process: from those that conserved the original layout of the farmhouse built around a yard to row houses, to the present low-density linear houses.

As we have said, the urban settlement that has gradually been formed is extremely serial. The Via Maremmana has become the “centralising axis”, with all the shops and business services typical of a residential quarter. The two squares contained in the fabric correspond to empty lots equal in size to original lot.

This research ends with the replanning of the fabric and building, in the characters inferred from “reading” the outer suburbs of
Rome, taking an area of Villanova as a sample.

Through the "reading" it has been possible to discover the "rules" of the fabric and buildings that have governed the more recent examples of the city's expansion. Through these rules, the typological process of the fabric and buildings can be "re-planned", through a critical reorganisation and classification of the fabric types and building types, planned and spontaneous, according to which of them offer the best "performance" today.

By replanning according to phases of types (lot and building), the process of urban formation can be rediscovered and updated so that each phase can be adapted to today's requirements, from the more serial phase to the more organic one.

In fact, the phases correspond to many successive projects, not to a single one. By reacquiring the process through the "reading", the phases can be codified in such a way that each project is closely derived from the preceding phase and already contains the subsequent phase.

Replanning is a tool for reacquiring a common "building language".

Project identification consists in selecting the phase that is most in keeping with the urban settlement of the time.
**Twentieth Century Morphological Change in Small Downtowns and Neighborhood Centers in the Ohio Valley**

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There is a generally accepted idea in the Ohio Valley, if not across the entire United States, that the commercial centers of small towns and of older districts within cities declined between the beginning and the end of the twentieth century. It is true that most have declined in relative importance. They possessed at the end of the century a much smaller proportion of the building space used for the retail business than they did at the beginning of the century.

Winchester, Kentucky has about 300,000 square feet of ground floor building space devoted to commercial activity in the downtown area. This retail space could easily fit within the combined floor areas of the Wal Mart, Kroger, and Lowe's stores on the bypass road. Add in the other big box retailers and the dozens of other stores outside of the town center, and the result is that downtown provides less than twenty percent of commercial space in Winchester.

In 1925, almost all retail activity in Winchester took place in the town center. The exceptions were small grocery stores scattered into the neighborhoods. The size of the downtown then was about 200,000 square feet of ground floor building space. The building space hasn't changed dramatically since then - it has actually grown by fifty percent, but it has declined in relative proportion.

It is a colossal understatement to say that Americans' enthusiastic use of automobiles was a force in the morphological evolution of towns in the twentieth century. Automobile use was an agent of change in three ways. First, they increased access to town centers and actually aided in their growth. They then liberated people from space-time constraints that had caused services to concentrate in town centers. Finally they created new spatial demands of their own. Streets had to be cleared of non-transportation activities, which were pushed onto off-street land, and then expanded parking was also developed in the blocks.

To ascribe all responsibility for formal change in the region's downtowns to automobile use is a mistake, but nevertheless, they have had a powerful influence on the reformation of traditional business districts that were spatially constrained by the intensity of their previous archi-

**contemporary form was documented using recent aerial photography, a variety of map sources published by the towns themselves, and fieldwork and aerial oblique photographs to update and corroborate maps. Town maps from the eighteen eighties give a distinctly un-urban impression, and the town centers were mixed in building pattern and use. The unbroken blocks of common-wall buildings associated with the images of these towns were not completely developed. Houses existed in the blocks that were the most central of the main commercial streets. Building area and height was varied, though a pattern of two
and three story buildings was developing. Lebanon, Ohio's town hall was on the corner of Broadway and Main, but was flanked by houses and faced a third house across Main Street.

The edge between the commercial and residential areas of the town centers was non-distinct. Just as houses extended into the center, there was a great deal of blending at the edges. Henderson, Kentucky had not only hotels, restaurants, and groceries that extended into the neighborhoods, but a number of tobacco stemmeries as well. A pattern of churches and non-secular institutions integrated into residential neighborhoods had developed by the eighties.

Perhaps the least urban aspect of the building pattern was the spacing between residences. In most of the towns, the residential pattern was more like a village or hamlet pattern with varied setbacks from the street, wide spacing, and irregular development. Compared to the subsequent period, the overall building pattern was decentralized and low density. Vacant lots still existed, and in other cases there were large gaps between buildings because the street frontage had not been built out to its full extent. There was a distinct lack of unity in architectural massing and patterning because of this land use mix, the variety of business types in any given area of the downtown, and the small scale of many of the buildings.

The memory of these more rural patterns must have made the towns seem strikingly urban to older residents in the nineteen twenties. Infill and replacement intensified the patterns from the eighteen eighties to create the densest development that has occurred in the towns. Commercial areas did not increase greatly in area, because they were encircled by already developed residential neighborhoods. New business buildings were constructed on vacant lots or filled the street frontage of lots that had been previously built on, buildings were enlarged or replaced with larger buildings, and the dwellings that were mixed into the business district were torn down and replaced with business buildings. Danville, Kentucky had one of the most established commercial districts in the eighties. It stayed within its old boundaries in the twenties, but the commercial building ground coverage increased by more than fifty percent.

Danville and Henderson, Kentucky had commercial centers that were 16 and 38 acres in size, respectively. Of this area, a third was occupied by street rights-of-way, a third was covered by buildings, and the last third was other space within the blocks. Put another way, fifty percent of the land within blocks was covered by buildings. The contrast between mass and void was more striking from the street than the statistics on ground coverage would make it seem. Street spaces were consistently defined by buildings. The blocks in the commercial center of Franklin, Tennessee presented building faces defining the street line for ninety percent of their total length. In the residential areas also, vacant lots were built on so that a more consistent pattern of residences developed along the streets. Neighborhoods were fitted tightly to the commercial centers with no gap between. In most cases, the edge was simply the change between two properties from commercial to residential and the corresponding relationship of building to site. Business growth into residential areas was limited to occasional house-business combinations which were mainly professional offices or service businesses, and to a number of small groceries distributed throughout the residential districts. The towns' institutions continued to be well-integrated into the residential areas. The block of Main Street just north of the commercial center in Versailles, Kentucky was typical with three churches, four large residences, and a wood shop and auto garage at the border of the downtown.

Photographs and narratives reveal an aspect of use that allowed this distinct separation of mass and void to exist: the street was still a multi-purposed space. Cars, and still some horses, were parked across large widths of streets. Businesses stockpiled bulk goods and received deliveries from the front. Traffic intensity and its regulation were light enough to allow diversity of use.

The automobiles that brought people into town were beginning to create a limited amount of direct physical change in the form of new land uses (the automobile garage and the service station), and in new street elements (traffic lights and the provision for more orderly on-street parking). Off-street parking lots were not yet necessary. In this sense, it was a period of equilibrium between urban form and the car. Accessibility to the rural population brought prosperity, density, and public improvements to the town, and yet there were still few enough automobiles that they could be accommodated without seriously disrupting the pedestrian environment and existing spatial patterns of the town.

If the twenties were the height of building intensification, the forties began a period defined by diffusion. The commercial centers in the region have grown, and continue to grow, in area. But as they have grown in area, their density has fallen. Danville and Henderson serve as good statistical examples. Both towns' commercial centers doubled in land area between 1925 and 1993, but the area of building coverage
increased by only fifty percent in that time. The post 1925 development has been half as dense as previous development in its building coverage. If building height were taken into account, the densities would contrast more because newer commercial construction is usually one story.

Building density is significant, but the pattern of building distribution in commercial center growth has had an even greater morphological impact. Buildings of the second half of the century were usually built back from streets and with on-site parking. Street corridors are drastically different as a result. Sixty five percent of the street right-of-way edge within the commercial area that was developed by 1925 in Versailles still has direct building frontage. Only ten percent of the right-of-way in the area built after 1925 has direct building frontage.

Commercial centers grew into areas that had been neighborhoods. The total building density in the transition from residential to commercial has been fairly constant, but the building area has been concentrated into fewer and larger buildings. The unbuilt land was converted from yard to pavement. The result has been that the separation of residential areas from the traditional business core and a reduction in those conditions that are desirable for pedestrian use: sidewalks uninterrupted by driveways and parking aprons, tree lawns and yards on both sides of walkways, or building facades with awnings directly abutting walkways. Some towns have mitigated the deterioration of connections between neighborhoods and commercial centers with landscape development that makes the pedestrian environment more comfortable, but that does not change the walking distances now required.

The skill that has been applied to manipulating the diffusion of commercial space and to providing parking areas has varied. Many towns have allowed the real estate market to exclusively determine building and parking patterns. This has created situations where building and parking distribution become unbalanced to the point of dysfunction and where control over the spatial environment is lost. Other towns have established parking patterns that have preserved the center while attacking its edges in at least a predictable and coherent way. The results are patterns that can at least be acknowledged for their organization and predictability. One such pattern evident in Franklin has used the alleys parallel with the main commercial street to order a linear swath of parking between the commercial center and its edge with residential areas. A pattern used in Lebanon has essentially removed the quarter of each downtown block furthest from the town’s center for parking.

Other variations in the pattern of diffuse growth relate to differences in the patterns imbedded in towns from the plans drawn at their creation. Cynthiana, Kentucky’s town center was located against the Licking River and so the direction of growth was limited. In the early twentieth century dense expansion moved the center east toward the railroad and away from the courthouse. In the second half of the century, expansion took place near the courthouse, so that it is now on the edge of lower density development. In Madison, Indiana, the confined area between the Ohio River and the bluffs combined with an early preservation ethic to slow commercial growth into the neighborhoods. The downtown retained its compactness and new retail development happened above the hills north of the town center.

Transportation routes often shape change. In Danville, where one major highway coincides with Main Street, growth in the downtown has been linear. The designated route of US 41 in Henderson was relocated from Main Street to Green Street, two blocks further from the Ohio River. This caused the commercial area to grow toward Green Street and contributed to the decline of the area between Main Street and the River.

Intentional plans and unpredictable forces have changed all of these towns in dynamic ways. Perhaps none of their centers have a level of vitality that is completely satisfying to their critics. Activity in them is not reaching the potential allowed by their buildings. But the myth of a long golden age followed by a sudden decline ignores the complexity of the changes that have brought about their present forms.
Naming Urban Forms:

Boulevards and Avenues

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Antoine Furetière’s 1690 Dictionnaire universel defines the word boulevard as a “large bastion,” a military term derived from Flemish. Three hundred and three years later, today’s most widely used French dictionary, Le Petit Robert (1993), gives two other meanings for the word: “1. A wide street around a city,” and 2. “A very wide street, often with trees.” These three connotations summarize the development of the word boulevard over the last three centuries. This paper will explain this evolution by placing it in the context of the use of some other words: mail, cours, allée and avenue.

At the beginning, mail cours, allée and avenue

The origins of the great urban street, the boulevard, lie in the relationship between city walls and promenades. On one hand, there were the fortifications of the sixteenth and seventeenth centuries – enormous earth works, often consolidated with trees; on the other hand, there were the leisure activities for the elite – walks (and later, carriage rides) and games such as pall-mall. This relationship gave rise to improvised promenades, often on the existing planted fortifications, which offered a view over the countryside. It also led to the creation of promenades just outside the walls, on top of ditches that were filled in. These early promenades were called mail, cours or allée.

Mail. Furetière defines mail as a lane of trees closed by planks, which serves for playing pall-mall. In Tours, a Grand Mail and a Petit Mail were created in 1471, just outside the walls. A century later, in Orléans, a Petit Mail was established on the inside of the wall (a rare case); thirty years later, a Grand Mail reserved for the nobles, continued the first one. In Paris there were few mails; one was on top of the fortifications, and the most famous, Le Mail (created in 1604), was located between the Arsenal and the Seine.

Cours. According to Furetière, this is “a pleasant place where the elegant people stroll at some hours of the day.” Most dictionaries mention that the first such place name was Cours la Reine, established by Marie de Medicis in 1616. They suggest that the French cours is derived from the Italian corso, implying that Marie de Medicis imported this kind of promenade from Rome and Florence. Cours la Reine was a closed space made up of three planted lanes reserved for rides in carriages, a new leisure activity for nobles and very rich bourgeois. In 1649 in Aix en Provence, an all-together different cours (today’s cours Mirabeau) was created: a public promenade replacing a city wall and serving as a seam between the old city and new neighborhood established on its urban fringe. After that, many cours were created, mainly in the south of France.

Allée. Furetière defines this as “a place where one can stroll, either in a garden or in the countryside, and which is normally bordered by trees.” He notes that allée sometimes means a component of a promenade (allée of a cours, for instance), and sometimes the promenade itself. This second use was current in forests, as well as in some cities: in Toulouse a few wide allées (resembling cours elsewhere) were created around 1750.

A fourth term appeared at the end of the seventeenth century: Avenue. Furetière says nothing about this word, while Richelet defines it as “a big allée which leads to a country house.”

The avenues most often cited are the three created in front of the palace of Versailles and the avenue des Tuileries (today’s Champs-Elysées), in front of the palace of Tuileries in Paris (all four were created in the 1670’s)

Paris, 1670-1800, the choice of a word

In 1670, King Louis XIV ordered the construction of a new planted “rempart” (city wall) around Paris, to replace the existing fortifications on the right bank of the Seine. In the middle of the eighteenth century, it became a fashionable promenade and during the second half of the eighteenth century, it became a good place to live near. Against the initial will and rules, the promenade, which was meant to be free of buildings, was transformed into a new kind of great urban street.

Gradually, its name changed, as well. During the eighteenth century, cours was used concomitantly with two other words: rempart and boulevard, two words that previously meant only “city wall.” All three words were used in the singular form. All through the century, rempart was used much more frequently than cours or boulevard.

However, in 1787-88, this long promenade (4.5 km) was divided into 10 boulevards, each having its own “Christian” name.

The spread of boulevard

Once Paris made up its mind, it fixed the rule. The success of its Grands Boulevards was such that all belt streets created in the nineteenth century received the name boulevard. This is the case, for instance, in the new town La Roche sur Yon. More significantly, during the nineteenth century, when existing towns replaced their old fortifications with wide belt streets, they all named these new urban forms boulevards.

The attraction of the word boulevard extended even further, and it was used to replace several older names. This kind of change is quite unusual and denotes the extremely strong appeal of the word boulevard.
Even more telling, Nantes and Bordeaux, towns that created *cours* in the mid-eightheenth century to replace their fortifications, gave the name *boulevard* to the belt roads they created in the mid-nineteenth century well beyond the old urban core. The rounded form “belt” was there, but it no longer related to the replacement of an ancient military wall. In these two cities, the word *boulevard* was emancipated from its original meaning.

**Extension of the word**

The next step was to apply the word *boulevard* to streets that did not even have the form of a belt. In Paris in the first half of the nineteenth century, four such *boulevards* were created. They were, however, related to portions of belt boulevards. Boulevard Malseherbes, for instance, was part of a Y figure centered on the church Madeleine. It is the left branch of this figure, symmetrical to the right one, the boulevard de la Madeleine, the western portion of the Grands Boulevards.

In 1852 a more radical decision was taken. The *boulevard* de Strasbourg, a 30m wide street with two lines of trees, was opened between one of Paris’ railway stations (today’s “gare de l’Est,” situated north of Paris) and the Grands Boulevards. As the new street leads to a public building, it would have been semantically more correct to call it *avenue*. However, the word *boulevard* seemed more attractive, due to the prestige of the Grands Boulevards. Giving such a name to the new street was a way to try and ensure its success.

The next year, it was decided to extend this boulevard further to the south, through the dense urban fabric of the center of Paris and up to the Seine (boulevard de Sébastopol). Two years later, it was further continued by crossing the Seine and cutting through Ile de la Cité (boulevard du Palais) and the left bank (boulevard Saint-Michel). The resulting 4.4 km artery was called “boulevard du Centre,” a kind of an oxymoron that shocked nobody.

**Boulevard and avenue**

Once the word *boulevard* was set free from its origins, it tended to mean simply a wide and planted road. In 1863, the dictionary *Littre* criticized this tendency: “today, by extension and abuse, the name of boulevard is given to any large street planted with trees which goes through a city, even in its center.” This criticism is a reflection of a decision taken in 1860 by a commission of the Parisian administration that from then on, the word *boulevard* would be used only to designate “large concentric streets.” The use of *avenue* would be restricted to large planted streets that were either “radial, transversal or leading to public monument.”

In Paris this decision was implemented. It meant the change of projected new *boulevards* into *avenues*. This is the case with the *avenue* de l’Opéra and the *avenues* around the Arc de Triomphe and those around Place d’Italie (another star-like figure). The same word was used later to replace some *routes* (country roads), such as d’Italie, de Choisy, and d’Ivry. Thus *avenue* became more than a “way leading to a building”; it actually replaced the term *allée*, a term without any topological meaning.

This time, the rest of France did not follow suit. The semantic precision of Paris was rejected by others cities, where *boulevards* and *avenues* were opened everywhere and anywhere. Further thought reveals quite a strange phenomenon: from the end of the nineteenth century, no new words were created to designate the different new kinds of large streets. Two words were gradually applied to cover an enormously wide range of urban forms, the culminating point being when *boulevard* and *avenues* became synonymous.

Synonymous but not equal. Professionally, in the 1920, *avenue* became the generic term for all grand urban streets. In his *Traité d’urbanisme* (1923), a widely used textbook at the time, Joyant called any large street an *avenue*, and he cited many *boulevards* in this category as well as *avenues*. However, in the last 20 years, *boulevard* has been taking its revenge. In the context of general criticism of the brutal relationship between roads and urban fabric in the periphery of cities, a new entity emerged in France in the 1980’s, namely, the *boulevard urbain*, a road with heavy traffic but which is meant to coexist with some “urban” uses on both sides.

The choice of a traditional word to designate this new type of road is obvious. But why *boulevard* and not *avenue* (Joyant’s choice)? In the book *Boulevards urbains* (1990), meant to help design such entities, the author, Geneviève Dubois-Taine, illustrates the category *boulevard urbain* by making some historic references: two Parisian *avenues*, three *avenues* of Versailles and haussmannians *boulevards* in general. This last reference explains the choice of the word: *boulevard* is a reference to Haussmannian Paris, a kind of desired city for many architects and town planners in the 1980’s.

The ultimate triumph of *boulevard* over *avenue* is taking place at the present, on a different terrain, namely, football grounds. Nowadays when a player has completely free access to the other team’s goal, French journalists exclaim: “he has a boulevard in front of him!” When we remember that the classic defi-
nition of avenue is a "way by which one arrives at a place," we realize that boulevard has become an avenue even in the original meaning.

Words and urban forms

This paper has tried to show that the relationship between words and urban forms is not as simple as it would seem at first. Words are often chosen to designate an urban form in a manner that extends beyond its sheer physical characteristics and its topological relationship to other urban elements. Naming an urban form is not a mere descriptive operation; it is part of what we today would call marketing policy, an operation contributing to the success of an urban intervention. Hope, pretension or misunderstanding may play a part in the decision. The resulting foggy semantic zone is disturbing to purists, but offers a wealth of information about past town planning ideas and interests. Words, just like physical elements, can therefore provide indications that are quite helpful in understanding the present day urban landscape.

Endnotes

1 In 1990, Alain Demangeon published a brochure called A Propos du mot boulevard, which explains the military term and gives some ideas about further developments of the word. Luc Passion’s recent article, “Le mot et la chose,” in Landau B. (ed.) Les Grands Boulevards, Paris, 2000, deals mainly with the use of the word in Paris.
2 Marcel Poëte (La promenade à Paris, Paris 1913) does not agree. In his opinion, Sauval (1654), who was the first to suggest this connection, bases his conclusion on the simple fact that Marie de Medici was Italian.
4 Dictionnaire François, 1681.
6 According to documents of the Archives nationales, series H2 boxes 2127-2141.
7 Boulevard de la porte Saint-Antoine, boulevard du Temple, boulevard de la Madeleine, etc.
8 In Nîmes in 1809 the old Grand and Petit cours were renamed boulevard. Tours changed its two mails to two boulevards in 1843-44, and Orleans did the same five years later. In Marmande the present day boulevards were still allées in 1845. In Avignon, boulevards replaced several other words – promenades cours and quais – in 1836.
9 Normally, an urban form always guards its “surname,” while its “Christian name” can change quite frequently. This is the case, for instance, of the three cours in the small town of Cusset (near Vichy); one of them was originally called cours Bouquet, then cours de la République, cours Napoléon, cours d’Orléans, and since: cours Annet-Arloing.
10 For these details and others related to cities other than Paris, see Darin (M.) (ed), Les boulevards circulaires, Paris, 1998.
12 See Passion (Luc), op. cit.
13 As a project, it was called boulevard and was meant to be planted. It was then named avenue and lost its trees, in order to satisfy Charles Garnier, who wanted a clear vista of his Opera house.
14 Without entering into the question of the import/export of words, it is quite amusing to recall that in Howard’s famous diagram, the radial streets are named boulevards and the concentric ones, avenues.
16 An example of purism: Françoise Choay in a short article « boulevard » in Choay (F.) and Merlin, Dictionnaire de l’urbanisme, 1993 notes: “by abuse of language, since the last third of the nineteenth century, boulevard has become a synonym of avenue.” The criticism of this kind of ‘abuse’ goes back to Littré’s 1863 dictionary. Purists however are never as purists as that; they accept without saying the “abuse” which consists in using the military term boulevard to designated a special kind of promenade or street…
The Process of Integration of a Segregated Post-Apartheid Community

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Due to the South African government system of Apartheid, segregated communities were established, with towns being duplicated for every racial group. In most areas there is the central previously European (white) town where the Central Business District and most work opportunities were located. Around this central town is between one to three satellite (sleeping) towns for each of the different previously disadvantaged racial groups namely Africans, Indian/Asians (South Africa has the largest Indian community outside Asia) and Coloureds. The current population figures are African at 76.7%, European at 10.9%, Coloured at 8.9% and Indian/Asian at 2.6%.

In these satellite towns, services, businesses (on a very small scale) and community facilities were duplicated. Farms, industries and open spaces were placed between these different townships to prevent integration. There was no definite work opportunities in the non-white townships and most of the residents had to commute from their homes via busses, taxi’s (minibus used as group transport and owned by private entrepreneurs) or trains to the job opportunities in the central previously European town. With the system of Apartheid came Homelands where certain ethnical groups were given a limited form of autonomy and rule. The system of Homelands created the same segregated phenomenon, where towns were located on the borders of the Homelands and the old Republic. The reason for that is the Decentralisation policy of the previous Apartheid government, where industries were given ample incentives to locate on the borders of these Homelands, where the workers can commute from their Homelands to the industries in the old Republic and back again. One of these communities is Greater Phalaborwa in the Northern Province of South Africa, which will be utilised as a case study for this paper.

After the 1994-election in South Africa, where the African National Congress (ANC) took over from the National Party (NP), Greater Phalaborwa became an integrated community consisting of the former European town of Phalaborwa that was in the old Republic, the former Gazankulu Homeland town of Lulekani and the former Lebowa Homeland town of Namakgale. The Homeland system was abolished after the 1994-election. Apart from these formal towns, there are numerous rural communities that formed part of Gazankulu and Lebowa and are ruled by four different Tribal Chieftains. The road from the neighbouring town into Phalaborwa acted as border between the former Homelands. The European town of Phalaborwa was established in 1955 as a mining town, with two mines extracting copper, phosphate and some other minerals on a smaller scale. There is also one industry manufacturing fertiliser for export purposes. The Shangaan people live in the former Gazankulu area and the Northern Sotho people live in the former Lebowa. These two towns were developed by the mines for their African workers. The population of Greater Phalaborwa is 164 000. The mines will be in full function until 2025, when it will be decommissioned as there will be no more minerals left to mine.

However, since 1990 and the democratisation of the South African society an enormous boost in international tourism has not only been apparent in Greater Phalaborwa, but also the whole of South Africa. Phalaborwa is the only town with a gate into the world-renowned Kruger National Park. The abundance of wildlife and cultural heritage has turned Greater Phalaborwa into a profitable and popular international and domestic tourism destination. This called for the conservation of the natural habitat and the preservation of the local culture. The Ba-Phalaborwa Municipality recently received a grant that is utilised for the development of a Tourism Centre that will host a museum, cultural village, several artists and crafters and an information office.

The aim of urban planning after the 1994-election by the Ba-Phalaborwa Municipality is to integrate these segregated communities of Greater Phalaborwa. This is not only the process under way in Greater Phalaborwa, but a national planning phenomenon. The problem that faces South African planning is that no policy or bill has been established in order to guide the process of integration. Thus, for the purpose of integration, given constraints such as space, time, money and lack of policy guidelines from central government, various plans are drafted by the different provincial, regional and local governments.

The plan drafted by the Ba-Phalaborwa Municipality is called the Inward Development Strategy (IDS). The non-negotiable constraints under which such a Plan had to be devised, are the following:

1. Geographical
   a) Bordered by small-holdings that mostly host game lodges in the North.
   b) Bordered by the famous Kruger National Park in the East.
c) Bordered by the two mines (Palabora Mining Company and Foskor) and the industry (Fedmis) in the South.

d) A military base is situated between Phalaborwa and Lulekani.

e) A heavy industrial area, sewerage plant and waste disposal site are situated between Phalaborwa and Namakgale.

2. Financial

The Inward Development Strategy has been fashioned by the fact that it must be established on a zero budget, as the Ba-Phalaborwa Municipality has a dept of R40 million, due to the fact that services are delivered for which no income is derived. The area is also plagued by massive poverty and unemployment, which means that the people will never be able to pay for water, sewerage or other services.

3. Demographic

a) Two African ethnic groups dominate the area, the Shangaan and Northern-Sotho's. They are reluctant to integrate and tension is prevalent between them.

b) There are four Tribal Chieftains and they do not wish to hand over their property for governance by the State, even though the Ba-Phalaborwa Municipality is involved in basic planning functions limited to the design and layout of new townships and the provision of basic services. The people in these tribal areas never get full title of the property they stay on, but lease it on a 99-year period from the Chief. Due to that fact, no zoning control can be fully instated in these areas.

c) Due to the extended war that prevailed in neighbouring Mozambique, several Aid Organisations built schools, clinics and churches for the refugees in the refugee camp in Greater Phalaborwa called Humalani, that consist of clay huts and not tents. After the war, they did return to Mozambique, with help from the United Nations, but they keep returning due to the fact that Mozambique is plagued by poverty, unemployment, landmines, floods and no infra- or suprastructure.

d) Apart from the Mozambicans, South Africa is viewed as the land of opportunity by most of the other Sub-Saharan African countries and therefore there is a constant influx of illegal immigrants to seek employment and medical help for their people with HIV/AIDS, Malaria and so forth.

e) As a result of the former African townships being far away from the European towns, where the majority of the jobs and businesses are, taxi’s became the predominant transport for these people. The different taxi’s owners organised themselves into organisations and they are very powerful in the townships. Taxi wars constantly break out between the rival groups that result in a considerable loss of life. In order to purchase groceries, clothes, draw money and so forth, the people from the township have to commute with taxi’s to the former European towns. That ensured income for the taxi owners, has lead to the phenomenon that any business that wants to locate in the township is prevented from doing so through measures including blackmail, threats and attacks.

In order to ensure environmental quality in the urban landscape a Green Belt policy was adopted, where all the parks, flood line areas of the rivers and streams in the area are protected from building, pollution and development. School groups and clubs are involved in developing the Green Belt as parks and protected areas, by keeping it clean from refuse and by planting more trees and clearing alien plants.

The goals of the Inward Development Strategy are as follows:

1. To set the principles of the direction and nature of development for at least the next twenty (20) years.

2. To guide development from the three focal points towards each other (inward development).

3. To guide development in such a way as to maximize all bulk and internal services.

4. It will be more financially and physically viable to service these areas.

5. Promote relevant development in suitable areas.

6. To redress the legacy of apartheid from segregated development to development towards each other in order to ultimately have a unified town and community.

7. It will create a feeling of unity between all residents in Greater Phalaborwa.

Figure 1 is a graphic representation of the Inward Development Strategy of Ba-Phalaborwa Municipality. The three urban clusters are Phalaborwa, Namakgale and Lulekani that are situated in a triangle formation that is 20 km from each other. A heavy industrial area and sewerage plant are located in the core of the triangle and a new solid waste disposal site has been commissioned next to it. Therefore, no residential area can be located at that area and thus a new unified cemetery will be developed as the different scattered cemeteries is filling up at an increasing rate due to Malaria and AIDS-related deaths. An agri-industrial area for chicken batteries, hydroponics and other high-impact agricultural practices, will be developed as buffer between the heavy industrial area and a proposed township extension of Namakgale. Bordered the main road that links Phalaborwa and the Kruger National Park with the rest of the
country, a combined light industrial and business area was identified. The remainder of the area was identified as residential areas, where townships-extensions will make full use of the possibilities to integrate the communities. Combined with the township development housing subsidies will enable the Ba-Phalaborwa Municipality to develop communities where housing and basic services will be provided to them. Different areas within Greater Phalaborwa were identified where tourism and agri-industry development will be encouraged.

The various government organizations, non-government organizations, all four tribal leaders, the dominant employers, business chamber and the public all accepted the Inward Development Strategy as planning guide for Greater Phalaborwa during the next twenty (20) years.

The Inward Development Strategy and relevant development would dramatically alter the urban form of Greater Phalaborwa and will put it on a course not planned for during the Apartheid years. It is the ideal that through proper planning and the integration of these segregated communities, that the spirit of reconciliation will lead to a unified community and nation.

Endnotes
1. Introduction

Over the past decade, land use policy has become the instrument of choice to solve many problems arising from sprawl, particularly those associated with the automobile. The emergence of neotraditional design, with its emphasis on density, mixed land use, transit and pedestrian accessibility, is based on the assumption that such land use patterns will reduce automobile dependence and its associated problems. However, there is little evidence to support these expectations. First, empirical research on the relationship between neighborhood form and travel behavior is quite mixed. Second, economic, social and demographic trends are far more powerful determinants of travel than land use planning and design, and these trends suggest more rather than less automobile travel in the future.

2. New Urbanism and Neotraditional Design

New Urbanism practically originated with the design of Seaside, Florida. Seaside was viewed as revolutionary – a new alternative to auto-oriented suburbia. The design principles displayed in Seaside were widely replicated and came to be known by several terms, such as transit-oriented development, pedestrian pocket, or neotraditional design (NTD). We use the term NTD throughout this paper in a general sense to include all variations of the design.

Duany and Plater-Zyberk (1994), the planners/designers of Seaside, Florida, identified several characteristics of neotraditional neighborhood design:

- The neighborhood has an edge and a center
- The optimal distance between the center and the edge is a quarter mile
- It has a balanced mix of activities
- It has a fine network of interconnecting streets

The Institute of Transportation Engineers (1994) also identified several characteristics for NTD, including high density, mixed land use, complex public space, smaller dwellings, lack of hierarchical roads, and on-street parking. NTD communities mainly have a grid system of streets.

The intent of NTD is to provide a balanced community. A mix of jobs and housing allows for shorter commutes, while access to goods and services nearby promotes walking and biking. NTDs are typically considered as community clusters, with travel between clusters oriented to public transit service. The overall transportation goal is to reduce automobile dependence.

3. Empirical Evidence

Neotraditional planners (e.g., Calthorpe, 1993) cite examples from transportation studies that have predicted substantially lower automobile use in NTD neighborhoods. Table 1 shows an example of studies that have dealt with the possible effects of neotraditional design, or some aspects of the design, on travel behavior. Many of these studies predict substantially reduced automobile travel (often defined as vehicle miles traveled, or VMT) in an NTD-type community than typical suburban communities. However, these studies have some serious methodological flaws. In some of these studies, the effects of other variables on travel behavior are not controlled for, while in some others, the conclusions are derived from questionable assumptions.

It is evident from Table 1 that findings are quite mixed in many studies. A problem in determining the effect of neighborhood design on travel behavior is that there is no straightforward method to identify it. The few NTD communities that exist are still quite new, and their inhabitants cannot be assumed to be representative of the general population. Because of the lack of actual examples, many studies have used comparisons of communities with similar characteristics, e.g., older, inner suburbs with mixed use, narrow streets, etc., to conventional suburban residential tracts. Population characteristics of such communities differ in many ways, and many of these characteristics are related to travel. Even if such characteristics are controlled, the question remains whether people self-select based on their travel preferences.

Another approach is to conduct model simulations and compare the outcomes across different neighborhood forms. Unless trip demand is allowed to vary, however, simulation results are misleading. A third approach is to model the effects of specific neighborhood characteristics, such as residential density, presence of retail, etc. Problems with this approach include a high correlation between many neighborhood characteristics, lack of reliable measures or data, and a failure to control for traveler characteristics.

4. Limitations of NTD in Reducing Auto Travel

In order for NTD to reduce automobile travel, its influence must overcome structural economic and demographic trends that have been associated with increased automobile travel. These include rising household income, declining real costs of auto travel, changing household demographics, and economic restructuring.

4.1. Automobile Ownership and Use

National survey data show that households continue to own more automobiles, use them more frequently, drive longer distances,
and drive alone more often (Pickrell and Schimek, 1998; Pisarski, 1996; Vincent et al., 1994). As the automobile’s share of trips has increased, share of other modes has decreased. These trends are now evident throughout the world. Car ownership is increasing most rapidly in developing countries, and the rate of increase in Europe exceeds that of the US. Similarly, public transit is losing market share in most places despite government efforts to maintain service (Giuliano, 1998; Pucher and Lefevre, 1996).

The single most powerful explanatory factor determining auto ownership and use is household income. Rising income means higher value of time and hence greater demand for faster modes of travel. Increasing income also means a decline in the real price of automobile ownership and use. Development and expansion of highways, as well as liberal parking and taxation policies provide additional incentives for automobile use. Thus a complex of public policies supports the overall trend of increasing automobile ownership and use.

4.2. Decentralization of Activities

Decentralization of activities in the US cities has continued since the beginning of the 20th century.

4.3. Women’s Participation in Labor Force

In the US, women’s participation in labor force increased tremendously over the last few decades. A similar trend is now evident in many European countries.

Table 1. Examples of Empirical Studies Examining the Relationship Between Accessibility/Design and Travel

<table>
<thead>
<tr>
<th>Study</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanson and Schwab (1987)</td>
<td>Individuals in high-accessibility areas make higher proportion of nonwork trips by nonmotorized modes than individuals in low-accessibility areas</td>
</tr>
<tr>
<td>Kulash, Anglin, and Marks (1990)</td>
<td>57% less VMT in NTD-type community than typical suburban community</td>
</tr>
<tr>
<td>Fehrs and Peers Associates (1992)</td>
<td>33% less VMT in NTD-type community than typical suburban community</td>
</tr>
<tr>
<td>Gordon and Peers (1992)</td>
<td>25% more trips in suburban communities than traditional communities</td>
</tr>
<tr>
<td>Handy (1992)</td>
<td>32% higher auto trips in suburban communities than traditional communities</td>
</tr>
<tr>
<td>McNally and Ryan (1993)</td>
<td>Individuals in high accessibility areas have high walk-trip frequency than other areas</td>
</tr>
<tr>
<td>McNally and Ryan (1993)</td>
<td>Individuals in high accessibility areas have higher proportion of automobile trips than other areas</td>
</tr>
<tr>
<td>McNally and Ryan (1993)</td>
<td>27% less vehicle hours traveled in NTD-type community than typical suburban community</td>
</tr>
<tr>
<td>McNally and Ryan (1993)</td>
<td>15% shorter average trip length in NTD-type community than typical suburban community</td>
</tr>
<tr>
<td>Cervero and Gorham (1995)</td>
<td>NTD-type community has less solo driving and higher proportion of walking/biking trips than typical suburban community in one area</td>
</tr>
<tr>
<td>McNally and Ryan (1993)</td>
<td>NTD-type community has less transit use than suburban community</td>
</tr>
<tr>
<td>Rutherford et al. (1996)</td>
<td>27% fewer miles traveled in mixed-use neighborhoods than other areas</td>
</tr>
</tbody>
</table>

Decentralization is no longer unique to the US; Canadian and European metropolitan areas show the same trend of a greater population and employment growth outside the central core (Giuliano, 1998). Although favorable public policies in the US have certainly played an important role, other forces are also at work. These include rising income and structural economic changes. Rising income leads to increased demand for goods and services, including ever larger single family homes. Low-cost transportation allows people to live in environments they prefer, even if such places are far from jobs or services. National housing surveys consistently show that most people prefer suburbs to cities.

The emergence of the “New Economy” is a continuation of restructuring which has favored decentralization. Information and communications technology is associated with globalization, spatially distributed production, and networked firms. More activities have become “footloose” as a result of information becoming a larger part of economic activity. With the notable exception of the world’s few global control cities, the New Economy is reinforcing long-term decentralization trends everywhere.
maintenance. They therefore face more time constraints, and hence have greater demand for the speed and flexibility accorded by an automobile (Rosenbloom, 1995).

4.4. Change in Household Size

Average household size has been decreasing steadily in the US and other parts of the world. Recent data show both decreased household size and increased numbers of non-family households. Both of these trends imply more travel because of resulting increased maintenance activities.

5. Conclusion

The NTD concept seeks to use urban design and land use planning to reduce reliance on the automobile. The empirical literature to date provide mixed evidence. Basically there is little reliable information to suggest that travel behavior is significantly different in NTD neighborhoods or communities. These results are not surprising. Neotraditional design may indeed make possible more walk and bike trips, provide basic services closer to home, or provide a better balance of jobs and housing. However, most people do not take advantage of such choices. Job and housing location are outcomes of highly complex choice processes, and transportation is just one of many factors affecting such choices. Basic services provided near home may not have the selection or prices of the supermarket or shopping mall farther away. Walk trips are often not considered feasible when lives are busy and filled with activities. More importantly, neotraditional communities do not conform to the larger travel and land use trends that are shaping our metropolitan areas. Perhaps transportation policy is a more appropriate tool for managing the automobile than land use planning or design.

References


The Permanence of Urban Form in the Construction of a Place:
Quality of Design in a 1930’s Residential Area in Rio de Janeiro, Brazil

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How much of the original urban design of an area leads to its perceived qualities, to its public image, and to its recognition as a special place by its users? In this paper we present the preliminary results of a comparative study of residential areas in the city of Rio de Janeiro - Brazil, that are highly regarded as special places by both their communities and the population at large. Our research tries to understand which aspects of the original design of these places still remain today and may be held responsible for their popular success, and which design fundamentals are common to all of them. We will comment on the first case-study in our research, the area called General Glicerio, a residential development of the late thirties.

Place Construction and Dimensions of Performance

To study a place means to understand the relationships that its users have with it, and its genius loci (Norberg-Schultz, 1979). In a city, the quality of a place determines preferences and expectations, attractiveness, inclusion in tourist guides, commercial profits and differential land rents. People simply feel attracted or not to a place, a feeling that Tuan (1974, 1977) relates to memory, to imagination and to what he calls topophilia. In this sense, our research assumed the theoretical construct of a place proposed by Canter (1977), who understands that the nature of places is formed in the amalgam of three fundamental realms: its observable physical attributes, the concepts that it forms in our minds, and the set of behaviors that it is capable to promote.

The Study Area

The case study discussed is an area popularly known as General Glicerio, a residential development that replaced a XIX Century mill with a garden-city-like, appropriate and site-specific urban design. The area is regarded as a specific place in Laranjeiras, a district in the south zone of Rio de Janeiro that today is mostly middle-class high-density residential. The district lies along the narrow valleys of a creek, and its development is limited by the rough topographic conditions typical of most of the southern territory of Rio de Janeiro (Fig. 1).

As the valley district of Laranjeiras is right off the expansion line from downtown towards the southern districts and the beaches, urbanization and the sub-division of its rural properties happened as soon as tram tracks were built in the beginning of the XIX Century. With the tram, commercial uses and higher densities concentrating along the major central valley, and from it the General Glicerio road lead to the gate of a new textile company – mill, administrative buildings and labour housing.

Closed down in the late thirties, the mill and its properties gave way to a residential middle-class real-estate development: Cidade Jardim Laranjeiras – Laranjeiras Garden City, a name that reveals a coincidence with the proposals contained in the city-beautiful master plan for Rio that had been completed almost a decade before by the French architect-urbanist Auguste Agache. Designed by architect Washington Azevedo, the original project reveals a strong influence of the garden-city model: adapted to climatic and topographic conditions, it covered an area of approximately 29 ha. with 413 lots for detached houses in an organic street pattern around a central spine.

Interrupted by the II World War, the development was re-launched in 1945 with changes to the original design. The General Glicerio street was now to receive twelve residential buildings of twelve stories each – some of them with shops at street level -, three stories residential buildings were allowed in the surrounding lots, and the plan of a new city tunnel connecting to southern neighborhoods was incorporated into the design. The development was to impact in the district in attracting hundreds of new families. Interestingly, architect Azevedo was sensible enough to respond to the new post-war taste, altering his original design toward a more “progressive” refreshed image. He understood that the construction of the tunnel would turn main street into an avenue, in which case tall buildings would be more appropriate. He also adopted a proto-modernist vocabulary for the new tower-blocks, besides concepts of the Charter of Athens, such as the idea of super-block, the high density and the tower-in-the-green.

Figure 1
Both the original and the revised project had urban design qualities that were advanced for their time: it was responsive to site conditions, it permitted a mix of residential and commercial uses, it promoted an impressive tree canopy covering main street, it put value in pedestrian circulation by means of wide sidewalks and of design solutions that stressed semi-public spaces. Advertising at that time stressed the qualities of Cidade Jardim Laranjeiras: “a modern city in an aristocratic neighborhood”, “the most picturesque quarter in Rio”, “ten minutes from downtown”, “rigorous selection of buyers”, “healthy climate and proximity to Flamengo beach and to commercial centers” (A Semana, 9/9/1939). Later, after the design was changed and the development re-launched, a newspaper stated that “majestic constructions surrounded by gardens” would cause a stronger effect in the design of the whole (Diario da Noite, 3/15/1945).

Although in the seventies real-estate developers and zoning changes forced building heights to go up to five and seven stories in the area, and the neighborhood as a whole changed dramatically, our place managed to maintain much of the original aspects that made it special and admired by its community and by the city population at large.

**Research Methods and Findings**

Besides the historical evolution of the district and the study area, we considered census data, field appraisals, morphological and figure-ground analyses, interviews, questionnaires, and cognitive mapping (Fig. 2). A series of maps and serial-vision sketches (Cullen) were drawn showing physical and spatial attributes.

Located in the bottom of a small valley, General Glicério street is surrounded by steep hills that define the organic street pattern of the development. The circulation system is dependent on the main street as the axis, served by the two involving rings of secondary streets responding to contour levels, and land-use is predominantly residential except in some of the tower blocks with convenience shops at ground floor. Tree planting is intense, particularly along the main street; an important amenity in making the place comfortable and known for.

In the original design, permeability between the street realm, the tower blocks and the surrounding hills was superb. In walking along the main street marked by tall trees and their impressive canopy, the rest of the development and the surrounding slopes always show through the spaces between tower blocks, and as a scenario at the end of the street. Until recently, the tower blocks maintained their two original main entrances – one from the main street and another from the back street. Pedestrians also could walk easily from one street to the other through the landscaped short-cuts between the buildings. Unfortunately, physical permeability was disrupted when tower blocks residents decided to maintain the main entrance, for the sake of “security. Nevertheless, the front landscaped areas and the street connections were preserved, still allowing for passengers of arriving cars to enjoy a comfortable porte-cochere, and pedestrians to have a direct physical and visual connection to the buildings.

A series of site interviews and the random application of ninety questionnaires to respondents who lived, worked or used the study area, provided us with rich information on cognitive mapping, environmental evaluations and preferences. Respondents were sub-divided into four groups of users: those who live in the area, those who work in the area, and those who only use the area frequently. The data generated graphics to help in the analysis of results. Here we can only comment very briefly on the results obtained and the preliminary conclusions of the research.

For instance, to the question “What is the first thing that comes to your mind when you think of this place?”, 58% of the respondents imagined positive aspects, and crossing this data to the answers to other questions suggests a significant relation of these positive aspects to physical and design aspects of the area. Another question about the degree of satisfaction towards a list of elements revealed “tree planting” as the most preferred, and the aesthetics of the place as a whole came in second followed by the gardens. The only item that received a totally negative evaluation was parking, from 69% of the respondents; parking spaces in the area are well beneath demand, and irregular parking impedes pedestrian circulation.

The majority of respondents was worried about personal security – a feeling that is shared with all population in Rio as a matter of fact – and said they wanted police watch-points in the place. 81% of the respondents wanted more recreational areas – the little square with the play-ground seemed not to be enough – and 55% of them suggested the main street should be closed to through-traffic on Sundays and holidays so that it could be used freely for recreational purposes – just like is done very successfully in other parts of the city.

The most important lynchian element for the construction and structure of the mental image of this place is the “path” and, as expected, the General Glicério street stands out because it is the main access and the physical axis that organizes the space around it, what is reinforced by the presence of intense tree plant-
ing and the “tunnel effect” that it generates. The little square at the entrance of the area may definitely be considered a “node”, and constitutes a spot for functional, spatial, and formal interest of the respondents. As to the “sector” and “limit” elements, the majority of the respondents place a distinction between the study area and the rest of the district.

Preliminary Conclusions

The comparative analysis of the area as it is today with the original urban design, and the permanence of many of its most important aspects, revealed that the quality of design was fundamental to its recognition as a special place in the city, and to its preservation by the community of users. These results permit us to conclude that the methodology proved to be valid in qualifying the performance of urban design, particularly in respect to the cognition of its principal assets, and their role in helping it to be recognized as a special place by its users. The interviews and answers to questionnaires corroborate this conclusion. In our case, the research suggests that quality and uniqueness of place seems to be derived from:

- the site with its unique topography, constituting a small and enclosed valley with only one entrance and a feeling of being “out of the urban craze”;
- the clarity, quality and responsiveness of the original urban design;
- the tall and ever-present canopy of large trees aligned along the main central axis-street;
- the relationships between public/semi-public/private spaces, and particularly the intensely landscaped side-walks and set-backs of the residential towers;
- the relative visual permeability of the place: spaces between tower blocks reveal the surrounding slopes and suggests the ever-present security of enclosure, small public spaces for the use of children and the aged, along the main axis and easily controlled from the blocks and sidewalks.

Our findings suggest that the public image of the area - its perceived qualities, attractiveness and recognition as a special place in the city – is strongly related to the quality of the original project and the permanence of some of its design elements and attributes, and to how they are perceived, utilized and preserved by the residential community and by other users of the area. Its design quality also generated a strong community movement that guarantees preservation to this day - some years back the city responded to this movement by declaring it a preservation area. The quality of the place is clear in the daily use of its residents and frequenters alike, immersed in the three realms that Canter (1977) points out as affecting the construction of a place: physical attributes, concepts and behaviors.

References

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Endnotes

1 The research Urban Design and the Quality of Place: Performance Evaluation of Places in the City of Rio de Janeiro with Emphasis in the Study of in Environmental Perception and Cognition was coordinated by professor Vicente del Rio at the graduate program in architecture of the Universidade Federal do Rio de Janeiro - Brazil, from 1999-2000, and received grants from the Brazilian National Council for Scientific Development – CNPq, and the Jose Bonifacio University Foundation – FUJB.
2 Named after the district where it is located, in Portuguese the name the development means “garden-city of orange trees”.
3 The city was to give up building the tunnel in the late fifties.
Canons of Urban Morphology and the Dwelling at the Edge

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Starting from where we are

If formal study of the physical city is pursued initially in the field, there is the advantage that one is surrounded by the subject matter and can apprehend it through all the senses. But, in the field, one must start from wherever one is located, and that may be a highly arbitrary point in the spatial logic of the city's structure. This can be a distinct disadvantage. If, however, study begins in the classroom, a combination of past experience, memories, abstractions, imagination and powers of deduction are all required for the beginning student to grasp the city's shapes and their meanings. It's difficult to count on this collective calculus. Urban morphology can be confusing, and awkward to teach.

My classroom has become an increasingly multi-cultural place, and there is little assurance that class members share any urban experience beyond the windowless concrete box of learning where we gather, and of living in mainly suburban family dwellings, some with families and some in rented rooms. Students commonly know only small parts of the wider urban area.

Arguing the canons

A few ‘tricks’ help the class to cohere as a discussion forum, starting with a walking field trip of the inner suburban university at which I teach. The university was founded in an atmosphere of idealism, and purpose-designed, in the mid-1960s, at the summit of a small mountain that reaches up some 1,250 feet above the inlet below. Its design is focused, integrative and accessible, expressing a vision of what a setting for learning should be. The young architects, Arthur Erickson and Geoffrey Massey, who won the competition to build the university, had a specific set of educational ideals in mind. Places for informal interaction, centrality of the library, theatre and student life were all to the fore in their thinking, as was protection from the north Pacific coast winters. Learning was to be exalted above all, and so the fifth and sixth floors of the Academic Quad were elevated on columns, leaving the fourth floor open and outside, and providing vistas to the mountains or across the lower Fraser Valley to the Strait of Georgia. All this may be taken in at a glance, and is one of the experience-based observations I use to suggest the first canon:

That we structure our work(s) and world(s) in terms of our belief systems, and from where we are, taken as the centre.

The first clause restates a well-known point of cosmography, but a point within the immediate grasp of the student, while the second self-references our understanding of identifying space. This latter, a subjective starting point, may be taken back in geographical thought to the work of the Finnish geographer, J.G. Granö. In the first decades of the twentieth century, Granö developed an apparently independent position, that regional identification, while part of science, has a subjective beginning in that it arises from a point of environmental perception. Thus the human being lies at the centre of a world that is to be objectively ordered in relation to that starting point, although there is no suggestion that this order is teleologically derived. While this position was not fully appreciated in his discipline during his lifetime, it was strongly re-introduced into the literature during the latter decades of the century, from different sources of inspiration and with a number of variations in approach.

If the university campus provides a straightforward case from which this principle can be enunciated, it is often the dwelling that the students relate to more easily. I return at various points in my morphological classes to this idea that a subjective element underlies much so-called objective enquiry. In Granö’s thought, regions and sub-regions must be identified as clearly as possible, that is as objectively as possible, even though he insisted upon acknowledging their subjective beginnings. In mid-century American Geography, this position was sometimes given as the definition: ‘a Region is an area defined for a purpose’. This definition was not always taken seriously, nor was it entirely dismissed. But it follows that the region, and hence a particular landscape, exists in a particular form because, in effect, it has been willed into existence. When applied to urban morphology (and to all other designed forms), it leads to the second canon: That behind every artifact there lies an idea and a system of production.

The first part of this statement apparently has many forbears, some with lengthy lineages. For example, it appears in St. Thomas Aquinas’s five proofs for the existence of God. The fifth proof is of particular interest. Things lacking knowledge, such as natural bodies, tend towards certain ends, and even to best results. Such motion cannot be fortuitous; or else it would be random in outcome, which it is not. Therefore the motion is given direction, and thus exists by design. But without knowledge this would be impossible. Therefore things must be directed in some way by a knowledgeable and intelligent being.

This line of reasoning has its morphological expression. The constituent elements of an arresting landscape are intertwined so harmoniously that they can in no way be considered...
The Dwelling at the Edge

A recent project in Canadian urban morphology took “(Re)Development at the Urban Edges” as its theme. The bracketed prefix in the title suggests conceptual and processual complexity. The project concluded that it now becomes necessary to include the dwellings of all who are marginalized at the edges of society, whatever the edges may be, and wherever such marginalization takes them, from the inner city to the country estate, from the hobo jungle to the garden city. This provides the context, the realization that for the focus to be on the ‘here and now’ in the material landscape requires that an understanding of the origins of observation and analyses be included. That is, it requires looking to the subjective start of the scientific and historical analyses that must take place with all the empirical rigour that is consistent with the purpose of enquiry. This is Granö’s point, and students quickly understand this.

Thus the many edges that divide and give form to society must be taken into account in dealing with physical structures. I focus here upon the modest single-family dwellings in the inner suburban areas of a middle-level metropolis, and to how the inhabitants have changed them to suit their needs. Two hundred and fifty-four cases were studied on Vancouver’s North Shore. A later study in Burnaby, of about the same magnitude, yielded similar results.

I do not intend to present a lot of data that would be difficult to see or grasp at a glance. Rather, let me briefly present two schemes that summarize the thrust of the work.

“House Spaces by Purpose and Form” was a scheme empirically derived in this study. The General Purposes of Space were identified simply as shelter, communal activity and privacy. For each a “general form” was indicated, and then morphological specifics were matched. This is a simple scheme but it indicates the line of approach that purposes and specific forms are related through an intermediary stage in which a general form is recognized as logically transitional. Thus a ‘topology’ of form is recognized before the specifically ‘topographical’.

The model of Household Space Differentiation presents a diagrammatic scheme of this transition, and will be presented as an illustration. The first ‘stage’ shows a simple enclosure in which space use is functionally differentiated, but only partitioned in the most elemental way. Where I come from this can still be thought of as the pioneer cabin stage, and in fact such one-room dwellings were manufactured as kits and widely distributed before World War I. The next three stages represent the emergence of spatial complexity in the development of the dwelling. This evolution may also be traced in the way standardized housing has been produced and marketed, right through to the contemporary ‘manufactured (mobile) home’ that derives from the trailer. But once people start to live in their houses, they come to appreciate how the spatial arrangements may or may not suit their needs. At this point, what they do with their homes by way of expanding and
rearranging the spatial attributes represents a signature and record in the landscape of morphological development. The process derives from an initial appraisal by the householder of what is suitable, and this is the subjective beginning. To alter, renovate and expand the dwelling represents the process of re-ordering, that is the process of objectifying the dwelling environment.

Illustrations of case studies will be presented.

References
Different Urban Morphologies of a Great Squatter Settlement in Rio de Janeiro

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Introduction

A first look at the favelas of Rio de Janeiro will usually provoke surprise, wondering and the impression that they are all very similar. Effectively, at first it does seem that there is homogeneity in their morphologies; a more attentive investigation, though, reveals huge diversity in the shapes of the favelas built upon hills or plain areas, old or new, larger or smaller, richer or poorer. Even within the same area, a big shantytown like the one known as “Complexo da Maré”, where six different favelas grew around and on the waters, gathering approximately 60,000 inhabitants, it is possible to notice different morphologic patterns. The seemingly homogeneity of the urban fabric disappears along the construction of the place’s and the community’s histories, in the reconstitution of its origins, its formation and transformation processes and in the observation of the urban fabric as a result. The analysis of the urban shapes that come from this process reveal different configurations that will vary from a more formal and orderly pattern to a more informal and maze-like one.

Research and methodology

This paper presents a summary on choice aspects of the research “History of the Maré boroughs”. In order to remake the history of these boroughs, due to the lack of bibliographies or documentation, the option was to work with oral history, collecting statements from the inhabitants and relating them to general information on the city and the different historical contexts, trying to build the complex puzzle that is the historic record of how the group of favelas came about and how they were configured. Thus, the resulting spatial forms can be better understood and the analysis can be richer.

The area

This is a large piece of land on the banks of the Guanabara Bay, the mangrove fringe of the plains on the northern part of town, where, by the late 19th century, a few nucleuses appeared around small railway stations, in a still rural environment. From the 1930s on, the occupation area was sanitized, appointed as industrial, urbanized and crossed by the most important highway in the city, named Avenida Brasil. In the 1950s and ‘60s the area was considered a suburban zone, with lower middle-class boroughs, factories and favelas. In the 1980s, the concentration of favelas on the coast suffered a great intervention on sanitation, urbanization and the construction of low-income housing projects, followed by the construction of a new highway upon large embanked areas.

Complexo da Maré

The so-called Complexo da Maré is located between two of the main roads that lead to Rio de Janeiro, right between the center of the city and the International Airport. It is made of favelas and low-income housing projects facing the Federal University in Fundão Island. The group of favelas was partly developed on dry land, partly on the mangrove swamps and partly on the waters, and in the 1960s it combined eight favela communities. Today it also includes the low-income buildings designed to house the population removed from over the waters and from others parts of town. In 1988, it became the latest Administrative Region of Rio de Janeiro. From the Maré complex, we have selected as the subject of this paper the six original favelas: Timbú, Baixa do Sapateiro, Parque Maré, Nova Holanda and Parques Proletários União and Rubens Vaz.

Formation

During the first half of the 20th century, old farm lands were divided and turned into the Bonsucesso borough. The access to that borough was through the railway and through the roads that came from old ports inside the bay. Nearby the new borough and the small Inhaúma port, a few shacks appeared in the 1920s and ‘30s.

While the neighboring military headquarters allowed some people to build on top of Timbú hill, others were building at the base of the hill, in the south, close to the beach, and...
in the north, by the mangrove swamp fringe. In the 1940s, regardless of the inhabitants’ resistance against the removal of the new favela, the occupation spread with the construction of the highway Avenida Brasil and the establishment of factories in the area. By the late 1950s, the first organized invasion in Rio established the occupation of the northern side. By that time, most of the houses were built upon swamps or over the waters. The greatest occupation frenzy happened in the 60s, when the State built the low-income housing project Nova Holanda between two occupation nucleuses for the inhabitants who had been removed from other favelas. The university was built on the island in front of it, and connected to the land by a new bridge whose construction provoked the removal of the old favela at Inhaúma Beach.

While the shacks on the water-border favelas expanded, the older ones became definitive, and the inhabitants (some of them had been politically organized since the 1950s) worked together so as to get electricity, water and sewage systems, paved streets, public transportation and telephones, etc., the Nova Holanda complex grew dense, poorer and decayed. In the 1980s, a big intervention named “Rio Project” made important improvements in the area, including the removal of 1,500 inhabitants who were transferred from houses on the water to three big Housing Projects built in the area. In the 1990s, when the highway was inaugurated, many parts of the region presented consolidation aspects and vertical growth. Other housing projects, educational and sports facilities were built on the leveled area, which came along new invasions.

Morphologies in favelas

The specific formation process of each of these neighborhoods resulted in different space configurations. Firstly, it is necessary to notice the difference between the informal urban morphology of the favelas and the formal urban fabric. While the latter usually presents axis, streets, squares and blocks, generally following the hierarchy of the roads, orthogonality and regularity, with patterns established through urban planning codes, with infrastructure, services and usual urban facilities, the first one presents quite opposite elements. The roads are usually irregular and snaky, sometimes like a maze, rarely forming blocks; the fronts of the buildings define misalignment; occasional yards and stretching of roads compose the few open public spaces. The buildings are inserted wherever possible; when the space available is already too small, or when there are no more spaces available, the houses will be built one upon the other or upon slits of land, gaining unusual proportions and surprising shapes, such as the bridge-houses and the tunnel-houses.

The main characteristics of these settlings are the individual and gradual occupation and building process, the health damage due to the lack of basic infrastructure, the urban irregularity, complete illegality and constant mutation.

Morphologies at Maré

By summarizing and specifying the formation process of each of these boroughs, we have registered a few aspects, while regarding only the basic morphologic elements of the urban space (Lamas, 1992).

The Timbau favela, situated on top of the homonym hill, presents an irregular web in which it is possible to notice roads that are apparently guided by the level curves, as it happens in other favelas on hills, but with a low density when compared to other favelas, which is the result of strict military control while the space was being occupied. The houses are more orderly built and have more space between one another than on neighboring favelas.

At Baixa do Sapateiro, the construction is much more irregular than on the hill. The group of streets that substituted the bridges that used to lead through the water resulted in a complicated road design, with curve lines and apparently random breaks, guided by the localization of the house pillars in the water.

In Parque da Maré it is possible to notice that some of the inner tracks continue from the formal streets in the city, while others came about totally irregularly, allowing the identification of blocks that are nearly rectangular, square or trapezoidal. It presents the highest demographic density.

The Nova Holanda project, in its turn, presents the regularity and orthogonality of a planned environment, reinforced by architecture
of the serial, two-story, wooden houses. The “temporary” condition and prohibition to make any modification by the inhabitants, the lack of basic infrastructure and the progressive population increase provoked a fast fall, turning this housing project into a favela.

In Parque Rubens Vaz, the linearity of the site due to the bordering canals, as well as the organization of the inhabitants since the 1950s, which established space between constructions, defined the orthogonality and the shapes of narrow and long “blocks”.

In Parque União, almost an independent borough, a small initial nucleus of sporadic and individual occupation is noticed, but mostly it presents relatively wide streets and a certain regularity that results from the planned occupation of the area, a unique case in Rio in the first half of the 20th century.

Some of the limits of the great settlement were clear: Avenida Brasil and the formal urban web, the bridges and waters. But mutation was and remains as characteristic of the area. The irregular borderline of the water pillars and the bay water, in the north, remained for decades, until being replaced by the linearity of the highway. On the borders between the formal and the informal city, some of the roads present continuity, connecting different areas. Inside the complex, the limits between boroughs are made of existing canals, roads or property limits. Breaks in the urban fabric, like the occupation limits in previous moments, go unnoticed by external onlookers.

The differences between the shapes can be understood through distinct aspects. The individual and progressive occupation allowed freer and irregular designs to come about; the previously organized occupation made more regular designs appear. The characteristics of sites like the hills, of plain and dry terrain, of mangrove swamps or the water induced different shaping. Some mishaps determined the redirection in the occupation process: property limits, public roads, geographic accidents and some buildings. Even upon the waters, where more maze-like designs are found, the already built houses, the depth of the waters and the consistence of the ground below defined varied designs.

Between the 1920s and 1990s, while almost one kilometer of leveled occupation was consolidated, the population built their homes, the infrastructure, and their city. In the multiplicity of spaces, the different origins of the population should be observed, as well as the way they organized themselves and fought for their rights, the political contexts, the dynamics of occupation processes and development of each community. Nowadays we observe in the diversity of its shapes a clear gradation, a transition between formal and informal patterns.

The limiting number of words of this paper won’t allow us to go beyond this succinct historic/morphologic reconstitution. A more accurate analysis and a discussion on concept and theory (Alexander, 1965), methodology ((Solá-Morales, 1997) and philosophic (Deleuze and Guattari, 1980 and Jacques, 1999) bases that would grant a more adequate understanding and discussion of such space shapes constitute the next step of the work.

References

Endnotes
1 The resident population data will vary according to the source and the date.
3 There are contradictions concerning these origins, as appointed in longtime inhabitants’ statements.
4 Santos, CN e Pereira da Silva, ML, 1983.
Archaeology and Town Planning

From time to time between the X and the XV centuries, the khmer empire spread over the South-East Asian continent. During these periods, the frontiers of the empire stretched to Vietnam, Thailand and as far as Malaysia. These extensions used to start from a central point, a capital city named Yasodharapura and situated at Angkor. Nowadays at the centre of the archaeological site of Angkor, Angkor Thom, the “Great City”, is the only noticeable urban form. Hypothetically, the creation of Angkor Thom dates back to the end of the XII century under the reign of King Jayavarman VII, but it has never been proved from an archaeological point of view.

Since the beginning of the XX century, French researchers in charge of the discovery of Angkor have mainly focused on epigraphy, history of architecture, iconography and restoration of temples. They have classed the archaeological site and its image as a geographical place or a succession of places of worship. But no exhaustive study has ever been lead on the urban space of the city despite the fact that this royal capital was one of the most important instances of the golden age of town planning in Asia. Thus apart from some information about the main buildings of the centre of the city and the shape of its surroundings, we know quite nothing concerning the urban structure of its quarters, its formation, its fonctionment, its spatial and urban organisation, the different aspects of the habitations and the ways of living in the town.

Consequently, in coordination with the French foreign Office, the School of Architecture of Nantes and the Cambodian authority for the site, APSARA, we prepared a 3 years research program. Based on archaeological prospecting and excavations, named “From Yasodharapura to Angkor Thom”, City, Urban Space and Archaeology”, it aims at building an urban archaeological problematic and, in this context, at collecting a new set of field information.

The program will cover the whole surface of the city (900 ha), in that sense, it represents a major break up temporarily with a full unique stratigraphical archaeology. At first, the program gathers together the fields of archaeology and urban morphology. Considering this ambition and the deciding fact that the site of the old town is totally covered with forest, this program implies specific methods and concepts. The first prospecting and excavations lead in the field inside the south-east quadrant of the city have brought to light a set of information about the space and the history of the town through the discoveries of many urban constitutive elements: river, channels, stone or brick or laterite edifices, ponds, chains of faced ponds, ways dikes, differences of levels, earth ramparts, wooden architecture, from the X century, and streets. The present paper will only focus on one aspect of these discoveries: the street system found inside the south-east quadrant.

The main structure of the city of Angkor Thom

The main structure of the city can be understood from the Bayon temple which occupies its centre. This very complex edifice constitutes a real and a symbolic landmark being not only the centre of the city but also of the territory of a realm and, further on, of a world cast on the 8 major orientations of the cosmos; this diffracted central location is related on an inscription found on the site. 4 straight radial avenues lead to the Bayon temple. Following the 4 cardinal directions, they stretch out over 1500 m each. Therefore, the urban space is divided into 4 quite equal quadrants (north-east, south-east, south-west, north-west) of 225 ha each. The perimeter of this new 3 km by 3 km square thus delimited represents at the same time the boundary of the urban space and the symbolic wall of the central sanctuary. A seven-meter-high laterite wall materialises this boundary. All along, just inside the wall runs a glacis more than 80 m broad at its bottom. At the top, there is a round path and, outside, one could notice a surrounding moat of 100 m width.

In the middle of each side of the city square, the cardinal orients are marked with face towers as gates which announce the architecture of the Bayon temple. Furthermore, to cross the moat and reach the gates from outside, path dikes were built up. At last, 4 little temples

Figure: 1

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In the middle of each side of the city square, the cardinal orients are marked with face towers as gates which announce the architecture of the Bayon temple. Furthermore, to cross the moat and reach the gates from outside, path dikes were built up. At last, 4 little temples
Prasat Crung) are located at the four corners of the city on the top of the glacis; they mark the inter-cardinal directions and close from a geometrical point of view the symmetrical composition of this symbolic layout. Here, urban form is a representation of the spatial frame of a cosmogonical order. Inside the north-east quadrant, there are a large expanse of water (the Dong Mea), another huge mountain-temple (The Baphuon) and the royal palace. The main gate of it opens on to an east-west avenue leading to a fifth gate, the Victory Gate, located on the eastern side of the city.

In front of the royal palace, a large esplanade is situated. It is closed by two symmetrical monuments (The Khleang) and a succession of 12 temples (Prasat Suor Prat) in the east, royal terraces in the west and the Bayon temple in the south, the central tower of the Bayon being on the same longitudinal axe than the terraces. The morphology of this empty space (a rectangle of 170 m x 750 m) gather together the religious and political powers and the presence of the people. This place used to play an important role of representation well described by a Chinese traveller, Zhou Da Guan, in the XIII century and the bas-reliefs of the royal terraces, but less is known on its public aspects and the conditions of its frequenting.

**The street pattern of the south east quadrant and the Indian treatises on town planning**

According to the present state of our field work inside the south east quadrant, we are now able to present one part of the city’s plan which has never been seen before and to propose hypotheses of its conception that we can apply to the other quadrants of the city.

The street system of the south-east quadrant is laid out by a set of parallel streets which cross at right angle and are oriented towards the cardinal points. The distribution of the streets in space is unequal. 3 streets are oriented north/south and 12 streets (only 10 seem to cross the totality of the quadrant) are running east/west. Their width, as they appear now, is comprised between 7 m and 13 m. They are all connected according to their orientation to the eastern and southern axes of the city with dikes constructed across the radial chain of elongated faced ponds running along both side of the avenues. Now, inside the quadrant, 41 urban blocks have already been recognised. The dimensions of the street blocks shows an interesting regularity. Based on a square grid pattern, the dimensions between the axes of the streets are the following ones: in the east/west direction 405,29 m, 297 m, 360 m and 346,12 m, in the north south direction, 352,58 m, 363,05 m, 355,09 m and 343,98 m. The unique irregularity concerns only one street, the first north/south one which, in the field, is the western one; it can easily be explained by the presence of the course of an old river we found at this place and, mathematically, it is corrected by the fact that, the real equal partition of the 2 east/west dimensions of the two first chequers is (405 m + 297 m)/2 = 351 m which belongs to the category of dimensions mentioned above.

From this field data, we can draw out the main features of the urban conception of this quadrant: (1) the south-east quadrant reveals a grid pattern system of 3 streets in each cardinal direction; (2) it is based on 16 squares (4 x 4); (3) the average dimension of the side of each square is 352,88 m; (4) 6 streets superposed on the internal lines of the diagram have been traced with a maximum dimensional variation of 2.7 % (except one); (5) the positions of the other streets obey to two types of partition of these chequers that is to say 352,88/2 = 176,44 m (all the chequers are so divided by 4 east/west streets) and 352,88/4 = 88,22 m (mainly the eight southern chequers are so divided by 3 east/west streets).

All these informations allow us to compare them with the Indian town planning. India has produced an important old literature written in Sanskrit concerning texts and techniques (silpastrastra). They essentially concern religious and domestic architecture, town and village planning but also vehicles and furniture. In this context, they aim at producing a whole set of rules which mainly consist of ritual, typological, dimensional and social norms. Among these texts, we can distinguish a north and...
a south school. Four of the main ones are the *Manasara*, the *Mayamata*, the *Samaranganasutradhara* and the *Arthasastra* by Kautilya. Although, the treatises propose numerous classifications, 3 main categories of urban form can be kept and some recurrent pattern as well. Concerning the three categories, treatises mainly speak of villages, cities and forts. From their analyse, in the context of this paper, we will draw out 8 major rules which are at stake in the Indian town planning, that is to say:

1. The cardinal obedience of the urban elements.
2. A plan focusing on one edifice, generally a temple or a palace.
3. An orthogonal general shape, the square one being the most auspicious one.
4. A boundary wall and a peripheral outside moat.
5. 2 axes (i.e. 4 ways), north/south and east/west, coming from the central edifice and leading to the cardinal gates of the city.
6. The submission of the street lay-out to a practical and symbolic geometrical diagram (*vastupurusamandala*) composed of orthogonal lines (*vamsa*) and squares (*pada*); the 64 *pada* (8 x 8) and the 81 *pada* (9 x 9) being the most auspicious ones.
7. A chequered city plan resulting from the superposition of the streets with the structural lines of the diagram.
8. An interior peripheral street (*mangala vithi*).

As we can see, the fundamental primary structure of the urban form of Angkor Thom, as described above, corresponds to the first fifth rules of the “ideal-type” of an Indian model. The new discovery of the street system of the south east quadrant brings a complementary, precise and substantial support to this first general assertion. According to the real grid pattern, the hypotheses elaborated inside this quadrant and applied to the other ones leads us to think that the city plan of Angkor could have been conceived on the base of very auspicious diagram of 64 squares (8 x 8), the side of which is between 352 and 353 m, that is approximately the length of the plot of the Baphuon to which it could eventually refers.

Concerning the eighth point, no interior peripheral street has been found yet. Nevertheless, before any excavation, the interior periphery of the city is materialised by a surrounding hydraulic structure which appears to be a channel faced with laterite. Its axe correspond to one of the conceptual geometrical lines of the grid pattern and at the present state of our knowledge, it could play the role of the traditional peripheral “*mangala vithi*.”

Such a complex and extended urban creation implied a strong political will. It reveals an important social stake, it monopolises specific technical and symbolic skills revealing a learned traditions of town planning. The urban conception of the khmer capital city of Angkor Thom refers to the Indian model of a royal capital (*Rajadhani*) described in treatises. Such canonical and perfect instance of this model was unknown in the Indian archaeological history till today. If the forthcoming discoveries do not deny the present hypotheses (in fact, the new field work we just began inside the north-east quadrant seem to confirm them), Angkor Thom would appear in a way, from the conceptual town planning point of view, as the most “Indian” city of the Indian cities. This phenomenon already happened many times in the history of town planning till the XX century; the capital of Punjab, Chandigarh, is the main example of the western urban “Modern Movement”. The future knowledge of the city will rise up from the confrontation between, on one hand, a space structuration determined by the Brahmin way of thinking imported from India through the Indian treatises and on the other hand, a specifically khmer way of living based on the local geography and beliefs.
The Media

Overnight, with the fall of Berlin’s wall, Berlin became a media darling of unheard proportions. The media attention has helped Berlin in creating a special aura for a city devoid of positive imagery for most of the century, and assisted the city in attracting investors, headquarters, and production facilities. By commissioning urban design proposals prior to any legal framework that would govern future development, the media also contributed to a discussion regarding the city’s future image. The proposals were well-publicized, rich in image, and provided new, fast, metropolitan imagery for politicians, investors and the general public that would go on to influence the decision-making process underlying Berlin’s metamorphosis.

Nevertheless, the media’s role in the initial urban decision-making process for Potsdamer Platz remains suspicious. Would investors and developers have insisted on expressing their corporate identity in form of high-rises without the media’s promotion of this building type? And would the dominance of the city’s skyline by a handful of corporations have been acceptable to the population had not magazines, newspapers, and exhibitions bombarded them with glossy imagery of the vertical form as necessary progress?

Critical Reconstruction

The re-introduction of the high-rise marked a direct departure of the rather careful urban repair practiced during the International Building Exhibition under the direction of Josef Paul Kleihues (1984-87). Intended to recreate the “European City,” IBA’s focus was the traditional neighborhood with street corners and plazas, and privately owned buildings of a limited height and size. Perimeter blocks were to replace the architectural object, and apartments, entertainment, shopping and work in close proximity to each other were to guarantee an urban mixture more at home in the 19th than in the 20th century.

The IBA masterplan for the Potsdamer Platz area thus featured a series of elongated blocks lined with 5-6 story of mostly residential perimeter buildings. The primary orientation of streets, blocks and buildings paralleled the wall, and provided an eastern edge to the Cultural Forum, thus transforming this former “offering” to East Berliners into an integral part of West Berlin.

Oswald Matthias Ungers, in his 1983 proposal for Potsdamer Platz, was first to introduce a highly controversial building type: the skyscraper. He challenged the strict adherence to traditional block patterns, building heights and setbacks with a 200-meter tower next to a grid composed of over thirty 5 story urban villas. This abrupt switch from perimeter block to detached urban villa to tower and large, L-shaped apartment slabs failed to visually unify the area.

Ironically, it was Kleihues who, less than five years after his directorship, ignored the IBA guidelines by proposing a skyscraper solitaire which was to give vertical dominance to Daimler-Benz as new “urban crown” [Stadtkrone] of Berlin. Massing and siting of this media-commissioned proposal appear to be a mere combination of Ungers’ 200 meter tower with the 22+ meter residential perimeter structures of the IBA masterplan. The proposal failed to solve the juxtaposition between corporate identity and low-income housing and did not integrate the Cultural Forum into the finer grained urban fabric.

The second media sponsored high-rise plan for Potsdamer Platz by Hans Kollhoff, on the other hand, proposed a cluster of high-rises in order to accommodate the need for office space while maintaining the traditional building height for Leipziger Platz. Unlike Kleihues, Kollhoff intended to make Potsdamer Platz available to as many multinational corporations as possible.

Eight high-rises are arranged in a semicircle in front of Leipziger Platz and create a gate into the old part of the city. The remainder of the area remains untouched by development. Like the large-scale objects of the Cultural Forum, Kollhoff’s self-referential cluster
At the same time that the media published its proposals for Berlin’s urban future, the competition organizers for Potsdamer Platz developed guidelines based on the “European City.” Their brief expressly stressed the task to reconnect the Cultural Forum with Friedrichstadt, called for a diversity of uses to counter the functional homogeneity of the Cultural Forum, and demanded a sequence of streets and squares that would maintain the traditional streetfront development. Most importantly, however, they demanded that the parcel be taken as point of departure to visually achieve a desired variety and mixture of functions.

In October of 1991, the jury rejected all high-rise designs for the area and awarded first prize to Hilmer & Sattler for their horizontally structured proposal. Based on a new block grid of 50x50 meters, urban life was to arise on streets and squares flanked by 35 meters tall building blocks housing apartments, offices, department stores, company headquarters, theaters, hotels, etc. Short, narrow streets between the individual blocks were to lead into wider city spaces: to the Neue and Alte Potsdamer Strasse; to the area with open water on the site of the former Potsdamer Station; and towards the green wedge leading to the Tiergarten.”

Visually far less exciting than the high-rise designs, Hilmer & Sattler’s proposal did not fare well in the press. Their plan was perceived as a small-town, least common denominator solution, void of any vision for the most important building commission of the decade. Daimler-Benz, too, was set on the eye-candy presented by the media, challenged the lack of signature presence for its headquarters and called the proposal timid (kleinmütig).

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Daimler-Benz and Sony, who had already commissioned the office of Richard Rogers, made sure that his proposal was slipped in through the back door and hung opposite of the winning entry. Rogers, more than any other architect, ignored the surrounding city. The star-shaped layout of streets guaranteed each investor a prestigious Potsdamer Platz address, but failed to connect with the surrounding infrastructure. Instead, the semicircular pie pieces increased in height towards the periphery and created a new wall around the ensemble of Potsdamer/Leipziger Platz.

Nevertheless, Hilmer & Sattler’s plan was made the basis for the overall development. After being told that a future masterplan competition for the area would allow for one or two high-rises to be built, Daimler-Benz finally accepted Hilmer & Sattler’s concept. Subsequently, the cornice height was set to 35 meters plus two additional setback stories and building heights of 80 meters were allowed at Potsdamer Platz and Landwehrkanal. Based on Hilmer & Sattler’s urban development plan, three masterplan competitions were held, one for each investor.

On September 4, 1992, Renzo Piano and Christoph Kohlbecker were awarded first prize for the Daimler-Benz area. Their plan strictly adhered to Hilmer & Sattler’s block structure, but moved the public focus away from Potsdamer Platz towards a new piazza. A casino and music theater building mirrored the massing of the library and marked the terminus of the Shopping and Amusement Street by doubling the barrier. Competing expressions of public space such as arcade, square, street, atrium, and alley, all without connection to the surrounding city, amplified the primacy of an interior shopping mall as the heart of the project.

Almost simultaneously, Helmut Jahn won the competition for the Sony triangle. His proposal negated the intentions of the Hilmer & Sattler plan completely. Although urban elements such as street, square, tower and cornice line were all present, any relationship to Berlin or Germany was avoided: the curved streets did not create blocks, but remained streets as such; the central piazza failed to become an exterior space of the city, but remained an interior space instead. Ultimately, one large building, designed by one architect, would occupy the site.

A year later, Giorgio Grassi was declared the winner for the A+T development, the remainder of the area. Of all Potsdamer Platz proposals only his entry remained true to Hilmer & Sattler’s urban design concept. Four U and I shaped buildings made up the most contextual project when it came to siting, volume and appearance. Nevertheless, the A+T devel-
The Critiques

By 2000, with two thirds of the Potsdamer Platz development completed, media and general public were finally able to assess the quality of quarter. Some called the development a counterproposal to suburbanization, and argued that the layout of Potsdamer Platz is consistent with the European, not the American tradition. Others interpreted the area as “a spatially complex American city, with high-rises and squares, with urban life inside the large-scale structure, and with compacted street spaces. The New York Times, however, claimed that “Potsdamer Platz truly resembles an Edge City; a private, development-driven urbanoid cluster … that could be anywhere.” The developments were criticized for their commercial monoculture, their failure to provide smaller, livable property units, their lack of truly public spaces, and for overcompensating architects who had “transformed the urban center into a world expo of the building industry.”

Potsdamer Platz neither recalls the “European City,” nor any of the ideals developed under the heading of “critical reconstruction.” By giving investors control over a huge area in exchange for guaranteed employment and tax revenues, one cannot achieve the mixture of styles, appearances, and functions typical for the European City. Even the Senate’s stipulation that large-scale developments reserve at least 10% of the newly constructed floor area for shopping and entertainment, and 20% for housing, did not prevent the monofunctional character. Instead, by insisting on this arbitrary ratio, Berlin has created a novel hybrid on Potsdamer Platz: the destination city.

Destination City

Potsdamer Platz is ideally situated for this new urban type. Well connected by all forms of public transportation offered in Berlin – train, S-Bahn, underground, bus and tram – the new City Berlin Mitte offers easy access to all. Several parking levels under each complex with over 3,500 spots provide easy access for the short trip to the surface, where one can “eat sushi, watch a movie, and get out of there.” Potsdamer Platz has it all: living, workplace, shopping, dining, and varied forms of entertainment, all in one location. Office workers help animate the area during working hours and frequent the over 110 stores and 30 restaurants.

In addition to the many bars, restaurants, and cafes, Potsdamer Platz is also a heaven for movie enthusiasts. The Daimler-Benz complex offers 3,500 seats in 18 theaters, Sony another 2,800 seats including Germany’s first I-Max theater. A casino, a music theater, and Sony’s musicbox complete the allure and guarantee visitors well into the night. It is no surprise that, in 1999, the area already attracted more visitors at nighttime than the entire center of Hamburg.

You are now leaving the public sector and entering the privatized zone

No other urban neighborhood is cleaned daily; neither trash nor overflowing garbage bins distract from the clean-cut image, graffiti doesn’t survive longer than 36 hours. “Every new building is effectively private space, gated by night, surveyed by security cameras, patrolled by armed guards and Alsations.” By combining the advantages of a hotel with the benefits of one’s own home, the very expensive condominiums and rental apartments cater to those who “already have an apartment in New York, one in London, and now want to have one in Berlin as well.” Most of the apartments are rented to singles, couples without children, politicians and diplomats, who appreciate the close vicinity to the Reichstag as well as the international flair of the development, and “to whom it is more important to have their shirts ironed daily than to have a children’s playground nearby.” They live in a world devoid of churches, graveyards, schools or other social amenities. The resident population of Potsdamer Platz has little stake in their neighborhood.

The Potsdamer Platz development fails to provide urban space, cannot distinguish private from public, and is not needed. If it would be possible to create public urban space by piling volumes on top of each other, Potsdamer Platz would be the agora of the century rather than pinched off Ersatzstrassen and private shopping malls.
Morphology as Cultural Distinction: 
Workers’ Cottage and Minimum Bungalow Districts in
Northern California, 1870-1945

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Between 1870 and 1945, within walking distance of several large industrial workplaces, blue collar owner-builders and other housing investors developed several dramatically different house types and street forms for American low-income residential districts. Two of the most widespread types of these districts might best be called “workers’ cottage districts” (typically built before 1910) and “minimum bungalow districts” (typically built between 1910 and 1945). On-going studies in two blue collar areas in the San Francisco Bay Area—West Oakland and West Berkeley, California—show that the spatial rules of urban micro-morphology (the interior details of building types, including plumbing and utilities) show striking correspondences with the spatial rules of larger-scale street and neighborhood morphology. These conclusions are based on ownership records, oral histories, measured drawings of buildings, and Sanborn insurance maps. By “spatial correspondences” I mean not only similarities in form, but also similarities in more abstract patterns of connections, additions over time, and adjacencies.

Before 1910, workers’ cottages were numerically one of the most common house types in American industrial cities, although these houses have a very slim scholarly literature. Millions of workers’ cottages survive today. They are almost always wood frame buildings, typically with an initial size of just two to four rooms. This first portion of the home, the “starter cottage,” is often well-constructed, probably because sound construction was a requirement of their enabling loan agreements.

Over time, cottage owners alter their homes dramatically by changing room uses and making significant self-built additions, although workers’ cottages typically remain small homes of less than 1,000 square feet. The additions show practical solutions to immediate problems rather than any concern for visual elegance or matching the starter cottage. The construction quality of additions varies wildly, depending upon household budget and building skills; windows, doors, and other elements are often scavenged from older structures. From the front, workers’ cottages appear to be permanent, well-built wooden dwellings; meanwhile, from the back, the same homes may appear to be an assemblage of shacks. Because of these additions, we must say that workers’ cottages are “begun” in a particular year, rather than “completed” at any one time.

Mixed uses and spatial informality mark workers’ cottage interiors. Rooms are not specialized by their shape or details. Most rooms may be about the same size; bedrooms rarely have built-in closets. The kitchen always serves as sitting room and dining room, and often as a sleeping room as well. Circulation is very informal. There are typically no hallways; rooms open onto each other. If there is a parlor, for years at a time it may serve as a bedroom, or be rented out. The rear laundry porch, with its access to the outhouse, eventually gave way to back porch toilets (in West Oakland, usually added after 1920). Workers’ cottages today all typically have a toilet, a sink, and a bathtub—but rarely are all three fixtures in the same room; if they are, it is a bathroom added in an addition done after 1960.

In most U.S. cities that I have observed, the lot for the workers’ cottage is a standard 25-foot wide lot, from 60 feet deep to over 100 feet deep, depending upon the relative initial cost of the land. In West Oakland, most cottage lots are 25 by 125 feet. These are, of course, standard survey lots of the nineteenth-century American city. Even with their narrow lots and subsequent additions, Oakland’s cottages are not row houses; rather, they are open-lot structures with side yards of at least two or three feet between adjoining cottages. This fire precaution may be the only rigorously enforced municipal building code. These minimal side yards also allow for some light and ventilation, maintaining siding, fixing water-drainage problems, and access to the back yard for deliveries, trash, and historically hauling out ashes. In coastal California’s mild climate, these side passages have also proven to be perfect places to insert plumbing pipes, electrical boxes and wiring, and heating and ventilation ducts.

Like the interiors of cottages, streets of cottage districts typically have very little spatial uniformity. The houses typically have street setbacks that vary from zero to thirty feet. Front yards historically were planted with flowers or flowering fruit trees, but were also useful for storing crates of fruit or vegetables, or for Italian-Americans, for playing bocce ball. Since World War II, parking for cars is equally typical in front yards. The back yards often have vegetable gardens and pens for animals.

Land uses in the cottage district are also as mixed as the cottage interiors. Large-scale workplaces, small foundries and workshops, stores, and houses can be found on directly adjacent lots. These nineteenth century mixtures had positive aspects; varied and competitive employment, within walking distance, is what drew the residents to live in cottage districts. Depending on industrial and warehousing locations, cottage districts can be found near the center city or at the nineteenth-century growing edges of town.

Although it may not show up in morphological diagrams, the pollution of smoke,
noise, traffic and pounding vibration is another common defining element of cottage districts. Pollution was part of the reason the lots and houses remained relatively cheap in spite of their center-city locations. In West Oakland, the largest employers were division point yards for three rail lines; the Southern Pacific Railroad also built all of its cars and bridges in West Oakland. In addition there were multiple shipyards, and several canneries and other food processing plants. Until the 1950s, virtually all of these workplaces, plus the railroad locomotives, depended on coal-fed boilers. West Oakland was noted for the constant gray cloud of coal smoke that hung over the neighborhood.

Minimum bungalows, also a very prevalent house type today, were built in the urban U.S. between 1910 and 1945. Their interiors, lots, and neighborhood type present strong contrasts to the cottage and cottage district. Minimum bungalows, like cottages, are very small—600 to 1000 square feet. However, they were built all at once and in a permanent form. In West Berkeley, five miles north of West Oakland, design historian Carma Gorman has documented one developer who built 41 minimum bungalows (each only 684 square feet) between 1925 and 1927. Their interior spaces are specialized, hierarchical, and socially zoned. Circulation is controlled; both bedrooms are separated from the living room by a hallway. The rear bedroom is slightly larger than the other, and has a larger closet; its more private position indicates it as a “master bedroom,” even in a four-room house. By the 1920s, a significant share of the house cost is going into utilities: a kitchen and wash porch, as well as a three-fixture bathroom adjacent to the bedrooms.

West Berkeley’s minimum bungalows are not on scattered lots, but in carefully arranged “whole-streetscape” patterns that are typical of minimum bungalow districts. In West Berkeley, developers sought to buy not whole blocks (large plots were no longer available there in the 1920s) but they bought locations on which at least four lots faced each other across a street. Minimum bungalow lots are wider than the cottage lot: in Berkeley, they measure from 100 to 125 feet deep, and are usually 40 to 45 feet wide. This new width is clearly aimed at more light and separation for the house, and even more importantly, to allow room for cars to drive to a rear-yard garage. Most of the houses in the West Berkeley development had single back-yard garages supplied by the developer in varying yard locations, but symmetrically arranged on both sides of the street.

The spatial and land-use uniformity of the minimum bungalow district may have been very popular with low-income home buyers, but these rules were also clearly imposed (politically and economically) by people in the middle and upper class—a top-down infusion of modernity. Progressive-Era building codes and city planning rules were being more carefully enforced, even in workers’ districts, than their nineteenth-century counterparts. Zoning was city-wide in Berkeley by the early 1920s.

Employment was still within walking range, but in a strictly zoned industrial swath built along linear railroad access. Restrictive covenants in West Berkeley, similar to covenants on middle and upper class housing of the same period, were placed on most individual lots. These covenants forbade selling to anyone other than whites; they also forbade mixed use and any work uses of yards. Production was to be clearly separate from consumption. The covenants also established the uniform setback of houses from the street. Even on streets of West Berkeley that were not built by one devel-

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Floor plan of a typical worker’s cottage. Numbers show additions, 1875 to 1986.
health reforms, based on the germ theory of disease, led to many good things: better sewer, water, garbage collection services; widespread street paving and rodent abatement. The next reform steps led to the writing and enforcing of tougher building codes, and eventually zoning laws—all of which constrained individual city-building action, for better or worse.

A second opposition is the tension between mixture and uniformity: mixed land uses versus single uses; the overlapping of production and consumption realms versus their strict separation and specialization. Although the inner logic has yet to be completely explained, social and cultural leaders at the end of the Victorian era had convinced themselves—rather arbitrarily—that for public health, visual organization and spatial uniformity were as important as fighting germs. The most convincing explanation of the official choice of uniformity lies in reform desires to ease the realities of class struggle (in this case, the cleavages between working class values, on the one hand, and middle and upper class values, on the other). If they could not ease these realities, reformers at least sought to erase their visible evidence. Beginning in the 1890s, and more effectively through the 1920s, reformers sought to outlaw the expansion or reproduction of irregular, messy, immigrant cottage districts; meanwhile, officials applauded the regularity and modernity of minimum bungalow districts. The minimum bungalow district was also a potent antidote to the kind of visually haphazard, legally unincorporated, edge-of-town districts that Richard Harris has documented so well in his 1996 book, Unplanned Suburbs.

The third opposition (again, one that in practice is tightly woven into the other two) is the fight between the temporary and the permanent—the choice between a city that is obviously undergoing change versus a city that appears finished and complete. The cottage district stands for ever-changing, contingent diversity and individual use value, while the minimum bungalow district matches the goal of a visually finished, permanent city: very importantly, a city whose real estate values can be counted as being stable.

These oppositions of decision-making power, uniformity, and permanence are, essentially, on-going debates about the efficacy of morphology as both a real and a symbolic tool in building cultural change. Indeed, looking at the micro-morphology of building interiors, together with larger urban morphology of street and block, helps us to understand literally the inner workings as well as the outer appearance of the ways people—both low-income and high-income people—have used urban space for creating and changing urban societies and urban forms.
Abstract

Post-socialist China has entered a period of rapid urbanisation with intensified economic activity and institutional restructuring. The evolutionary process of urban morphology appears to be “unique” and different from the historical trends in other countries. As little systematic research has been done on this cross-disciplinary subject, this study will attempt to investigate its changing pattern, focusing on the post-1949 era. Based on a review of literature, a theoretical framework—“urbanisation as a process” with an emphasis on political economy issues is established. Within the framework, the concepts and methods of “morphological analysis” and “behavioural studies” are adopted for analyzing the physical environment. More general discussions and evaluations will be combined with empirical research—field surveys and an examination of practical planning experiences in cities in Hainan, China. As the biggest Special Economic Zone (SEZ) in China, Hainan is undergoing rapid development. Its inherent complexity and dynamic nature have profound significance for both theory and practice.

Introduction

Although urban form as an emerging discipline is still a controversial topic, its fundamental significance to planning and urban design has been recognized increasingly both in academic and practical circles. Before discussing the implications of urban form studies to contemporary China’s cities, it is necessary to review the relevant theories. Based on the extensive literature, the relevant theories can be tentatively classified in categories of urban history studies, town plan analysis, theories of urban functional structure, political economy analysis, behavioral studies, architectural approaches and space morphology studies. Generally, these urban form theories provide a wide range of methodologies to analyze and explain urban morphology. Although there is overlap, for organising the following discussion, these theories can be grouped roughly into three categories, which consider their potential contribution to urban China study. First, “morphological analysis” includes town plan analysis, architectural approaches and parts of historical studies. It deals with more objective elements such as existing urban space, buildings and urban design plans. Secondly, “behaviour studies” concerns more about people’s subjective intentions and the relationship between human behavior and its environmental context. Thirdly, “political economy analysis” focuses on political and economic aspects and the functions of social agencies in the “urban process”, in this analysis, urban form studies rely more on quantitative and statistical techniques.

About 30% of China’s 1.29 billion people live in cities and China’s urban system is one of the largest on earth. Since 1978 reforms, China’s “socialist city” has transformed into a post-socialism era (Andrusz, 1996). The complexity and dynamics inherent in the case of China are valuable for examining and restructuring the urban form theories and improving the level of integrity of the field. It is taken for granted that, after the 1978 reforms, as China entered a period of rapid urbanisation with intensified economic activity and institutional restructuring, there was a relative lack of systematic research about the urban transformation process. Consequently, this study program focuses on the changing patterns and processes of urban form of post-1949 cities in China. More general discussions and evaluations will be combined with empirical research, more specifically, a field survey and an examination of practical planning experiences in cities in Hainan Island, China.

Theoretical framework and methodologies for analysis

Urban form changes may be explained from perspectives which emphasize political, economic, socio-cultural and theological elements. These elements constantly exist in any human society including those of China. In particular, after 1949, compared with other factors, the political economy has become the dominant one driving the changing process. While socio-cultural and theological factors are still functioning but in a somewhat recessive position. As a result of this consideration, the conceptual framework of this study adopts “urbanisation as a process” theory.

According to Knox (1994), urbanisation is driven by a series of inter-related processes of change: economic, demographic, political, cultural, technological and social. The overall result has been a tendency for more and more people to live and work in increasingly larger towns and cities. At the same time, urbanisation results in some important changes in the character and dynamics of the urban system, land use, social ecology, built environment, and
urbanism. Certain groups within society may perceive some of these outcomes as problems. Government policies, legal changes, city planning, and urban management may eventually address such problems, stimulating changes that in turn affect the dynamics that drive the overall urbanisation process. Knox’s analysis defines political economy at its broadest level, drawing on a combination of macro-economic theory, social theory and concepts of political science to serve as the theoretical base. As one of the outcomes of urbanisation, urban form strikingly reflects the changing pattern of urbanisation. As a result, the model of “urban form as an outcome of the urbanization process” makes it possible to link “concrete” urban form, “abstract” political economy factors and planning issues appropriately. This model, then, provides a powerful and widely used approach for analyzing the causal mechanisms of urban form changes.

In urban form theories, “Morphological analysis” draws upon the surviving physical fabric of the city, maps and city plans. The central purpose of such analysis is to interpret urban manifestations and to anatomize the inherent information about local authority for planning control purposes, and the architects, owners and specialists responsibilities for urban morphological changes (Whitehand, 1987). “Behavioral studies” deals with how people perceive the city and make spatial decisions within it. There are two main requirements for analysis: first, a collection of maps, plans and documents related to urban landscape changes; second, the identification of the planning system and local people’s perceptions of urban form changes. The concepts and methods of “morphological analysis” and “behavioral studies” complement each other by examining physical urban form from different dimensions, and provide a balanced basis for analysis. If we regard “morphological analysis” and “behavioral studies” as major urban form methodologies and can be set in “political economy analysis” background, “urbanization as a process” can be used as a joint to link them together and reach more rational conclusions.

**Hainan Island: Cities, danwei (work units) and development zones**

The island of Hainan, located in the South China Sea, is separated from mainland China by the Qiongzhou strait, which is about 24 km in width. Its total land area is 33,920 km² and its population is about 7.25 million. Since 1978, when China’s opening and reform policies were initiated, a “Coastal Development Strategy” has been adopted to improve the condition of cities and their connection with the outside world (Tzeng, 1991). Consequently, in 1988 Hainan was declared a separate province and the fifth SEZ’, the government promised that more radical reform would be introduced to the island.

Before 1988, the development of the island followed Mao’s words, “preparing well for the future war”, growth of the cities was constrained rigidly. Since 1988, under an unbalanced development (growth pole) strategy, Hainan was pushed to the top of the reform tide. The radical urban development was twisted by deregulation of the economic environment, especially the real-estate market. The booming created a giant property bubble and the island began to suffer from it after 1994 when the stabilized policies were carried out by the central government. In 1998, when Primer Zhu Rongji visited Hainan, “tropical agriculture” and “tourism development” were identified as strategic development directions. The development of cities also stepped into a new stage, the recovery from the past negative accumulations and the promotion of local places became the major duties for Hainan. For academic research, the intense urban form changes in Hainan’s cities are valuable for testing the relevant theories and creating new systems for urban form study.

The cities Haikou and Sanya have been chosen as substantial areas to investigate urban form changes. Haikou is the capital of Hainan and an important economic and political center of the island. Sanya is the most important tourist city along the south coast of the island, where there are natural attractions and beaches. Within the cities, danwei and development zones as district level study areas are specific “morphological unit”, they are the most important components of the urban landscape in contemporary China.

Danwei are state units of production and administration established during the pre-reform period and, as such, they are basic collective units in China’s political and social order and play both an economic (societal) and political (statist) role. Each work unit, no matter how large or small, is surrounded by an enclosed wall. Within the wall, land use is often divided by function, such as workshop, office and residential areas. Larger danwei have complete sets of living facilities (e.g. shops, theatres, hotels, hospitals and schools). They become, in effect, self-sufficient entities.

Despite the increasing number of private-ownership enterprises, the majority of people in the city still work in danwei. This fact never can be over-emphasized for urban form studies of China. Since the reform, the state has encouraged many danwei to be economically self-sufficient, resulting in their change to profit-seeking firms in the market place while maintaining significant administration ties with their parent
units in the government (Zhou and Ma, 2000). Instead of providing housing, education and social services, *danwei* are reducing these investments and relying more on the market system. The separation of housing and working relations of *danwei* is pushing by government reform policies which, in turn, is not only changing social areas but also generating the new urban landscape.

In order to serve the physical infrastructure needs of a large number of investors, development zones managed by municipalities or joint ventures appeared. By the end of 1996, the total number of development zones authorized by the state council and the provincial government was 25 in Hainan. These zones occupy about 301.74 km² and include 6 industrial development zones, 14 tourism development zones and 5 comprehensive development zones. This has been a dominant development model for the post-reform cities.

The four of the six largest development zones in Haikou, they are scattered throughout the urban “fringe belt” and have more monofunctional purposes. Development zones have changed the cities from a compact to a dispersed form and have led to encroachment on valuable agricultural land. Since the experiences of suburban development in the western world have proved to be profound, the developing trends of Haikou should be given more attention.

**Implications and conclusions**

Decades of underdevelopment, followed by a sudden rise in demand for development, have led to a dramatic urban landscape transformation in cities of Hainan. Information generated by this study will highlight the urban form changing regulations and their inherent strengths and limitations. Academically, theoretical contributions will be derived from the application and testing of related urban morphological theories taken from both the English and Chinese literature. A better understanding of the position of urban form studies within planning, geography and urban design theory will also be attained. Finally, this study will demonstrate the significance of applied urban morphological research in urban design and planning activities.

**References**


**Endnotes**

1 Special Economical Zones are a kind of Free Economic Zone. SEZs were created by reforming the socialist economy of China in the late 1970s and early 1980s. In a SEZ, price regulation, welfare provision, labour management and financial practices are set according to market-oriented policies (Chen, 1995).
Evolution of Urban Districts: Elements and Forces of Change

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This paper attempts to develop a framework by which to understand and analyze the change that is constantly occurring in urban districts. By increasing our awareness of that change, how it operates and how it influences the surrounding area, the authors contend that planning efforts, in particular those for revitalization, can better achieve their goals and more effectively utilize public investment. In this paper, the theoretical approach is first outlined and then applied to two urban districts in the cities of Liverpool and Chester, England.

Elements of a District

In his work on the “shearing layers” of buildings, Brand (1994) described six distinct parts of a building that exhibit varying rates of change. He explained the lifecycles of the different parts and the frequency at which they changed. The differing rates of change had consequences for its cost as well as for how people related to it. For this work, that concept and those categories were adapted to describe six elements composing urban districts and the relative frequency at which they change.

1. Setting: The topographical and geographical environment of the district is the most stable and fixed element. Environmental characteristics provide opportunities and limitations for land use. Setting is essentially unchangeable.
2. Transportation Network: The system of roads and rights-of-way in a district sets the pattern for development. New routes, when built or expanded, generally occur over older and existing routes. Transportation networks are well-established and difficult to change.
3. Civic Spaces: Spaces that serve civic and social functions for a district are durable institutions. Over the years, their uses change according to need until they no longer serve a public function. Civic spaces change slowly.
4. Infrastructure: Sewer, water, electricity, and telephone lines provide services needed for urban districts. They require routine maintenance and upgrading. Infrastructure changes on a regular basis.
5. Architecture: Buildings, houses and other structures are the most visible part of a district and often define a district’s character. The architecture of a district continually evolves as new buildings go up, styles change, and modifications occur. Architecture changes frequently.
6. Accessories: Signs, plantings, light fixtures, awnings and street furniture have both ornamental and functional uses for a district. Incorporation of new materials and colors can distinguish districts. Accessories change constantly.

Forces of Change

We identified six forces of change that influence the form and appearance of districts, roughly corresponding to the six elements.

1. Nature: Natural forces include weathering and decay as well as natural disasters like earthquakes, floods and fire.
2. Society: Social, cultural and demographic changes occur through shifts in population, ethnic groups, cultural norms and values.
3. Law: Layers of regulations, ordinances, and codes shape districts. The force of law filters down into the myriad of decisions affecting the built environment.
4. Technology: Technological advances in transportation, communications, and manufacturing influence what is built and how it is built. Building and construction materials change. Technology creates relatively rapid change.
5. Economy: Economic forces include the transformation of an industrial base, economic cycles of investment and job growth, as well as day-to-day economic competition. Economic forces generate constant flux.
6. Fashion: Forces of fashion dictate constant change to suit new styles and tastes. Colors and facades, design and landscaping, all are changeable.

Relation Between Forces and Elements

In addition to different rates of change, both elements and forces vary in the degree of change from fundamental to adaptive.

Changes in the transportation system rely heavily upon social and cultural forces. While changes in the economy and technology gave rise to the automobile, it was not until it infil-

Figure: 1 The rate of change of the six district elements ranges from the unchangeable “setting” to the extremely changeable “accessories.”

Figure: 2 These six forces vary according to the speed at which they generate change.
trated the wider society that its influence on the transportation system was really seen.

Civic spaces are part of the public realm, largely controlled and regulated by public decisions. Laws proscribe behavior and the use of public places and also prevent infringement on the public realm.

Improvements and changes in infrastructure are largely the result of technological changes. Cable and high-speed computer lines entail whole new systems. Utilities must adapt to changing technologies.

Economic forces determine profitable land uses, resulting in buildings appropriate for that use. It determines the location of office buildings, warehouses, apartments and often whether historic buildings will be preserved.

The decorative parts of districts are the most adaptive features because they respond to the whims of fashion. Accessories are easiest to change.

Economic Costs & Public Involvement

At times when the forces of change are strong, change may come about spontaneously, as if on its own. In cases when the above forces are not creating the desirable change, planning efforts ensue. However, characteristics of the six elements have consequences for the economic cost and degree of public involvement that may be needed. While changes to the more fundamental elements of “setting” and “transportation network” can be quite costly, changes to the more adaptive elements, like “architecture” and “accessories,” can be less expensive.

A corollary relationship is the degree of public and private involvement in funding the change. Greater cost requires greater public investment and more unified decision-making. The more fundamental elements demand more active public involvement. At the other end of the scale, lower costs, private ownership, and dispersed decision-making places investment in the adaptive elements largely in the hands of the private sector.

Examination of districts in two English cities bears out these relationships.

Study Districts - Liverpool, Chester

Born in the mid-eighteenth century, the Rope Walks district in Liverpool was first home to rope factories, merchant seamen and mercantile businessmen and later became an area for warehouses and dockside worker housing. Early in the 20th century, it entered a stage of decay and economic decline from which it has still not recovered, suffering further damage during World War Two. Today, the Rope Walks district is the subject of an international effort in Europe to revitalize decayed central city areas.

Encompassing about 50 acres, the Rope Walks is now a jumble of nightclubs, abandoned and occupied warehouses, retail shops, restaurants and offices. The streets are narrow, and many buildings are shabby and neglected. Efforts during the 1960’s to demolish the district’s older buildings and increase access by automobile to the central business district were blocked by a growing popular preservation sentiment. The Rope Walks, until recently remained in much the same state as it did when the last bomb fell in 1942.

Liverpool’s Rope Walks district is experiencing massive investment aimed at revitalizing and transforming the area. Over a 3

Revitalization Efforts

Figure: 3 Natural forces create fundamental changes in a district with widespread consequences for all of the elements. The setting is most influenced by natural forces.
of public money along with £50 million ($80 million) from the private sector will be invested. Most of the public investment in the physical structure will go to pedestrian and transportation improvements, new public squares, and renovation of strategic buildings (Liverpool Rope Walks Partnership, 2000). Private investment has already rehabilitated many structures and will continue to focus on the districts’ architecture and accessories.

The overall aim of the project is to create new jobs with the hope that the increased local jobs will drive an increased demand on housing in the district. To effectively produce the type of commercial evolution sought, the Rope Walks Partnership, a non-profit organization leading the effort, has invested in transport, civic space and utility enhancement. New streets, new plazas and upgraded utility service, including fiber-optic cabling, now line or dot the district. New buildings under construction and rising property values indicate that some of the investment is working.

Changes in the Rope Walks are fundamental in nature, requiring modifications in some of the area’s basic components. This approach is not entirely unfamiliar in Liverpool, where the River Mersey had been radically altered to accommodate the great port plans of the eighteenth century and where the reconstruction after World War Two resulted in vast changes to the city’s transport network. The Partnership is working to weave its fundamental changes within the fabric of a historic district. Even with these limitations, the proposals have been grand, striving to enhance what is historic through a combination of adaptive reuse and investment in infrastructure.

It is important to note that public investment has spearheaded the regeneration efforts, moving ahead the types of projects typically associated with more significant municipal undertakings. Public money has bought new streets, subsidized new utility lines, underwritten master planning efforts, built public squares and improved strategic sites for eventual construction. Now that the majority of public funds have been spent on site, transport and civic spaces, the private sector will be expected to invest in the continued evolution of the district.

Bridgegate began its preservation effort under the active and fiduciary stewardship of the City of Chester. At the outset of its program in the 1970’s, Chester invested great sums of public funds into the district, sponsoring rehabilitation programs and deferring taxes for preservation projects. As the past 25 years have progressed, the degree of public investment has declined, giving way to an increased private participation as market forces have proven that the investment will generally bring rewards. The City needed to invest in the architecture and accessories of the district, but, as the success of the district’s evolution became evident, the City was able to become less financially involved, allowing private money to sustain and drive changes.

In contrast to the Rope Walks, Chester’s Bridgegate district experienced gradual change and smaller amounts of investment. Public funding targeted critical structures, but most of the conservation money came from the private sector. Over £1 million is invested each year in the city for the restoration of buildings. However, public involvement has been sustained over many years with a significant cumulative effect.

**Conclusions**

Comparing the two districts reveals how the types of strategic investment are tailored to the uses within each district. The more fundamental change that is being attempted in the Rope Walks has driven public investment toward site and transportation. It is also a more complex approach. Bridgegate’s emphasis on its architecture and accessories required less public investment and involvement. A further area of investigation might be to look into the differences between industrial, commercial, and residential districts.
A Morphologically-Based Paradigm for Local Development Plans

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Abstract

The planning paradigm based upon two-dimensional land-use map has difficulty in coping with the pursuit of well-designed sustainable settlements. The solution advocated is a development plan based upon the outlines of urban form in three-dimensions with land-uses seen as consequent variables within these structures. Morphological elements and their outlines as a controlling tool would be used as a plan language to express options for new development. Urban design principles translate into a generalised block structure which can reflect existing forms, thus guiding redevelopment.

Introduction

In the standard format of local development plans, uniform land-use parcels on a two-dimensional map are used to describe existing and desired land-uses, and to propose locations for new development. It is not suggested that development plans are wholly map-based but that the two-dimensional land-use paradigm is predominant in thinking behind such plans. This paradigm has serious flaws (Hall, 2000). The major limitations relate to dealing with urban design issues and mixed-use proposals. Indeed, the land-use bias can actually obstruct many urban design goals and the pursuit of more compact and sustainable settlement design. It also is an inadequate basis for public participation. It is proposed that the solution lies in a format for development plans that takes the outlines of physical form as its starting point with land-use as a secondary consideration.

Plan Method from Urban Morphology

One attempt to structure local plans on a basis other than land-use allocations has been the concept of the design area (Hall, 1996). It can be defined as the area to which a physical planning objective applies. Its exact boundary will be determined by the interaction between the objective and the existing physical form. The boundaries may vary as the objective changes. This apparently simple idea possesses considerable power. It facilitates sub-divisions that are not necessarily co-terminus with land-use boundaries. It facilitates the handling of mix of uses. Design areas can be defined for spaces together with the buildings that define them such as streets, squares and parks. Design areas should cover the whole of a plan area and in doing so can apply to both town and country.

Standard forms of design objective can be identified. Alternative objectives can be generated by considering firstly the different degrees of intervention by the planning authority and, secondly, by identifying the different qualities desired within these levels. A possible list, in decreasing order of controller intervention, could be:

- Strict conservation of existing form;
- personalisation retaining plot boundaries;
- redevelopment with a specific form or style;
- redevelopment within to a height/bulk envelope;
- minimum intervention.

It can be argued that there is an equivalence between degrees of intervention, as displayed in design objectives, and the stages in incremental growth and redevelopment exhibited by towns (Hall, 1997). A method of systematically describing the growth of towns should therefore provide us with a useful addition to plan language and would enable degrees of planning intervention to be accurately described. Fortunately this is available in urban morphology, following in the tradition of Conzen (Whitehand, 1981). Morphological analysis also has the great advantage of drawing attention to elements of form that persist over time and that can be significant in interpreting the physical manifestations of urban history.

Synthesising the work of Conzen and Caniggia, Kropf (1996b) has proposed a morphological hierarchy based on the idea of containment or levels of complexity with at least seven primary elements: tissues (plan-units); plot-series; plots; buildings; rooms; structural elements; building materials. And has proposed the use of the concepts of:

- the level of resolution whereby the properties apparent at the desired spatial scale are noted; and
- the level of specificity, whereby the degree of particularity used is defined.

Looking at a town at a low level of resolution, only plot-series would be identified. Increasing the resolution results in greater specificity as the plots and then the building within the plots are identified. At each level of resolution different types can be identified. The different types can be distinguished by reference to the position, outline and arrangement of the elements that compose them. Figure 1 shows how levels of intervention can be combined with levels of resolution to form a matrix. The cells of the matrix reveal different levels of specificity. The columns have been given
labels to indicate correspondence to certain of the standard objectives. The numbers on the columns indicate different levels of intervention in descending order. What we have, in summary, is a language for conveying desired form that is responsive to degrees of intervention and thereby to plan objectives.

**Morphological Control in French Practice**

Space does not permit a discussion here of all the differences between the zonal planning systems common in Europe and North America and the discretionary system that applies in the UK. The point that must be made, though, is that, although the zonal systems employ small-area designations and often-complex regulations, they are still based on land-use allocations in two dimensions. Indeed, it has been concern about the restrictive nature of this situation, and the desire for more physical controls, that has given rise to innovations in French practice. Legislative changes in 1993 introduced a third generation of Plan d’Occupation des Sols, or POS, that could accommodate control of physical form. The term *Qualitatif* has been increasingly used to describe such plans. Where they are used, the POSQ can show concern for mixed-uses, conservation and the quality of urban form and the public realm (Trache, 1999).

Certain innovative examples of POS have employed morphological controls to reproduce historic form. One of the first was the plan for the village of Asnieres sur Oise (Samuels, 1993). There was a desire for regeneration and revitalisation but with development that reflected the traditional form and was integrated into the existing urban fabric. The new POS employed morphological controls based upon:

- plot dimensions;
- building form combinations for different plot types;
- building details (such as shutters and dormers).

Similar approaches were adopted in the small towns of Mennecy (Kropf, 1996a) and Montreuil (Trache, 1999). In the latter case, the town had a historic pattern of plots based upon the horticultural activities which were characteristic of the area but was damaged severely by redevelopment during the 1960s and 1970s. The revision of the POS in 1993 presented the opportunity not only for the preservation of the remaining features but also to guide future growth in a manner consistent with the historic pattern. Although the analysis and prescription drew on French tradition in urban morphology, they did not neglect the Anglo-Saxon town-scape school and regulated views and vistas in the urban landscape. There were four elements of prescription:

- minima and maxima for plot widths and surface areas;
- ratio of built to unbuilt space including specification of street set-backs;
- four options for the relationship between density and plot size and the disposition of public and private open space;
- building heights in pursuit of townscape harmony.

The approach was considered “permissive” as design details were not controlled but were left to the discretion of the development control officers. However, the roof shape and bulk of the new building were uniformly controlled using three-dimensional drawings as aids.

The examples given so far aimed at ensuring that new development respected an existing historic pattern. The same technique, however, has been used to control large-scale green-field development in France. Farthing (1999) has described the St. Eloi extension to Poitiers during the 1980s. This was a large addition of 3,500 dwellings to the East of the existing city and covered an area of 123 ha. The planning regulations specified:

- size and spacing of buildings in blocks;
- road layout siting of local facilities;
- layout of neighbourhoods;
- density;
- size of dwellings;
- tenure of dwellings.

**Plan Method from Urban Design Principles**

The plans for Montreuil and St. Eloi contained more than strictly morphological controls. The Montreuil plan included limited use of townscape principles. These contrast with morphological controls by being concerned with the lay perception of the outward appearance of urban form.

The St. Eloi plan was more concerned with structuring new development at a lower level of resolution. The concern for the layout of neighbourhoods and the size and spacing of buildings in blocks relates to important principles from current urban design theories. These principles lead to a definite pattern of urban form, namely *block structures*. These can, and should, be used to guide development within plans. The design principle of permeability leads to grid (albeit deformed) networks of roads with no redundancy of routes and maximum social interaction (Bentley *et al.*, 1985). Buildings should have public fronts and private backs, creating the form of the *perimeter block*. This is reinforced by urban morphology which shows the development and persistence of this form over several centuries. Designers would argue that this is
because it works. In other words, it provides an efficient setting for urban activities.

Morphological analysis and urban design principles point to set thresholds in block dimensions. Bentley, et al, (1985) note that the 90m block “can do for most purposes” but goes on to argue for minimising block size. A method is set out for determining block size from assumptions on parking, privacy, garden space and dwelling size. With regard to dwelling size, the design principle of robustness requires shallow plan structures that enjoy natural light and ventilation, at least in temperate climates, and can be readily converted to a variety of uses. Taking into account private open space and parking requirements, a rule of thumb calculation for the typical British small town or suburb leads to a block width of 50-60m across. An equivalent approach, the “ten metre sausage” (Hayward, 1993) yields 40-55m width blocks. Such dimensions are now typical of much contemporary house building.

The implication of these points is that perimeter block structures are a necessary part of the design of new development and their approximate sizes are known in advance. Failure to plan to them would have unsatisfactory results. For any infill on a medium size site (say 100m square to 300m square) fitting in 60m blocks with frontage to roads and backs to existing blocks does not leave much room for manœuvre and a block structure almost plans itself. If good planning is to result, blocks are largely pre-determined and therefore could, and should, be incorporated in development plans.

Conclusion

Development plans should be conceived in terms of outlines of physical form in three dimensions. They would be the primary consideration. Land-use allocations would still be an important matter but secondary to the physical guidelines. The degree of physical detail shown would vary within the plan according to the implications of area-specific policies. The elements of form that are to be retained or provided would thus be clearly identified. The result would be a complex document and this complexity is necessary if contemporary planning goals are to be attained.

References


City Form in Asia: Tropotopia: A Case Study of Urban Kampung of Jakarta

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Urban form in the developing countries has gained increasing attention in the scholarship of urban studies especially in the domain of physical planning and design. This discipline has been interested primarily in the ‘shaping up’ built environment - planning and design as an activity (solution). Hence, it inevitably demands for positive action in the process of analysis on the urban phenomenon especially that of an urban form. However, in the academic sphere, we can speak of ‘form’ beyond any positivity in order to acquire a better understanding about social phenomena in certain city.

There have been various labels referring to the Developing Countries regarding the urban phenomena, i.e. dualities: capitalist/bazaar economy, formal/informal, dynamic/static, and modern/traditional. There has been criticism against such a duality or dichotomy as yet the negation fails to dismiss it. Physically this duality is identifiable and can be judged as good/bad or proper/improper, however, such a view may overlook the complex picture of the society involved. It may tempt planners and designers to precipitate a solution of what is good in planning and design.

In this regard I would like to discuss alternative approach for understanding urban ‘form’ in the developing countries with particular reference to Jakarta. I will look into a social aspect of a city - *vita activa* or social practices, which are political.

The term *kampung* refers to settlement especially in traditional village in Indonesia. Urban kampung in this discussion refers to a used to be traditional village that has evolved in the urban process of a city. It does not include squatter settlements, which are named also kampung.

**Social Practices or *Vita Activa* of the Kampung Dwellers in Jakarta**

This section will discuss social practices of the city of Jakarta - *vita activa*, especially the urban kampung. The discussion will focus upon the relationships of human individuals or groups in the context of time and space. How such relationships may affect different chances of life between individuals and groups, of people’s political wellbeing, and, how the diversity of the human life constitutes a society and its living space. The term of living space here does not necessarily refer to a distinct geographical space but rather to a relative range time-space dimension of human practices in which the human subjects may or may not be presence.

Human life is conditioned life. It presumes that the human well being encompassing social and economic well being will depend upon how human beings are capable to sustain their life-cycle process. H. Arendt designates three fundamental human activities, which correspond to conditions of life given to human: labour, work, and action. Labour refers to human activity that corresponds to the biological process of the human body. Labour produces and feed the vital necessities needed for spontaneous growth, metabolism, and eventual decay into the life process. Hence, the human condition of labour is life itself. Work refers to the activity that corresponds to the unnaturalness of human existence. It provides worldly things distinctly different from all natural surroundings. Human condition of work is worldliness. Action is the only activity that goes directly between humans without the intermediary of things or matter. It corresponds to the human condition of plurality, to the fact that humans live on the earth and inhabit the world. This is the plurality of humans that is specifically the condition of all political life. Under the condition of plurality humans take various forms and degrees of social integration.

As human labour concerns the human life in itself, the quality of human labour will govern human life through the labouring body and head or mind. This activity characterises humans as both *animal laborans* and *animal rationale*. The civilisation of human being has revealed that better living demands for more a labouring intellect than body. In the social practices dominion and domination are knowledge-related activities. Most of the population of densely urban kampung that are rural migrants are less or even uneducated. The quality of labouring activities of this type of people will subsequently condition their life in the city that demands more than just a civilised society. This process manifests distinctly in their physical living environment - crowded, unsanitary, no recreational spaces. As also identified by Jellinek, the living conditions in the *pandok* or lodging house are invariably *Spartan*. Male gendered space governs the living environment.

The work of our hands, as distinguished from the labour of our bodies, fabricates the bold unending variety of things whose sum total constitutes the human artefact. They bear the proof or evidence to productivity. These things possess durability of existence such as human settlement and other material production. This durability may constitute the notion of property, and value needed for the exchange market. Kampung has been the place which contradictory to Western concepts and standards about human well being. It is the locus of bazaar economy - grass root economy, which enormous in volume comparable to capitalist one in the city of Jakarta. It is family-based economy, fragmented and unrelated economy activities; as yet, it is about people living in the city. Scholars that
attempt to simplify urban capitalistic economy by neglecting it simply deny the 'reality' of the dual economy. As a result it finds their way and space in the city by invading marginal spaces in the city, e.g. pedagang kakilima (ambulant traders). This type of traders is annoying politicians yet essential to most of urban dwellers. Their activities are responsible for and contribute the name of Jakarta as the big village despite its endless effort to beautify for itself.

Political existence of individuals in a city is expressed in their citizenship. It means that everybody has equal rights to politics and law. It also has something related to governance, which include role of groups in civil society in the governing relationship.⁶ In social practices, the reproduction of the structure of domination becomes crucial in the societal system - structuration process.⁷ There are two fundamental concepts of the structuration theory: structure and system. Structure here is not something that is presence. It is organised sets of rules and resources. Rules and resources as sets of transformation relations are organised as properties of social systems. The structure is marked by absence of subject. System is reproduced relations between actors or collectivities. It is organised as regular social practices. Systems are grounded in the knowledgeable activities of situated actors who draw upon rules and resources in the diversity of action contexts.

The highest form of structure in the government system or the state is the constitution. The Indonesia's 1945 Constitution (UUD 1945) is very broad in nature; hence, it subjects to various interpretations. The constitution of society in this level will depend on how the ruling government interprets the 1945 Constitution to the benefit of public in general. Historically, the two heads of state in the past had maintained authoritative government. The situation was even worst during the administration of Suharto for about 25 years under his rule. In the Sukarno's period Jakarta had been the symbol of the Self of Sukarno.⁸ He built an urban scene along the Jakarta's main thoroughfare with a series of different prestigious and monumental buildings. Beyond this scene was urban kampung. In the Sukarno period, while the country has experienced an economic boom, social and spatial injustice prevailed. The worst condition was that of the panopticism.⁹ It had been covertly exercised especially with the practice of the military dual function (dui fungsi). This was embedded spatially in the government system down to the village level. Dui fungsi involved in the political decision in the government. This condition in the past made political freedom as the essence of a society severely curbed and under the heavy surveillance. Public spheres and spaces simply absent. Oppositions were prohibited for this reason urban and rural spaces were under heavy surveillance. Physical development of Jakarta benefited more to the fortunate well-off citizen than the unfortunate urban kampung. Jakarta became much more outward looking (globalisation) than combined inward and outward.

In the grass root level, the political existence hardly absent. People are tribalised in the mode of patron-client relationships within a society. They are organised and trapped under the domination of prenan or thugs in order to exist as member of a society. These various groups in the city constitute a fragmented society that subjects to conflict amongst them to get better living in the city of Jakarta. In the extreme case, the area may turn into daerah rawan or dangerous area for ordinary people to stay or pass through. This 'local politics' of urban kampung shapes up patches of marginal spaces in the city of Jakarta where bazar economy prevails. The city of Jakarta has become the place of what Huntington calls clash of civilisation.¹⁰ The clash between global and traditional, local norms.

Urban Form: Tropotopia

In this context, I would discuss urban form as a ‘third form’. Plato in Timaeus¹¹ suggests that we can speak of form in three different ways. First, it is the form, as it appears - a thing. Second, it is a form as resemblance or copy - being a form. These two forms can be spoken of in terms of their positivity. They are confined in time-space dimension. Third, it is ‘form’ that is in the process of having quality. It is eternal and is not confined to time-space dimension. In this regard, I introduce a term tropotopia¹² referring to such a spatial form and process. Tropotopia in the process of having quality conceives ‘form’ as origin, cultivator, container, and bearer of imprints.

Kampung what ever it may be followed such by another term such as rural or urban is origin. It originates human civilisation and condition. It gives birth to the existence of a town or city. Being origin it entails its social, cultural meaning and connectivity. As origin, it gives birth values and norms. Human beings at their originity have their ‘own’ worldview. Kampung being cultivator, it nurtures human living by letting human beings to grow, explore and change its natural endowments. It is a place where human beings enter their ‘maturity’ into a society, which is as yet nei-
ther rural nor urban, a society of dual quality. It consists of various fragments of human associations including those of new tribalism. Kampung being container, it holds, accommodates, includes every being in it. It is part of the city as well as the city itself. It helps the most rural migrants to become urban in their own way. Historically, traditional kampung has its invaluable contribution to the formation of the city. Some parts of the 'modern' and 'cosmopolitan' city of Jakarta grow and develop in accordance to 'modern' standard. They orientate their development outward looking. In the contrary, urban kampung grows and develops with no orientation of any norms and standards. Kampung being bearer of imprints, it gives distinctive features, character, quality, type, property, and constitution. It convincingly justifies Jakarta as - the big village.

Conclusion

Urban kampungs constitute Jakarta. They are real. The more 'we' try to hide it the more it become obsolete. Urban kampung equals rural migrants, poor, bazaar economy, and all 'bad' thing against so called modernization. Urban kampung is suitable place for those new rural migrants and the remaining urban poor to live in the city. Persistence of kampung especially in physical sense being worsened has been primarily to the ambiguity of the government to politically involve kampung dwellers into governance. Urban kampung as a society is politically vulnerable, defenseless and subject to domination and repression. Understanding tropotopia of place, especially its people, will thoughtfully help developing a 'positive model' of a city, for problem solving, that may incorporate hidden values of social practices constituting activities and accordingly places. It is the citizen of the city, whatever fragmented they are, that create a city and not otherwise.

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2 H. Arendt coins this term *vita activa* to refer to a life devoted to public-political matters (Greek *bios politikos*; or Roman *vita negotiosa* or *actuosa*). It is the way of life of people in a city. See H. Arendt, *The Human Condition*, Chicago and London: The University of Chicago Press, 1958, p. 7-21.
8 For detailed accounts see Kusno, A., *Behind the Postcolonial. Architecture, urban space and political cultures in Indonesia*, London and New York, 2000
12 This term is derived from a Greek term *tropos*, fashion, form, manner, mode, style, way, and direction; *topos*, locus, place, room, space, spot. Tropotopia, hence, refers to 'spatial form' that is in the process, direction of having quality. It is difficult to define as a fixed form.
Designing the Contemporary City

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Abstract

Although condemned to failure, architects insistently elaborated ideal models for shaping cities up through the mid-twentieth century. The purpose of these Platonic ideal cities was to establish limited and organized territories. Resisting all mechanisms of control, real cities bring about forces that defy order and stability by permanently unfolding multiple configurations. The built environment, suggested Nietzsche, is unpredictable insofar as it reveals simultaneously divergent series of cities. The collapse of models invested with universal values stimulates a reinvention of the urban aesthetic, as exemplified by Rem Koolhaas’s proposals, which seek different ways of thinking and designing the contemporary city.

Theoretical discourses on the control of urban environments were first elaborated in the context of Plato’s philosophy and constituted a model for ideal cities planned thereafter. Such idealism was the inevitable consequence of a worldview founded on the assumed triumph of reason and supported by Greek philosophers, lovers of wisdom and truth. The genesis of the urban process in western culture was thus marked by a struggle to transform natural chaos into a human cosmos. The desire to implement a cosmos, which resulted in the invention of ideal cities, arose from the twofold desire for permanence in space and eternity in time. The suppression of the potentials of time required dominating differences that insert the real world in a flow of incessant mutations. The Platonic urban model was, therefore, based on timeless principles that privileged immutable relations of measure and proportion to neutralize space, to imprint identity and permanence on the world.

In the pursuit of stability and predictability, ideal cities were formulated through rational concepts intended to expel differences brought forward by chaos. A harmonious cosmos would emerge in an ideal urbanity ruled by laws supposedly capable of mastering nature. Imitating and materializing a Platonic model, architects would build an ordered city, would impose a rational cosmos on chaos. In this sense, the design of ideal cities entailed establishing formal and functional fixity by mapping space through lines that delimited, centralized, and hierarchized territories. These urban configurations were founded upon a center of power with peripheral fortifications, which circumscribed and protected a political space. Isolating forces that would threaten order, the boundaries marked a territorial identity for the city. The function of the boundaries was to make space impenetrable to movement from without or within and to obstruct processes of deterritorialization, processes that destabilize limited and organized territories. While the walls, roads and landmarks of the city defined limits for the legitimate exercise of power, they simultaneously made these limits more fragile and vulnerable to transgressions. Every structure of control provokes resistance, forces that emerge as differences and operate discontinuities with the dominant power. Where there is power, argued Michel Foucault, “there is resistance, and yet, or rather consequently, this resistance is never in a position of exteriority in relation to power.” Hence if the ideal city was a mechanism of control, the real city has struggled against submitting to instruments of capture. Despite all attempts to impose an immutable order on chaos, cities give rise to unlimited potentials, which constantly blur limits. The configuration of real cities is thus fundamentally unstable and, therefore, architects always failed to imitate models for ideal cities.

Although often strategically modified to adjust to distinct worldviews, an unrelenting desire to dominate physical environments through utopian projects permeated theoretical and practical discourses on urban design. Investments in idealized projects were recurrent until the mid-twentieth century. Modernist cities, though presumably revolutionary, were still involved with the imitation of standards, with the reinvention of a pattern of order and control. However, from the sixties onwards, new paradigms for designing cities emerged when this generation realized that stability and predictability are neither achievable nor even desirable. This insight converges with Nietzsche’s thought that, in criticizing totalitarian ideologies of philosophical tradition, stimulated the recovery of differences that these ideologies had suppressed or marginalized. According to Nietzsche, “the world [has] become infinite for us all over again, inasmuch as we cannot reject the possibility that it may include infinite interpretations.” The world has fragmented into infinite perspectives.

Resulting from a proliferation of points of view, this perspectivism explodes controlling centers and thereby signals the collapse of immutable references, of absolute models. Perspectivism obliterates classical perspective by shifting the emphasis from unity to multiplicity, from representation of an ideal world to creation of multiple possible worlds. Instead of converging into the same image, points of
view each reveal simultaneously divergent and heterogeneous series of cities, thus indicating the coexistence of infinite cities within the city. Within the complex and paradoxical context of the metropolis, chaos produces formal dynamism and functional instability instead of fixed forms and functions. The built environment becomes not simply a space in which movement occurs but, above all, a space itself in movement, in a process of mutation that compel the city authors and actors to assume the condition of travelers in time. As a response, contemporary urban aesthetic, such as the work of Rem Koolhaas, is breaking with the authority of totalitarian and universalizing projects and is abandoning the pursuit of idealized models for shaping cities.

Koolhaas considers that the intense transformations in urban form brought about “an unavoidable fragmentation of the existing city, a displacement of the center of gravity of urban dynamics from the city center to the urban periphery and a remarkable ingenuity in avoiding urbanistic rules.” Instead of only referring to a territory on the boundaries of the built environment, “urban periphery” also designates urban centers, which are peripheral in relation to other centers. Such places become simultaneously central and peripheral in an ongoing decentering process, which results from the multiplication and dispersal of centers in urban space. The decentered city dissolves the traditional system of references and the hierarchy of landmarks by turning centers into peripheral territories. Therefore, privileged central territories as well as the “non-architectural conditions” in neglected peripheral territories are objects of Koolhaas’s investigation. Two projects are of particular interest in this regard: Melun-Sénart and Yokohama.

The Melun-Sénart project in France, 1987, refutes the modernist functionalism. The intervention seeks, above all, to intensify interactions by redefining the limits between public and private domains, and by interweaving cityscapes and landscapes. This operation consists in inscribing in the territory a system of architecturally empty bands, of linear voids, some designed to preserve nature or historical sites, others to distinguish and emphasize urban elements. Koolhaas declared that “instead of a city organized through its built form, Melun-Sénart will be formless, defined by this system of emptiness.” This system of emptiness indicates the unusual premise of the project: the preservation of voids is precisely that which establishes the quality of urbanity, regardless of other architectural interferences. Positive space here does not leave negative space as a remainder. Instead, the empty bands create an archipelago of residual islands, of built interbands, which establish random and flexible interactions with contexts preserved within the bands: “Each island will be a microcosm of a different interval. Their perimeters, always contaminated by their interface with the bands, will take on programmatic coloring and architectural specificity.”

Melun-Sénart is distinct from striated spaces that, as Gilles Deleuze suggested, are structured upon predictable points of reference and experienced as successive forms in sequential times. Because of the contamination between bands and interbands, a smooth space rises in the city, which offers shifting connections between places. In deforming and destabilizing forms and functions, this urban design expresses space as multiple and undetermined. This instability of space comes about because the spatial structure is infused with transformative potentials of time. As a result, the city is constituted as an entity always already other than itself. Under the incessant metamorphoses of perspective, the environment becomes a labyrinth: a network of corridors and crossroads with interchangeable centers and peripheries, with fluid references and limits. The labyrinthine city continuously produces progressions of unpredictable configurations. The urban space in the Melun-Sénart project is thus marked by the possibility of making, unmaking and remaking spaces and times.

In 1992, Koolhaas elaborated a project to regenerate the urban forum of Yokohama, Japan. Infiltrating all the interstices of the physical environment with architectural elements creates an alternative urbanism. “Continuous and formless, the project engulfs the site like programmatic lava.” Buildings of distinct scales and indeterminate functions are inserted in every abandoned territory or residual space. The strategy is to produce maximum density and programmatic variation with minimum permanent definition. As Yokohama is expected to become an extremely dense area, the purpose of this project is to build, starting precisely from the “ineluctable disorder,” that is, from the congestion and concentration of heterogeneity in the twenty-first century metropolis.

The existing urban elements in Yokohama are explored, and the former functions are combined with new uses of the space. Activities that would take place in disparate areas will now occur in one place, either successively or simultaneously, to achieve a twenty-four-hour peak usage of space. Koolhaas, for instance, will increase the utilization of the parking lot by installing a warped surface that will be “…sometimes highway, sometimes ramp, sometimes parking, and sometimes roof and that could
accommodate the endless programs that we would insert in an amorphous and informal manner.\textsuperscript{9} Combining past layers and possible future events that overlap in the present, the identity of urban space becomes complex and thus unstable. Forms and functions are ceaselessly reasserted with the ever-present trace of their provisional character. The future entails the return of the past yet with the difference guaranteed by the insistent creation in the present. Consequently, Yokohama reveals Nietzsche’s perspectivism: a repetition of differences through which, in the flow of time, different cities always emerge from the same city.

Contemporary metropolises indicate a discontinuity: the city is not only, or mostly, a limited and organized physical space. Rather than imitating models or representing the world, current urban designs strive not to oppose cosmos to chaos but to make them interpenetrate. No longer seeking to impose an ideal form upon unlimited matter, urban proposals become not a demiurgic production but, instead, a continuous variation that sustains ongoing developments in forms and functions: formal dynamism and functional instability. The desire for a city that will elicit multiple possible worlds leads architects to develop an urban aesthetic that proceeds from denaturalizing the self-evident truths of an idealized world and from estranging all mechanisms of domination. Arguing that “if there is to be a ‘new urbanism’ it will not be based on the twin fantasies of order and omnipotence; it will be the staging of uncertainty; it will no longer be concerned with the arrangement of more or less permanent objects but with the irrigation of territories with potential,”\textsuperscript{10} Koolhaas invests in urban designs which enhance transformative forces in the chaos of contemporary cities. The task of the present is thus to explore the city as a place of creation, a place of crisis and critique. This is a task which stimulates theoretical and practical inquiries into possible aesthetic perspectives for contemporary urbanity.

The research for this essay was developed in the CEDR at University of California, Berkeley.

\textbf{Endnotes}

\textsuperscript{1} Gilles Deleuze and Félix Guattari, A Thousand Plateaus: Capitalism & Schizophrenia (Minneapolis: University of Minnesota, 1987), pp. 508-10.


\textsuperscript{6} Ibid., p. 983

\textsuperscript{7} Deleuze and Guattari, Thousand Plateaus, pp. 492-99.

\textsuperscript{8} O.M.A., S, M, L, XL, p. 1225.

\textsuperscript{9} Ibid., p. 1223.

\textsuperscript{10} Ibid., p. 969.
The Complexity as a Challenge For Townscape Management Analysis: A Case Study in the Swedish Town Uddevalla

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Introduction
Among the almost 300 Swedish communes 33 are founded as medieval towns. The average sized town Uddevalla, at the west coast of Sweden, is one of them. I will from this empirical study based on theories of M. R. G. Conzen maintain the morphological characteristics as based even upon medieval functional patterns.

In my work testing and developing analysis methods for inventory and analysis of urban morphology I also intend to challenge the traditional image of the town, evaluated by the integrated conservation.

The tool
As a methodological tool Conzen’s analysis method is divided into four analysis phases based on socio-economic factors. I distinguish from plans and cadastrals in Uddevalla back to the 1690’s an urban development in 7 morphological periods based on mainly general factors. Periods are even adapted to special local circumstances as the devastating town fire 1806. The physical environment is, in a second analysis phase, structured as synchronic maps of the morphological regions summarised out of the three aspects: urban plan, building fabric and land use pattern. Even fringe belt areas are here identified.

Characteristic structural, typological and functional features of all morphological regions are summarised as documentary attributes as well as characteristic visual features distinguished as townscape. Recommendations towards future planning and urban design guidelines for conservation and development of the urban area may be lined out, in a terminating analysis phase, as management of the townscape is formulated.

Fringe belt development
In the oldest quasi-rectangular plans from 1690, 1696 and 1783 it is by parallel studies of the cadastrals possible to follow development of the fringe belts inside the plan area in three steps. Most central is the official area around the town square with the church and town hall, in the plan from 1783 enlarged with pris-ons, schools and hospital. In the west quarters harbour related functions were built and proto industrial establishments were able to use water facilities on large plots in the east quarters along the river.

After the town fire in 1806, all buildings and old plot structures were erased and a regular grid pattern was introduced by the Government. Earlier fringe belts inside the town kernel were erased. Only original functions in the most central city kernel with the church and town hall around the square were preserved, as well as small reminiscences of fringe functions along the grid borders. The oldest plans, however, do not tell us, that outside the plan area quite important and extensive fringe belt areas were developed. In the harbour westward in relation to the town kernel proto industrial enterprises were established. Southward along the road, small clusters of buildings were situated as well as a school and a seaside resort. These frames for the new town area after 1806 exemplifies important formative factors not discussed by integrated conservation, though in focus for the morphologists.

The first orthogonal plan from 1806 was completed in 1879 with a new grid plan, to the east of the old one, planned with functions that we embrace in fringe belt areas, here mainly official and industrial buildings. Nowadays the two grid areas are grown together and the different characteristic attributes are not very obvious. The grid patterns are almost identical, though building patterns and plot structures together with land use functions indicate basic characteristic differences harder to discern and describe.

During the 19th century town development can be regarded as a polarisation between three socio-economic and functionally different poles represented by the grid plans, the functionally diverse fringe belts around the grids and more peripheral enclaves of small own house settlements. In the first grid area additional buildings were slowly filling up the plots in the approximately 25 quarters, where a full socio-economic society was established with residential buildings for town burgers, areas for business, craftsmen, sailors etc. Both residential buildings and other functions as smaller proto industrial establishments were situated in this first grid area. Repletion increased during the last decades of the century, when the population reached the same amount as before the urban fire, i. e. 4,000 inhabitants. The orthogonal plan from 1879 in the east grid area cover mainly non residential functions. In contrast to the first plan, where every quarter was divided into smaller plots, in the new plan official institutions as schools and industries were planned for whole quarters.
More peripheral residential buildings were built with the first real apartment houses of the town. The seemingly homogenous plan pattern can in this way be divided into different contexts according to socio-economic factors.

During the second half of the 19th century the industrial and infrastructural expansion gave new contents to the fringe belt zones and the harbour area was developed to a functional meeting point with the railway lines. When the grid plan pattern from 1879, however, was laid out over the western fringe area, it was not possible to follow the plan, as the area was already occupied by different enterprises.

The Swedish industrial development was initiated during the second half of the 19th century and migration to urban areas was intensified. Many new inhabitants could find provisory solutions for dwelling inside the town, though from the 1830’s most new inhabitants had to find plots in enclaves at former agrarian impediments of town land or donation land. These early enclaves indicating characteristic irregularities in street fabric, plot and building pattern can be compared to suburban settlements in larger cities. The most characteristic features, however, were the polarisation between city kernel, the area reserved by society for fringe belt functions around the grid and the peripheral enclaves for the arriving non burghers.

During the 20th century the building pattern was developed along new lines. First discernible is small enclaves with exclusive residential villas, built during the decades around 1900, along the border of both the grid kernel and the adjacent fringe areas. The radical change was initiated by the plan from 1909 designed in accordance to the garden city movement doctrine, though the original, formally varied building pattern gradually developed to a nature adapted type form in a degenerated manner, seen out of doctrinaire aspects. Complexity, however, increased when intentionally designed building patterns as functionalism and modernism replaced traditional form for multifamily houses as well as for private villa areas.

The early functionalistic areas, adaptively situated in adjacent areas between the grid and the outer enclaves, were followed by new enclaves with modern multi family tower blocks, often grouped together in old traditional building pattern, though in a new scale and architectural form. Plot pattern lost its meaning when community owned companies exploited large areas and single buildings have to be distinguished instead of plot pattern. For privately owned houses plot pattern is given another meaning in modern villa areas, when agricultural landscape with former tilled, often very plain fields were exploited for own-house areas.

Planners or architects here designed new plot and building patterns with intricate and sometimes labyrinth fabric in order to contribute to a more varied and nature imitating environment.

**Kampenhof as a problem point**

In this way it is possible to find about 10 types of morphological regions of importance for the unique townscape character of Uddevalla. The structural patterns, however, sometimes in the same way as in the grid pattern must be understood as divided into separate contexts. This can be exemplified in the study of a special problematic point: Kampenhof, the old fringe belt area along the harbour. The problem picture may be described as partial transformations and reductions through clearance to almost urban fallow, resulting in a visually weak character, an unstructured and to some extent chaotic environment. This area in lack of old buildings is not focused by the antiquarians. The morphological analysis, however, can from historic layers relate different structural factors to various periods important for the townscape of the area, as well as for the whole urban landscape.

To find guidelines or recommendations for this fringe area the analysis can be deepened in about 6 contextual patterns revealing very different structural characters. The oldest functions as harbour and proto industrial enterprises are not possible to discern, though the 19th century harbour structure with quays is an important document of the development even if no old buildings are left. The oldest buildings are a bathing house and villas in parks from about 1900, built in a national romantic architectural style. Evaluation of the area in this way is biased from fringe belt character to more residential, thereby possibly indicating higher architectonic demands of the whole area. The first railway line and the railway station are erased. The second railway line from the turn around the century 1900 is used as a street passage between two contextual areas. Former stock areas along the river and harbour are now being barrier zones in fallow. Stores, ware houses and official buildings, as sewage renewal work and fire-station, are grouped in a centric pattern in relation to the high rock with a former defence fortress.

Harbour related buildings, sheds and industrial enterprises are situated in the most western area with a high grain silo as a visual accent contrasting to the areas along the border to adjacent grid kernel and functionalistic environments. The modern buildings for official use in the fringe context are designed in architecturally individual building patterns and
characters. In the most extensive central area, still in urban fallow, parking lots are surrounded by roads in a free non geometric pattern. The visual impact of the whole area as contrast to the regularly built grid quarters is an important townscape attribute to take into consideration. The different characters of the two large central fringe belt areas, westwards respectively eastwards in relation to the first grid kernel, also are of certain general interest. The harbour fringe belt area has developed a chameleon character, changing function and character according to the needs of society during at least three centuries. The east fringe area, developed as a part of the grid kernel with mainly official land use, has structurally, functionally as well as visually been relatively stable during more than one century and is today highly valued. Both, however, must be understood as important parts of the whole town landscape.

Conclusions
The development during five centuries is complicated though explainable in morphological terms. Development will, however, during the 21st century become even more complex, as the natural central focus in the grid kernel loses its functional meaning in an enlarged commune with more than one focus. Even if basic terminology is at stake, the contextual description of different fringe belt characters must be developed further to modulate our understanding.

In contrast to the integrated conservation, primarily dividing the physical environment in areas with or without culture values, the morphological analysis is not evaluative. The townscape management analysis does not give normative answers of a doctrinaire character. It is a useful tool to give alternative answers to the physical context, even facilitating the dialogue before future planning in problem areas. The great capacity of the method to analyse a complex urban pattern in an old town kernel or fringe area indicates the possibilities for analysis of modern residential or fringe areas.

The Conzenian theories and tools are well suited to describe and understand the urban development in an alternative way; the emphasis on urban fringe belts give a complementary story to the antiquarian way of focusing on the most valuable culture historic heritage. This alternative is by focusing the fringe belts presenting a new narrative enriching the cultural heritage both by, what in Swedish integrated conservation is discussed as, document and experiential values.

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The Evolution of Professional Attitudes Towards High Rise

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Summary
In a brief period between 1948 and 1968 unprecedentedly large numbers of tower blocks were built for public sector housing, radically changing the skyscape of British cities. This paper seeks to trace shifts in attitudes among non-architectural professionals involved in the creation of these buildings: planners; housing managers; building contractors and local councillors. The principle source for this paper is the professional journal. The main weakness of this approach is the possibility of bias from a journal’s editor and of only hearing the views of the most vocal members of a profession. The greatest advantage, however, is that articles are dated and thus give an accurate impression of the time scale in which new ideas are receiving attention.

Planners
The post-war baby boom came as something of a shock to planners who had laid careful wartime plans for zero population growth. Blissfully unaware of the demographic time-bomb, planning, certainly until 1951, centred on the dispersal of surplus population from the overcrowded conurbations into new towns. The problem with investing so much this a single idea was that the new towns were very slow to develop, not helped by the many economic crises of the later forties. Hemel Hempstead was the most advanced of the new towns in 1951, yet had taken five years to produce just 1000 houses. The great cities were left to cope with long housing lists and a growing population with a dominant planning ideology which simply wasn’t working.

Early high rise schemes, such as Westminster Gardens in Pimlico, can be seen as part of the Abercrombie plan for the County of London which included provision for flatted estates within the inner city to provide fairly high density housing – with the ‘overspill’ from cleared slum sites expected to be moved into New Towns. High-rise was increasingly used during the fifties to try to overcome the shortage of overspill accommodation which the failure of the new town policy had created. This became particularly the case following the wider application of the green belt concept after 1955, which greatly restricted further outward expansion by cities. The greater open space which could be created through building upwards seemed to recommend the tower to city planners on environmental grounds. No more the overcrowded, overbuilt city.

Housing Managers
Though it became normal to consult housing managers on the design of schemes, their influence was generally confined to certain specific issues. Nevertheless, those working on the management of high-density estates identified problems in their operation fairly rapidly. Perhaps the most emotive issue was provision for children. Many councils in England tried to avoid putting young children into high-rise at all because of the management problems they created. This is not to say that the lesson was always learnt. The 31-storey towers at Red Road in Glasgow being built in 1968 provided accommodation for large, young families and became notorious for vandalism even before the estate was completed. There were also issues about the poor provision of play facilities for younger children. The problems being identified in the Housing Centre's *Two to Five in High Flats* published in 1961 were still being discussed in Pearl Jephcott's 1971 study *Homes in High Flats*. Ten years on the problems persisted.

When an issue identified by managers could save money it usually received more attention. Early estates, such as Quarry Hill built in Leeds in the late thirties, had communal laundries. During the fifties this provision was generally abandoned on new estates as unpopular with tenants and expensive to run. Laundering in the flat, however, connects to another crucial management issues: damp. Coal fires were not practical propositions in tall blocks and without such a good source of radiant heat condensation became a real problem in many post-war homes. As early as 1957 RJ Allerton, the London County Council’s director of housing, was pinning hopes on electric underfloor heating as the cure for damp problems in towers. In fact, the situation deteriorated through the sixties. With the removal of gas supplies from many blocks following the Ronan Point explosion, many tenants supplemented expensive electric heating with cheap, though moisture producing, paraffin, making the problem still worse.

Local Government
In 1957 Councillor K Kinna, chair of Wallasey’s housing committee, voiced the anxiety of the more provincial towns at the prospect of erecting high flats and commented that it seemed even small boroughs of around 50,000 inhabitants would soon be forced to plan along those lines. When Birmingham completed the
first of its 12 storey blocks at Duddeston and Nechells in 1954 it had warranted a lavish feature in the Municipal Journal. By the early sixties however, high-rise schemes had become commonplace and no longer such a matter for municipal boosterism.

Members of housing committees were crucially important in taking final decisions concerning housing schemes. When the Ministry of Housing and Local Government were reconsidering the form of flat building subsidies in 1953-4, they received a number representations from councillors and officers of the London County Council, Birmingham and Coventry pressing for more money to be made available to them. Building companies were well aware of the power that councillors could wield. In September 1961 over one hundred people from thirty different authorities in the Greater London Area visited a scheme built using the Bison Wall Frame system.

It is clear from reading files held at the Public Record Office that, with the exception of a few progressive councils such as London, Leeds, Birmingham and Glasgow, it took a great deal of effort to persuade local councils to adopt new ideas on housing. The Ministry of Public Building and Works even proposed in 1963 that a subsidy should be paid to councils using industrialised building – a technique which was most suitable for high rise construction. The Ministry of Housing and Local Government in turn organised a series of conferences with local government officials and councillors during 1963-4 in an attempt to encourage the organisation of local authority consortia for the more efficient production of houses.

By the end of the sixties, many councils were losing interest in housebuilding – partly because of economic constraints and partly because many authorities no longer had acute housing shortages. Coventry declared it was to build no more high rise in August 1968. The collapse of Ronan Point, a 22-storey system-built tower in Canning Town, London, in May 1968 further complicated the matter, with some councils arguing that as they had been forced to build IB towers, central government should be forced to pay for the necessary strengthening which the Ronan Point Inquiry recommended. In the end the costs were split evenly between central and local government, though in the case of many councils, this was probably not a fair allocation of who was ‘to blame’ for tower building.

The Building Industry

In the late forties and early fifties most builders wanted a return to the easy profits which had come with suburban expansion between the wars. Ronald Wates, of building giant Wates Ltd., was typical, expressing his frustration in 1952 at the continuing shortages of building materials which were the reason for the government’s restrictions on private house building output. The editor of The Builder Ian M. Leslie reflected this view arguing that the 1955 housing subsidy proposals were flawed because they maintained payments for high flats, thus artificially sustaining an unpopular building form.

The fat profits that could be made out of tower building in the nineteen sixties changed the emphasis somewhat. The two killer blows to the use of high rise – the removal of the progressive height subsidy in 1967 and the Ronan Point collapse in 1968 – were thus viewed with dismay throughout the industry. The problem for builders working in the public sector was that the British economy ran into serious trouble almost immediately following the Labour Government’s re-election in 1966. When costs needed to be cut back, towers were an obvious casualty. Industrialised Building, which had only managed to compete on cost terms with traditional building techniques in the construction of high rise, suffered in turn. By 1970 many firms were simply reverting to traditional building in the face of falling orders. Once it was clear that the public sector and IB bubbles had burst, those house building companies that survived bankruptcy simply went back to their core business of suburban semis.

Conclusion

No profession ever forms a totally coherent and unified position on an issue and this paper seeks simply to look at when some of the voices were being raised. There is an overwhelming sense, however, that, outside the architectural profession, towers began to be built as a necessary evil and in time began to be seen as being less necessary and more evil. The builders might have been happy to make money off public sector high-rise schemes, but knew that in the core private sector market, the suburban house was still the dream of their customers. Different city councils reacted differently to high-rise flats, but it is clear that they should not simply be seen as a result of municipal boosterism. Housing managers, who had to deal with the day-to-day consequences of a high-rise tenant population, identified physical, as well as social, problems with the blocks very rapidly. Planners, in turn, saw high-rise as at best a quick fix to the problems of land shortage and a rapidly growing population. It is clear that any enthusiasm that had been felt toward this type of building, had all but gone by the late sixties as
the experience of twenty years of high-rise housing in Britain began to tell. There was nothing fundamentally wrong with the use of high-rise, but it had become clear that the way high-rise was used in Britain had created a tremendous social and physical problem in British cities, the consequences of which are still being dealt with today.
Creating the Post-Industrial Pearl: The Morphology of Portland’s “Next Great Neighborhood”

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A significant aspect of contemporary landscape transformation in many US cities relates to redevelopment of underutilized industrial areas near the urban core. The Pearl District, a former rail terminal facility and industrial warehouse area located adjacent to downtown Portland, Oregon, provides an excellent example of the transformative processes associated with development of a post-industrial urban neighborhood. The current redevelopment of this area represents a conscious attempt to create a specific conception of post-industrial lifestyle and place associated at once with an urban renaissance and with a particular understanding of Portland’s past.

In a headlong rush to develop the Pearl District as a paragon of the post-industrial urban neighborhood, cultural simulacra replaces genuine heritage elements. Existing structures are renovated and new buildings constructed according to a particular view of the Pearl’s past. Understanding the area’s physical transformation over time is necessary to assess how place-bound cultural images are used to promote dominant urban interests in the Pearl District, and to provide an inclusive approach to the management of this post-industrial landscape. Careful examination of area’s past and of its existing built fabric and patterns of land use reveal a richness that is ignored in current planning for the district.

What is the Pearl District?

The Pearl District has its roots in Portland’s early settlement history during the mid-nineteenth century. After annexation to newly incorporated Portland in 1851 the area burgeoned as an immigrant community of recent arrivals from northern Europe. Railroad expansion in the early twentieth century brought increased warehouse, wholesale, and manufacturing activity. A transient immigrant population, convenient patterns of land ownership, and advantageous location made rail-related redevelopment relatively easy. By the 1920s, however, the emergence of the automobile resulted in the growth of an automotive service industry alongside the district’s rail-dependent enterprises. The area boomed until near mid-century when businesses were drawn to new locations suburban locations. Such decline has led to the current round of redevelopment in the Pearl District.

“Pearl District” is a recent appellation, the invention of local cultural raconteur, Thomas Augustine. He coined the name in 1986 to promote a local arts festival, marketing the area and its buildings as the “crusty warehouses with the gems inside” (Gragg 1997, L5). The name caught on with local arts and travel writers, coming into more general usage in the early 1990s. Prior to that time the area had been known simply as the warehouse district and as an extension of Portland’s “skid row” area.

In recent years the Pearl District has become emblematic of Portland’s efforts to create unique and desirable inner-city neighborhoods; efforts that have caught the attention of city planners and developers, as well as the popular press. The area has become the trendy place in Portland with a plethora of art galleries, upscale shops, and popular restaurants. For official and popular consumption the Pearl District is presented as the most fashionable of neighborhoods with all the necessary accoutrement of upscale, twenty-first century urban living.

Evolution of the Pearl

Development of industrial uses in the future Pearl District was simultaneous with its growth as a residential area for recent arrivals to the city. Located near river-port facilities and downtown, the area was ideal for mixing capitalist enterprise with inexpensive labor. Preservation of land ownership in full-, half-, and quarter-block patterns made it possible for landlords to convert from residential structures to larger loft structures without the burden of assembling small parcels. These larger lots were also suitable for the construction of single-family and duplex residences, and quarter blocks with up to six such units were commonplace.

Expansion of rail facilities and development of a warehouse district began in earnest in 1905 when a rail spur was laid from existing terminal facilities south through the future Pearl. This was followed with construction of two other spurs to serve expanding warehouse and industrial development. All of this helped fuel Portland’s dream of becoming a premier transport terminal (Oregonian, 1896; 1906; 1910; Heritage Investment Corp. 1986).

The new warehouse district was not the only such area in town, and competition between various railroads for the attention of manufacturing, wholesaling, and warehouse...
interests contributed to under development of the future Pearl District. In spite of the rhetoric about this area as a turn-of-the-century warehouse district, the presence of a substantial residential fabric indicates a continuing immigrant presence through the 1920s. Even in the core of the warehouse district no fewer that 46 residential structures remained in 1926; and many of these contained multiple dwelling units. (See Figure 1.)

Continuing redevelopment of the immigrant community was stimulated in the 1920s by the growth of automobile sales and services. Auto dealerships lined the streets on two sides of the “warehouse” district, with a host of ancillary businesses located along and adjacent to these auto rows, particularly in the future Pearl District. Service stations, repair shops, and various accessory and parts dealers were located between and even within recently constructed warehouse structures.

Portlanders’ early love of the automobile presaged the decline of the railroad-dominated warehouse district that that provides the foundation for the current Pearl District. Before declining, however, this industrialized area reached the zenith of its redevelopment on the basis of automobile and trucking influences, rather than under the sway of the railroads. As a result, redevelopment of the old immigrant neighborhood continued after the railroad influence began to wane, and continued into the 1950s when little remained of the immigrant community that had once found a place in the Pearl District. (See Figure 2.)

Decline of this central industrial district led to emergence of its image as a “zone of discard” (Ford 1994) by the 1970s. Its transportation nexus had declined, and many businesses that once enlivened the district had left for suburban locations. Numerous buildings sat vacant or underutilized, and the area gained an unsavory reputation, particularly after 5:00 pm when most of the remaining workers went home. A vibrant industrial district had become a dangerous and dirty part of the city — home to countless marginalized individuals living in the upper stories of the old buildings, or sleeping in packing crates on vacant loading docks.

Property values in the district had declined precipitously from the boom days, and in the late 1980s developers began to take advantage of inexpensive structures and tax breaks for the renovation of old structures. Buildings in the district were purchased with the intent of converting them into offices and residential lofts. By the mid 1990s, the district was settling in to its current Pearl District appellation, marketed as an area of toney art galleries and loft living.

Although official plans for the Pearl District call for redevelopment that recognizes the area as a unique reflection of Portland’s diverse social, cultural, and economic character, the historic diversity of the Pearl is re-written to exclude significant sections of both its social and built character. The official accounting of the Pearl’s development readily includes images of old warehouses and romantic railroad building, but shows little concern for vestiges of automobile-centered development (anathema to the current planned vision of Portland) and of working-class lifestyles and impoverished immigrants that are also reflected there.

**How Pearly is the Future?**

As interesting as the Pearl District is as a post-industrial neighborhood, how essential is it for successful redevelopment area to completely throw off all but the most trendy aspects of its heritage? The current success of Pearl District redevelopment has been dependent upon a selective historic understanding of the cultural value of reclaimed warehouses and their conversion into fashionable urban lofts. Yet, the success of this transformation is also its failure. In casting off the representations of the area as an immigrant community and as an auto-dominated center in favor of a new historicism, redevelopers of the Pearl District landscape confuse a distinction between what is new and what is old as they eschew much of the history of the Pearl District as a place.

New and renovated structures attempt, through selective architectural interpretation, to re-create a sense of the Pearl’s past, paying scant attention to the physical and temporal character of the area’s emergence as an industrial center adjacent to the downtown core. As Portland urban designer Gary Papers (1999) has observed:

Even new structures on vacant lots follow the “revamped industrial” mode, confusing the essential distinction between what is current and what is 40-90 years old. Perhaps it
will take the design of an officially public building or ‘landmark’ to break this fabric quandary.

The development of new structures that recognize a distinction between past and present, and that attempt to reinterpret the Pearl’s current industrial style in a fresh way could draw attention to the fact that the landscape of the district and its transformation are not as monolithic as represented in official documents and developer portrayals.

There is a lack of understanding about the diverse character of the Pearl District’s past; or at least there is an unwillingness or inability to translate that past into a new post-industrial landscape. While design guidelines created by the City for the Pearl District encourage respect for context and the integration of industrial character in the design of buildings and street features, there is no strategy for integrating heritage artifacts beyond these meager guidelines (City of Portland, Bureau of Planning 1996). Each individual site is at the mercy of its current owner who is free to treat the property as tabula rasa, or to respect both the past and the future it represents. The approach taken by most weights heavily in favor of sanitizing each site, removing true remnants of the past in favor of selective architectural re-creation.

Within the Pearl District both converted and new loft structures are seen as contributing to the uniqueness of the emerging post-industrial lifestyle. However, many other structural remnants are seen as having little value for adaptive reuse and are redefined as inhibitors to the area’s post-industrial transformation. While numerous voices within the district favor the retention of such elements to reinforce the immigrant, railroad, warehouse, and automotive heritage of the area, their contributions are ill-reflected in current planning and development. Genuine heritage yields to cultural simulacra, with the irony that history is central to marketing the Pearl as post-industrial neighborhood. It is the fabrication of historic identity and the development of industrially themed projects that are increasingly the components from which the post-industrial Pearl is assembled.

The full identity of the Pearl lies deep within its settlement history. It includes the area’s development as the home of forgotten immigrants. It includes existing buildings and sites, as well as the palimpsest of those lost in the Pearl’s various transformations. And it includes those inhabitants who have used the area for home and business for over 150 years. Current redevelopment of the Pearl District into a post-industrial neighborhood could certainly be guided in a way that gives expression to this heritage without resorting to nostalgic simulacra and the physical expressions of the pasticheur. While maintaining a fundamental respect for the physical structure that underlies the public realm of downtown Portland, a much broader discourse needs to be opened about the no longer extant, the existing old, and the new; a rich dialogue about the diverse physical and social fabric that represents the evolution of the post-industrial landscape of Portland.

References
Introduction:

Urban areas differ from one another in many aspects, functionally, socially, physically, and spatially. The classic studies of Burgess (1925), Hoyt (1939) and Harris and Ullman (1945) outline the broad differentiation of urban areas in terms of functional and social aspects while the studies by Krağa (1994) and Siksna (1997) address the detail of differentiation in terms of spatial aspects. Moreover, the findings from Krağa’s and Siksna’s studies indicate that there might be a systematic relationship between spatial and functional aspects; the former in terms of configurational development and functional types, the latter in terms of block size and form and the retail core of city centres. This leads to a much-needed new research that should bring together and examine details of the spatial, functional and physical structures of urban areas and their relationships; first by investigating the relationships between area structures, particularly areal configuration, and functional types of urban areas, i.e., dominant land use types, and second by examining the distribution of detailed functions within the structures.

This paper reports the findings from both studies, with special reference to Bangkok; and, its arguments are based on Hillier’s ‘principle of natural movement’ and ‘theory of movement economy,’ and his subsequent ‘theory of centrality as a process.’ (Hillier et al., 1992; Hillier, 1996 & 2000) The principle of natural movement (Hillier, 1996), which establishes the relationship between the urban grid and pedestrian movement, shows that the grid structure primarily generates natural movement and systematically affects movement patterns, which can be captured by ‘integration analysis’ of the axial map. The theory of movement economy (Hillier, 1996) suggests that movement in cities works like an economy, in a sense that the degrees in which different functional types take advantage from the grid maximisation of natural movement to accomplish as many tasks as possible will specialise the functions of urban areas. The process works by the grid generating natural movement that in turn attracts movement-sensitive uses. If the movement-sensitive uses are the attractors themselves, such as retail, they will bring more movements into the grid, and so create the multiplier effects, whose impact is to bring on new buildings and uses into the grid. The theory of centrality as a process (Hillier, 2000) states that the grid of a movement-sensitive use, being a live centre, will tend to adapt itself through grid intensification, by having small-scale block structure and trip-efficient permeability, in order to create interaccessibility within the grid and from the grid into the city. What is proposed here is that the grid structures of different dominant land use areas differ from one another; and, the differentiation is the effect of the grid layouts that do not only facilitate detailed functions but also specialise their distribution patterns, particularly the retail function.

Spatial analyses and studied areas:

The main spatial analysis of the studies is the ‘axial analysis’, which is a configurational analysis of the network of axial lines that pass through all convex spaces of the city. (Hillier and Hanson, 1984; Hillier, 1996) The result of which is integration, which can be calculated in four scales. ‘Global integration’ is calculated from the relativised mean depth of each axial line with respect to all other lines in the system, to give an overall structure of spatial system. ‘Local integration’ is calculated by the same method as global integration but with a limited depth, or number of steps, from each line, to display locality of the system. Here it is calculated at three steps. ‘Connectivity’ is calculated from all lines connecting at one step away from each line. It displays a structure of the number of connected lines. ‘Radius-radius integration’ is calculated from mean depth of the main global integrator to all other lines. It normally depicts a functional structure of the system. The co-efficiency values of two correlations also add two more configurational measurements. ‘Intelligibility’ is a correlation between global integration and connectivity, which indicates the navigating difficulty within the system: the higher the intelligibility the easier the naviga-
tion. ‘Synergy’ is a correlation between global and local integrations, which indicates the distinctiveness of parts within the whole system: the higher the synergy the more distinctive of the parts.

Thirty areas of Bangkok have been selected for examination. Sixteen of them are located in the historic core, and fourteen in the immediate extended areas of the historic core. All areas are selected in relation to their dominant land use types, these being: residential, commercial, mixed use and central business district (CBD). Nine of them are residential areas. Thirteen are commercial areas. Four are mixed use areas. Finally, four are CBD areas.

The findings:

Taking all studied areas, each measuring number of islands over number of lines, full line length, line length within area and block mesh and analysing as being embedded with its context, i.e., the historic core or large scale maps, the means of each dominant land use area show strong structural differentiation among the four land use areas, and the most obvious being the differences between residential and commercial areas. (Table 1) Grids of the commercial areas have compact and integrated structures, whose lines tend to connect to form islands, whereas the grids of the residential areas have loose and segregated structures, whose lines tend to end in themselves. Furthermore, while the commercial grids tend to be more integrated over time, the residential grids become more segregated, and thus less intelligible and less distinctive. The grids of the mixed use and CBD areas have similar integrated structures to the grids of the commercial areas, but they are not compact. They seem to be an enlarged version of the commercial grids. When the same analyses were applied to study the areas independent of their embedding, a similar pattern is found although the configurational values of the independent analyses are weaker.

Using all areas embedded in the large scale map of Bangkok, simple regression of the means of ten spatial variables for the areas (island/lines ratio, full line length, line length within area, block mesh, connectivity, integration radius 7, local integration, global integration, intelligibility and synergy) against average land values for the areas produces significant positive correlations with all variables except intelligibility and block mesh. The multiple regression gives a r-squared of .63 (p.0129), and the stepwise regression again shows that integration radius 7 is the strongest variable. If the areas are taken independently from their embedding, a similar pattern is found, but weaker, and local integration becomes the most significant variable, both for the average and rise of land values.

Focusing on the thirteen commercial areas, however, the results from the non-embedded areas are much stronger than for the embedded ones, again with local integration by far the strongest (r-squared .484, p.0083) on its own and the only significant variable in the stepwise regression, both for the average and average rise in land values. For the embedded areas, there is no significant variable on the stepwise regression, and the independent r-squareds are weak. One reason for this may be that there are strong differences between the historic and non-historic areas. When the historic commercial areas are embedded in the historic core map (rather than the large scale map), the results are much stronger for the embedded areas, though there are too few cases to test this out on the stepwise regression. This suggests that commercial areas are sensitive to rather localised context. A further factor may also be that the internal morphology of a commercial area becomes more significant over time, due to its ability to act as an attractor and the role that local spatial properties play in this (Hillier 2000). Taking the nine embedded residential areas on their own, there is a different pattern again. The are strong negative correlations between mean land values and block mesh (-.745, p.0027), line length within the area (-.541, p.0239) and full line length (- .751, p.0025)) and significant positive correlation with synergy (.447, p.049). Local integration is weakly positive and global integration weakly negative. The spatial factors that produce values in residential areas are thus quite different, and in some senses the inverse of those producing values in commercial areas.

Further selecting eight areas — three each from the residential and commercial areas and one each from the mixed use and CBD areas — for the detailed studies of area structures and retail distribution, the results show an idiosyncratic correlation pattern among all dominant land use areas. For all areas and the residential and mixed use areas, the regressions of nine spatial variables (log full line length, log line length within area, log embedded connectivity, embedded integration 7, embedded local integration, embedded global integration, non-embedded connectivity, non-embedded local integration and non-embedded global integration) against a retail variable (square root of retail entrance again significant positive correlations are found with all variables except intelligibility and block mesh; the multiple regression gives an r-squared of .632 (p.0129), and the stepwise regression again shows that integration radius 7 is the strongest variable. If the areas are taken independently from their embedding, a similar pattern is found, but weaker, and local integration becomes the most significant variable, both for the average and rise of land values.
density) produce significant positive correlations with log embedded connectivity although the correlations are not strong. For the commercial areas, the significant positive correlation is log full line length (Figure 1). There is no significant correlation for the CBD areas. When two movement variables (second root of pedestrian and vehicular movement densities) are added as independent variables, pedestrian variable becomes the strongest and most powerful variable of every area (unsurprising as retail is sensitive to movement). When these twelve spatial, movement and retail variables are correlated against the average and average rise of land values (log version), it is clear that embedded global integration is the most powerful variable of every area (Figure 2).

**Conclusion**

These findings suggest that area structures are the primary factor determining the developments of areas’ dominant land uses, which can be reflected by land values. They also indicate that the developments are sensitive to the detailed, and sometimes combined, spatial characteristics. While commercial areas must have strong localised context, they also need to connect with long lines, which usually are the global integrators, for the viability of retail shop distribution and the valuation of areas; these results strengthen Hillier’s suggestion of the interaccessibility of the movement-sensitive areas (Hillier, 2000). Residential areas however strongly depend on the global context. They should be well connected and integrated with the city to generate their liveability whether by bringing on movements to feed on retail shops or by setting land values.

Likewise, mixed use and CBD areas need a strong localised context so to be valuable, and they are more likely to thrive on the global context for viability, mainly affecting on retail shop distribution. The findings thus far suggest that if there is a major change in the spatial structures, the evidences outlined how the urban areas might be changed.

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**Table 1:** Comparative average spatial-measurement values from the embedded system analyses (* = statistically significant)
Research focusing on urban structure or urban form most often classifies towns into two groups, regular and irregular (or planned vs. organic growth). Differences within the first group are seen to exist only between the orthogonal and the non-orthogonal (e.g. radial or polygonal) forms. Orthogonal structures are seen as uniform. This uniformity is reflected also in the concepts used. “Orthogonal town plan” is often understood as a synonym to the grid plan. Besides, “geometric” or “geometric regular” are used to substitute both of the two first mentioned.

During my study of orthogonal plans I found only a few authors who considered there were differences among orthogonal plans. The most remarkable was Sibyl Moholy-Nagy. In her “Matrix of Man” (1968). Moholy-Nagy divides orthogonal urban structures into two groups, “orthogonal-connective” and “orthogonal-modular”. The former is based on hierarchic street network and blocks of varying sizes. The latter is a “pure grid plan” based on uniform street network and blocks of equal size. Also Castagnoli in his “Orthogonal Town Planning in Antiquity” (1971) made a distinction between an orthogonal structure with a hierarchichal street network and a modular grid structure. The same two types can be found also in a much earlier study by Gantner (1928), although his starting point is different (regular vs. irregular) and he divides regular structures into four groups even separating hill towns from towns on a plain.

I consider there is a difference between an orthogonal plan and a grid plan, as Castagnoli and Moholy-Nagy have specified. However, I would not separate them into two different groups but rather consider “the orthogonal plan” to mean rectangular plans in general, whereas “a grid plan” should be more regular and thus in a way a sub-type of an orthogonal plan.

Orthogonality was the dominating principle in urban design in Finland for nearly 300 years. In the 17th, 18th and 19th centuries ca 170 town plans were designed, of them 70 were at least partly implemented and 35 still exist as cores of the oldest town and cities. One of the goals of urban planning in Finland during several centuries was to improve fire safety in towns built mainly with wooden houses. The most important means in town planning was to make the urban structure more spacious.

To describe building density or spaciousness in a way by which different towns or different periods of a specific town could be compared with each other the relation of street area to dwelling-block area was chosen as the unit of measurement. In the background was the block-effectivity ratio (e), which is used in modern town planning, but which could not be used in studying old town plans which lacked information on buildings. The chosen method has the advantage that even plan drawings without marked scale can be compared. Also different types of plans can be compared, i.e. both irregular and regular town plans, the latter could be either orthogonal or radial plans. The basic pre-requisite to use the street area/block area ratio is the homogeneity of urban structure.

There are, however, restrictions. The method gives comparable results as long as the studied towns have a both physically and functionally homogeneous structure and their structural components, the street and the block, remain simple. The results are comparable even with an additional component, if this is regular e.g. fire streets/alleys. Any special functions and the varying plot sizes these functions need cannot be measured in this way. Even such building density which differs from “regular blocks” gives results which are not necessarily comparable. Another restricting factor in the method is the volume built on a plot. The comparison can be used as long as we can assume the volume on the plots or in a block to be relatively even, e.g. the number of storeys is uniform. In Finnish towns this means the single-storey building stock, i.e. the era of the traditional wooden town. A small number of two-storey houses in a few town centres does not negate the method. From the 1860s when a town plan area was divided with avenues into parts of different size and when increasing public functions were placed on plots of different size here and there in the urban area, the ratio can be calculated for a sub-area (e.g. dwelling areas limited by avenues), but no longer for a whole town.

However, there is one more limitation to be added. The emphasis of the study is on two-dimensional aspects, i.e. it excludes build-
ing heights and their influence on streetscape. The discussion on spatial development is primarily on a general level and the basis is the number of storeys without exact knowledge of measures of building heights. The approach has defects as in spatial discussion the third dimension is fundamental, but the majority of the maps and drawings did not contain any information whatsoever on buildings. We only know that most buildings had one storey, but there exists only sparse information on their actual height. On the existing building stock it is most difficult to make deductions, as e.g. the preserved building stock originating from the 18th century in its present form is a result of several alterations and enlargements and the earlier phases of a building have been studied only in a few separate cases. Future study on the architecture of dwellings will presumably provide further information on this field.

The results of my earlier study (Kirjakka 1982) showed that there were two kinds of dimensional and spatial changes in urban structure: changes in building density and such changes in the “granularity” of block structure where building density remained nearly unchanged. These structurally essential changes with unchanged building density required a more diversified approach than one concentrating on building density and street widths. Also the wish to study the unrealized town plans meant that more than the street area/block area ratio and the “granularity” were needed to study dimensional development. Block structure and plot form become essentially important in describing/studying the desired town structure and in outlining townscape and/or street space.

This problem could be solved by using the classification of town components which I had outlined in my first study (Kirjakka 1970). The classification had been an attempt to structure a previously unstructured “uniformity” of grid plans. To characterize block types I used besides the classification based on the sites of plots in a block (1-row, 2-row 1-axis, 2-row 2-axis) a ratio describing the plot form (plot width i.e. length of its street side to plot length/depth). This was necessary as to distinguish the varying 2-row 1-axis blocks used in different planning periods. It presupposes that plots are rectangular, which was mostly the case in the material. The classification of open places was based on the relationship of streets to the sides of the square. A function-based classification could not be used as most towns had only one open place each. The classification of streets was based on their width and the placement of rows of trees along the streets.

An additional aspect in the changes in urban structure was the diversification of town components which took place when planned vegetation was introduced. However, for a long time planned vegetation was more important in restructuring the old basic components of streets, blocks, and even open places, than as an independent component.

The research method consists of measuring the relevant data from the plan drawings and analysing the contents of the town plans which is complemented by searching dimensional data and facts relevant to the actual plan from the written material. The findings from the written material have also been used in the analysis.

The study begins with the 1620s, when the first plan drawings for Finnish towns were made, and it ends around 1860. To end the study with the description of the actual 1856 ordinance on town building and its analysis did not seem satisfactory. As an architect, I felt that at least a summary description was necessary of the town possible to build within the framework of the ordinance. Thus, I decided to include the innovative applications of the 1856 ordinance from the period 1856-60, of which the most important were completed by 1860.

During the study it became apparent that a somewhat different kind of approach is needed to study the post-1856 period with its early industrial development and urban growth and its differentiating planning tasks than the pre-1856 periods. As a whole, the post-1856 orthogonal town, its structure and its architecture should be studied from different viewpoints and different aspects.

The inclusion of the plan proposals and unimplemented plans means also that the continuous dialogue in developing the structural and architectural ideas in the 19th-century planning process can be traced. This innovative phase of development in urban planning and urban design ended with the normative thinking of the 1856 ordinance.
Besides plan drawings I have made use of written material, which falls into two classes: national and town-related. Concerning the towns, the extent of the subject made it necessary to use secondary sources, which in principle meant town histories. The national material for the whole period, i.e. primarily legislation, is almost completely available in print. For the 19th century the printed sources are complemented by the documents of the national administration in the Finnish National Archives. They contain material on town planning and replanning, building ordinances and legislation from the first half of the 19th century. Committee reports, statements from various officials and senate discussions on goals and building possibilities also contain data on measurements. They form the most important written source of the study. In their diversity their contents fulfill all requirements of multidisciplinary approach.

A literary source, which also seemed necessary to include, were the writings of Renaissance theoreticians. This is an aspect in the study I have shortly introduced in the IPHS conference 2000. As it was only a sub-theme, it was clear that this treatment should keep to numbers, i.e. ratios of numbers, and contain as limited a selection of writers as possible.

When studying town plan dimensions attention should be paid to the plan drawing from which the measurements are taken if there are several copies of a town plan. As an approved plan is a legal document aimed to be realized, it has all the details the architect has intended and the dimensions are accurate. Thus, it is always the approved original drawing or an officially certified copy which should be used. Any copy redrawn for other purposes may have inaccurate dimensions or altered details. For example, the model plans of the Lindhagen collection have been redrawn and their parks and avenues are shown as a “mixed forest” with alternating coniferous and deciduous trees regardless of the original plan. The parks included planned undulating walkways which were not shown. Nor was it shown that the avenues had two straight rows of trees.

In regard to the secondary sources a critical approach is needed. Errors or mistakes in town histories and other secondary sources are often somewhat odd interpretations of maps and drawings or of town planning in general. Historians are seldom trained to work with plan drawings neither do they understand what urban planning and design actually was and is. And art historians who are used to work with pictures often forget the practical side of urban planning and design.

Both plan drawings and building ordi-
House Patterns as Generator of Urban Structures

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Abstract

House patterns and urban structures are interdependent in every urban system. They are however generally seen as designed or developed more or less independently of each other. The specificity of global spatial structures of cities is usually associated with cultural characteristics of the relevant urban societies. Houses are the most original and universal type of building patterns and carry cultural information as well. Is there any relation between house form and the emergent spatial structure of cities with the mediation of culture? In this paper the theory of space syntax is applied to identify the cultural characteristics of urban structure and house forms in Iranian traditional cities and their transition in relation to the changes in the social structure of Iranian urban society.

Iranian traditional cities

Analyses of street network of Iranian traditional cities around 1900 have displayed that these cities, in comparison with possess the common properties of all cities including Western cities. They are spatial systems with logical internal integration that are at the same time integrated with their exterior. This is in contrast with a view that describes ‘Oriental’ cities as fragmented entities lacking internal unity (Piran 1999). Of course there are also specificities in Iranian traditional cities that clearly distinguish them from Western medieval cities and existing Iranian cities possess very deeper structures. The continuous system of public spaces in these cities is very deep. Lines of the street network with high global integration value are very concentrated. Substructures of local areas are very distinct and segregated from each other and are strongly dependent on the global system (Karimi 1997, Hillier 1996). We have examined these spatial properties in more detail in the city of Naein to better understand their social basis. Naein is a small and old city in the hot arid zone of central Iran. This city, with its long history from pre-Islamic era, has accommodated two urban cultures with different features, Zoroastrianism and Islam, but with almost the same basis of social systems. Naein epitomizes the logical relation between urban spatial structure and the structure of urban society (Azimzadeh & Klarqvist 2001). Until the first decades of 20th century this city was inhabited by 7 separate local communities (tayifs), belonging to two Shiite sects, Haidari and Nimati, with powerful social cohesion (Avery et al 1991, Sultanzadeh 1989). Each community occupied an amorphous patch of the urban area constituting 7 city quarters (mahallas), each with a quarter square called husseiniyeh, a place for religious congregations. Syntactic analysis of the network of public spaces in the old city of Naein displays that each mahallah constitutes a clearly intelligible substructure in the context of the whole city. The pattern of internal integration of each quarter (mahallah) emphasizes the location of the quarter squares in spite of their, sometimes completely, peripheral position. From a map with the boundaries of all mahallas drawn it can be seen that each quarter has direct access to the integration core of the whole system (the city spine, the bazaar) without mediation of any neighboring quarter. This shows how the deep structure of the whole system is generated at the cost of relatively high segregation of quarters from each other. In the middle of the traditional quarter squares (hoseiniyehs of Shia Muslims) in Naein, and several other Iranian cities, there exist remains of the platform of holy fire of Zoroastrian ritual. This provides evidence to the fact that the spatial structure of the Iranian traditional city antedates the arrival of Islam. This spatial structure is in close concordance with the structure of Iranian urban society from pre-Islamic era up to late 18th century. Until the Constitutional Revolution (1906-1911) the global socio-political structure of Iran was characterized as a system based on tribal and lineage affiliation (Afary 1991, Wali 1993). The Iranian traditional city, in contrast to the Western medieval city, was never a city of civil society, a “commune formed by confederations of individual burghers” (Weber 1958, p.98). In the Iranian city individuals were not integrated into the urban society as independent members with equal rights and duties.

Spatial configuration of Iranian traditional houses

We have studied a wide range of plan layout of Iranian traditional urban houses in different regions. Among representative samples there are houses and house complexes from northern region of Iran along Caspian coast, which in contrast to the arid and semi-arid zones of central Iran has a subtropical climate. The use of different building material and technique in the context of different climate have resulted completely different architectural solutions and building forms in houses from northern costal region of Iran. The most significant difference deals with the shape and position of courtyards. These houses lack the
Public spaces (in Naein such complexes consist of up to 12 houses have been recorded). But real cases in Iran have not confirmed this hypothesis. In traditional neighbourhoods, inhabited by groups with kinship relationship, the major houses that were built prior to affiliated houses were usually located at the inner end of blind allies. This indicates that the formation of a labyrinthine structure did not happen after that an area had been built up through restructuring of the street network. It began from the early stages of the process of building of houses.

The results of case studies suggest that both the specificity of spatial configuration of houses and cultural priorities in expansion and aggregation of houses, which emphasised the seclusion of residential complexes and quarters for sustaining kinship and community cohesion, were directly involved in forming cultural specificity of Iranian traditional cities. Complexes of houses with internal connections show that adherence to the original house of the major family in the kinship system was preferred to immediate connection to the global system of public spaces (In Naein such complexes consisting of up to 12 houses have been recorded).

Transition of urban structure, micromechanisms

Changes in urban structure of Iranian cities have been investigated through comparison of syntactic properties of their present street network with their traditional forms. The result
of analyses in all studied cities shows considerably higher global integration of the urban system and higher correlation of local and global integration, which means more homogenous distribution of globally integrating lines over the urban area. This implies that in all Iranian cities today each part is connected to the whole system through considerably fewer numbers of intermediary spaces.

The view that limits the factors involved in the process of changes in Iranian cities to just autocratic interventions (Mazumdar 2000) stops at the level of superficial interpretation of urban form and neglects the involvement of basic social factors and micro mechanisms in forming urban structures. Structural changes in Iranian cities have been accompanied with and a result of social transformation, which can be characterised as a process of continuous individualisation of the society. Along with the disappearance of the local community institution and dissolution of the organisation of extended family, new pattern of houses for nuclear family were adapted in cities. The analysis of a wide range of plan layout of new urban houses has revealed common morphological properties that can be interpreted in terms of the new form of family organisation and position of the individual in the family. While the spatial configuration in these houses emphasises independence and privacy of the individual it facilitates non-hierarchical and less restricted relation of the family with the whole urban society outside world.

New rules of aggregation and composition of houses (or rules for composition of houses, where developers or the state were involved in providing houses or building lots) favoured independent and possibly equal access for each unit (house) according to functional ends and/or requirements of the expanding property market. These rules are, in essence, different from the precepts of the traditional culture for patterning accesses, which emphasised the seclusion of residential complexes and quarters for sustaining kinship and community cohesion. In the new social condition a man’s most intimate associations might be scattered over the whole city. The fact that these rules are even observed in informal developments indicates that they have their roots in a new established system of social relationship. Micro scale changes even in the historical core of Iranian cities, in form of gradual subdivision of properties, seem to be affected by the new rules of aggregation. These changes tend to lessen the depth of the structure by producing new rings in street network, which facilitate easier accessibility, free movement.

Conclusion

Whole process of transition of house patterns and urban structures in Iran is in concordance with a new trend in the cultural patterns of society where equal, independent and dynamic social relationship is, unavoidably, preferred to the traditional group cohesion, which entailed hierarchical, static-ally mediated relationship. Individualisation of Iranian society does not means dispersion of people but their more intensive integration in the urban society. Spatial concomitant of this process in cities is increasing integration of the network of public spaces.

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Abstract

As a retrospective but also looking ahead, the paper approaches the theory on urban morphology from three different, although related, cognitive requirements, looking for contributions to a possible unified urban form theory. Although all three approaches point towards acquisition of knowledge, they do it in different ways and contribute differently to the theory. Conceptual basis for such a unified theory is discussed and methodological development suggested.

1. Approaches to the urban form theory

**Historical** approach to urban form theory is fundamentally inductive, hence, about the discovery of patterns in empirical data. The question to answer is “how urban form has been”. City form emerges from such a study as a large manufacture, built up along time, each addition being somehow prompted by existing ones and, in turn, conditioning the addition of new ones through a host of social and environmental restrictions. Urban historical morphology provides the means to describe such an evolving object so that possible causal links between previous developments patterns and subsequent form particularities are highlighted, as in the work of Conzen, Whitehand, and Muratori.

**Architectural** approach is interpretative, in the sense that description (existing form) and narrative (proposed form) are merged in a single process. The question posed by designers is “how the city should be”. Above all, architectural approach assumes the city to be submitted to design intention, which means a prescribed order stated as condition for development, so that resulting urban form necessarily embodies that order. Imposing order is more evident in Rowe, for instance, and subtler in Rossi, Panerai, Caniggia.

**Geographical** approach tries to be predictive. To predict urban form doesn’t mean to foresee the future of a particular city, but to explain its spatial dynamics so that one can experiment with it and simulate possible outcomes from such a process. It differs from previous approaches in that, first, historical information is just a hint of how the underlying spatial structure is working. Second, spatial process is largely self-organised, resulting from widespread decision system. Here the question is “how the city could be” and the outcome is a structure – an abstract set of relationships that represents the morphological process, as suggested by Batty and Portugali.

2. Spatial Theories and Urban form

What have emerged from those approaches are apparently contradictory evidences and visions: on one hand, identification of stable structures and urban patterns, alongside with evidence of human agency, although little inference of their underlying structure, have been provided by historical studies; on the other, architectural studies, although highlighting the power of human agency, particularly the one of designers, still keep a naive understanding of the role of design in the morphological process. Spatial approaches have been able to represent urban processes with unparalleled skills, but the urban form theory that they provide is not free of problems. Nevertheless, they could provide a framework for a comprehensive urban morphology theory. I will review three of them, briefly.

**Cellular Automata**

CA is a family of computer models used for urban simulation, based on spatial rule-based procedures. Rules refer to possible states that a cell space can assume within a transition governed by spatial adjacency. Thus, things happening in a particular space now will affect things happening in the neighbourhood next. Attractive about CA models is that they embody a principle of generic development that fits the ways cities appear to develop. To this extent, CA models, despite not being urban theory models originally, have become a sort of operational environment for theory experimentation. CA models have been applied mainly to simulate urban growth, land use dynamics and spatial interaction, although they can generate truly city form. CA models reveal some fundamental spatial mechanisms that seems to be basic supports for human decision regarding production and usage of space. Nevertheless, they do not seem to simulate human agency as such. Rules can be invented and transformed by model operators, but not by model’s agents, who are automata. An objection to CA models as representation of urban form theory is that, apart from the – relevant – adjacency basic rule they are empty boxes, waiting for some theory to give them meaning.

**The theory of the city as object**

The theory of the city as object proposed by Hillier intends to account for deep roots of urban form generation and relies upon axial descriptions of urban layouts. It starts by empirically identifying distributions of street lengths, which are found to be large amounts of short and a few long ones. These differences in length lead to a syntactic measure of accessibility which privileges the long streets. This is then taken as evidence that all cities do have long and short streets, which are more and less accessible. Accessibility is said to shape land use and built
form: more accessible streets will be taken for business, less accessible ones will be residential. Residential use implies local socio-cultural specificity, so housing areas will be variant, that is, will bear diversity, whereas commercial use implies a more global, faceless built form, so more invariant. The somehow straight forward, creationist conclusions brought up by this theory conceal some unreferred problems, such as:

- the approach is rather explicitly utilitarian, suggesting the urban space is produced as a direct response to social needs. This demand driven, social approach seems to contradict the spatial approach itself;
- The theory doesn’t explain urban transformation, as it suggests a process that, once the street layout is defined, everything else comes into place automatically and then no change is supposed to occur;
- Supposed spatial rules are conceived as laws, that is, deterministic procedures which can only lead to one sort of configurational structure. There is no room for uncertainty, choice, risk and error.

As a urban form theory, the city as object can only restate the role of distance, relative position and spatial interaction in the morphological process. It reintroduces evidences that a spatial reasoning is present in human decision making; not necessarily an automatic coupling of long straight roads and shops, but nevertheless, a spatially aware human agency.

2.3. Inter-Representation Network

So far, the most attractive attempt to theoretically unify those evidences seems to be Portugali’s IRN. Being a cognitive theory that suggests continuity between what happens in the real world and in the human agent’s minds, IRN allows for cities and cognitive mapping to be sides of a same process, one representing the other. Individuals capture urban knowledge by storing cognitive maps that simulate a particular urban reality but not quite, as these maps combine information about several places through time. In this way, cognition depends upon both actual concrete reality and each individual’s experience and previous knowledge, that is, other urban realities in space-time. Stored knowledge is used as basis for the individual’s action on the city, transforming it according to that framework, so that changes in the built environment will be a sort of external representation of the individual’s mind. From the moment that a new urban bit is incorporated to the existing city, it adds to the previous city’s characteristics some new ones that will enable new representations and further change.

This approach seems able to explain continuity and change, patterns and innovation as a result of constrained human agency. A perfect framework for human agency simulation; nevertheless, IRN is not a urban form theory, for it lacks specificity. To evolve from its general statements on to a truly representation of urban form history and process it seems necessary to articulate human urban agency, spatial reasoning and urban dynamics in such a way that particularities of urban form generation are depicted.

3. A possible spatial theory of urban form

It has been suggested that existing approaches to urban form, although decisively contributing to our actual state of knowledge on the matter, do not provide a sufficient theoretical framework to represent its various fundamental aspects in an integrated manner. The fundamental aspects, proposed by those approaches are: detailed urban form description, the role of human agency, spatial reasoning, structure and dynamics, pattern formation, innovation and change. I propose a model with the following characteristics:

3.1. Human agency

Production of the city is a mediated action, that is, new spaces and built forms do not materialise directly out of agents needs, but as a rent seeking activity and a market. Developers see the city as an opportunity field; under competition, they try to maximise profits and minimise risks. These two goals are contradictory, as the later requires a conservative approach whereas the former leads to innovation. Conservative, low risk decisions demands repetitions of successful formula, resulting in pattern formation. Higher risk decisions require innovation; competition lead to increasing market segmentation, multiplying built form types and urban insertions. Consumers see the city as an interaction field; under cooperation requirements, they will try to minimise their interaction costs and maximise quality. These goals are not contradictory; however, all consumers pursuing their goals will interfere with each other, generating externalities. Because interaction is not symmetrical, agents will develop preferences; attraction and repulsion forces will generate integration and segregation patterns that affect each other.

3.2. Spatial reasoning

Spatial reasoning is the core of this theory, replacing rigid spatial laws. Agents’ decisions are utterly spatial, although always as a relative position regarding other agents. Developers will trade-off their profits and risks
perspectives by deciding the location of their investments; residential consumers will solve their interaction puzzles by choosing locations among those offered by developers. Service providers will chase potential clients by choosing locations too. However, individual decisions are taken heuristically, with limited information and independently from each other, so that one affects the others. Developer’s successful locational decision is likely to be followed by others, and spoiled; service locational decisions are likely to concentrate, hampering accessibility. For residents, relative position is even more complicated, as dependent on other residents and many services. In this way, spatial reasoning is overwhelming, continuous and changing.

3.3. Structure and dynamics

Basic dynamics can be provided by extended cellular automata models, adapted to deal with proximal space. In this way, agents’ decisions, that can involve the whole city, from the nearest to the farthest neighbour, can be handled. It is also able to simulate, through a two-layer structure, both agent and space dynamics. The space layer holds spatial configuration as well as land use and allocates built forms and public spaces. The agent layer deals with consumers decisions and delivers activity allocation. Feed-back is exhaustive for both layers; developers will get evaluation from consumers preferences, occupied built forms are likely to be repeated in the next cycle, those not occupied will be devaluated and not repeated. Consumers get their feed-back from spatial opportunity measures (Krața, 1996); residents locations will be evaluated against service locations and other residents concentrations. Services will be evaluated by their share in potential consumers’ capture. Both kinds of spatial opportunity measures are spatially defined.

4. Final remarks

The suggested model is expected to represent the four main spatial patterns observed in contemporary cities: uneven development, multicentrality, inner change and fragmentation. Uneven development appears as discontinuous built form deployment as a result of ‘location invention’ and is in the model as the developer’s dilemma between profit and risk. Multicentrality comes up as a phenomenon of ‘moving centres’, centralised activities that change locations inside a city, and is simulated through the model’s mechanisms of co-operation and competition. The model also can simulate inner change, as built forms and their locations describe opposite value curves - increasing location value and decreasing built form ones. Finally, sprawl can occur in simulations as result of space production.

The conceptual model tries to bring together fundamentals of historical, architectural and geographical approaches to urban form representation, by means of translating every variable into spatial equivalents, and can be developed further into an operational simulation device.

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The Integration of Architectural and Geographical Concepts in Urban Morphology:

Preliminary Thoughts

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Introduction

The theories put forward by Gianfranco Caniggia and M.R.G. Conzen have similarities as well as differences. Though they belong to different disciplines and worked in different countries, they were both pioneers in urban morphology. The aim of the research introduced in this paper is to explore the Conzenian concepts of the morphological region, morphological period and fringe belt, and to see whether they can be combined, both theoretically and in application to the city of Reykjavik, Iceland, with the typological process recognized by Caniggia.

Conzen’s Theory

The aim of Conzen’s approach is to explain the geographical character of towns. The town-scape (or urban landscape) is a combination of town plan, pattern of building forms and pattern of urban land use. Conzen defines the town plan as the topographical arrangement of an urban built-up area in all its man-made features. The town plan is itself subdivided into three constituent parts or elements: streets and their arrangement in a street system, plots and their aggregation in street blocks, and the block-plans of buildings (Conzen, 1960, p.5). Combinations of town plan, building fabric, land utilization pattern and the site, form morphological regions (Conzen, 1975). A morphological period represents a phase in the development of the town, which creates distinctive material forms in the cultural landscape to suit the particular socio-economic needs of its society. Conzen also investigates different types of changes, developing, for example, the concepts of the burgage cycle and the fringe belt.

Caniggia’s Theory

Caniggia’s enquiry aims to understand the built form by examining the historical process of its formation. A distinction is made between the spatial correlation of built objects (copresence) and temporal correlation (derivation). The inquiry of spatial correlation of built objects is based on a set of subdivisions that forms a hierarchy. The components are: elements, structures of elements, systems of structures, and organisms of systems. Caniggia applies this to both individual buildings and to towns. Analysing a building, an elements could stand for an individual building material such as bricks, and the association of building materials forms the structure of elements for example a wall. Their combination forms the system of structure or a room for example, and the entire building is the organism. When Caniggia analysis the town the building is the element, a structure of elements is the urban tissue, their arrangements forms regions or districts, which together form the organism of the entire town. The examining of the derivation correlation is an attempt to find the basis for the built form created in a specific era. Every era produces a different type of dwelling. The built form is modified according to changing social and economic conditions, forming the typological process (Caniggia and Maffei, 1993).

Linking Caniggia and Conzen

When discussing the typological process Caniggia points out that there is a ‘leading type’ (tipo portante) which is a form of dwelling that is not restricted by the surrounding urban tissue - in other words a dwelling that is built on a green-field site in a period of town expansion. The form of dwellings created in one period is different from that created in another. There is a basic type of dwelling for each period of expansion, which represents the culture, religion, law, technology and economic conditions of the period. This is a fundamental issue in the change of urban areas, because even though dwellings undergo modifications according to socio-economic change within the city, the initial basic form will affect the result. The entire city can therefore be divided into zones according to the basic type of dwelling formed in each period of expansion. Each zone has a character of its own.

Conzen puts the fringe-belt concept forward as an integral part of a wider town study. Fringe belts represent significant changes in the entire development of the city, reflecting intermittent deceleration or standstill in the outward growth of a town. These obstacle zones are often defined by a fixation line, which can either be a physical barrier, such as a river or steep slope, or a human made barrier, such as fluctuations in population and economic development within the city. The fringe belt marks changes in the mixture of new land-use types at the town fringe and is a major morphological region in itself. When a fringe belt undergoes its initial development it is characterized by a variety of extensive users of land - not ordinary residential accretions but various kinds of institutions, public utilities, open spaces and country houses which, relative to the areas of
their sites, initially have a lower need for accessibility to the main part of built-up area.

Characteristically fringe belts form a system of successive, broadly concentric zones more or less separated from other, usually residential, areas. Conzen divided them into a first or Inner Fringe Belt (IFB), one or more Middle Fringe Belts (MFB), and finally the most recent or Outer Fringe Belt (OFB). Each fringe belt is a permanent zone that represents a hiatus in the growth of the residential area. It undergoes phases of changing social and economical conditions and often becomes consolidated over time by attracting compatible land uses.

As Conzen points out, fringe belts are more or less separated from each other by zones of residential dwellings. This is fundamental to the idea of combining the fringe belt concept and the typological process. One of the aims of the research is to see whether the zones between the fringe belts are where the 'leading type' is built on a green-field site in a period of town expansion.

We can begin to sketch some of the components of an integration of the fringe-belt concept and the typological process. In the core of the city we have the first settlement, mostly composed of the basic type of dwellings. At the fringe of that first settlement we have the first fringe belt (IFB). Then in the next period of town expansion we have a new leading type. This is followed by another fringe belt (MFB). A series of fringe belts with new leading types between them can exist, ending with the most recent fringe belt (OFB).

The leading type within each dwelling zone is adapted in harmony with other aspects of societal change. The research will explore what characterized the leading type in the zone between each fringe belt as well as what is the mechanism underlying the changes in the leading type. The influences upon changes of design can be divided into four main categories: social factors, economic factors, governmental factors and technology.

**Reykjavik**

Iceland was isolated for centuries from the rest of the world and no towns were built in Iceland between the time of settlement in the ninth century and the second half of the nineteenth century. Communication with Europe and North America was slow until the middle of the twentieth century. Reykjavik’s history of urban development spans only about 100 years and is well documented. In a country with a total population of only 282,000 inhabitants and a good database, it should be practicable to trace how new ideas (from Europe and America) reached Iceland and how they affected the development of urban forms there. With its very short history and relatively isolated development, Reykjavik contrasts with the towns and cities investigated by Caniggia and Conzen. Its relative simplicity makes it a good ‘laboratory’ in which to explore, test and, conceivably, integrate their ideas.

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Form, Function and Fashion in Post-War British Reconstruction Planning

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Introduction

Aspects of reconstruction planning are becoming respectable in a number of disciplines, but only recently has the basic work been carried out to establish the number, type and authorship of the large number of post-World War II reconstruction plans in the UK (Larkham and Lilley, 2001). The dynamics of reconstruction planning here differ significantly from other countries at the same period; and the nature of plans changed between the early 1940s and the early 1950s. Surprisingly perhaps, many of these plans were prepared for relatively undamaged towns by their professional planning officers. Little has been done on the detailed morphology of the changes proposed by such plans, with the significant exception of Nasr’s work comparing French and German towns (Nasr, 1997). This paper extends this consideration to a wider range of UK reconstruction plans.

First, however, it should be understood that bomb damage across UK towns was relatively light. Many studies of post-catastrophe reconstruction assume that the catastrophe produces a tabula rasa. Yet, in UK towns, this was far from the case: a morphological framework of streets, spaces and plots generally remained even in those cases where much building fabric did not.

Nature and extent of proposed fabric change

It is clear that the earliest plans, initiated by the most severe damage (Plymouth, London, Coventry) were radical. The morphology of much of the bombed city centres was to change, with new streets in new patterns and more of a zoning of land uses. Although some surviving buildings were retained, and some bombed shells kept as war monuments, many remnants were demolished. In Coventry’s case some surviving timber-framed buildings were removed and re-erected outside the new ring road. Yet the major reconstructions were in a minority, and the radical nature of proposals became more and more diluted through the late 1940s and into the 1950s (Hasegawa, 1999a). Fashion was clearly changing.

Streets and spaces

Several characteristics of street patterns are common to the majority of plans. Traffic growth and management were key problems. Almost without exception, the proposed solutions were the provision of more, wider, straighter roads, with more controlled junctions and grade-separated interchanges. This is a ‘technocentric’ approach (Diefendorf, 1989). This is carried to extremes in the 1945 Norwich plan, which proposed a viaduct to be carried largely on the roofs of a row of factory/warehouse buildings, and the 1949 Edinburgh plan which proposed what it termed “an interesting three level road scheme” partly underneath Princes Street, and a by-pass “thrusting its arched concrete structure of mellow colour across the valley”.

Many plans proposed by-passes; that for Tunbridge Wells (1945) was located far from the town centre, while that for Wolverhampton (1945) was extremely tightly drawn around the new civic centre and retail core. The partial by-pass for Durham (1944) was, owing to the topography, probably the most controversial in terms of aesthetic impact. The wide carriageways, roundabouts and other features betray the influence of the influential report by H.A. Tripp (1942) and American practice. Tunbridge Wells was an exception. Most others implied considerable demolition, in some cases of relatively recent prominent public buildings.

Ring roads changed the pattern of road use and traffic circulation, opening new possibilities of access into the core and to suggestions that the inner road network should be adjusted. Many roads were to be straightened and/or widened, to improve the free flow of vehicular traffic. Bristol was criticised for proposing “the pointless destruction of valuable buildings merely to produce 100 foot wide streets” (Punter, 1990, p. 39). The current practice of pedestrianising these areas is not mentioned, although Wolverhampton did propose banning large public service vehicles from the central area, forcing people to walk from bus stops on the ring road. In some cases the existing street pattern would largely remain, albeit with these modifications (Worcester, 1946). In others, the historic pattern was substantially altered by both major widenings and what Conzen termed ‘breakthrough’ streets, as suggested by Sharp’s plan for the mediaeval planned grid of Salisbury (1949).

While there are traces of formal, beaux-arts layouts in some new street patterns – the original axial plan for Plymouth arguably fell into this formal category – these were relatively rare. The majority of new streets and patterns were purely functional. This functionalism tended to ignore existing forms.

On occasion, new streets were highlighted as opening up important new vistas: Sharp wrote of Exeter (1946, p. 90) “while it would be wrong to try to ‘open-up’ monumental vistas of [the cathedral], new views should be provided”. At Salisbury he proposed “one
new direct view ... far wider than any at present in the city: but with the curve of the streets and the river flowing beside the roadway, it will still be entirely informal and in character with the rest of the city” (1949, p. 36). Yet the mediaeval grid street pattern of the city is anything but informal!

Relatively few plans propose new public open spaces. When such spaces are proposed, as with Worcester’s square outside the Guildhall, it is far from clear what its purpose would be; and the small square in Tunbridge Wells facing new public buildings in the Pantiles seems most useful because of the car park underneath it.

Blocks and plots

Street blocks and plots in these plans are significantly altered more because of the road widening and straightening proposals than for any other single reason. The central area proposals for Worcester, for example, identified some 26 buildings as worthy of retention; all of the remainder and their historic plot patterns would be redeveloped. In most of the proposals particularly for central areas, no attention is paid to plot patterns, and the depictions show what became termed ‘perimeter blocks’. There is no hint at any function for the interior spaces within these blocks. Nasr (1997) suggests that, in East Germany in particular, component standardisation led to standard widths for the similar perimeter blocks developing; but it is not possible to ascertain whether this was so in the UK plans.

Buildings

Both those buildings remaining, which could constitute part of a morphological frame and constrain the reconstruction plan, and those proposed, are significant. Few structures were retained in many cases. Inconvenient ones were demolished or, as in Coventry, physically removed. The number identified as important, despite the beginnings of the Listing of historic buildings from 1944, was low, as was seen in Worcester. Even Sharp, whose texts were full of historic context and sensitivity to place and character, proposed relatively little conservation.

Sometimes even the buildings were technocratic. In Bristol, an unofficial proposal for retail redevelopment proposed a “multi level shopping development with small shops of lower terraces and two levels of ramps and bridges giving access to departments stores. The plans were wildly futuristic and unrealistic...” (Punter, 1990, p. 31).

The nature of proposed buildings, and their representation, are significant. Those in Worcester are clearly Modern in positioning, but are depicted as being clad in reassuring traditional red brick (Larkham, 1997). Others demonstrated innovations, as in the canopies projecting over the pavements in Exeter’s 1946 plan. Many, however, are bland and characterless – the extensions for Manchester University, for example, spread serried standard flat-roofed blocks around the original Victorian quadrangle (Manchester plan, 1945, p. 102). Many plans depict, often in great detail, elevations or models of new civic centres, using either a Classical form, or a rather spare modernism, clearly with classical inspirations. Some such as Bristol have been strongly criticised, for the “blandness and monotony of its ‘Stalinist’ architecture” (Punter, 1990, p. 30). Yet, in a few plans, the authors are careful to stress that the representations “are intended to indicate height and size only and are therefore made as non-committal in design as possible (Norwich, 1945, p. 51). It should be remembered that, although much emphasis is placed on town centres, a number of the plans make very detailed suggestions for the replacement of “outworn” residential areas with new housing. None propose what actually became the ubiquitous solution, the tower block. Tunbridge Wells illustrated a sample replacement of some 150 Victorian terrace houses with 60 houses and 20 flats in small blocks, illustrating the key point that all proposed new residential areas were at considerably lower densities - implying considerably more land used. Today’s concerns with suburban sprawl, suburban services and commuting are absent.

A new paradigm or fashion?

Some historians have implied that these plans form a ‘new paradigm’ in conceptions of planning and urban form. They were certainly being produced at a point when the profession of town planning was young and seeking to establish itself more firmly in the brave new post-war era of professionalism and when the design fashion of modernism was becoming the mainstream in the built environment professions. Certainly ‘expert views’ were often sought by, and in the case of London forced by central government upon, the municipal authorities (Hasegawa, 1999b).

Yet closer examination of individual plans suggests that there are significant similarities in postwar and prewar plans by some of the key consultants, especially Abercrombie. He had already prepared similar plans for Dublin (1923) and Bristol and Bath (1930). As an example of a relatively little-damaged town, Wolverhampton’s 1944 plan can clearly be traced to moves in the mid 1930s to review road infrastructure and provide a civic centre (Larkham, forthcoming).

As the contexts of more examples come
under scrutiny it seems less defensible to describe this phase of planning as a new paradigm. The concerns were those of 5 or 10 years earlier. The plan approach, and often the physical designs, were likewise. What did change, in cases such as Worcester, Dudley and Wolverhampton, was the commissioning of detailed socio-economic surveys to provide hard data underpinning the main themes of the reconstruction plan. This, rather than any new thinking about physical form, was the new paradigm enshrined in the 1947 Act’s Development Plans.

However, these plans and the thinking they put forward was certainly a fashion: not only is there evidence of civic boosterism in producing plans and sometimes in employing prominent consultants, but the publications and exhibitions communicating the plan concepts were taken up, reviewed and compared as with any other design fashion.

Were the proposed changes ever carried out? The bulk of these proposals were never carried out, at least in the form originally proposed. Hasegawa (1992) suggests that there were a range of problems at both local and national political levels, including a reluctance to use new planning powers and to borrow the large sums necessary. The changing planning context after the 1947 Act also rendered the earlier plans obsolete.

Yet these plans had a persistence; an influence lasting in many cases for decades. In particular, roads and other major infrastructure envisaged here was usually built, albeit decades later and in different forms. Even Abercrombie’s iconic new geometrical street pattern for Plymouth was built to a rather different form (Chalkley, 1983, Figure 2). In some cases, as with Worcester, only a small number of the new buildings were constructed on new street alignments; when the old streets were not re-aligned the new buildings sit very oddly in the urban landscape.

These plans have, therefore, been discussed as failures, since their details were so rarely implemented. For example Barker and Hyde (1995, p. 181) note that “Heavy with statistics, graphs and diagrams, most of these impressive volumes are now only likely to interest somebody curious to study how far achievement fell short of intention. The way well-argued propositions came to nothing makes melancholy reading”.

This is too harsh a judgement. If one reads many of these texts closely they are littered with caveats: these were proposals for between 20 and 50 years to come. Their influence has persisted. Of those actually constructed, Plymouth has been judged a qualified success (Chalkley, 1983); and parts of the Coventry scheme have been Listed. The plans themselves should be seen as textbook examples of the contemporary approaches to urban form.

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Introduction

This review paper has been written as part of the work of the International Seminar on Urban Form’s Working Party on Legislation and Urban Form. In the UK, there is a lengthy history of legislative control over building. The UK system of planning and building control, at least during much of the twentieth century, is much more centralised than that in some other countries. Lastly, relatively little has been written in the UK on this specific topic. Much has to be drawn out of detailed local studies, particularly of suburban development.

In terms of what constitutes ‘legislation’ for the purposes of international comparison by this Working Party, in the UK there is relatively little primary legislation in this direct area. Of the Acts of Parliament having some effect, most are in the fields of public health and housing. More control has been exercised outside Parliament, historically by Royal Proclamation and, presently, by ‘Statutory Instruments’. Much more direct control has been exercised by individual local authorities through bye-laws.

The early history of building control

Much of the known history of building control relates to London, both because of the survival of detailed records, and because of the interest of historians in the capital city (Schofield, 1993). However, many London-specific provisions did gradually spread to other towns.

The great impetus for many regulations was to lessen the risk of fire; and, secondarily, to restrict overcrowding and thus prevent disease. These ‘public health and safety’ considerations still form the backbone of building control. For this reason, with very few exceptions, studies of building regulation focus most closely on housebuilding. Although the early Proclamations set prohibitions, these could be relaxed with the appropriate permission.

The first significant building regulations are from 1189, when provisions were made for settling building disputes (Knowles and Pitt, 1972). This dealt with issues of party walls, obstructions of views and proof of the ‘right to light’, the fixing of joists in walls, and so on. Under these regulations, local public meetings dealt with issues such as regulating the height of jetties (projecting floors) above ground level and limiting encroachments of buildings on to highways.

Under Elizabeth I, numerous regulations restricted new building construction close to London. However their wording makes clear that their purpose was to prevent overcrowding and the spread of plague.

From 1603, regulations applied to the detailed form of buildings, including their size and appearance. The 1607 Proclamation, while allowing new construction upon old foundations, specified that such buildings should “both adorn and beautify his Cities, and be less subject to danger of fire, and cause less waste of timber ...”. Houses could be extended but only up to a limit of one-third of the original size. Materials were controlled: “the front and all the outer walls shall be built of brick or stone”, and the façade design “shall be made in that uniform sort and order which shall be prescribed ...”.

The regulations for the rebuilding of London following the fire of 1666 are seen by some as an important stage in regulating both urban layout (eg width of streets) and building form (non-flammable building materials and other provisions) (Reddaway, 1940).

Through the seventeenth century successive Acts began to assert control over architectural detail, still in the name of fire prevention. While not affecting building type, they certainly affected architectural style: the 1707 and 1708 Acts essentially prohibited the style later known as ‘Queen Anne’ (Knowles and Pitt, 1972, p. 38).

By c. 1720, partly in response to legal restraint, it is suggested that four distinct house ‘types’ had emerged:

1. brick-fronted houses incorporating internal timber framing and other traditional elements;
2. London ‘West End’-style houses, revolutionary in the use of standardised parts, regularity and repeatability in form and detailing;
3. London ‘City’ houses with exuberant individualistic carving and varied typology; and
4. fringe-of-town hybrid houses with vernacular and classical forms such as weatherboarding in classical proportions (McKellar, 1999).

The main thrust of the 1774 Act was to ensure fire protection and to prevent poor-quality construction of party walls, like so many of these Proclamations and Acts. In so doing, however, it specified four ‘rates’ of house building.

“The first rate included houses which ... were not less than four storeys high and were valued at over £850. The second rate dropped a storey and had a maximum value of £850. This process continued until the fourth rate was reached. These houses were two storeys high, were valued at a maximum of £150 ... Each rate had its own code of structural requirements” (Edwards, 1981, p. 6).

The rates were limited in their physical location; first rate houses on major roads and so on. “The real importance of the system was not so much that it facilitated the enforcement of a structural code, but that it confirmed a degree of standardisation in speculative building” (Summerson, 1962, p. 126). This Act certainly had
a significant impact upon residential building form. However, it contained no restrictions at all on the height of buildings and the width of streets.

Developments since the mid-1800s

The 1844 "Act for regulating the construction and the use of buildings in the metropolis and its neighbourhood" was lengthy and detailed, and proved difficult to administer (Knowles and Pitt, 1972). Its provisions were little different to the 1774 Act, but applied to a wider area; building heights were limited to the widths of new streets, each of which was to be not less than 40 feet wide. However, there were no limits placed on new buildings fronting on to existing streets.

The Health of Towns Act (Public Health Act) of 1848 was an important step in regularising building regulation nationwide along the lines set for London. Other Bills and Acts of about this period had important implications for building form while being ostensibly focused on public health concerns. Beresford (1971) discusses the 1841 Bill for Regulating Buildings in Large Towns, which contained the phrase “Houses not to be built back-to-back” (the first use of that term). Unsuccessful in 1841, this house type was eventually prohibited.

The Public Health Act of 1875 was extremely important as it allowed (but did not compel) all local authorities to develop a series of technical ‘bye-laws’, caused by public concern over health and sanitation, and the safety of some constructional practices. Bye-laws covered issues such as slum clearance, minimum street widths, foundations, composition of concrete, brick specifications, and that houses should have damp proof courses. There developed national minimum specifications, but many urban authorities developed bye-laws specific to the local context. Buildings and urban areas developed under these bye-laws have often been described as monotonous.

“This nomenclature is somewhat unfair. The bye-laws did not require that streets should be straight, merely that they should be of a certain width. They did not insist that houses should be identical, merely that they should be solidly built, adequately ventilated, and reasonably fire-resistant (Edwards, 1981, p. 70).

One detailed morphological study of the impact of bye-laws upon house and urban form exists, for courtyard housing in Kingston-upon-Hull (Forster, 1972). Forster suggests that the bye-law revisions of 1854, 1875 and 1893 “produced significant and easily-accountable changes in morphology”, although it is less easy to explain the “variations in the diversity of building styles, the fluctuations in the rate of building, and the improvements in the stand-
note that perhaps the greatest control has been exercised by a wide range of non-legislative, although often quasi-legal, procedures including governmental standards and guidance, building agreements and legal covenants. Agreements between landowners and builders were very significant in shaping large parts, particularly suburbs, in the eighteenth and nineteenth centuries; legal covenants were a means of enforcing these agreements, but persisted up to the present. Government guidance has been of increasing significance during the twentieth century, with a series of reports issuing set standards which dominated aspects of construction for decades.

Conclusions

The UK experience differs significantly from that in some other countries, for example Italy, where regulation at the level of the “building rules” (regolamento edilizio) have had noteworthy impact on building typology in different cities. Even in the UK, however, there is some clear correlation between regulation, urban form, and typology: for example in the ‘typical’ built form of the Georgian estates, or of Victorian bye-law housing.

It is clear that there is a very small number of pivotal points in the development of building types and mechanisms for control in the UK: of which perhaps the 1875 Public Health Act and the 1918 Tudor Walters Report are probably the most significant.

However, there is little in UK primary legislation, at the national level, to have a significant impact upon the form of buildings in a typological sense. Much more is done through legal and quasi-legal procedures, including leases, covenants, and government guidance and standards including the Building Regulations; much of this is carried out at a local level, and again there is relatively little typological effect.

What are affected to a great extent are the building structure and construction standards. This body of regulation develops from the early concerns for safety, principally of the prevention of the spread of fire, and for public health in terms of damp, sewerage and constructional soundness. Even so, some of these effects are superficial or of wider urban impact (bye-laws and planning standards specifying street and pavement widths, and similar). Together these have wide-ranging effects on the shaping of urban form, but very little specifically on building typology.

Note

A full version of this paper, with bibliography, is published as a Working Paper of the UCE School of Planning and is available from the author.

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Territorial studies as a science were introduced into Italy in the fifties by Saverio Muratori, who compiled a "dictionary" for the description. These studies, using a method of synthesis which give an idea of the various levels or stages in the formation of a territorial reality, were later taken up by Giancarlo Caniglia and Alessandro Giannini (of the "Muratori School") and applied mainly to Italian case studies.

This method is based on reading of a process of transformations, in which history is a determining factor: the presence of man-made works 'historicises' a given territory, thereby turning it into a landscape. Thus history is inseparable from landscape, not because of a problem of dating and describing, but because it allows a diachronic reading of the processes of land transformation.

I'm using the two terms "territory" and "landscape" synonymously, when by "landscape" I refer to an environment which man has changed or modified in some way.

Broadly speaking, we may identify four stages or phases in the structuring and development of a territory: ridge phase, hill phase, valley phase, and flatland one.

A specific historical period corresponds to each of these stages. Territorial development has been defined as cyclical, that is, as comprising historical "courses" and "recourses", which manifest themselves formally in route, settlements and forms.

Within this cycle, one may notice how the human structuring of a territory moves from high to low, passing from an unconditioned ridge world to a more domesticated one, to the moment of assault on and total domination of the environment, which corresponds to the passage from hill to valley and on to plain, after which the reverse process takes place.

Each phase is characterised by founding principles, the resulting forms of which are often continuously superimposed. Thus we may verify a pre-existing order in the territorial structure, in which the constants are legible in terms of form and dimension, both in the agrarian structures (the Roman centurial model) and in the settlement types.

At the end of this process the territorial organism presents itself as an extended fabric structured by routes, networks, orientations and layouts. Reading their continuity and systems of measurement means recognising the most important moments in the structuring of a given territory. Extracting the forms from this reality, as one does in an architectural drawing, represents a moment of synthesis.

As in several Italian case studies, one may hypothesise that a territory was rationally divided in order to create a substantially isotropic development, but that due to natural obstacles this development reveals eliminations and deviations in the orthogonals of its principal orientations.

The matrix of even the most complex urban plans (starting with 4th century BC Roman planning) may be found in this type of system of territorial organisation and in examples of headland and hillside settlements. Physically, these were characterised by natural fortifications on three sides and by an artificial, or man-made, fortification on the fourth. This typology, taken from spontaneous examples, is applied and rationalised in the Roman castrum, which in many Mediterranean cities represents the substratum of the city. We may see this if, on a larger scale, we take into account the process of human structuring of a territory and, on an even larger scale, the territorial networks which justify the presence of settlements, routes and orientations.

Italian Case Studies

In order to explain the rationale behind territorial structuring in the Mediterranean

![Plan of Antioch's territory by J. Sauvaget](image)
area of the Middle East, I would like to begin with some Italian case studies. Planned settlements, together with centurial allotments for agriculture, are found scattered throughout many parts of Italy. Often these are not very extensive in plan, yet they are nevertheless legible in the persistence of their orientations and forms and in the consistency of their dimension and typology. In other words, small settlements with centurial areas of equally limited dimensions; once the first colonies had settled, after the arrival of the first castra, attention was paid to the areas in-between, which were rendered productive through large estate type structures. One case study is that of the area lariana in Italy (as we see in Gianfranco Caniggia, *Strutture dello spazio antropico*), where is not know if the agricultural divisions, based on the heredium and iugerum measure, are indications of small-holdings defined by crop rotation, by special crops planted on terraces or more simply by labour distribution over large properties. From a formal point of view, these properties constitute a division into centuries with consistent measurements, but with changing layouts in the final pattern. Moreover, one may read fan-like arrangements in the passage from one century to another, which attest to a unified plan along extensive lines. On the superimposed layers, by enlarging each uni-directional centurial grid with a magnifying lenses, one may see the subsequent local adaptations.

The persistence of Roman structures in agrarian plans and fabrics presupposes a continuity in civil life and a recuperation, with adaptations and modifications, of forms produced in an earlier historical period.

The presence of Roman culture in these settlements may be concretely deduced from the general territorial pattern, consisting in road networks and agricultural divisions, and is legible in the property boundaries and the position and orientation of roads and hydraulic works. The continuity of plan and systems of measurement allows us to identify a typology which is recognisable as one stage in the territorial structuring.

**A Middle-Eastern Case Study**

I shall try to extend these considerations to an area like Syria, a region on the edge of the Roman world, which is present as a generating substratum and is today legible in the system of territorial settlements and in the remains of [territorial] divisions. Planning on a territorial level varies according to the varying orographic conditions: on the plain it is comprised of a single campaign, which gives rise to a single orthogonal system. In the hills, instead, the planning is not unified and depends on overcoming natural obstacles (such as mountains and water). The Roman trace is legible in the route networks and agricultural divisions. The unit of measurement is the century (a system based on multiples of ten) and its subdivisions: the heredium, iugerum and actus. The century is made up of 100 heredia (corresponding approximately to 710m x 710m), while the other measurements represent the division of holdings by the heredium (approximately 71.04m x 71.04m), iugerum (71.04m x 35.52m) and actus (35.52m x 35.52m), the smallest measurement of land cultivation. The division into centuries, therefore, represents in Syria, too, a land and water-works distribution as well as a rational system of territorial structuring.

Taking the Roman division into centuries as a starting point means understanding the before and after of an important moment in territorial structuring. The moments following the planning are spontaneous adaptations, which reflect local exigencies. The territorial structure, therefore, may be read as a twofold dialectic: between the Roman plan and successive changes, and between the different typologies on the plains and in the hills.

In Syria we find two different approaches based on the degree of fertility of the land and on altitude. In the north (the Massif Calcaire), for example, the reference type is that of the 5th to 7th century before abandonment, and it is a territorial model that probably did not change after the 7th century, but gradually deteriorated, thereby creating a formal discontinuity, which consisted in a slowing down of processes due to upheavals, such as changing political and economic interests, fluctuating social poles and the advent of Islam.

In the area near and around Antioch, on the border between Turkey and Syria, even though there was a slowing down of processes in the same historical period, a formal continuity and its successive adaptations are more clearly discernible, just as the territory itself has a clearer systems structure. This is probably due to the fact that Antioch and its territories were an important Roman province for a longer time.

**Conclusions**

This paper, based on a work in progress, allows us to deduce general concepts, which today still represent problems for those who study landscape, particularly in the Mediterranean area of the Middle East. The problems of a general nature are as follows:

**The problem of “Reading and Interpretation”**

A critical reading of the changing ways of structuring a given territory, using criteria tested in other contexts (in Italy, for example), helps us to understand, through an analysis of the real,
how landscape forms may be updated, especially in the Mediterranean area of the Middle East.

In the last century encroachment along the coast and in the valleys (urban structures) has reached high levels and has been accompanied by a depopulation of the other extra-urban regions. In this case, studying the settlements means studying a territorial type which must be considered as an agglomeration of structures that exploits the landscape in successive phases from the ridge to the valley and vice versa. A reversal in use, after man has reached the bottom of the valley, leads to a change in the main focal points, while the larger settlements, the cities, remain intersections of a more technologically advanced valley activity. The settlement, as an aggregation scattered throughout a territory, especially in the Middle East, is therefore the logical antecedent to a planned city, in which the building layout corresponds to a homogeneous fabric of productive areas that, in turn, define a “formal homogeneous area”. Thus, we may speak of an *ager divisus* also in the Mediterranean area of the Middle East, which allows a prior ordering of, and establishes a relation between, the agricultural sphere and the extra-urban building type.

“The problem of Scale”

Building and territory belong to two different scales and present different kinds of problems (more or less complex, according to the scale). Yet the scales are interdependent, thereby creating a single reference, which is that of Landscape Architecture.

“The problem of Architecture”

If Landscape is Architecture - and I have used terms like “process of transformation”, “continuity”, “discontinuity” and “organism” - then it is time to revive this discipline. It has been left too long to merely technical know-how, especially in an area like the one in question, in which the contrast between traditional extra-urban culture and urban culture is increasingly manifest.
Localization as a Critical Matrix of Reference for Architectural Design:
The Example of Venice and Chioggia

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If we consider the forming process of a place as the progressive outcome of subsequent syntheses between human action and the surrounding environment, we can remark how any historical urban context keeps a sort of “genetic memory” of its transformation process. This enables us to “read” that historical continuity which we can define as Language: the “unifying synthesis of the whole different and often antithetic historical-stylistic contributions”.

This study concerns a critical-comparative “reading” of the two historical centres of Venice and Chioggia.

The main features of this work are represented by the historical centre’s walls plotting and the cadastral surveys, through which it has been carried out an in-depth historical and typological analysis of the urban fabric.

The research is mainly focused on identifying the materials, the structural system and the distribution ratio of the plotted buildings, as well as their subsequent formal resolutions (elevations), and it aims to highlight those (structural, distributive, formal) features which show a possible consolidated local building tradition.

Methodological issues

In his introduction to the “Phanomenologie des Geistes” W.F. Hegel in an ideal conversation with Plato wrote: “the proper image in which the truth exists is just the scientific system of itself. To cooperate in order that philosophy draws near the form of science, that is my aim”.

We believe this preface very important when we are trying to define some methodological issues for our study.

In his “Vorlesungen” and in the “Phanomenologie des Geistes”, W.F. Hegel explains how reality can be conceived as an historical dialectic between “subject” and “object”. They both live in the etheiral bipolarity between “human instances and aptitudes” and “natural prerogatives and resources”. In other words human aptitudes answer to his needs (instances) in connection with the prerogatives of the historical and natural environment, seen as resources.

On this subject we have to remind the position of A.J. Toynbee in his work “A study of History”. He constructs a global vision of the historical process of civilization by an empirical-inductive methodology highlighting the close connection between environment and socio-cultural reaction. He believes the environmental prerogatives as challenges to which any social group reacts in an autonomous way.

The dialectic between “subject” and “object” then, according to Hegel, develop by a succession of progressive man realizations of reality: “Logical”, “Economical”, “Ethical”, and we add, a “Conclusive” stage. (“Aesthetic”). The latter represents, at the same time, the final “stage” of one cycle and the beginning threshold of the next. They are “significant”, actually, only if they are considered in a progressive connection each other.

J. Piaget and the developmental psychology demonstrate, on the other hand, how history of civilization is constructed on progressive stages of realization of the external world. He underlines, above all, the modalities through which elementary psychic structures develop in complexes.

We can notice then: an “Empirical Conscience”, promoted from existential instances translated in operative reactions, through which man realize himself in relation with an “outside”; an “Historical Conscience” founded on working appraisals of the “preceding syntheses” and translated in new analogical-imitative propositions. It represents the historical and social expansion of the empirical conscience, for this reason it is the preferential vehicle of continuity of civilizations in history. Finally we can see: a “Critical Conscience”, based on synthetic valuations of the “different from himself” that man is now able to control scientifically thanks to a new consciousness of his “attitudes”; a “Theoretical Conscience”, founded on mental categorizations and translated in “Thought”.

The work of a “young hegelian” becomes then fundamental: Karl Marx. He understands what Karl Lowith called: “the authentic key of the hegelian philosophy”.

According to him the hegelian dialectic have to be seen reversing the two terms of comparison subject-object. “Thought” derives from “Reality” and not viceversa.

The instruments of the knowledge of reality from man (“subject”), we will say, have to be found in the reality itself (“object”) as preferential vehicle of the cognitive process.

We have therefore to construct, he argues, a kind of conceptual tools or categories able to preserve the “concreteness of the empirical facts” to which they are applied and to connect them in an organic system.

For this reason we can try to redefine the hegelian categories.

The first “stage” (“Logical”) is the “Conception”: expression of the “Empirical Conscience”, able to “read” and to “translate” the territory to answer at its shelter and sustenance instances. It defines the basic “ratio” of the settlement.

It is also the “concept” of House in advanced stages of civilization and then it presupposes an “Historical Conscience”.

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The latter can be considered as vehicle of the second stage (“Economical”). It represents the phenomenal “Application” of materials previously analysed: the “structures”. Finally the third stage (“Ethical”) corresponds to the “Critical Conscience”. It assumes a key role in the knowledge process of reality: it is, at the same time, synthesis of the preceding processes of “reading and realisation” and reference for the subsequent “Conclusive” stage: the “Synthesis” of a building organism.

The last stage is the “Individuation”: the passage between the formal resolution of one cycle and the beginning “Conception” of the following one.

In this way, moving from the concreteness of the analysed towns, it has been possible to construct some methodological tools able to read the building identity of an anthropic place in its dynamism of transformation.

From a similar “reading” of the same territory, two different environmental syntaxes: Venice and Chioggia.

The example of Venice and Chioggia is very interesting because it demonstrates in hindsight how, from a similar reading of the same territory, two different environmental syntaxes developed.

The basic substratum (“Conception”) for both the examples is the large anthropic system developed by Romans in the area. The lagoon environment was indeed an important structure for production and trade of salt. It required then specific technical competencies and an articulated and well structured socio-economic organization.

The settlement pattern set up by Romans is the “Heredium quadrato”. It is a square shaped structure measuring 240 roman feet: a good solution for the economical and settling instances in the lagoon environment. It is actually a perfect “machina” for the salt production and an effective settling system.

In this case the “concept” is the straight connection between “calle” and canal, water and land, as the most rational solution to the shelter and sustenance instances.

The ancient venetian domestic vestiges (XII cent.) don’t give us a proper house but special structures, arcades, and portals. They use to be open on courtyards established on a canal. “Canal door” and courtyard portal. The former, arched, is straight referred to the side arcades of the courtyard; the latter, architraved, is placed to underline the domestic fence. According to G.Caniggia the courtyard-house type should be included in the greater class of the fenced houses since fences are the representations of liminary signs which characterize the most important element of this typology. (cfr.Latin limes =border, limit, but also road, path, way; limen =threshold, house).

In Venice’s example the roman heredity works then as a substratum. Differently Chioggia was a building reality already well structured in the I century BC. It belongs entirely to the anthropic system developed by Romans in the territory and it is therefore characterized by a clear continuity with it. The most interesting evidences of its environmental syntax lay actually in town structure and in its urban fabric: parts of a wider system.

In Venice the straight connection “water-land” is marked by parallel supporting structures orthogonal to the front and transversal single-directed floors. At the beginning (XIII cent.) we can notice a rotation of 90° of the façade structural system: bearing wall deeply fretworked. Later (XIV cent.) they will adopt a more rational solution: a “binding” façade as “bracing” of the entire structural organism.

The phenomenal “Application” of prerogatives of the empirical conscience is translated, in Chioggia, in the application of the typical lagoon settling economy, as guarantee of a rational connection between canal and “calle”. A ceremonial axis (La Piazza) and a commercial canal (Canal Vena) fence a special/privileged area where all the public buildings are located, while docks and commercial structures take place in very specific areas, along the widest and deepest channels at the borders of the building settlement. This structure contributes to define three different urban fabrics related to similar aggregative systems of the same type: the courtyard-house.

The pre-eminently “Synthesis” of the venetian reading is the “portego”. It resumes synthetically the concept of the straight connection between “calle” and canal, and its phenomenal application: it defines the whole structural-distributive system of the venetian house and it translates it on the façade.

In Chioggia’s example this “stage” corresponds to the building confirmation of its urban form. The urban fabric is structured in three aggregative systems related to three different urban locations. A process of “tabernizzazione” characterizes the privileged area between the Piazza and the Canal: buildings line the main axis while an open courtyard faces the canal. This process finds an application on the other side of the Piazza, but in its “open” version: it allows the access inside the built up area that will be later filled up by “insulizzazione”.

Finally the island beyond the Canal Vena. The formation of the latter is of great interest since, as a synthesis of a clear pattern, linked to the production of salt, with a “modus
“aedificandi” already widely established, demonstrates in hindsight the mechanism of Chioggia’s urban development, though in its different aggregative ratio.

Each calle is traced in a 1:2 ratio with its relative block of houses, whose head towards the Canal is usually occupied by the typical Venetian Palazzo synthesising the bond of all the structures that are to follow. They are defined by “insulizzazione” of pseudo-elements of terraced housing, measuring approximately 4x4m. In both cases box-like supporting structures (arcade where possible) can be noticed.

The venetian “Individuation”, “Conclusive” stage, of the entire process, is the “binding” façade (evidence of the “portego”): it is conceived as frame until the XV century and as a lithic transenna afterwards.

Venice of XIII century was almost entirely a wooden town: driven poles and reed walls, protected by clay. Therefore the typical gothic transenna is crosswise structured to unify the above “polifora”. It works in analogy with a wooden frame, where windows play as lack of plugging rather than cracks in the supporting structures. In the same way as painted pargets contributes to a visual dematerialization of walls.

The design of the façade was deeply settled in Venice, during the XV century, but it assumes an autonomous valence since the XVI century: saving the semantic of the structural-distributive system behind, it will be the place of all the following cultural-stylistic experimentations.

We can say that the venetian façade represent the synthetic plane between the environmental characters (related to “place”) and the cultural-stylistic contributions (connected to “time”).

Formal simplicity and uniformity identify viceversa the Chioggia’s “Individuation”. The presence of box-like supporting structures implies the adoption of extremely homogeneous wall structures, usually plastered, with windows clearly felt as cracks in the structure, whose elements are highlighted by the Istria stone. The façade is always a bearing wall, often arcade. Arcades represent the most evident sign of belonging to the mainland roman organization.

This building uniformity is significant because it confirms and exalts the basic “ratio” of the urban settlement. The latter represents the authentic cultural and historical vehicle of Chioggia’s environmental identity. The entire body of typological and formal differences characterizing the urban fabric is the consequence and the exploitation of important urban nodality: “ pivots” of a complex and perfect “machina”.

In conclusion, globalization is forcing a rethinking of the idea of place and identity. I therefore believe we need to elaborate a new critical approach able to find the instruments of his work in the reality of places itself. For this reason my research aims at finding out a critical matrix of reference for any architectural project aiming at a critical confrontation with the context.
We’re Almost in Heaven: 
An Analysis of Upper Class and Upper 
- Middle Class Residential Tower 
Buildings in Brazil

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The title of this paper might lead the reader to think of high-rise buildings running a World design competition of skyscrapers. Compared to this idea the buildings analysed here may seem low and modest and sure to lose the race despite their designer’s claims of their being called ‘towers’. What then is the essence of these buildings? Can they be said to define a typology?

Type has been a controversial notion in architectural studies since the pioneer quarrel between Viollet-le-Duc and Quatremère de Quincy till recent days as stressed the special issue of Casabella (1985, Jan-Feb) on the theme. In this paper the idea of type will be discussed in terms of space hierarchy and then in terms of its consequences at the aesthetic level.

Tracing some typological aspects

Brazilian upper- and upper-middle class housing standards are apartments ranging from 130 to 600 m², in buildings six to forty floors high, one or two units per floor, preferably sited in residential neighbourhoods.

Despite the claims for contemporary status, these buildings are, in technology terms, essentially traditional, with concrete structures plus conventional brick masonry panes, since building technology in Brazil has almost kept unaltered from the first daring pioneer experiences produced under modernist principles. Indeed, as a result of the continuous offer of low-cost labour, changes in building materials and technology have been very limited as can be easily demonstrated by comparing a contemporary building to those produced in the thirties. Newly built residential towers are evidences that the gap in building technology between Brazil and the developed countries has increased greatly from the heroic days of the modernist avant garde. If, for instance (to stick to a well referred case), Afonso Reidy’s housing estate – Pedregulho, built in Rio de Janeiro in the 40’s – be compared to, say, Le Corbusier’s Ville Radieuse in Marseille, variables regarding form, material, building technology and spatial configuration allow for their insertion in a same typological niche. Although one of the most visible aspect of high rise modernist and contemporary architecture is building technology, which in the national context associates to the development of concrete, in the cases studied here – apartment towers under construction in Natal – the only great novelty seems to be the slabs. In Europe – Cohen stresses in his comments on The Croulebarbe ‘sky scraper’ by Edouard Albert, Boileau and Labourdette – the two major building technologies of the post-war period are the reinforced concrete floor slabs, and the concrete-filled tubular steel frame plus stainless steel cladding panels. In 1955, Reidy affirmed his preference for steel-reinforced concrete, “because of its ability to be molded “... “Steel establishes a certain rigidity in the actual design whereas steel-reinforced concrete gives the architect much more freedom of creativity” (Peter,1994 :33) One can argue that different things are being compared here, as Reidy – a former ENBA student who had an active part in its modernist insurrection of 1930 – produced what is generally viewed as pioneer top quality architecture, whereas the cases examined here may be said to be ordinary speculative buildings. However, the briefest scrutiny of the scenery built from the 40’s through the 60’s in most Brazilian cities will reveal cases that bear strong formal and technological similarities with whatever have been included in reference books and catalogues on modernist architecture produced in that country. This means that what seems to have once been a national effort towards contemporaneity may have lost its impetus.

On the other hand, both functional and symbolic requirements are constantly changing. Facilities such as carports and common areas grow constantly in size and number, as do various spaces within the living units. Playgrounds, huge reception lobbies, party halls and even ball rooms are becoming crucial marketing items as are swimming pools and fitness rooms – seen as expressions of new lifestyles linked to concerns over body care – so that the notion of dwelling place is quickly approaching that of a leisure resort. In flat interiors each bedroom tend to be a kind of autonomous unit with an en suite bathroom and built-in furnishings designed to accommodate appliances from cooling boxes to exercise gadgets, through personal computing stations and TV/video/stereo sets.

However, these new requirements can hardly hide the maintenance of a very traditional requirement dating from the time of slavery: the service entrance for maids and low class people whom occasionally come for some job.

Amalgamated functional and symbolic requirements – impossible to set apart in most cases – are then the fundamental factors in the
development of spatial layouts and their formal implications

Evolution and formal implications

The very first apartment buildings, conceived namely for young modern couples, willing to live in an easy to run home, were sited in town centres and dialogued with the street. The coexistence of different unit types was fairly common. Compounds were often subdivided in blocks, each having flats with varying area and number of rooms. Still a mix of functions was welcome at ground floors of downtown buildings where we can find cinemas or shops. Current class distinction laws no longer tolerate this democratic pattern.

Things has changing dramatically specially by the seventies, when most of the upper and upper middle class in main Brazilian cities – São Paulo, Rio, Salvador, Recife, Belo Horizonte and Porto Alegre – moved into apartment buildings that occupied empty plots or grounds belonging to large suburban houses in residential neighbourhoods around the centre. Until this decade most wealthy Brazilian families would have but one car even when they lived in mansions. Plans with two carports per flat – located mainly in basements and backyard plots – were then rare, sometimes there being none at all, since it was still easy to park outside. The following brief description summarises a decade of buildings, still faithful to the modernist language. They were six-to-twelve-storey high, had carports and lobbies in the pilotis – a result of the building’s 120 to 240 m² projection area at ground floor level – one or two flats per floor, three or four bedrooms per flat, one with an en suite bathroom. A spatial logic of three entrances structured the access: residents drove into the pilotis and walked to the ‘social’ elevator shared with visitors that walked from the street, through a main entrance into the ‘social’ lobby. Servants went in and out by a ‘service’ entrance, a ‘service’ lobby and a ‘service’ elevator never once meeting the visitors-plus-residents community.

Demands concerning parking lots are alone a measure of the kind of evolution we are talking about. In market terms, estate agents report, the number of carports per flat links directly to internal flat area availability and sets the social standard of the building. Two carports for each household must be offered if one wants to achieve the minimal standard required by the social segment that we are concerned here. Therefore, buyers will demand a two-parking lots flat even when they own just one car.

As pilotis ground floor areas no longer responded to current parking requirements this whole spatial organisation became obsolete leading to the re-structuring of the three entrance paradigm that was based on the same social segregation and hierarchical logic. Open communal spaces once corresponding to the pilotis areas at ground floor level have now been uplifted to two or three floors over the street level so that multiple parking floors can be accounted for. Residents move directly from the floor where they park their cars, into the ‘social’ elevator, no longer using the ‘social’ lobby used solely by visitors. Although these lobbies at street floor level have become empty spaces for most of the time their decor continue to be regarded, paradoxically as it may sound, as very important, being subjected to serial reforms by interior architects and designers in order to achieve dernier cri looks.

The building/plot relationship in Brasilia has been maintained since its foundation, in 1960, and remained quite unique for Brazilian standards, as the pilotis were kept open and working according to Le Corbusier’s plan.

Following the élite’s lifestyle evolution another important change affected communal spaces designed for reception, some of which now sporting real ballrooms. Party halls formerly located at pilotis level moved a storey above all parking levels, sometimes occupying the entire floor area so that the first residential storey went up yet another floor, a position that matches a good strategy in a context where apartment values vary largely according to height and where people share the idea that the richer you are the higher up you must be. A vocational location to a privileged sharing space such as reception hall should be terrace floors, as a variant of Le Corbusier’s toit-jardin. However terrace floors are not used as a social sharing place -except when there are heliports. Most of the times terrace floors are just service floors with water towers, elevator machines. But the current trend is to make them the upper floor of a duplex or triplex penthouse, since according to real estate market laws it is more profitable to sell a very expensive penthouse than sharing with owners as whole the price of a terrace common area. Status rank can, therefore, be read from outside and the élite’s choice is that of a one-flat-per-storey building crowned by a penthouse that can be seen from the distance.

Distance is in fact necessary to visualise buildings whose exterior boundaries – usually the walls surrounding the carport floors – show a blank and steep face to the street in the fashion of a prison wall clad in expensive marble, granite or colourful clay tiles. The prison resemblance is further emphasised by the presence of guardhouses on top of the exterior wall where a porter controls access 24 hours a day. As the
east is the privileged orientation two distinct façade patterns are the norm: the privileged front façade with verandas, terraces, garden boxes and large glass panes of the ‘social’-plus-family sector; the blank back façade with small window panes of the ‘service’ sector that accommodates kitchen/utility terrace and maids’ quarters.

Conclusion

Apartment buildings designed for the Brazilian élite have evolved towards a very specific type, distinct from current trends both in US and Europe. Social status and social fear defined its current form and structure: three entrances and three visible vertical parts - lower parts (parking and facilities), twenty to forty standard flat floors, and penthouse as a crown on the top - with façades mostly adopting a front/back scheme.

Nowadays, as the spatial articulations of units and communal areas evolved to respond to new social requirements, the relationship between the building and its neighbourhood became progressively one of strangeness.

Bunker walls convey an illusion of protection by erasing whatever is left of urban vitality from the streets surrounding them. The more people feel safe inside the more people feel (and are, in most cases) in danger outside. Thus, those who need to walk on the street to reach the entrance feel and often are, at risk of being assaulted before they can reach the ‘social’ lobby and succeed in gaining access after the being questioned by the porter/guard/watchman perched on top of his gate house. Worse still for those who walk the distance from the bus stop to the service entrance, alongside the bottom of endless walls that unfold, one after the other, in posh residential neighbourhoods.

As the opposing notions of high and low, private and public, rich and poor become increasingly unapproachable the visible immediate consequences of this process to the built environment can be nothing but segregation in terms of encounter potential and townscape appearance. The higher some are, the happier they appear to be. Maybe there is a feeling that heaven is closer in Brazil or maybe it is just that avoiding the street and those who are there makes the Brazilian élite feel almost in Heaven.

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The role of Tradition in the Italian Typological Studies

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Abstract
This study is aimed at demonstrating the unique interpretation of the relationship between tradition and innovation which characterizes the Italian approach to the urban and typological analysis. Its peculiarity consists in having emphasized the importance of history in selecting the most innovative aspects of social changes. Our work will be subdivided into four main points emphasizing this specificity.

Foreword
The principles of the Modern Movement in Architecture and City-planning have been slowly overcome thanks to the rediscovery of the relation between project and history. In this panorama the Italian situation is peculiar since the close link between tradition and innovation had never been dismissed over time.

In this century, the premises to such a debate are found in the discussion on the historical center as well as in the politics addressed to the development of the rural settlement, which took place during Fascism.

The term tradition is assumed as a reference in the discussion to enhance the peculiarity of the Italian experience.

Tradition as Method
According to the Italian approach the traditional city develops on the pre-existing system through a series of layers. This is described by Gustavo Giovannoni, who anticipates Lavedan. With the same craft spirit Giuseppe Pagano sees the traditional rural dwellings.

The problem of the new city as a systematic development of the pre-existing city has been discussed by Saverio Muratori in his studies dedicated to Venice and Rome.

The same concept of “environmental pre-existence” (“preesistenza ambientale”), theorized by Ernesto Nathan Rogers, aims for a continuity between desiring, history and regional specificity.

The idea of the traditional city which develops through successive transformations of the inherited building structures is also manifested in Aldo Rossi’s definition of the city as a “manufacture”. Referring to buildings which have lost their original reasons for existing, he finds an implicit confirmation of the formal principles which survive to the use the buildings were addressed to (FIG.1). This achievement is clearly showed in the “primary elements”, while the residential areas define an indistinct, ever-changing building matter.

The handicraft-method enables to transfer the acquired skills over successive generations through the concept of “derivation”. According to it Gianfranco Caniggia offered an interesting sample on the interior design experience.

This transformation of traditional city implies that its material forms were deprived of their original reasons of existence. Antonio Monesirol expresses this concept to justify a constructive relation between tradition and innovation.

If we define the result of the continuous refurbishment of the inherited building form as a “type”, we can assert the idea of the traditional city as a collective work. In fact the idea of “type” makes it possible to systematize the multiplicity of “capillary mutations” through which the inhabitants themselves modify the inherited building structures.

Tradition as Context
The definition of a context expresses the condition of interdependence between the parts of a whole. As such it affirms that the value of each element belonging to the whole depends on the relation it has with all the other components referring to the same ensemble. This idea has been stated clearly for the first time by Saverio Muratori.

The concept of context explains the specific reasons which have determined the unique configuration taken on by the object, re-establishing a dialogue between project and history. Gianfranco Caniggia takes from linguistics the definition of “structure”, a term which implies a whole of elements whose value is a “differential” one.

The context concept can thus be linked to that of aggregability of the components (FIG.2). Gianfranco Caniggia suggests four different levels, or “scale”, of interpretation of the building appearances: the basic components, the structure of basic components, the systems of structures, the system organisms.

However, the basic components can be specified according to formal autonomy and location, defining different degrees of organicity within a whole.

Every building activity becomes a transformation of the established balances. This explains why the concept of context becomes helpful to express the evolution of the city. The definition of context makes the existing relationships among building objects understandable and interprets the indivisibility between building form and the event the form makes possible.

This defines the concept of “locus”. A performative interpretation of the “locus” is successfully recorded by Aldo Rossi through a personal reinterpretation of Adolf Loos’ opinion. Aldo Rossi confirms that the permanent qualities we aim to assign to architecture itself are nothing else but an abstraction.

Figure: 1 Split: the Diocletianean palace under transformation, from its original plan to the actual survey. The pre-existing building bind the development of the successive urban tissues.
The meaning of a building action is measurable through the difference it produces with respect to the context into which it fits, or through the modification which the context produces on the new building object. It is possible to explain, in such a way, the definition by Franco Purini of the “locus” as a modification of the context.

Therefore to accept a contextual logic means to acknowledge the idea of architecture as a self-referential matter.

**Tradition as Language**

When one wants to define a traditional way of producing a city and its architecture, it becomes necessary to talk about the existence of a language. First of all, the existence of an architectural language requires the various building expressions to be comparable, independently of their specific nature. This implies that such a definition is more extensive than that of type, as Antonio Monestioli says.

Franco Purini underlines that buildings become less meaningful due to the functional differentiation principle introduced during the Enlightenment. The notion of building unity is capable of assuring unity within the diversity through a clear formal hierarchy of the parts. Later, the author recognizes in the house the theme that is endowed with that unifying ability that is required to a language to be such.

Franco Purini recognizes his cultural debt towards Saverio Muratori and his school. It is worth analysing in detail the definition of the “basic type” quoted by Gianfranco Caniggia. His aim is to show that the more recent building structures patently derive from the older ones, based on a “handicraft” principle.

The primitive house becomes therefore the central component to understand the urban structure: it is capable of founding the residential quantities and monumental entities through specialisation operations within a system of constructive and spacial and volumetric conventions. The theme of the residential cell takes on a special meaning within the Modern Movement culture, simply expressed as Existenz Minimum.

The definition by Aldo Rossi of the “analogue city” can also be drawn back to the existence of space organisation principles that remain valid independently of the physical dimension of the city and its components. In this way, it attain the meaning of a “language” acquiring historical authenticity at the very moment when the various building manifestations take place. Even today, this result can be taken as a metaprojectual orientation to be rigorously pursued, as Franco Purini sustains.

**Tradition as Landscape**

The theme of the landscape usually meets the architectural critics through an environmental perspective. In this sense, paradigmatic are the words used by Giuseppe Pagano to express the sense of necessity revealed by the rural building. Similar considerations are introduced by Gustavo Giovannoni in relation to the characters of the medieval towns.

The structural role of the landscape by a settler point of view emerges clearly only through the teaching of Saverio Muratori. This principle is further developed and reduced to system by Gianfranco Caniggia’s linguistic studies, and in particular the contribution of Ferdinand De Saussure, leads him to an incautious identification of type and language.

This identification can be ascribed to an excessive emphasis the author places on the role of the house as an institution, with respect to the rules on the basis of which the house itself can originate the organisation of the city and its components. This question, which is of basic importance, had already been grasped by Giuseppe Pagano, who states that traditional building survives its functional conditioning in its successive transformations.

The definition by Aldo Rossi of the “analogue city” can also be drawn back to the existence of space organisation principles that remain valid independently of the physical dimension of the city and its components.

Rossi expresses the idea of typology as a factor of transversal correlation capable of unifying into a system all parts of the city and its components. In this way, it attain the meaning of a “language” acquiring historical authenticity at the very moment when the various building manifestations take place. Even today, this result can be taken as a metaprojectual orientation to be rigorously pursued, as Franco Purini sustains.

Figure: 2 Florence: Santa Croce (A) and San Frediano (B) quarter’s building survey. Samples of the context considered as a “structure”. Every building type’s identity simultaneously derives from its “opposition” and “combination” to the others.
definition of the dialectics between transformative intentions and the characteristics of the site which undergoes the transformation itself. The role of the landscape derives also from the conditions under which the landscape resources are used for constructive goals. This justifies the distinction between wood-elastic areas and those with a masonry-plastic attitude. These distinctions immediately bind the characteristics of the manufactures, and are unifying elements among the different kinds and species of buildings. This condition confirms the thesis of a symbolic dimension of architecture as Franco Purini states.

When the architectural symbolic representation disappeared the landscape takes on a substantially geographical connotation as noticed by Franco Purini.

The lost of the theme of the house implies therefore an attempt to extend the architectural theme to the natural context, and a symmetric reduction of the idea of the landscape to that of the “garden”. This problematic development is clearly identifiable in Vittorio Gregotti’s opinion.

Following this reasoning it is possible to define a sort of “type of territory” substantially different with respect to that stated by the Muratorian school. Through this approach the landscape enters into competition with architecture.

Endnotes
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The Urban Form of Two Portuguese Regular New Towns: The Implementation of an Urban Policy

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In this paper two case studies of Portuguese medieval towns are presented. These examples of new regular foundations show a particular Portuguese political urban strategy developed between 1258-1325.

With the analysis of Viana and Caminha we pretend to illustrate how this particular policy, with particular methods and praxis, was materialised (Kropf, 1999, p.46) in urban nucleus according to constant spacial principles which could be applied not only in different places but also to different process of urbanization – in spite of the use of geometry and proportions.

With a retrospective analysis of descriptions, documents, cartography and local observation it is possible to redraw the fortified nucleus existing in the end of the 15th century (Peters, 1988; Colleta, 1985). This cartographic analysis was developed in the digital current survey map of the city in CAD software and were the basis of the morphological analyse (Koster, 1988). Nevertheless the morphological analysis of medieval new towns requires not only its reconstitution, but also the analyse of the its process of urbanization.

Program and process – the construction of urban networks
D. Afonso III and D. Dinis (1258-1325) constructed a urban network that covered all the territory, and that was particulary developed in the frontier territories and near the rivers coast and embouchures. This national urban policy had regional characteristics according the different cultural and geographic zones.

The definition of the new towns program was supported by a pragmatic urban royal policy. The royal structure was still a powerless organization (Matoso, 1987) developing a process of centralization through the negotiating with other political structures. The privileged partner was the one that offered less concurrency and more economic benefits. Avoiding the nobles and the clergy, the urban centers had these potentials, allowed the reintegration of the existing populations and the new settlers around old aggregate structures – the parishes - and also increased the regional economic development and the royal benefits.

Urban strategies were developed according to the regional needs and political objectives. First of all royal functionaries inquired systematically the national territory listing the royal properties and taxes. With this acknowledgment the king was able to define urban priorities: where and how new urban poles should and could be settled and which existing urban centers needed a royal support.

The royal process of supporting an urban pole started with the redefinition of the political, economic and juridical organization through new contracts.

Defined the political environment of the new or existing town the monarchs proceeded to the definition of the urban network program: the number, distance, and area, number of settlers of the towns network.

In the north Portugal were implemented two urban networks (in the northeast and in the northwest). The morphological analysis of Viana and Caminha requires its previous analysis.

The northwest network: Distance, area, number of settlers
In the Minho and Lima region D. Afonso III and D. Dinis have developed an urban network characterized by constant spa cement between nucleus, areas and number of colonos.

Viana, Caminha, Cerveira, Valença, Melgaço et Monção, located in the Minho and Lima embouchure and all the long of the south side of the Minho frontier, defined a urban network wich distances varied between 12 and 25 km. The all six towns received very similar Foral Charter’s and had an area dragging from 2,3 to 2,5 hectares. (The urban program implemented by these monarchs considered a forecast average number of settlers and area of the fortified nucleus (a nucleus of 2,5 hectares average area could be occupied with about 300 plots which confirms the 350 number of settlers estimated to Melgaço).

Network morphology
The regularity / orthogonality issue
The analysis of the north east and west urban networks, reveals different degrees of ‘regularity’ and ‘orthogonality’ (Lilley, 1998, p.83; Boerefijn, 2000, p.25). In fact, the ‘regularity/orthogonality’ was not a fundamental objective for these monarchs or for this urban policy. The real issue was to guarantee the nucleus urbanization according to a constant scheme adapted to each case.

The spatial scheme
The Place and the Limits definition
The process of urbanization started with
the choice of the place and the delimitation of its limits (Slater, 2001, p.49): the limits of the surrounding agricultural area and of the wall rampart.

The construction of the nucleus was a process that had a more or less royal intervention depending on the political needs and on the local capacities of executing. In any case, this process was characterized by constant spatial relations between some of its elements - the square, the church, the town council, the main street and the rampart - and by constant method of urbanization – the juxtaposition of the main and more different construction works. The formal scheme is based in three or more parallels streets limited in one side by a perpendicular one.

This constant method of urbanization, and its constants spatial relations, is the basis of the morphological analysis of Viana and Caminha.

Viana and caminha morphological analysis / urbanization process
The political process
Viana and Caminha received foral charts in 1258 and 1284 (Matoso, 1987) and their fair contracts were celebrated in 1286 1291. Both foundations had important economic objectives: the development of the new fluvial and maritime routes. In the military point of view, Caminha was a much more important nucleus – located in the frontier – and with a more exposed location.

The urban construction process – the morphological analysis
Urban morphology: foundational elements.
The urban morphology of Viana and Caminha medieval nucleus is based in the location and articulation between their foundational elements.

The places chosen for the two new foundations were open and notable spaces on the mouth of the rivers. This type of implantation reveals the determination of the royal intervention and the concern of articulating with the existing aggregative elements - the circulation network and the old parishes.

D. Afonso III and D. Dinis supported the construction of Viana and Caminha fortifications. In Viana, where the military strategy wasn’t very substantial, the wall construction was extended till the end of the 14th century and has never been a geometric and regular work. On the contrary the Caminha military instability demanded an efficacious fortification that was built in a short space of time. An impressive oval wall with 13 towers and 4 symmetric doors was built. In the two nucleuses it was in the donjon that the council reunions took place.

The construction of a new church was an expensive and difficult process. In fact, transferring a meaningful and aggregate element of the local populations demanded a strong intervention. Therefore, both in Viana and in Caminha D. Afonso III and D. Dinis privileged the conservation of the pre standing parochial church. As the new church was a posterior work, its space was kept without any constructions during the fortification and first establishment works. For very pragmatic reasons the field that was chosen was located in an extreme of the nucleus next to the wall.

In this urban scheme the ‘urban center’ was associated to the church place: sidelong to the principal quarters and axes the square confined with the fortification wall and was the town foundational political and civic center.

Concluding, the plan principles and the articulation of the main equipments were a direct consequence of a pragmatic urban praxis.

Urban morphology: streets and plotting plan.
The Caminha urban medieval scheme can be described as three parallels longitudinal axes with two perpendicular axes with no plot fronts. An oval wall limited this structure where the main square and church were located in the northeast extreme, bordered by the central street and by the wall.

In fact, the main axe was the central one, the larger (with 3,5-4 ‘varas’) and the more densely occupied in 1513. The other two streets had a width of 3-3,5 ‘varas’. These three axes defined two main blocks with 30 meters large and 90 meters long where the plots where systematically disposed ‘back to back’.

The plots deepness varied according to its location. Plots with the main façade flanking to the main street were deeper than its backyard plots confining with a secondary street. However, the plots widths were not a direct corollary of the streets hierarchy. The Caminha1513 plot plan reconstitution reveals plots with larger amplitude of width that varied between 4,5 and 7 meters, with a predominance of the larger lots (6,5meters). These were located dispersely all over the nucleus. Likewise, the type of façade and the number of stages didn’t depend of the plot location in a main or secondary street.

Four parallels longitudinal axes constituted the Viana urban medieval scheme. In fact, the two perpendicular streets, in spite of its width ness, had no facades bordering with.

In Viana the implementation of these scheme principles was adapted to the field curvature and to need of resettling more popula-
In fact, these four axes of 3-3.5 ‘varas’ width constituted three main blocks (30m large) that were divided by three secondary alleys of 2-2.5 varas. This alternating system permitted to double the number of plots, increasing significantly the number of settlers. The royal inquiry of Viana population of 1517 reveals that the main/central street was the second most crowed street, exceeded only by the northern parallel that led to the mother church.

A detailed analysis of the plots which maintain 15th and 16th centuries architectural elements evidence a constant metric in the width dimensions. As the 1498 inquiry documents confirms, multiples of the ‘vara’ was used in a short variation (from 3.5 varas to 4.5 varas), with preponderance of 70% of the 4 varas width plots.

The deepness metric of Viana plots is connected with the street structure. In the streets, the majority of the late 15th plots have ¼ of the block width (a media of 14 meters). The remaining space of the plots (with a reduced area with average of 30m2) faced the straight path. A type of plot was developed in the streets and another one to the alleys.

Conclusion

Both in Viana and Caminha were structures by parallels longitudinal axes with a hierarchy that was correlated with the main square and church.

The Viana and Caminha nucleus reveal a plot dimension concept. However there wasn’t a type size plot.

The width metric variation depended, firstly, of the minimum width needed (a 4 meters room) and of the larger constructive possibilities. The regularity of the width metric depended, mostly, of the demographic pressure (Boerefijn, 2000, p.56) and of the process of the settler’s implementation. The deepness plot dimension depended not only of this pressure but also of its location in the street hierarchy. The rule was a the adjoining of back to back plots, having each one a garden, when the demographic pressure was high, this open space was eliminated, doubling the number of plots and reducing the soil area to a minimum of 30m2.

There wasn’t a rule relating the typology of the plots – interior organization and façade structure – with the streets and the nucleus hierarchy that were mostly connected with the political and economical municipal development.

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From the Idea of Metropolis to that of the Territory-City

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Is a new dream really in the making?

This is not doubtful. The contemporary epoch seems, on the contrary, to characterise itself by the dramatic absence of any dream, any vision – anticipative or not –, of the city of the XXIst century.

Actually, if the XIXth century remains that of the affirmation of the Grande Ville (Giovannoni, 1931), and if the transition from the XIXth to the XXth registers itself as the age of the Metropolises – which have become the object of all attentions and cares, this new change of century seems marked by the interrogations and lacks of understanding raised by the evolution of these Villes tentaculaires (sprawling towns) – which, for certain specialists, have turned into non-cities.

The yesterday too dense and too dark Grande Ville, looked upon as a “threatening catastrophe” (Le Corbusier, 1925), and whose serious illness was going to mobilise the energies of a great number of “specialists” (hygienists, sociologists, philosophers, economists, architects,…) until it came at the origin of a new science, namely town planning (officially born in 1910), has eventually left a majority of contemporary “physicians” totally distraught.

To such a point that they no longer even wonder how to save the City – “medicine or surgery?” mused Le Corbusier in 1925 –, but officially declare it dead. Incapable of recognising this new urban organism they saw shaping itself all along the XXth century – and which they don’t venture any more to name a City, so foreign it seems from the entity to which they had until then lent that term – today’s specialists acknowledge at the same time their incapacity to find a solution to its growth and disintegration within the territory.

As a matter of fact, city which, century after century, had accepted “mending” upon “mending” (Cerdà, 1867) to adapt itself to the changing needs of its inhabitants, had thus been able to evolve progressively, in harmony with the new usages. Nevertheless, as early as the middle of the XIXth century, Cerdà wondered if in the “new period of transition” they had entered at that time, a complete overturning of the thought hadn’t become necessary, so the “present generation” has became “essentially different from the previous generations”.

“Nothing in our ancestors’ urbe any longer fits the needs of our social and urban life. But who is to blame? Maybe the generations which have preceded us and which have built urban centres according to their habits, to their customs, to theirs needs and aspirations? Or, maybe ourselves who, out of laziness, lack of care, and ignorance couldn’t or wouldn’t transform them or build others entirely adjusted to our civilisation and purposes.” Cerdà, as early as 1867, put the problem in those terms.

Is the one we have to face today so different?

For without even evoking the problem of a possible “remedy”, if we lack the necessary elements to think the present City – “large” or “small”, without forgetting what Sombart wrote: “the “large city” is not a city about which we simply say that it is large” – is it not essentially because we preferred to remain totally blind to the changes that it was suffering, in front of our eyes, in order to privilege, just one more instant, an image that was becoming more and more obsolete day after day?

This indifference to change – perfectly ineluctable unless we renounce everything progress has offered us for more than a century: news means of transportation, of communication,… among others – can’t indeed be explained by any other factor than a voluntary blindness, so these ones had been announced as early as the end of the XIXth century, and during the first decades of the XXth.

For, actually, today’s reality looks very much like yesterday’s anticipative visions, in which the “new servants” (Wright, 1931) – telephones, electrical intercommunications, radios, automobiles, airships … – finally allowed a total dissolution of the city, a true fusion between city and country (Wright, 1939). A vision at last confirmed by Le Corbusier who, in 1946, declared that “the two traditional human establishments (the city and the village) are going through a terrible crisis. Our towns are sprawling shapelessly, indefinitely. The city, this coherent urban organism, is disappearing.”

As a matter of fact, so as to fight the real “cancer” the Grande Ville constituted, and to absorb its anarchic flows, various solutions were imagined as early as the end of the XIXth century. And regarding Soria y Mata’s Linear-City, Howard’s Garden City, Wagner’s Grossstadt of Vienna, Wright’s Broadacre City, or Le Corbusier’s City of Three million inhabitants,… all these propositions reveal a common major preoccupation: the totally new attention given to the territory. The Metropolis can’t be thought any more independently from the territory in which it is inscribed. It becomes inconceivable to think the organisation, the arrangement – indeed the improvement – of what is on the way to be only the “center-city”, the “historic city”, without designing its unavoidable extensions – planned to structure in the best way this territory in a “state of flux” –, as well as the vital links.
between the different parts constituting the new metropolis. In the same way, it is becoming essential to tightly bind this new organism to the surrounding others, each part inscribing itself in a whole, whose logic obeys a totally different scale: the scale of the territory. And it is this ineluctable leap into the scale of conception that will be so difficult to integrate: to think the City of the XXth century, and all the more so that of the XXIst, require simultaneously to think the territory.

Wright (1931) had already announced the “death of urbanism” when Bardet (1945) declared “We can say that urbanism has become an urbanism”. And well before them, Cerdà, already, had envisaged a “ruralised urbanisation”, an urban-rural combination which would be at the origin of a new definition of the urbe: “each urbe presents three large parts: the region, the “suburbia” and finally, in the centre, the urban nucleus. These three distinctive parts constitute all together what we call an urbe.” Now, these three parts refer more often to measures – according to the meaning of dimension as well as disposition – as well as to very different times of conception. They respond only rarely to a unique logic, hence the necessity to understand their specificity very well in order to compose a coherent whole. “As a matter of fact, it is sufficient to confront the reality of an ancient town (...) and the needs (...) of a new town (...), to see that the conditions of living of the two organisms are different, antithetic, and incompatible, so that every compromise proves to be dangerous.” (Giovannoni, 1931)

However, we are now inclined to act as if the criteria which had served to build the “reality of the ancient city” could still help us erect the new city. As if the urban forms inherited from past generations, pure products of their lifestyles and aspirations, could still offer spaces adapted to our own needs. We still refuse, more than one century after Cerdà’s description and definition, to consider the urbe as the new entity from which any thought about the city should henceforth be engaged. We prefer, on the contrary, to privilege images – more often closer of the myth of the city than to its proper reality – accepted for centuries as a postulate (at least in the Western World).

The latter notably teach us that the “ideal” city is a perfectly delimited, compact and homogenous ensemble. During the course of years, we’ve more or less admitted that a periphery came to juxtapose itself to its totality – deemed of a great cohesion –, with the condition that it adopts and perpetuates the characters proper to the city. So we’ll still continue to speak about gate or enter of the city, about perspective, about homogeneity, about public places or spaces,... and we’ll persist in viewing them as a “centre” – a heart, a nucleus – whose periphery spreads farther and farther. We’ll refuse to consider the true reasons why the centre was loosing more and more of its centralising, unifying power – supposing that it was as important as we wanted to believe it –, to gear down itself in a great variety of different “centralities”, created to respond to the new needs of the contemporary urban civilization. We’ll also prefer not to see the sprawling of this new polycentric ensemble onto wider and wider spaces, according to modalities unknown until then, but which could now be envisaged thanks, notably, to the new means of transportation (the car, high speed trains,…).

Today, all this has become our daily reality and, facing the evidence of this new degeneration, the “physicians” of the new millennium feel at a loss, unarmored: the majority of the spaces – urban as well as rural – are today considered as “out of norm”. Unless, for example, we finally accepted Cerdà’s urbe as a principle, or entity of reference!

So the centre, generally belonging to the past and having undergone an “exaggerated densification” (Giovannoni, 1931), can survive only if, beyond a project of conservation, a programme of upkeep of vital functions is also settled. Otherwise, as Wright (1939) predicted it, the historic centres will be nothing more than “the largest museums of the world”. But, in order to be able to do so, the centre should be perfectly connected to its surroundings. Speaking about the “suburbia”, born more often from “excessive decentralising” (Giovannoni), its own survival and development remain dependant on the attention that will be brought to its organisation, and on the “discipline” that we’ll apply to this complex whole to give it a coherence. But, in the meantime, this coherence will be able to assert itself only if the organism of the “suburbia” is in keeping with the system which manages the larger scale, that of the region, and the territory.

So, urbanism or orbanism?

The observation of the Hypercities (Corboz, 1994) of our early XXIst century more often offers to our sight the confirmation of a century old visions (more indeed) – sometime judged, for some of them, as “utopian”. Isn’t it finally time to sharpen, to stimulate our glance, if we really want to be able to think the contemporary city and its future developments? This means, first, to accept to put aside the ancient paradigms, to forget the old postulates which have until now ruled the thought of the City – of the city of the past -, to admit new codes of
reading and of conception adapted to the contemporary evolutions of our civilisations. These codes still need to be invented, but some of the “fathers” of urbanism have paved often unexplored or badly understood ways for us, because we were badly engaged. Once relieved of our prejudices and a priori, wouldn’t it be worth carefully going over them once again? They will not necessarily conduct us to the solution – to the famous “remedy” – but maybe they will help us, as we go, to ask ourselves the real questions, to formulate the problems in such a way that the reflection will be able to start under better auspices….

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Changes in Built Form at the Neighborhood of Rio - Niterói Bridge: The Case of Niterói

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The origins of Niterói took place exactly where the overpasses leading to the bridge linking this town to Rio de Janeiro, over Guanabara Bay, now stand. The mentioned bridge radically and extensively changed the urban form of the area, also altering the whole dynamics of the site.

Since its foundation, the town has repeatedly suffered significant changes in its morphology. The purpose of this paper is to analyze the transformations occurred in different periods. Each of them marks a significant change in the urban scenario.

Context

The name Niterói is from Indian origin and means “hidden waters”, probably due to its location by the Inlet of São Lourenço, north-east of the Guanabara Bay, hid by the Peninsula of Ponta da Areia. The first settlements of the future town sprouted by this inlet.

The proximity of Rio de Janeiro and Niterói resulted in an interaction between their developments. As capital of the colony, Rio de Janeiro had its development fostered since the first centuries of colonization. Niterói’s economy, based on agriculture and fishing, remained incipient for three centuries. In 1808, the Portuguese Court moved to Brazil and Niterói was chosen by the Royal Family as a summer resort, fact that brought the town a significant development spur. The center was transferred to Praia Grande, on the shores of Guanabara Bay. It was Pallière who designed the grid road scheme. A regular ferryboat passenger transportation to and from Rio de Janeiro was established in 1835.

Niterói became the capital of the State of Rio de Janeiro in 1902 and remained as such until 1975. Besides its administrative role, shipbuilding and textiles manufacture had also helped the city become an important center for the region.

1º Scenario – first settlements

The inlet of São Lourenço lay protected between Ponta da Areia and the continent; before it, the Island of Conceição. The mangroves and the high continental relief completed the landscape during the first periods of colonization. In 1833, some anchorages already existed in the north. Some of them came to play an important role as receivers of goods from the interior bound for Rio de Janeiro.

The occupation of Ponta da Areia dates back to mid 19th century, when Mauá shipyards – pioneers in the development of shipbuilding in Brazil - were built. This industry became the most important economic activity for Niterói. Conceição Island is another site where the history of shipbuilding took place.

By means of electrical streetcars, the road network interconnected different town areas and established connection points to other surface transportation systems, such as railways and waterways. In 1913, a railway linking Niterói to the main agricultural centers in the state of Rio de Janeiro was built. The railway allowed for the expansion of the northern area of the town.

2º Scenario – Niterói Harbor

In 1929, with the works of filling the Inlet of São Lourenço with land, part of the project for the Niterói harbor, were completed. This was the first major transformation Niterói suffered in its natural site. The Inlet elimination altered space configuration, not only rendering previously existing main roads farther from the sea, but also breaking the grid design of the rest of the central area.

The railway station was built next to the new harbor. Opposite the station, two perpendicular main roads converging to a semi-circular square called Renascença were built. Public buildings were constructed around the square. Surrounding it, semi-circular avenues were also built following the same design. The space between them was destined for an industrial sector to support harbor activities.

The new road network allowed for a more direct access to the center and various districts. The construction of other avenues provided access to the north and eastern inland.

The northern and western areas of Niterói were then linked by an important connection in the streetcar network from which irradiated the main lines for the whole city. The place consisted of a square surrounded by Santana de São Lourenço’s Church, a still outstanding landmark. The sea was then much nearer and the harbor played an important role; a small trade and service center came up in the surroundings and turned it into a connection point between the northern and the central regions.

The space configuration after the Inlet of São Lourenço had been filled, was defined by a continuous space, where the already structured main roads linked the northern, eastern and southern areas of the city by means of an integrated transportation system consisting of...
streetcars and buses.

However, the urban scenario next to the harbor gradually became poor and empty, for the expectations derived from its creation not even slightly came true. Not only did the harbor fail to receive and distribute the north of the state’s agricultural output, but was also impaired by a growing technological change, impeding a competition on equal terms with the neighbor harbor Rio de Janeiro.

It is true that Niterói was able to ship a considerable load of products like coffee, sugar and grains. The harbor reached its best in 1964, due to the coffee grown in the states of Rio de Janeiro and Espírito Santo exportation increase. Decline came nonetheless soon after, caused by the increasingly irregular shipments conditions. The previously planned industrial area created large empty spaces subsequently occupied by “favelas”.

3rd scenario – Contorno Avenue

In 1960, Contorno avenue was built northwards alongside the bay, as a connection alternative to the northern areas of the town and to São Gonçalo, a municipality located north of Niterói.

Not only did Contorno avenue cause great changes to the seaside and the harbor surroundings due to new embankment, but also altered the structure of the main northern district: Barreto. This avenue also changed the Conceição Island seaside, forming a link to the continent, although precarious.

After Contorno Avenue’s construction, the space configuration of Niterói began to suffer great impacts again. This process reached its peak in the 1970s, when the Rio-Niterói bridge was concluded.

4th scenario – The Access Overpasses to Rio-Niterói Bridge

Ready in 1974, the bridge was a new and strong impact on this area’s configuration. The end railway station was again in Barreto; the one close to the harbor was de-activated. Nowadays, the railway’s role is minimum. The harbor carries out secondary functions like ship repair; harbors only small and medium size boats.

One of the access avenues to Renascença Square suffered meaningful alterations by the bridge; several properties had to be expropriated; several remaining buildings around the square were visually sectioned by an overpass. The square itself was brutally sectioned in the middle.

The mentioned overpass also divided the semi-circular avenues that surround the square. This sectioning brought about a clear separation between two distinct sectors causing them to function, in practice, as if they were two separate districts.

Conceição Island ceased to be an island, for it was linked to the continent by part of the land fill serving as a basis for the bridge. The districts near the bridgeheads also had their main roads intercepted by the overpasses.

Besides changing the configuration of the area in various ways, these accesses generated a continuous traffic flow making pedestrian crossing almost impossible. Vehicle flow is also intricate, requiring a complex signal system, which generates disorientation and traffic retention.

These same districts began to change their appearance, replacing uses like former residences for various services, such as clinics, courses, real estate agencies. High-rise construction and hillside occupation became predominant not only for the growth of “favelas” but also due to middle-class residential complexes.

After the bridge, Niterói expanded southwards, towards more pleasant shore regions. Population growth rates in those areas are the highest in the city.

A Possible Future Scenario

The impact originated from the flow over the bridge has caused a present traffic volume incompatible with the existing road system physical supporting capacity. There has been a large expansion of inter-city bus lines besides the enormous quantity of cars using the bridge as access to Rio de Janeiro and neighboring municipalities.

The plan for a subway line linking the neighbor municipality São Gonçalo to downtown Niterói is presently being discussed. This plan includes an elevated open railway. The idea is to propose a legislation amendment in order to increase high-rise buildings maximum permitted height, allowing investments in commercial and service buildings. If this proposition is carried out, this sector of Niterói will suffer an extensive transformation regarding land use and

Figure 3: The church and the north connection pole
occupation density. Once again the urban landscape under study will suffer substantial alteration.

Final Considerations
The analysis of the above described scenarios indicates some issues:
Firstly that the city growth and development is always conditioned to political action which determines transformations to space configuration and local urban dynamics. Moments of great transformation are very clear in the case study presented.
Secondly, that the measures resulting from physical intervention are always followed by changes in land use and in the road system. In this case-study, some transformations -not so successful as previously expected, as in the case of harbor facilities – generated large empty areas besides space fragmentation. During the period which followed the bridge construction, Niterói had to have its road system adapted to support a considerable traffic flow increase, causing countless traffic jams. On the other hand, as a connector, the bridge allowed the multidirectional expansion of the city, providing easy access to more distant areas which now present high occupation rates and resident population growth.
Thirdly and last, is the lack of importance given to the consequences of transformations on morphology and urban landscape. Scenario changes have already been commented, particularly in what the results of the bridge existence are concerned. The possibility of an elevated subway being implemented, the lack of importance bestowed to the effects produced on the local landscape, are again remarked. Considering the possible construction of high-rise towers around the stations, consequent effects on land use and occupational density can be expected, perhaps not producing profitable returns in terms of environmental quality.

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Figure 4: The construction of the overpasses to Rio-Niterói bridge.

Figure 5: The Renascença Square intercepted by one of the overpasses
This paper argues that the unique qualities of traditional Islamic cities were attributes of Islam as a cultural phenomenon, in which specific urban processes gave rise to distinct urban patterns.

Three premises underlie this paper. First, the formation of the Islamic City is understood within a holistic political, religious, and socioeconomic cultural context. Second, it is the combination of inherited form, ‘fixed’ cultural processes, as well as ‘variable’ factors specific to the locale, which generated an urban form unique to each individual city. This proposes an extension to the Orientalist view that focuses on the generalisation of a prototypical model. Rather, the presented case study, Cairo, is not construed as an abstract case, but one in which a unique combination of cultural and ‘variable’ forces resulted in the genesis of its urban form. Third, this paper is about understanding urban change and adaptation, and its basic cultural origins within context of Bein al-Qasrein, Cairo’s civic centre.

Morphological changes throughout Cairo’s Islamic history

Cairo was founded in the late Abbasid period (950-1250), an era of major changes in Islamic religious and political ideology, and social organisation. Changes were characterised by the rise of a feudal system administered by a military élite, and a growing middle class of ulama (religious intelligentsia) and merchants. From middle of the ninth century there was increasing autonomy of territories in the Abbasid Empire. Discontent with the conditions of life under the decaying Abbasid régime triggered the emergence of splinter groups, mainly Shi’ites, whose propaganda focused on the reunification of both spiritual and political leadership within person of Caliph.

Fatimid Cairo (969-1171)

Within this context, the Fatimids emerged as a Shi’ite sect based in North Africa creating their own Caliphate integrating secular and religious power. To consolidate his power, the Fatimid Caliph established his imperial capital, Cairo, planned and laid out as a royal compound for the Caliph, his court, slaves and officials, and troops.

Cairo’s layout reflected the centre of political and religious power. The city was surrounded by high walls and gates, containing two large centrally-located Palaces, and a mixture of administrative, recreational, and residential functions. The original town plan deviated from its Islamic counterparts; characterised by a regular grid, wide streets and open spaces (rahhas). The rationale behind this plan is most likely based on rituals, religious ceremonies and political processions that constituted part of Shi’ite culture (Nasser, 2000). The two Palaces formed a powerful spatial organising force. Isolated from the surrounding built-up areas, they were surrounded by high walls with gated entrances. The Palace precinct was not regular in form, rather, it followed topographical influences, suggesting deflections and irregularities in the Palace walls, as well as an ‘organic’ inner layout, a result of an incremental building process including mansions, administrative Halls, oratories, baths, and the Fatimid cemeteries.

The arrangement of open spaces was closely associated with the Palaces. Bein al-Qasrein was the most important square by virtue of its central location between the two Palaces, and its use for grand processions and political ceremonies. The four other squares carried religious connotations. Contrary to early Islamic processes, the construction and positioning of the Palaces had taken precedence over the Congregational Mosque, signifying a preoccupation with power rather than religion. Building arrangement differed between secular and religious buildings. The former were arranged perpendicular to the streets, whereas, the latter were oriented towards the qibla, facing Mecca. Nevertheless, this clear deflection of the five free-standing Fatimid mosques was not influenced by street layout, nor did they influence neighbouring plots and buildings. Principal buildings were aligned along the major north-south axis, al-Qasaba. The remainder of the city was divided up amongst the army tribes. The method in which the tribes were settled was similar to that in early Islam whereby each tribe subdivided its terrain and circulation routes, hence establishing their own property boundaries. The spaces between the houses became roads, giving rise to a maze of narrow lanes and alleys lined by densely-packed housing.

Ayyubid Cairo (1171-1250)

By the twelfth century the Ayyubid dynasty, founded by Saladin, came to power, modelled on the increasing institutional split between secular and religious power. The Caliph in Baghdad possessed only titular power. This had serious repercussions on social organisation; the élite became more specialised militarily, abandoning direct religious pretensions, paralleled by the subsequent rise of religious notables conferring legitimacy upon the ruling class, influencing decision-making and guiding State policy.

Two principal determining factors had lasting effects on Cairo’s urban form. First, the influx of people fleeing the burning of Fustat...
and seeking shelter in Cairo, and secondly, the shift of political power from Cairo to the Citadel on the Muqattam Hills. Saladin had little intention to preserve Cairo as a sanctuary refuge: he opened the city to the masses. Thus Cairo experienced unprecedented, and unregulated building on all available open space, including major streets, for there was no functional significance for these in Sunni Islam. The areas were parcelled out in the same fashion as the Fatimid troops had been settled. During the Ayyubid period the commercial life of Cairo diversified, the settled quarters were adapted to the requirements of trade and craftsmanship that was soon translated into a physical order (Abu Lughod, 1971). Specialised markets were distributed within the city, each market associated with an ethnic grouping.

The movement of the seat of political power from Bein al-Qasrein left a vacuum both functionally and in the extent of vacant properties. Saladin intended to eradicate all memory of the Fatimids through the gradual dismantling of the Palaces; the grandest of the Fatimid mansions accommodated the incumbent régime; some buildings were converted to commercial functions; others were replaced by either residential, commercial or religious buildings. To reinstate orthodox beliefs, Saladin constructed religious and cultural buildings as Shi‘ite counter-propaganda. State-sponsored colleges (madrasas) were constructed over parts of the Fatimid Palaces encroaching on to Bein al-Qasrein Square and the Qasaba. The colleges followed a particular building arrangement, their exterior façades were parallel to the centre-line of the street, even though the interior was orientated towards the qibla (Al-Sayyad, 1981). The longevity of these buildings, still partially extant, can only be attributed to the proliferation of waqf khayry, or religiously endowed land and property, at the time of the Ayyubids.

The impetus behind Bein al-Qasrein’s development stemmed from its exclusive allocation to an elitist tenure dependent on (i) past patterns of land ownership of the former Fatimid Hills which possessed an inertia that was slow to change, providing the foundation for large structures to be constructed in their place, (ii) most of the commercial and religious buildings governed by strict waqf property laws that limited change to the building’s uses and boundaries, (iii) religious buildings created distinct building and plot arrangements, and (iv) land speculation in this part of the city augmented land values, underpinning its commercial and cultural proliferation.

**Mamluk Cairo (1250-1517)**

The Caliphate was transferred to Cairo in 1261 by the Mamluks. As a social class, they tended to insulate themselves from the ruled to an unprecedented degree. Only with respect to religion did the Mamluks strengthen their bonds with the ruled. The special variant of feudalism that evolved under the Mamluks was that fiefs (liqa‘is) were being assigned as sources of revenue rather than units of administration. This had a two-fold effect; (i) the Mamluk’s lack of involvement with agricultural land tended to concentrate all power within the city and, (ii) amirs became involved in urban mercantile operations. As a result, the amir’s power, whether military, economic or bureaucratic, lay in his household (bayt), forming centres of urban administration. No member of society lay outside the network that the ruling class manipulated through patronage (Staffa, 1977). The religious body of ulama was no exception. The durability of the legal institution depended on the mutual interdependence between both political and religious power: the ulama legitimised the régime and secured a degree of law and order and an Islamic way of life.

The overall impact of these changes, underpinned by the safe channelling of the East-West spice trade in the fourteenth century, transformed Cairo. New settlements extended beyond the former walled enclosure. Within the walls and specifically in Bein al-Qasrein, almost all traces of the Fatimid Palaces had been lost. Accounts of travellers to Cairo during this period describe a dense and crowded city: ‘there is no lost space: shops and houses are built close to each other to the detriment of the street. The city had become densely built up’ (Wiet, 1964:72).

Building densities reflected a significant rise in the number of khans, madrasas, and other public buildings. Most of the increasing density occurred in ground cover rather than increase in building height. Transformations were governed by escalating land values in Bein al-Qasrein, placing constant pressure on residential land to make way for the proliferation of commercial buildings to house international trade. The only available space for building were those areas once allocated to the stables adjoining the mansions. To further augment land value, markets were transferred from different parts of the city creating a district specialising in international trade and luxury goods in the centre of Cairo.

Bein al-Qasrein had become the area with the highest concentration of wealth and luxury characterised by the construction of grand mansions and monumental buildings by the ruling class. These conveyed symbolic meaning - fostering identity and legitimising the régime. Gardens contracted in size due to the high competition for land. Religious buildings were smaller than their predecessors, with no central courtyard, in order to fit in the available space. Residential land was characterised by shifting ownership boundaries involving amalgamation of plots, as well as subdi-
vision under redevelopment and Islamic inheritance systems (al-Maqrizi, 1853). The resulting plot boundaries and building arrangement were highly irregular.

As a form of urban fiefs (iqtas), the Sultan gave his closest amirs land to regenerate through a process of tahkir. The amirs would then exploit their properties to generate revenues. The conversion of residential property to commercial structures, coupled with the construction of religious and municipal buildings in Bein al-Qasrein, and their subsequent placement into waqf, had two significant effects on the development of the area. First, there was already a significant number of inherited waqf properties, protected by strict laws governing plot shape and land uses. Consequently there was less available land for development. Secondly, developed and redeveloped commercial and religious structures were further immobilised as waqf, fixing boundaries and functions for the future of the area. In conclusion, the Mamluk period is characterised by the dominance of an elite not only holding military power but the greatest mass of wealth. Bein al-Qasrein represented the centre for their self-aggrandizement in the pious works of cultural/municipal buildings. The inertia of prior investment and physical durability, coupled with the dynamism of needed economic functional changes, provided the rationale for the perpetuation of plot, building and land use patterns.

**Ottoman Cairo (1517-1798)**

From the middle of the fifteenth century, Cairo declined owing to famine and plagues, as well as renewed invasions by the Mongols. The Caliphate was moved to Istanbul, while Cairo became a provincial capital. The adaptation of Bein al-Qasrein during the Ottoman period is characterised by two factors. First, a large number of buildings were repaired and restored by the private initiative of the elite. Second, substantial new change came in the form of comprehensive redevelopment and building replacement. However, Cairo’s subordinate position in relation to Istanbul meant that goods en route to Istanbul were stored as transit trade in Cairo. As a result, there was a remarkable rise in warehouses (wikalas). In general, transformation was limited to Mamluk residences not held in waqf. The impetus began with the movement of the elite to newly developed suburbs outside the walled city. Many residences were divided into smaller lots replaced by denser, compact residences for the rising merchant class, and wikalas. Subsequently, the intensification of commercial activities in Bein al-Qasrein, particularly the southernmost part, led to significant commercial development. On the other hand, the fixed boundaries of inherited building forms and functions held in waqf resulted in an overall stability in street pattern, building arrangement, plot distribution, and land uses within Bein al-Qasrein.

**Conclusion**

This paper has shown that Cairo’s town plan originated, developed, and functioned within a cultural context, determined by the degree and intensity of political, social, religious and economic forces. In evaluating these cultural processes this study has proposed a challenge to the Orientalist tradition that has failed to provide a comprehensive theory for the study of Islamic urban morphology. Therefore, if we are to search for an Islamic ‘spirit’ in the character of those cities, either created or colonised by the invading Muslims, it is necessary to examine cultural principles of urban design and planning that were present throughout the evolution of these cities. But, more importantly, there is a need to consider a holistic view of the various mechanisms that linked society and the spatial environment within the Islamic city.

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Aleppo: An Example of the Persistence of a Classical Urban Fabric in an Islamic City

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The theoretical basis of this paper is the widespread presence of urban fabrics deriving from *domus* agglomerations throughout the Mediterranean basin. The persistence of their basic characteristics, however, may be verified in only a few of the areas to which they were imported.

As is well known, the Mediterranean basin is the original territorial organism of western culture.

Even though there has been a constant diffusion and exchange of civil, social and architectural models throughout the Mediterranean, we usually associate the first great moment of programmed ‘cultural’ unification with the advent of the Roman Empire.

The reorganisation of the Empire was the first and, perhaps, only operation on a vast territorial scale which used exact methods in planning road networks, territorial division and urban organisation.

This programme had two different outcomes. On the one hand, the appearance of the conquered territories was altered by their division into centuries and by the foundation of new cities; on the other, their appearance was rendered homogeneous and in the colonised areas new, common cultural models were imposed.

Thus, throughout the Mediterranean basin, the same typology of city and dwelling came to be widespread and was adapted to a variety of pre-existing conditions.

In some areas of the Mediterranean, the earlier conditions (building type and urban structure) were similar to Roman types and the cities which arose there have better conserved their original urban and housing structures.

In the south-eastern regions of the Mediterranean, for example, the *domus* has kept its characteristics even up to the present day.

This is an important point, since in many Roman cities one may easily verify the persistence of an original town plan, whereas the *domus* type dwelling has often lost the main features of its original structure and has undergone a process of transformation (fragmentation, encroachment, etc.) which varies greatly from region to region.

In the south-eastern regions of the Mediterranean, the hypothesis of the persistence of the classical town plan is confirmed by the fact that the advent of Islam did not represent a rupture with the past, as one might at first suppose. When they didn’t founded new cities, the Islamic peoples used pre-existing urban patterns without major alterations, thereby adapting the Roman-Hellenistic building type and urban layout.

Our case study of the city of Aleppo, as with other cities in Syria (for example, Damascus and Laodicea), is a Seleucid foundation, built according to rather strict planning regulations and with a layout common to many other Greek cities in the Mediterranean.

After its foundation, it remained under the control of classical civilisations (Hellenistic and Roman) for about six hundred years.

It is hardly surprising, therefore, that traces of the original plan of the Greek and Roman town are legible and that the old town within the original quadrilateral configuration has kept its basic structure, even though, on a smaller scale, the urban fabric has been transformed in a way which is typical of the Islamic city.

Ever since the first maps were compiled by the French land registry in the early thirties the persistence of the Greek town plan has been evident to all; yet, even though Aleppo has often been the object of scholarship, no one has ever been particularly interested in the Roman town plan, which has perhaps been considered merely a brief episode, a simple adaptation of the Greek city layout.

The persistence of the Roman urban fabric, however, goes much deeper and is more widespread than may at first seem.

Yet this fabric is not easily legible, since it was derived from territorial planning which took place in different stages and which was strictly dependent on orographic conditions. Thus, as in many other cases, it was not characterised by a single, rigid plan as in Greek cities, but by a process of addition and superimposition.

Only through a careful reading of the urban fabric is it possible to reconstruct step by step all the phases of the city’s urban history. This is the aim of my paper: to demonstrate, through this method of reading, the persistence of classical urban fabric in this Islamic city.

From a reading of the building layout and an examination of the historical data provided by scholarship we may conclude that the Greek city (Beroea) was characterised by a structure common to all other Seleucid colonies, as J. Sauvaget has shown.

The *via recta* connected the acropolis to the retaining wall and passed nearby the tell (primitive settlement). The agora and courtyard
houses in 47.2 x 124 metre blocks were situated along this road.

This initial plan was followed by a spontaneous growth of the urban fabric up to the retaining wall which probably encircled the city. The existence and position of this wall are not documented, but its traces are indicated by the presence of impromptu paths near the city gates and by anomalies in the urban fabric.

The first Roman town plan of Aleppo was a continuation of the Greek and probably consisted simply of an adaptation of the earlier urban layout to meet the needs of the new inhabitants. Traces of this plan are legible in the widening of one or perhaps two blocks to the east of the agora (from 47.2 to 71 metres) and in the presence of domus agglomerations laid out in a north-south direction scattered around the periphery of the Greek city.

The eastern boundary, beyond which the city did not expand in this initial phase, was probably created naturally by a branch of the river which now encircles it.

This initial Roman town plan was followed by two more.

The first notable hiatus in urban growth took place in the second planning phase which, like the third, was based on territorial rather than urban concepts of planning and therefore followed a different course from the first: these later phases show a lack of continuity with the pre-existing urban fabric, rotating by 18° and 10° respectively with regard to the initial north-south orientation.

A reading on a scale of 1 to 50,000 shows the presence of centuries at a territorial level.

Similar Roman centuries have been found in the areas around both Damascus and Homs. The Byzantine and Mameluke cities were overlaid onto the classical city, disrupting the Roman urban fabric and encroaching on the remaining free space within the new retaining wall.

On the basis of this first reading on an urban scale of the building agglomerations, Aleppo cannot properly be defined as Islamic in its original quadrilateral configuration; rather it represents the co-presence of the classical/occidental with Islamic/oriental city.

Through the reconstruction of the alignments of the walls of the buildings, the reading of the urban fabric reveals that Aleppo in its original quadrilateral configuration was entirely planned in the classical period.

In the course of time, an Islamic scheme was superimposed on a classical one, and the city today is the result of this superimposition.

Thus a cul-de-sac system disrupted the ancient geometrical street pattern in order to allow access to the courtyard houses, which were created through a division of and encroachment on the older domus and courtyard houses lots.

The cul-de-sac system is not, however, peculiar to Islamic urban fabric; rather it is typical of the encroachment of courtyard houses onto pre-existing buildings and is found, for example, in many cities based on a domus agglomeration.

This system derives from the division of the single lots of the ancient houses into several courtyard houses and allows us to invert the common European notion of the ‘extrovert’ or outward-facing block.

Through an analysis of the blocks of the original quadrilateral configuration of the city, especially those belonging to the Roman planned urban fabrics, which are larger than the Greek, while the number of specialised buildings is smaller, we may see that this type of system was very frequent.

In those blocks the majority of the houses are only accessible from the cul-de-sacs. Consequently the entire urban fabric is self-enclosed and is based on a relation of solid/void in which the void is 1/3 of the solid. The resulting notion of an urban fabric and building agglomeration seems to be that of the classical city taken to the extreme, characterised by only a few specialised buildings, against which is set the uniform mass of undifferentiated courtyard houses.

Through this method of reading of the building agglomerations it has been possible to reconstruct the original layout of the urban fabric of courtyard houses in Aleppo.

Above all, however, our method has allowed us to reconstruct the typological process which has led to the present urban and building patterns.

Here I have dealt only with results based on this method of reading of the urban fabric and I have tried to underline the aspects relevant to a continuity between the classical and Islamic city.

The aim of this research is not an historical one of presenting a model which has remained unchanged, but of following the various stages or phases of a typological process which has led to the present layout of courtyard houses and which has brought about those modifications that have adapted them to the needs of contemporary life. In other words, my aim is based on the search for characteristics typical of the Mediterranean city.

In the light of this research, it has been interesting to try and reconstruct the typological process of domus agglomerations in Aleppo in that the process here is similar to, though more extreme than, that which has taken place in other Italian and Mediterranean cities with the...
same basic *domus* layout. Moreover, in Aleppo
the courtyard typology persisted up to the fifties, reaching high density levels and representing a valid alternative model to modern housing.

Thus, the hypothesis of a cultural continuity between different geographical areas throughout the Mediterranean basin allows us to understand the structure of our cities and our houses, through an analysis of examples which, only apparently, seem far removed from our own culture.
New Building Typology and New Architecture in Siberia in the 1920-1930s

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Finding new building typologies is considered to have been one of the most characteristic features of the architecture in Soviet Russia in the 1920-1930s. Following the communist ideology architects should change the daily life of people through the invention of ‘the Social Condensers’ and in the end create a New Man. Several researchers studied this subject, restricting themselves to Moscow and Leningrad. They forgot the peculiarities of the evolution of building types in the provinces, for example in Siberia.

In the time of the Revolution and the Civil War the intensive development of Siberia was interrupted and only Lenin’s introduction of the NEP (New Economic Policy) actualized it. The existing towns, heritage of Capitalism, contained only low buildings, mostly wooden structures plus several two-storied brick buildings in their business centers. Now these settlements should be transformed to Socialist cities.

But in the beginning of the 1920s only reconstruction and additions to existing buildings were possible as a result of poor economical conditions. We see a curious example in the subsequent refurbishments of the businessman Aron I. Kagan’s house in Novo-Nikolayevsk, first into the Regional Proletarian Museum of the Productive Forces and then into the head-office of the Siberian Regional Union of the Agricultural cooperation. A one storied building of small scale with eclectic neo-Russian details became a two-storied block, which demonstrated ‘proletarian simplicity’ in its façades.

In 1925 Novo-Nikolayevsk (in 1926 renamed Novosibirsk) became the center of the Siberian region. After that one third of new constructions in Siberia took place in its new capital. Administrative and trade buildings were built in a traditional manner and although trade required modern constructions with large spans for variable and flexible spaces, the architects still followed the pre-revolutionary neoclassic or Jugendstil decoration for the exterior of these buildings.

At the same time the political and cultural changes asked for the Palaces of labor, Lenin’s Houses and workers’ clubs buildings, with utopian visions of the future and with a variety of functions. Theoretically they had no analogs, but in fact they can be compared with numerous pre-Revolutionary buildings, such as People or Enlightenment Houses. For example the Lenin’s house and the Palace of Labor (both designed in the 1920s in Novosibirsk) presented in their formal compositions variations of the theme of The House of Science (Peoples University) built in 1912, after a competition, in Tomsk.

In 1925 the New Architecture appeared in Siberia, thanks to the Moscow Architectural Society’s USSR-competition for the Industrial Bank and the ‘Profitable House’ in Novo-Nikolyayevsk. These two modern, huge-scale buildings defined the main square of the city. The public saw in the abundance of glass and strict openness of their skeleton structure a modernity, which was imported from Moscow to the New Capital of Siberia. After construction of these two buildings newspapers and journals strongly criticized the traditional architecture for being useless and bourgeois.

The immigrating crowds of country people, brought to the Siberian cities by collectivization and forced industrialization, created new problems: hunger, unsanitary and epidemics of infectious diseases. The government tried to improve the situation through the ‘factory-kitchens’, hospitals, medical institutions, bath-houses etc. The progressive mentality of the Siberian public health service defined the Constructivist character of all new buildings from 1927 on. The moscovite Alexander Z. Grinberg constructed in 1927-1928 the most interesting example of healthcare buildings – the Hospital complex in Novosibirsk, which combines the hospital buildings with services and housing. The hospital was noted for its highly functional planning, good building orientation and a subterranean communication system. The state had a great program: according to the First Five-Year Plan the psychological hospital in Irkutsk (1932), the nervous-psychological (1932) and children psychological hospital (1932) in Tomsk, the hospitals in Anzhero-Sudzhensk and Cheremhov were constructed. Also regional hospitals in Omsk, Krasnoyarsk, Barnaul, Rubtsovsk and Biysk were planned.

Another side of the great social change was the construction of the clubs. The state planned to use the workers’ club as a Social Force. Although the clubs were from the begin-
ning constructed in a modern way, their pre-revolution functional program was only enlarged by the inclusion of cinematography. For the workers the cinema was the most popular and understandable medium. The idea of the club as an instrument to change people failed; even a visit to the cinema at the factories’ clubs was dangerous because of hooligans. One of the first large club buildings was the Club for workers of the Soviet Trade organization in Novosibirsk (1927-1928, architect Ivan A. Burlakov). This club was also the first example of the Constructivist work of the Siberian native architect.

A remarkable concept was presented in the House of Culture and Science in Novosibirsk – a six building complex containing a theatre, a library, an exhibition hall, a scientific research institute and a radio station with studios. The theatre was the only part of this project, that came into being. The moscowite architect Traugot Ya. Bardt and the artist Mikhail I. Kurilko invented for the theatre a special ‘Teomass’ system. It should be ‘a super-mechanized theater of the planetarium-type’ - theatre of Mass-activities, as propagated by the Russian vanguard theater producers Vsevolod E. Meyerhold and Alexander Ya. Tairov. The theatre space could be transformed into a circus or a swimming pool for ‘water pantomime’. Films would be projected on the inner surface of the cupola. The architects thought about the relation of buildings with open spaces, so they made a planning of routes for demonstrations and processions through the building.

The Siberian housing construction of the 1920-1930s was closely connected with the quest for new forms for the expected socialization of the communist society. An important role in the development of the idea of Commune-houses (dom-kommuna) in the USSR played the diploma project for the Commune for 5140 miners in Anzhero-Sudzhensk by Nikolay S. Kuzmin prepared with a consultation of the leader of the constructivists, Moisei Ya. Ginzburg in 1928-1929. As a student of the Tomsk Institute of Technology, Kuzmin applied in his final project the method of a scientific organization of labor for the spatial organization of the daily life, inspired by Taylorism and Fordism. He divided the worker’s day in seven activities and monitored the daily actions with minute precision. His Commune is one great clockwork and the placement of the blocks leads the communards to clockwise movement. Kuzmin wrote: “The general plan is a consequence of two diagrams: the life-diagram and a scheme of dynamic links. The principle of centralization and the shortest connections are obvious and are clearly shown in the plan”. According to the egalitarian principle of equal access the rooms of cultural and daily facilities are placed in the center of the lot. Other requirements were direct sunlight to every room and its natural ventilation. The Kuzmin commune was a closed system – a functionally subdivided large urban unit. Its peculiar ‘natural economy’ (all public facilities and services were within its boundaries) find an excuse in the absence of necessary facilities in Anzhero-Sudzhensk.

The ‘Commune house’, was explained as something completely new – a ‘New Social Condenser’, but it presented nevertheless typologically nothing more than a combination of old building types as hostel, hotels, overnight buildings for poor people and even monasteries or prisons. In fact Siberia had its own typical pre-Revolutionary examples: the Czarist government constructed migration centers for peasant and military settlements.

In Siberia as in the whole USSR the Workers’ residential construction co-operative associations (RJSKT) had solved the large housing problem in 1928-1932. ‘Printer’, ‘Working five-year plan’, ‘Chemist’, ‘Red Tanner’, ‘Checkist’ RJSKTs were established in Novosibirsk. From the construction of separate houses they evolved to the erection of living quarters, in which an arrangement of buildings in parallel rows with special orientation was widely used. These associations constructed brick communal buildings with communal dining hall, factory-kitchens, reading-rooms, sport-halls, bathrooms and showers. The newspapers wrote: “Two rooms and kitchen with its petty bourgeois cosines become history. Instead of them the new socialist way of life shall come! Give way for the new way of life!”

Several interesting housing projects were built in Novosibirsk by architects Boris A. Gordeev and Sergey P. Turgeney, exiled from Moscow, like the so-called housing combine for the association ‘Dinamo’. It consisted of a shop, apartments without kitchen, a hotel for 250 persons, a dining hall for 220 persons and a mechanized kitchen for 1500 dinners. In 1931-1934 they built the regional Supply Committee building – the first gallery-type housing in Siberia.

Another side of the new typology was the construction of administrative buildings (Soviet Houses) and of the buildings for NKVD-OGPU (the Soviet Secrete Police). These buildings should show in their monumentality the Soviet Power. Remarkable is that the dwelling complexes with daily-life facilities and services as commune-houses build for simple industrial workers never worked perfectly. They either never started to function or functioned a very short time according to their social programs, although some of this sort
of complexes for the OGPU are even now in good use and still preserve their original concept. These buildings, placed together, formed a special part of the town centers.

According the First Five-year plan and due to the development of the basic heavy industries of Ural-Kuznetsk-Kombinat, many new cities were under construction at the end of the late Twenties – beginning of the Thirties. In these company towns the new communities were fully planned. But even before the introduction of the Industrialization of the First Five-year plan in Siberia one unique attempt to create some settlements for industrial workers found place. The Dutch architect from Haarlem, J. B. van Loghem, designed in 1926-1927 several settlements for workers of the Autonomous Industrial Colony (AIK) “Kuzbass”. For his ‘functional town’ he combined the garden-city idea with typified housing buildings placed along perimeters. Van Loghem designed several types of houses (from different materials: brick, wood and with different systems: freestanding one-family house, row houses and bachelor-hostels). It was a very early experiment of typifying workers dwellings. His typology system together with constructive innovations allowed cheap and quick construction of necessary housing. After his leave of Siberia his designs, with some changes, were still used.

In 1931 the German city-planner Ernst May came, together with his international team, to Siberia. In his master plans for Siberian towns he used the principle of superblocks, consisting of housing, hostels, crèche, kindergarten, school, hospital, canteen, supermarket and a cultural center with club, cinema and sport field. The socialist town was understood as a sum of separate blocks, each of them should be self-contained in material and cultural requirements of their inhabitants. For easy access and healthy conditions the schools were to be located in park strips, which ran through the whole city.

The architects got more freedom for experimenting with types. Each member of the E. May’s International Brigade had to design some specific building type. In their work for the housing projects the dwelling for minimum existence was of great importance. Standardization became the general option for discussions.

After the mid 1930s it became obvious that the Soviet Government gave priority in Siberia to the building of the industry and had not enough will and possibilities to house all workers properly. Nevertheless the short time of experiments with new typology and new architecture of the 1920-1930s was the most important period in the social and architectural history of Siberia in the Twentieth Century. In the course of two decades the Siberian built environment was incredibly transformed. The old Siberian cities lost their compact structure; the new ones were constructed as Sotsgorods. The panoramas of the old cities with their churches and cathedrals were consciously destroyed, the old city symbols replaced by new.

In the beginning of the Thirties the Stalinization of Soviet architecture and city planning stopped the Modern Movement and the experiments with buildings types. Only in the Sixties, when the Thaw came over the Soviet Union, the experiments with typology of buildings and their urban placement, with the aim of feeding, services and cultural networks on egalitarian basis, became once more a subject in Soviet architecture.
The Urban Form and the Transformation on the Office Buildings: The Sao Paulo Metropolis’ Study Case, Brazil

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Toward the Multicentrality of Form
Many phases of development configured an urban expansion of the São Paulo metropolitan agglomeration gathering today 39 municipalities and 17,306,000 inhabitants. The main urban form transformation was stimulated by the high rise construction, the population growth, and the shift of activities on the territory.

During the 1950’s and 1960’s the old radio-centric road system was enlarged with the construction of new highways and secondary allotments’ streets, keeping the existing centrality. The 1968 Basic Urban Plan proposal forecasted a large road network.

The office buildings high rise, hotels and even buildings for residential use grew slowly, becoming in the 50’s predominantly a prestigious urban pattern. The large enterprises headquarter began to migrate from the traditional center toward the Paulista area. The city expands itself constituting an agglomeration growing with the industrialization, attracting the labor force.

During the 1970’s and 1980’s the central activities of goods and services distribution increases, following the population translation over the territory. Near the edges of the Pinheiros river new commercial poles of modernity were born delineating an urban design commanded by the implementation of shopping malls like the Iguatemi in 1967, soon followed by the Eldorado and Butantã ones at the vicinities. The new urban design fundamentally configured a tissue of high rise buildings, with offices, commerce, services, and residences that before had been predominantly two floors twin or row houses.

Before the 1972 São Paulo Zoning Law it was allowed to build 6 times the parcel area. After it the high rise construction was limited to 4 times the parcel area in those districts of higher density. These areas occupied by families of median and high income gained an urban design marked by the presence of office buildings of high technology. (Ornstein, Leite & Andrade, 1999).

Simultaneously the low income population pressed by its worst economic situation squatters public and private lands amid rich areas, building the Heliópolis and Paraisópolis favelas, respectively.

It is known that the population poor groups earning monthly from 2 to 5 minimum salaries reached 2,857,315 million inhabitants in 1995, according to the sample research by dwelling of the Brazilian Geographic and Statistical Institute. The whole urban area shows differences as the result of the social and economic unbalances.

In this context new proposals were done to renew the olden areas preserving and renewing historic buildings as that of the Municipal Theater of São Paulo and the taller buildings like the Martinelli used for the municipal offices, and that of the Bank of the State of São Paulo (recently privatized as Santander Bank), located at the traditional city center. The metropolis was known by its central polarization force and urban form organized around it. (Bruna, 1991).

Slowly the change of this urban form starts with the expansion of the commercial activities along the main arterial highways toward the south. The construction of express ways together with new roads and the Large Metropolitan Beltway which first phase will be ready in 2002, structure the formation of a road network, although the radio-centric system remains less important.

Many enterprises and banks headquarters continued shifting from the central areas reaching Southern the Faria Lima and the Berriini avenues. New corridors with modern...
architecture office buildings with high technology were structured multiplying the strategic located new centers. The metropolis became polinucleated with many urban centralities. New commercial areas grew around these centers building 150,000 sq. m of usable office areas, per year. The total metropolis’ stock area reaches 7 million sq. m of usable office space. Thus the once known as an industrial metropolis becomes a tertiary megacity, with businesses tourism attracting people all over the world, and becoming the gate of entry for South Latin America.

Office Buildings

Comparing the land use transformations in the 1990's and its forms, one verifies that 63% of the land is residential and 37%, non residential. From the 313 million sq. m of non residential uses’ increase, 90% correspond to both commerce and services, and the remaining 10% to industrial uses. (Prefeitura do Município de São Paulo, 2000).

From the 7,4 million occupied people in the metropolitan region, 4 million are connected to services and around 1,1 million to commerce, including the higher levels of education and information tech knowledge.

From 1987 to 1997, the growth of high rise buildings of commerce and services in the Municipality of São Paulo is among the biggest in the Southeast region - linked to both, Berrini avenue and Pinheiros River Edge Drive, the Nações Unidas avenue. In other words, this verticalization embraces 41.8% of the total services’ built-up area, with more than 5,000 sq. m of individual licensed built-up area.

Nevertheless, although São Paulo is today a tertiary megacity, the office buildings vacancy rate remains high. For instance, in 1999 there was 2,7 million of sq. m of real estates for offices in the central area, with a vacancy rate of 15%, probably due to old buildings needing retrofit to attend the enterprises’ technological demand. In the newer expansion axes of Berrini and Nações Unidas avenues the vacancy rate is 10% compared to the acceptable limit of 7%. Despite this, nowadays there is a lack of office buildings with a floor area pattern around 800 sq. m or more, associated to an infrastructure with air conditioning for environmental comfort, less energy consumption, safety system against crimes, thus supplying many multinational enterprises’ needs.

Facing such data, in Brazil there is an open discussion about the performance of the occupancy type in work environments, as the office buildings follow imported patterns, not always tuned with the local reality. Recent Post-Occupancy Evaluation (1998-2000) done in high tech buildings of large size (3,000 users/day), located at the Nações Unidas avenue indicates the need of improvement (Ornstein, Leite & Andrade, 1999):

(a) at the neighborhood - more efficient garbage services; pavements and side walks recovering for disabled accessibility;
(b) at the building - study and proposal of escape routes in case of fire; improvement of the vertical transportation (elevators); restaurant and theater hall services opened to the users;
(c) at the typical floor - layout improvement favoring the users’ privacy, storage area, better thermal and lighting comfort and less noise.

New centers like these have taller office buildings with more than 40 floors upward and 3 floors underground, built with building systems still not largely in use in the country, mostly emphasizing the use of high performance concrete. Predominantly these buildings have a core area with stairs, elevators and shafts, and a landscape office type as floor space. Generally their facades are on curtain wall, no matter what is the solar and climatic conditions. Thus the selection is done according to the market speculation, rather than favoring the enterprises and final users needs for environmental comfort and energy economy, among others. (Becker & Steele, 1994).

The multicentrality changes the initial radiocentric metropolitan form, changing thus the urban design. The old continuous urban pattern is broken, both the traditional and the modern amalgamated before. Many new office buildings have no more an organic relation with the urban tissue. They are considered isolated elements in the landscape, attending only the inner buildings’ needs. No one cares with the environment, like for instance the buildings’ underground garages built despite the high level of the subterranean waters. There is no

Figure 2: Old Center and a Requalified Office Building.
access to the rail transportation which is expanding in the region, and slowly modifying the traditional urban design. The individual transportation predominates generating intense traffic in rush hours.

The old commercial areas receive some quality's transformations connecting the location of new enterprises to some improvement at the neighborhood, like in road system, public squares, cultural centers and requalification of old buildings with uses complementary to offices like hotels. Also they are served by the subway (metro), train and bus systems.

Centers like these are the result of the called Urban Operations, done in partnerships between the public and private sectors. The financial agents are worried with the renewal of buildings and the need for new services' offices, like that for call centers. In these cases the building requalification is associated to the urban neighborhood requalification, even facing limitations in the typical floor size and in the technological capacity of adaptation to the new demands for cables' structures: voice, data, telephone, electricity, energy generators, air conditioning, aside to specific care in case of historic buildings.

Conclusions

The urban form of São Paulo is quicker modifying while the metropolis is becoming globalized.

The old center urban design keeps its landscape pattern at the same time the new technologies are introduced into its buildings, imposing better levels of environmental comfort.

The newer centers expanding towards the Southwest are structuring large size developments, molding the metropolis' architectural monumental patterns.

Their functional uses rather supply the marketing needs than adequate the high tech innovations to the local needs of work and urban life.

References


Brazilian Mining Towns: A Mosaic of Urban Forms

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Abstract

This work sets out the results of a study, which looks at the changing urban patterns of a Brazilian town from its colonial-era beginnings until the present day. The town, Nova Lima, located in the state of Minas Gerais, presents in its urban form a mosaic of urban experiences which have resulted from various developmental tendencies introduced by the foreign companies that came to exploit the area’s mineral resources.

Urban Morphology analyses show that the town core was of a Portuguese pattern and was ruled by the Royal Ordinances from 1693 to 1820. In order to further exploit its mineral resources, however, the Imperial Brazilian Court adopted the policy of bringing in mining experts from abroad. More than 100 companies arrived in Minas Gerais between 1822 and 1889 to mine gold, iron and diamonds. These companies not only brought advanced technology and skilled workers but also implemented urban designs similar to those used in the English industrial towns of the Victorian era, thus adding to the colonial cores of the original settlements. These mining towns tested Victorian principles in the hinterlands of Brazil in the nineteenth century. They also can be presumed to have acted as laboratories for urban theories that were further developed and known as Garden City principles.

In the following century, the extraction and manufacture of iron by Mannesman, a German enterprise, led to new urban patterns. In order to settle its large staff, Mannesman developed near Nova Lima a highly forested, suburban area according to organic principles.

Today, many people who work in Belo Horizonte, the capital of Minas Gerais located 20 kilometres from Nova Lima have chosen to live in a number of suburban developments on the outskirts of the city.

This paper presents the different typomorphological patterns of Nova Lima in order to discuss whether the recent burst of new development there is a metaphor for Garden Cities or is simply a new language for land speculation.

Introduction

A look at the 300-year history of development in Nova Lima shows that different planning purposes were used to develop its urban and rural areas. The aim of this study was to determine the main principles of each period of development and to discover which of these resulted in today’s urban form. Literature about Portuguese principles was found in Vasconcellos (1958), Marx (1991), Goulart (1995) and Marx Delson (1979). Information was also gleaned from books written by those who travelled to Minas Gerais in the gold-mining era. The most useful book was one written by Burton in 1876, which very accurately depicted the life of Nova Lima, where the gold-rich Morro Velho mine was located.

General information about English “paternalist villages” was found in Ashworth (1954), though it contained no references to such villages in Minas Gerais. Paranapiacaba in São Paulo was a similar example of a village built in Brazil to house the railway workers of an English Company. Minami (1994) describes the main organising principles of the village plan, which allowed us to distinguish and compare them to those in Nova Lima.

Lynch (1985) explains the concept of an organic settlement and how to distinguish it as an isolated entity related to the overall landscape. The use of satellite images and Brazilian software Spring DB, INPE (2000), made it possible to identify the protected, forested areas along streams, the street layouts, and the relationships between built and open spaces. The resulting urban forms were drawn on a digital basis. Each form, resulting from the application of a specific policy, can be taken as an example of a planning experience that can be explored as a tourist product. Such information is valuable not only to architecture students but to the general public as well, demonstrating as it does cultural aspects of Minas Gerais, which, until now, have remained unknown.

The Portuguese Principles

There exists a generally held belief that the Portuguese didn’t settle on any specific rules regarding the street layouts and building typology of Brazilian colonial towns. Despite the fact that many scholars disagree with that statement, it does hold true in Minas Gerais. The main factor in the development of the towns was the urgency to mine gold. Since no one wasted time cultivating the land, goods had to be brought from other Brazilian towns and from Portugal. The road that joined the principal mining centres to Rio de Janeiro, the main city and port of that era, became the input vector that prompted the development of the towns. Vasconcellos (ibid.) notes that mining villages appeared along the road known as the Royal Road, which ended up becoming the main street of almost all the colonial villages. Huts and small houses were established with little order along the thoroughfare. The only known rule was laid down by the Roman Catholic Church, which recommended that the main churches be built on distinguished spots near the Royal Road, Marx (Ibid.) Small nuclei of development grew up around these churches and along both sides of the highway.
As progress brought more commerce to the main street of these villages, squares were laid out and new streets made. There were also attempts to draw a grid pattern. Further settlement saw the construction of council halls, cathedrals, and houses for the wealthy. In general, the plots had a large frontage and were short in length in order to adapt to the mountainous terrain.

**English Paternalist Patterns in Mining Towns**

In the middle of the nineteenth century, an English enterprise, the Saint John Del Rey Mining Company, acquired Nova Lima's Morro Velho gold mine and brought in skilled mine workers from Cornwall to work it.

At the time, Nova Lima was a small village spread out along the Royal Road and near the mine. The home of the former mine owner was turned into the Company headquarters in 1834. A later collapse of the mine pointed out the need for greater structural support. Wooden beams were introduced to reinforce the tunnels, leading to deforestation in the area. Lakes were also created in order to provide hydroelectric power to light the mine and the homes of its employees.

Finally, the Company constructed neighbourhoods based on English patterns. In contrast to the Portuguese example, these English residential areas were laid out by following the labour hierarchy of the Company, from slaves to Company superintendent.

The first home type, for instance, was also the simplest: rows of two-room houses for the slaves. Next up in the hierarchy were the unskilled workers, for whom were built terrace houses with street frontage but no garden or indoor toilets. A third kind of habitation was a duplex with garden frontage. There were also bungalows with porches and wood-frame windows for more skilled workers. The most highly skilled workers were housed in substantial bungalows with fenced plots and hedges and with access from the outside controlled by gates. For the mine superintendent, doctor, vicar and other important officials, very impressive homes were built near the mine headquarters. In addition, the Company provided schools, hospitals, shops, bakeries, clubs, football fields and even country homes. The paternalist nature of the Company also caused it to improve the sewage system, street drainage and water quality. These measures not only worked to make its employees healthier, happier and more productive, but to control them, as well.

Morley (1999) tells us that these private initiatives made enormous contributions to town planning in its embryonic years. He states that low-density residential planning with semi-detached houses designed in a variety of cottage styles within a setting of open space and foliage was discovered to be a subtle remedy to urban ills. It is important to note, he says, that these methods were employed within other schemes, which produced an international culture of superior environmental quality.

**Organic Developments**

These old Nova Lima neighbourhoods remain as they have for centuries, and even today the descendants of their former tenants own some of the old houses. In contrast, however, Nova Lima's suburban area is undergoing numerous changes, mostly as a result of the explosive growth of nearby Belo Horizonte.

Some of the growth pressing toward Nova Lima could have come as a result of a development constructed in the late 1960s by Mannesman, the German mining Company. Mannesman, whose headquarters was located on the other side of a road which delimits the two cities, built the first suburban development in this highly mountainous area to house its senior officials. The development was designed to respect the local streams, forests and other natural features of the region. Houses were built on two levels; employed coloured beams and enjoyed beautiful views of the surrounding mountains.

From this development were to come numerous others. One of the newest Nova Lima neighbourhoods are being developed on the outer reaches of the municipality around one of the lakes created long ago by the British. Hills have been bulldozed and the ground levelled to make way for 120,000 plots surrounding the lake. A wall encircles the development and a gate controls access. The area has been divided into clusters of high-walled houses. The project is based on the SWA Group; a standard model that can be reproduced anywhere. And although the planners claimed that the house typology chosen for the development was intended to stress the culture of Minas Gerais, the houses actually bear a strong resemblance to the big houses of Spanish Latin America.

Brazil, of course, was colonised by the Portuguese, and it was their discovery of gold here that led to the development of Minas Gerais. Along with wealth, the discovery brought the introduction of Baroque architecture to the region. Examples of “Mineiro Baroque” architecture can be seen in Ouro Preto, the former state capital, with its typical cathedrals, neighbourhoods and street layouts. If the houses in the most recent Nova Lima development are being sold as exemplifying the culture of Minas Gerais, perhaps they should have been based instead on this exam-
Conclusions

There is a general acknowledgement among urban morphologists that form, resolution and time constitute the three fundamental components of an urban morphological study, Mouldon (1997). Each component provides a guide to the development of the study.

The first component, form, expresses the product of the political and socio-economic forces at play in a settlement over time. A subdivision of the economic cycles of time provides us with the periods of analysis. The principal policies provide the resolution, a clue to the subject under analysis. Form, then, is the result of the application of resolution on a certain period of time which can be analysed as a layer, a frozen pattern that is the result of a combination of the three components.

In this research study, resolution was taken to be the planning strategies developed by various mining companies to house their work forces. These planning strategies varied widely, with the Portuguese letting development occur more or less freely, the English employing a highly structured, overall plan, and the Germans taking into account and working within the natural landscape of the area. Yet despite the differences in approach, it was found that all three ultimately respected the natural environment and tried to enhance it.

The same cannot be said regarding current development, which has tended to view the landscape as a mere element of the development and has destroyed many natural features in order to provide more plots to sell.

Nonetheless, this is yet another pattern that has been added to the former ones, creating a mosaic of urban forms.

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Urban Built Form Design Control

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Abstract
Continuous change in contemporary cities has produced an urban space typologically diverse, particularly in fast growing South-American countries. As a result, the straight contextual analysis, usually used to assess the degree of innovation/permanence of new buildings in urban settings becomes ineffective, for the simple reason that frequently it is virtually impossible to establish what the context dominance actually is.

The method proposed in this paper takes the issue of typological analysis from a systems approach. This is carried out by a series of procedures, such as:

a) identifying buildings' constitutive parts, which can be done at any degree of detail;

b) listing them according to their attributes of repertory and formal composition; with this it is obtained an extensive catalogue of the entities taking part of the considered urban setting, from which the actual context can be depicted;

c) listing each entity's participation in the landscape composition, or the role each one has in the landscape configuration.

The software that operates the analysis does the rest, measuring the degree of innovation/permanence of each entity, in relation to the others, and defining what the context is made of. From this, any inclusion/exclusion in the considered townscape is automatically evaluated in terms of impact on the pre-existing setting. The system can be used at any urban scale, as well as at the buildings.

Introduction
A recurrent urban design problem is to relate the designed built form to its context. This has been approached by several authors, from different areas, such as Muratori (1960), Rossi (1966), Caniggia & Maffei (1979), Castex (1980), Steadman (1998, 2000), as it lies right at the hearth of urban form theory. The basic point is to access the degree of differentiation of a new built form out from the other, already existing built forms around the design site. Differentiation among new and old buildings emerges from expected changes in social requirements, as well as technology evolution. It does occur in varied degrees because differentiation takes place in many, if not all the components of a building, compared to a host of surrounding buildings components.

Homogeneity and morphological change
The effect of insertion of a new built form in an urban context can be considered in several ways. One relates to morphological order change, altering relationship between hierarchies; other impacts, as on legibility, or townscape are frequently reported. Indirect effects can be considered, as land use pattern, animation or energy conservation. In any case, the central question is twofold: a) to measure the impact of a new built form on an existing context (design situation), and b) to describe an existing morphological pattern which configures a context for future designs (planning situation). Both represent aspects of the same problem: each new insertion contributes to establish a new morphological pattern, which can remain the same, vary slightly or, in unstable situations, vary radically. In this way, history of urban form can be described in terms of its rhythms of change as it goes through long periods of stability, gets unstable due to cumulative change effects and abrupt pattern shifts. An adequate measuring procedure for patterns and changes is still missing from both normative and cognitive theories.

Urban built form design control
The instrument of design control proposed is implemented through the following procedure:

System delimitation, defines the context upon which a design will be assessed. Delimitation includes definition of scale, architectural entities, analysis parameters and attributes in the right resolution levels;

Entity and attributes specification, creates a data structure in which every entity is described through its attributes and relationship to other entities. This data set is the basic input for the computational model;

Processing, action by which the computer software compares the attributes of each entity to all other entities at the same resolution level, assigning each entity the value of +1 when they are equivalent and -1 otherwise. From this one-to-one comparison a contextual dominance emerges, a pattern for every entity, set of entities and entire architectural objects, against which every other designed architectural object can be assessed. The computational model will spot the effect of inserting such a new object at every level of detail considered in the system definition, identifying the contextual innovation or permanence resulted from the proposed design.
Attributes can and should be organised at several hierarchical subsystems, in order to better represent typological and morpho-typological structures. The operator can define particular detailing levels, therefore, to adapt the model to any scale analysis, from a particular building to entire urban design schemes. The model also allows for crossover relationship among entities so that morphological characteristics of one specific level can impact others at higher resolution levels.

Innovation and permanence

The ideas of innovation and permanence that relate the attributes types do not refer to innovation as an invention or something new. They do not refer to permanence as something created by the time passing either. Their concepts derive from three essential notions:

a) equality or geometrical equivalence notion is based on analytical geometry (Chaput, 1964) and proportions theory (Schofield, 1971): when two attributes are not equal or equivalent, an innovation is achieved; on the contrary, permanence is restated;

b) reference and non-reference notion is linked to architectural composition concepts (Linazasoro, 1981) as well as to mutual presence and derivation concepts (Caniggia & Maffei, 1979): an innovation is featured when there is a rupture in the composition because some attribute does not relate to the set its components and relationships; a permanence is featured when some attribute refers to the components and submits to the compositional rules;

c) notion of objects genotypic and phenotypic dimension (Steadman, 1983; Hillier, 1984): an innovation is featured when two attributes have different genotypes and permanence is featured when two attributes have the same genotypes.

If we determine any logical value to innovations and the opposite value to permanencies, we can statistically control the way they are distributed in the system. As a rule, we adopt the values -1 to innovations and +1 to permanencies. So we can quantify the situation of each entity in relation to these requisites in the system. This quantitative mechanism that can be understood as establishing system parameters and it is according to the typological approach, which was mentioned before.

The assessment does not finish with quantitative analysis only. The operator should always make a verbal sense to model products through sensitive and reasonable resources. Negative “-” or positive “+” results and high or low values should not be considered good or bad nor worse or better. Nevertheless these meanings can be culturally related, they do not take part in the model.

A model for measuring morphological patterns and impacts

The proposed model arises from consideration of built forms, as being abstract entities, which can be decomposed down to minimal bits of information, virtually to an on-off pixel grid. Opposed to building types, which are entities highly structured and bearing social meanings, built forms have much less structure and virtually no meaning, so that, whilst types enable quite large variation within the boundaries of a same category, built forms are responsive to very small differences. The proposed model, operating similarly to synergetic computers used in pattern recognition (Haken, 1991), register the very elementary signals, and enables the operator to organize them in a bottom-up structure. In this way, patterns emerge from a finely detailed shape database by means of hierarchy introduced by the operator, according to his analytical objectives.

Such a description enables morphological variance to be detected at different levels, from the very elementary up to the most complex and allows for the measurement of spatial diversity based on the relationship of each part to the other parts of the whole. The model, implemented through a computational algorithm is able to give a precise quantitative measure of a spatial systems pattern, and to spot the impact of a proposed new built form on such a system.

The analogy to synergetic computer is more than casual, as the research suggests a real possibility of giving the computer model the power to work out the hierarchical relationships that at this moment the operator is in charge with. To this extent, the model could evolve into a truly pattern recognition device, able to spot the very structure of built form spatial organisation. The pattern recognition paradigm, proposed by Portugali (2000) refers to the possibility of giving the computer model the power to work out the hierarchical relationships that at this moment the operator is in charge with. To this extent, the model could evolve into a truly pattern recognition device, able to spot the very structure of built form spatial organisation. The pattern recognition paradigm, proposed by Portugali (2000) refers to the possibility of recognising a pattern, among several ones, in the presence of just a portion of one of those patterns, which can be achieved through synergetics. The case in hand proposes a two step process, involving pattern recognition - to identify in which way a new building belongs to an existing contextual pattern - and pattern formation - to identify in which way this new building contributes to change the existing pattern and to make a new one emerge.

Conclusions

The following simplified statements have derived from experiments with the model in the city of Pelotas, RS, Brazil:

- The Impact of a new building on an existing urban environment is not limited by the...
features of the new object; it is established by a relation between the new object and its context with influences and interdependencies;

· there is neither direct nor constant relationship between innovation and high impacts occurrence; the keys to these answers are linked to the relative position of permanence and innovation relations that take part in the system;

· high Impact occurrence can either be active or passive; that is, at any partial change this occurrence can come from new buildings as well as from existing ones;

· the bigger the diversity of a certain urban environment, the bigger its capacity of absorbing impacts and there is a tendency to morphological stability or inertia; in the same way, when diversity is low the urban environment is sensitive to any interference; there are high impacts even if there are not big changes;

· according to what was said before, could say that the diversity of the parts provides stability to the set which they take part in;

· contrarily what has been reported in critical literature of architecture, the presence of high impacts is not a privilege of present century modernism; it tends to be a historical recurrence and not to be exclusive to a certain period.

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Xi’an - Urban Morphology of Cultural Difference

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The city of Xi’an is famous for its orthogonal grid and fortifications that reflect some of the key ideas of traditional Chinese urbanism. The original structure of historic Chang’an was strictly orientated according to the ancient principles of divination and divided in a number of walled sectors. At its peak the perimeter of the walled city measured ten by eight kilometres and housed a million inhabitants. The city layout reflected strong hierarchical rules of Chinese society. While physical structures other than massive walls almost completely disappeared, the city grid remains the strongest contributor to continuity of dramatic urban form of Chang’an. Urban-morphologically it keeps the spirit of the ancient capital alive.

Once the beginning of the Silk Road, Xi’an of today has the largest proportion of Muslim, Hui population in China. They mostly inhabit densely populated area in the very heart of the old, walled city with lives centred on ten mosques. The juxtaposition between two strong traditions, the dominant Chinese Buddhist and Confucian thought and Islam generated many interesting urban situations. Urban Design-Research Studio MOST explored urban-morphological aspects of that relationship. This paper presents the context of that study. Xi’an, the capital city of the Chinese Shaanxi Province is city of long and exciting history. Known as Chang’an for more than a thousand years it served as a capital city for many ruling dynasties. It was the capital of the Empire for over three hundred years (586-904) [5]. Its peaks include times of the First Emperor of China Qin Shihuangdi (died 210 B.C) and the Emperor Xuanzong (713-755). It stood at the beginning of the Silk Road, which since year 200 linked China with Europe. “By the 6th century A.D. the site of the city of Ch’ang-an had already been validated by two millennia of historical experience” [6]. During the Tang dynasty (618-907) Chang’an was largest city in the world-it housed a mil-lion inhabitants and the perimeter of the walled city measured ten by eight kilometres [1].

With the fall of the Tang dynasty (907) the importance of Chang’an diminished, and after the civil war the capital was moved to Kaifeng in the Henan Province. Today Xi’an is one of the most important industrial centres of China, with five million inhabitants and many industries strategically located deep inland.

Chang’an was established by the Chou dynasty (XI C.B.C – 256 B.C), almost mythical founders of Chinese urbanism. Their famous rites, the “classical source for city theory ... the Chou li, or Chou kuan ...” [6] was thus not only tried at, but to the large extent established on the experiences of foundation and construction of the city of Chang’an.

The classic rites “stated that a royal capi-
gancies, the grid remains strongest single contributor to continuity of dramatic urban form of Xi’an. Urbo-morphologically it keeps the spirit of Chan’ag alive. Wide avenues are reminders that once “nine carts could ride abreast on each of the 18 main roads of the grid” [Holledge, in 2].

Today, Xi’an is one of multicultural centres of China. Thanks to its position at the beginning of the Silk Road since the Tang times thousands of traders at any moment lived in the city. For centuries it houses the largest Muslim, Hui population in China. Due to central location of their quarters the presence of Huimin (Hui person, Muslim) is obvious. Since the seventh or the eighth century they inhabit the same, densely populated area in the very heart of the old walled city, just West to the Drum Tower (Image 1). The Hui quarter (Huiminfang), or simply “the quarter” (fagang) [2], is not larger than one square mile but it houses more than 30,000 people (1994), or half of the total Hui population of Xi’an. It boasts ten (of Xi’an’s eighteen) mosques, true centres of social life of the district. There are also several historic monuments, hundreds of shops, eateries and an unknown number of food stalls. They “spilled beyond their architectural confines onto the public sidewalk. Hui entrepreneurs used the sidewalk for food preparation, storage, and seating for customers”, while “the biggest streets in the quarter were only wide enough to allow a single car to drive through, and much of the area consisted of small alley-ways so narrow that a bicycle could barely squeeze by” [2].

The presence of the Hui in the street-life is obvious, but the physical framework of their activities does not reflect the cultural difference. In her study of relationship between modernisation and consumption activities in Xi’an Boyd Gilette notices that “in 1998, the quarter was the only part of the city that retained a number of houses that were more than 100 years old. Its private homes and narrow, convoluted alley-ways contrasted sharply with the wide streets and high-rise complexes that characterized most other places in Xi’an” [2], but none of those features bear particular traces of Islamic culture. That culture is strongly reflected in everyday practices of the quarter’s population.

So, by its origins and present appearance the city of Xi’an is as Chinese as it gets. But, for more than a millennium it houses a strong and vital Muslim community. What are the expressions of that community and, particularly, where are the urbo-morphological consequences of difference?

We could argue that the local identity finds strongest expression in urban “software”, while the “hardware” does not bear the expected level of difference. That seems to be a historic fact, for even “Hui people of the late-imperial period spoke, looked and acted Chinese in most respects” and only “their practice of Islam produced some striking cultural differences between them and non-Muslim Chinese” [2].

Present manifestations of everyday life make strong spatial markers and provide delimitations, often as powerful as walls. For instance, sounds of the call to prayer (Image 2) that permeates the Muslim district “five times each day, but in synchronisation, as each mosque independently determined the proper time for worship to begin” [2] give almost tangible feeling of entering and leaving the area. The reach of human voice (or most often, far less poetically, the loud-speaker) establishes not only external boundary of the Huiminfang, but also the intricate network of internal boundaries. Local Hui are strongly devoted to “their” mosque, often identifying themselves not only as “living around the mosque” but as “belonging to” one of them.

The fact that Islam did not find stronger spatial expression nor left recognisable mark at macro morphology of Xi’an might have cultural reasons that come from “the long-standing faith in the supremacy of Chinese culture and Chinese folk nations against non-Chinese “barbarians” [2]. That discussion remains beyond the scope of this paper. It may be recorded only that such sentiments remain present. Hui are still often seen by other Chinese as “feudal” or “traditional” (chuantong), which equals with backward (luohou) [2]. Being deeply religious, “… during the Maoist era Hui were “accused of maintaining feudalist, anti-socialist and exploitative practices” [Glady in 2] and today authorities are trying to correct that stigma.

What matters here is that juxtaposition between two strong traditions, the dominant Chinese Buddhist and Confucian thought and Islam has generated many interesting urban situations. As already described, the morphological expressions of difference are not represented at urban level. That scale is marked by the ephemeral manifestation of Hui presence, by temporal structures of their daily practices and rituals, by morphology of movement, smells and sounds. Physical expressions of cultural difference begin at the level of

Figure: 1
architecture, particularly sacral buildings. Traditionally, not even typology of Xi’an mosques was recognisably Islamic. It was based on Chinese courtyard house, siheyuan. Built into the continuous walls of the traditional streetscape mosques did not reveal the essence of their difference, except to a knowledgable eye.

Modern day mosques are deliberately of completely different architectural style. That, to certain extent, shows changing attitudes to Islam in general and, to a much larger degree, to the local Hui community in particular. New mosques of Xi’an are built in recognisable, “international” style derived from the idea of “Arabic” style, the alabo de.

Thus the architecture of the mosques makes visible dialectics of local religious practice practices and influences of wider Islamic reform movements. Xi’an Muslim community is active to the extent that “some of the disagreements were so bitter that residents had to build new mosques to separate the quarrelling factions”. In that climate “how a mosque looked like conveyed a public message about residents’ beliefs, practices, and allegiances; their status as “authentic” Muslims; and their degree of modernisation” [2]. The issue of architectural style became directly relevant to the status of the mosque congregation. The “traditional” and “Arabic” forms relate to different versions of Islamic teaching. Some Hui see Chinese-looking mosques as backward and insufficiently Muslim. That explains why both mosques built in the quarter since the 1980s were “Arabic”.

“Of the other Hui congregations in Xi’an (those not in the quarter), seven of the eight mosques (all constructed since 1979) were built in Arabic style” [2]. Locals enthusiastically describe them as “truly Arabic”, “truly Islamic”.

That brings forward the most interesting dilemma of the local community: “how should one be a Muslim?” “At issue was how, and to what degree, Chinese Muslims should imitate the Middle East, and to what extent this entailed rejecting the indigenous practices” [2]. The architectural styles of the new mosques and those built in traditional Chinese styles illustrate that fundamental issue, which for us translates into an interesting question on morphology of cultural difference. But important observation of one of Boyd Gilette’s informants brings us back to the everyday life. He believed that “only thing that made these mosques different from temples was the kind of worship that took place inside them”, for “most had images of dogs, cats phoénixes, and other animals on the inside, which he objected to be violating the Qur’anic prohibition of making images.” He was also certain that “since Hui beliefs are different from Han beliefs, Hui mosques should look different from Han temples ... For this reason the new mosques are all built in an Arabic style” [2].

That is an issue to be seriously addressed in planning of Xi’an. Dramatic urban reconstruction during the 1990s tore down the old residential and commercial buildings in the city, widened the streets, and developed many new buildings. The progressist attitude of the Government is likely to be well accepted by locals. They see their quarter as unpleasant, many wanted the quarter could become “like America” and “like Beijing” [2].

With such approach to reconstruction Xi’an has gained a lot, but also suffered big loss of traditional environments. In reconstruction of the Huiminfang the messages of old Chang’an should not be disregarded. Many inhabitants “despite their disparaging remarks, … were strongly attached to the quarter. … Very few chose to leave, including those who were wealthy enough to purchase private apartments in the newly rebuilt parts of Xi’an …” [2]. It is important to evaluate and keep traces of the past, not only as physical artefacts but also as living practices capable of generating quality environments. The emphasise should be on definition of practices of culturally sustainable development. Those raise questions of the “future of the past” in developing countries and dialectics between local and global trends - and remain outside this short paper.

Endnotes
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Brasilian and Portuguese Modern Housing: The Success of a Model

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Abstract

The paper aims to analyze the evolution of the high-rise collective housing developed in Brazil and Portugal according to the Modern Movement principles. The comparative typological evaluation identifies their morphological rules. The spatial and functional strategies changes occurred after they have been occupied are discussed. The inhabitants’ satisfaction is analyzed through indicators that assess the current way of using the housing spaces and the social dynamics generated by the existence of complementary functions. The conclusions refer that although adaptability and flexibility degrees of dwelling spatial layout are related to specific cultural, social and economical frameworks, some invariant persist: a clearly positive inhabitants’ satisfaction with Modern Movement high-rise collective rising.

Introduction

In Brazilian and Portuguese cities, the production of high-rise collective buildings as a result of Modern Movement theories is expressive. Initially in Brazil, then in Portugal, these concepts were formalized through isolated interventions in the urban fabric – individual projects of architects – associated with the introduction and diffusion of reinforced concrete. Progressively the isolated project conception gave way to the repetition of housing models formalizing neighborhoods through integrated programs of city planning.

The research studies the housing programs developed accordingly to the evolution of high-rise collective housing typology in each country, in order to evaluate the inhabitants’ satisfaction. By satisfaction is meant the “feeling resulting from the perception of a positive balance between expectations and reality” (Pastore, 1969: 18).

The selected projects range from the 40’s up to the 70’s in Lisbon, Rio de Janeiro and Brasilia. These projects are paradigmatic examples of high-rise collective housing history and show a large variety of standard solutions. They were large-scale integrated operations that resulted from economical and social development programs led by the governments of both countries.

With these programs, the housing problem is then seen in a new perspective. To the high-rising process were associated new organizational spatial and social models that structure the dwelling space and the surrounding urban environment. The private life space (residential unit) and the public space (collective facilities and services) are designed as complementary. After more than four decades after the construction and occupation of these urban areas, the programs are compared to each other and the inhabitants’ satisfaction is analyzed.

Methodology

The methodology adopted aims to relate the scale defined by the residential unit (micro scale) with the surrounding urban environment including services and collective facilities (macro scale). The evaluation of how these different scales interact and complement each other permits an identification of functional demands and spatial needs of the dweller’s social structure. The Post Occupancy Evaluation research is based on the interpretation of physical, functional and behavioral elements (Preiser et al, 1988, Bechtel, 1990). The development of the research includes the following phases:

1 the physical and functional evaluation identifies the concepts adopted in the urbanistic plans as well as the functional and spatial requirements;

2 the performance evaluation is based upon a detailed inquiry of the inhabitants’ needs in order to verify the satisfaction levels of the dwellers concerning the four sequential degrees: bad (1), reasonable (2), good (3) e very good (4):

a) the evaluation of the URBAN ENVIRONMENT is concerned with understanding the inhabitants’ satisfaction as dependent on the location of the areas within the city and on the way these intervention areas are relate to the city urban fabric;

b) the satisfaction level related to the RESIDENTIAL BUILDING studies the physical...
characteristics in the contiguous spaces;

c) the analysis of the RESIDENTIAL
UNIT refers to the logic of spatial composition,
i.e., the way the unit is spatially arranged,
considering the three distinct areas disposed
according the domestic activities: social, private
and service areas;

d) the SPATIAL MODIFICATIONS
ALREADY COMPLETED OR STILL AT PLAN-
NING LEVEL describe the spatial changes
occurred in the dwelling unit, as well as the
desired ones, indicating a trend in the spatial
organization;

The enquiry process was launched and
completed in the period 1999-2001; 154 types of
high-rise collective buildings were identified in
this study. From a total of 9197 inquiries, 928
(10,09%) were collected and considered in this
study. The characterization of the spatial strate-
gies is obtained by comparing the data from
phases 1 and 2.

The form of the Brazilian and Portuguese
modern housing

The evolution of high-rise collective hous-
ing in the Brazilian and Portuguese cities urban
plans show different aims. In Lisbon, this typol-
ogy was introduced in the neighborhood of
“Estacas” (1952) in the Alvalade area. The
urbanistic plan consists of blocks over pilotis;
the domestic space reflects the rationalization
of the physical organization. Later the typology
was inserted in the neighborhood of “Olivais
Norte” (1958) based in Athens Chart’s concepts.
These principles were reviewed later in the
urbanistic plans of “Olivais Sul” (1960) and
“Chelas” (1962). These plans were influenced
by the new English towns and French interven-
tions of the 50’s and are examples of the evolu-
tion of the high-rise collective housing, while
the plan of “Telheiras” (1973) aims at a renewal
of the urban morphological principles of physi-
cal continuity.

In Brazil, after the first modern buildings
were tested in urban centers, an opportunity
arose to create an entire city based on the
modern codes. In the Pilot Plan (1957) of
Brasilia the typology presents an opposite trend
to the previous housing solutions. Lucio Costa
(1902-1998)’s proposed model denotes a move
away from the ‘life in high-rise’ to a scale that
stretches horizontally, in a transposition of
the vertical plan to the horizontal one (Figure 1).

The Residential Satisfaction

The analysis of the residents’ social and
cultural structure (Figure 2) shows that 34% of
the Portuguese families inquired have 2 mem-
bers and 26% have 3, while, 28% of Brazilian
families have 4 members and 22% have 5 mem-
bers. This fact is related to the low birth rate.
The study concludes that in the Brazilian cases,
52% of the typologies have 3 room units, 25%
have 4 and 17% have 2 rooms. In the Portuguese
situation the numbers are 25 %, 31% e 22%
respectively to 2, 3 and 4 room units. For both
countries, around 80% of the families inquired
were owners of their apartments. In both cases,
30% of residents use their home for professional
work too. The permanence in the dwelling unit
during lunch time shows different values: 50%
for the Portuguese families (reflecting the cur-
rent retirement status of a large part of the
population); and 80% for the Brazilian families
(reflecting the easy access and short time taken
between the dwelling and the working places).
The percentage of cases of renovations made in
the interior of the dwellings is around 70% in
the Portuguese cases, while in the Brazilian ones
this value is slightly higher. It is important to
point out that these renovations are mainly “cos-
metic”, such as replacing wall covers or floors,
painting or security measures.

The comparative analysis of the URBAN
ENVIRONMENTS (NEIGHBORHOOD) indi-
cates that 60% of the Brazilian and 80% of the
Portuguese cases show the satisfaction as posi-
tive (good), though lower evaluations (10% and
20%) and higher evaluations (30% for the Brazil-
ian cases) also exist. This situation is related to
the different locations in the city urban fabric
and to the existence of collective facilities and
the proximity of specialized commercial areas.
The satisfaction level regarding the RESIDEN-
TIAL BUILDING is again positive (67% in the
Brazilian case and 58% in the Portuguese). Simi-
lar situation is related to the evaluation of the
RESIDENTIAL UNIT, where 48% of the Brazil-
ian cases have a ‘good’ level and 43% an ‘very
good’ rating, suggesting a positive evaluation.
This positive assessment in Portuguese areas is
about 71% (Figure 3).

In general, the Brazilian satisfaction rat-
ings are distributed by the four analysis levels,
showing varied satisfaction degrees, while the
Portuguese cases show these satisfaction
degrees distributed by the three lower levels.
Conclusion

This research demonstrates a pattern of using the modern housing spaces that is independent of geographic location. This pattern is associated with the functional complementarity defined by different activities generating vicinity facilities.

The present physical configuration reflects some of the transformations that occurred in the original urban plan, even though the essential proposal has been achieved. The population has integrated well the new proposed way of housing. This is most evident in the study of the interaction between population and the planned environment; there is a positive satisfaction in all aspects studied. It is possible to verify that the evolution of the way of dwelling in high-rise collective housing is characterized by:

- the permanence of use of public spaces surrounding the residential unit due to the proximity of collective facilities and local shopping units;
- isolated transformations to enclose the green area through fences in the vicinity of pedestrian paths contiguous to the public spaces of residential buildings. The area underneath the blocks has been transformed by the dwellers for security: to install entrance halls, creating living spaces for the exclusive use of the dwellers and closing the pilotis areas in strategic points to deny public access. One also notes the construction of covered parking areas in the vicinity of the buildings.
- positive evaluation of the dwelling unit, associated with a positive evaluation of the housing spaces in a global way. Usually, this is correlated with effective improvements. On the other hand, the negative satisfaction at a physical level is related to the small dimensions of the unit and to the insufficient number of rooms;
- the alterations carried out within the interiors of the residential units, despite these interventions not interfering with the original spatial structure, thus showing a similar use through the years and a flexibility to adapt residential spaces to differentiated uses. Usually, the articulation between social, service and private areas does not undergo modifications in time, indicating a similar use in the long run, and a capacity of a dwelling space to adjust to new functions. Notwithstanding different cultural, social and economic contexts, situations of constancy following the adopted modern ideals were identified in both countries.

References


Figure 3: Residential satisfaction's references
Quasi Public Places: Towards a Theoretical Model of Urban Institutional Space

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The focus of this paper is on an emergent morphology of the urban periphery. It is intended to attempt to clarify some terms of the changes in the ‘spatial practice’ and the ‘lived space’ of the city, resulting from mobility and technology changes, by comparing an emergent peripheral morphology and social patterning typical of many European cities. We propose that the way these morphological changes influence our patterns of everyday activity and social connectedness are not clearly enough understood at the spatial level and that therefore the nature of the design choices to be made and their social consequences are not clearly articulated. We will suggest that emergent structurings of life in the urban periphery lead to a ‘loss of the middle scale’ in the lived space of the city with consequences for quality of ‘community’ and place.

The notion of public space is one of those seemingly self-evident ideas which benefits from a more rigorous inspection. We tend to define it in opposition to the notion of private - rendering it crudely homogeneous and failing to account for its complexity and unevenness as a field for social activity and meaning. It is not at all clear what the exact dimensions of public space are as they affect issues of social power and empowerment and of meaning.

In fact public space has always been highly uneven in the way it supports urban activity and urban society and in its accessibility and meaning, and our concern about the problem of public space arises from the widely reported observation that the experience of public space is changing, along with the way it acts as a field or medium for social action and interaction.

Public Space / public spaces, scale and the territorial gradient.

The concepts public and private are not absolute but are relative, acquiring meaning in context and in relation to one another. Different paradigms have been identified in which the ideas of public and private serve to organise contrasts, while across these paradigm bound-

aries meanings can differ profoundly; the public of the public sector is something different to that of the public realm and is different again to that of the public interest. Clearly the public-private polarity presents epistemological and terminological problems, and various commentators have proposed the insertion of a third term. Kristiaan Borret proposes that segments of civil society pursue limited interests in opposition or at least in differentiation to a wider public (Borret). What this does is to segment the amorphous idea of the public or the public realm by scale. This scale segmentation can be taken still further and related, not just to formal organisational structures, but also to multiple, less clearly articulated, but nonetheless real issues of everyday identification in urban public space. The structures we are talking about may be fleeting and highly fluid. The issue of the ‘public’ (as a whole) may then be defined not in opposition to the private but rather in terms of the relations between multiple ‘publics’.

This idea will be considered in relation to two other ideas useful for the understanding of the workings of space and its role in articulating life patterns. Relations in space are constrained by the real limitations imposed by spatial configuration. Power is articulated in space when one space is used to control access to deeper spaces in a gradient of power or privacy (Hillier and Hanson, Markus, Robinson). Choices of users are constrained and in cases like this power is concentrated in the space concerned and in those in control of this space. On the other hand, when configuration allows users to exercise choices about whether and how to make contact with others or things one may say that power is distributed in the layout.

The residential institution and the home illustrate the effect of this power factor. The institution tends to deal with its more complex social variables by the means of spatial devices which maintain control in the hands of staff. Points deeper in the spatial arrangement are controlled through particular points and power is concentrated at these points. We can use a graph technique (figures 1b and 2b) to describe this - a tree-like structure is produced with one point controlling access to more spaces deeper in the gradient. In the home the control of the gradient for visitors is affected by two simple access restriction points - at the front door where family and invited visitors are granted access and at the stair or passage where access is restricted to family and more select visitors. Access by family to bedroom areas is possible via a hallway without strict surveillance from the living area. In this case power can be said to be distributed for family members who choose to interact or not with others in living areas. In the

Figure 1 a and b. A central city (European) ‘space of many publics’.
graph representation there is a ring where the choices of the exact sequence of spaces to use in accessing areas deeper in the gradient, puts power with individual family members (figures 1b and 2b).

The dismembering of the city by the centre to periphery process. Capsular vs immanent environments.

The city ‘unravels’, and processes of mobility and habitation disengage from each other as one leaves the centre. The historical centre is characterised by proximity and contiguity - where mobility connects all places with all other places within a context of high densities of people and things. Local and larger scales confront one another as contiguous flows of people, information etc. energise and enrich each other. On the periphery with mobility patterns historically directed towards the centre, mobility begins to dominate, concentrating in engineered infrastructures and disengaging from the functionally and experientially diluted fabric through which it is woven. The dense, integrated experience of the city is lost and habitation is consigned to capsular interstices between high speed arteries, where direct friction between the local and the larger scale disappears. Relationships of scales and morphologies of social practice in the periphery becomes quite different to that in the inner cities. If meaning is a product of relations (Markus), then clearly the social meaning of the public built environment is at stake. The question is; how is the environment on the periphery we are sketching out here public, and how does its publicness relate to that of our traditional city centre model?

In the sense that social spaces are constructed in use, the ways experience and identity are grounded in urban space are multiple and highly specific. Meaning is constructed in the way spaces are inhabited and experienced in relation to each other, and insofar as these spatial relations/meanings are shared, they become one of the ways that groups define themselves. Local social space consists of the shared experience and the shared significance of locations and relations within a field of connective possibilities, and crude representations of such processes can be constructed using node and edge diagrams. Local social spaces may in a mixed neighbourhood, consist of the dwelling places of the members of one group along with the places (shops and cultural facilities) with which they identify (figure 1a). Many of these local social spaces may coexist and overlap in the same urban area. The diagram is a gross simplification representing relations between nodes as abstracted topological connections, but consider how these connections are translated into movement through the actual geometry of the layout, and one gets a sense of the way that members of the same group could meet in the course of their everyday activities. As interesting is the way, when multiple local social spaces overlap each other within the same layout, mapping trajectories shows how people using different local social spaces come into daily contact with each other.

The local social space in a traditional urban neighbourhood is also subject to characteristic urban scale differentiations and hierarchies, as in the difference between streets which are quiet and residential and those where shopping and facilities concentrate - the high street where local people and those from outside the neighbourhood are copresent.

The ‘territory’ is defined in a relational way and it is this that allows the social and cultural overlap that we find in traditional urban space. Neighbourhood and community on the periphery is founded on territory that is about the bounding of land. These neighbourhoods tend also to be socially and culturally homogeneous (figure 2a). Social and commercial facilities tend to become segregated from the housing and concentrated in ‘generic’ capsules of malls and ‘centres’ accessed by the mobility network, and relations which may have been local, embedded in neighbourhood, have become distantiated and accessible only through the specialised mobility network.

Figures 1b and 2b represent the territorial gradient from the largest public scale to the most intimate and private in steps. ‘Space’ considered here is undivided - experienced simultaneously socially and spatially - with the sequence being from the very private (bedroom) through gradations within the dwelling, and local social space (figure 1a), through scales of public space to ‘generic’ public spaces (‘centres’ and malls attached to no particular

Figure 2 a and b. A peripheral ‘space of a rather depleted public’.
a; Schematic urban layouts with superimposed local social spaces. 
b; The territorial gradient describes systematically and schematically a ‘section’ through the daily lived experience of urban and domestic space.
public, attached to the generic mobility networks of the urban periphery). The territorial gradient offers a schematic section through spatial practice and lived space. The local social space in figure 2a is much reduced compared with figure 1a. This is not to suggest that no distanced relationships exist in social patterns in the inner city - simply that in the process represented by the change from urban life to suburban, relations which were local have tended to become distanced. The relative social homogeneity of new residential areas and the use of private transport in local areas means that relations between different local social spaces are effectively eliminated. These factors have a serious consequence for the ‘shape’ of public space as it is defined by these relations. The ‘thick’ shape of the public space in figure 1b, is a consequence of rich connections between local social spaces. Not only is public space in the peripheral model ‘thin’, the spatial sequence defines another point of concentration of power - at the level of local social space (the dotted dividing line). Public space becomes controlled and surveyed, and the presence of strangers a cause for concern and suspicion.

Another serious transformation in the ‘shape’ of this set of relations is the loss of the scale represented in the centre by the high street. The simple pattern of mobility network and attached ‘capsules’ means that the largest generic and the smallest local scales predominate and the middle scales of direct connection to adjacent areas is lost, along with the economic and cultural advantages of their connection.

Conclusion

Schematic graphs of central and peripheral public space highlight how central public space is much richer in relationships, as local social spaces come in contact with each other and in the relationship of the local with a ‘middle’ scale in the high street. This illustrates how peripheral spatial layouts suffer a loss in the intensity of the experience of the public. If meaning and quality in public space are dependent on this richness it demonstrates how, ‘public space’ in the periphery may be experienced quite differently. It is difficult to find common ground between the ‘space of many publics’ of the traditional centre and this ‘space of a rather depleted public’ of the periphery.

The house and the traditional city tend to distribute power to people and publics. The institution and peripheral city concentrate power with a select group. Such institutionalised space is difficult to reconcile with the public space of our traditional model and deserves a different name; quasi-public space.

References


Endnotes

1 The ideas are from Lefebvre (1991) who postulated space as being perceived, conceived and lived; perceived space or spatial practice is defined by the daily lives of people; lived space is the appropriation of physical space by the imagination.
AlphaWorld: The Morphology of a Digital City

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Cities have existed for thousands of years, and the form they have taken has often been a function of the culture or civilization that created them. The twentieth century has seen a diminishment in the foundation of new cities, but there is a new frontier for city founders. The information revolution, which has exploded the worlds of communication and commerce within the last few years, now permits digital human settlements. This paper examines one of the first of these digital settlements.

Although there has been extensive speculation on the impact of digital technology on the existing built environment (Mitchell 1995, 1999), there has been little study of the form of the digital built environments that exist, nor of the potential impact or relevance of these environments to existing physical cities. This paper addresses this gap by describing the morphology of the digital settlement called AlphaWorld. This study is important for three reasons. Firstly, as an early manifestation of a rapidly emerging technology and of an increasingly popular form of human interaction, AlphaWorld may be a harbinger of many more cities of this nature. Secondly, despite AlphaWorld’s obvious and fundamental differences from physical cities, it is intriguing to examine what similarities exist between AlphaWorld and physical cities, and on what those similarities can teach us about the ways in which urban form develops. Thirdly, this paper is a wake-up call to the design professions to become more actively involved in the design of virtual settlements. There is room for improvement in the brand-new world of digital environments, and without the increased involvement of designers, the design of online environments will suffer, while the design professions could be marginalized from an increasingly significant component of the online environment.

Like many real-world cities before it, AlphaWorld is a commercial proposition, owned by a publicly-traded corporation called Activeworlds.com based in Boston. (The world itself is stored on a server in Seattle.) The world was opened for settlement in April 1995 and Activeworlds.com purchased AlphaWorld at the beginning of 1996. Access to the world is via free downloadable software available from the company’s web site. AlphaWorld is one of many internet social communities (Beamish 2001), but it differs radically in that it offers a ‘physical’ environment which can be ‘settled’ by any paying user who can find a piece of unoccupied property on which to build. This has allowed AlphaWorld to grow freely in an incremental manner quite unlike the stylized ‘environments’ of other communities like GeoCities.

In cyberspace, AlphaWorld is quite large. It was originally only 6 km on a side, but in late 1995 it was expanded to its current size of 655 kilometers on a side, or 429,025 square kilometers—‘slightly larger than the state of California’, as the company proudly announces on its web site. It is thinly settled—only 0.4% of it is occupied—and of course it has no permanent population. Activeworlds.com estimates that settlement has grown rapidly since mid-1997, when the first census was taken. Despite its large apparent size, AlphaWorld consumes only digital space. Its database comprised 2.04 gigabytes at last count, a fraction of the average new computer’s hard drive (http://activeworlds.vevo.com).

The physical determinants of AlphaWorld are simple. It is square and flat, although visitors see a surrounding ring of mountains. The ground plane is an opaque green, but it can be penetrated at any point. The world extends 2 kilometers up into the air and 1 kilometer down underneath the ground. There is no gravity, and structures are permitted up to 350 meters above or below the ground plane (ActiveWorlds personal communication, November 1999).

The world is measured by a coordinate system of metric cells—each cell is 10 meters on an edge or 100 meters square, and the world extends out 32750 cells from the center. These cells provide the location coordinates of AlphaWorld, providing the only orientation (apart from an artificial sun) in an otherwise featureless plain. The default entry for visitors to the world is at coordinates 0,0, a location known as “Ground Zero”.

Movement within the world occurs either through walking or teleporting. Walking is slow but steady, as ‘avatars’ (the forms that...
visitors assume when they are in the world) are tireless. Teleportation, however, is instantaneous and requires only the X,Y coordinates of the location that the visitor would like to go to. It is by far the most popular form of transportation.

Activeworlds.com is laissez-faire with regards to urban design. The company does not impose any street patterns or land use controls in AlphaWorld. People may build whatever they like wherever they like. The placement of streets, building lots, and open space are left entirely to citizens. 'Ground Zero' is the only space within AlphaWorld whose form is governed by the company. In the original, smaller incarnation of the world, its dimensions were too limited for the amount of avatar traffic, and it was widened in mid-1995, destroying surrounding structures. Since this time no alterations, except additions, have occurred within AlphaWorld.

What are the urban design consequences of an environment where anyone can build anything, with minimal political, climactic, financial, or social constraints? AlphaWorld may be the closest any built environment has yet come to realizing these utopian conditions. After six years of growth, the results are easily visible.

Figure 1 shows AlphaWorld at the scale of the entire world, 655 kilometers in diameter. At this level the world resembles a sort of geometric cosmos, in part due to the nature of the binary programming routine that created the image. But a distinct order is apparent. I hypothesize that the pattern seen is primarily due to three forces of settlement: random wandering near ground zero, local teleportation to the nearest uninhabited location along an axis, and teleportation to prestigious coordinates.

There are exceptions to the settlement patterns described above. Some settlement occurs at the extreme edges of the world. Some paths appear in apparently random locations, although they almost always occur along a cardinal direction. All over the world, tiny settlements are scattered, most likely the result of individuals who have chosen to locate digitally far away from anyone else. These citizens value their digital privacy, while those at Ground Zero wish to maximize their digital accessibility.

The built forms of AlphaWorld are a bizarre assortment of structures that are often undescribable using traditional urban terminology. The remainder of this proceedings introduces these structures, which will be discussed in more detail in the full paper (available from the author at bdr2@mit.edu). A map of the central portion of AlphaWorld at first glance does not seem unlike that of many American cities (see Figure 2).

The Urban Fabric

On foot, the urban fabric of AlphaWorld is not at all reminiscent of a city. It is extremely low-density, with individual compounds set far apart. Even Ground Zero lacks defining buildings, being bounded merely by billboards. The overall effect is that of a super-suburbia, but one that lacks even the ordering elements of that landscape- superhighways, commercial strips, wide roads- and instead replaces it with a scattered terrain of compounds, difficult to navigate and often visually uninteresting.

Streets

Streets are not really necessary in AlphaWorld, as avatars may travel at will over and through any built object. Streets in AlphaWorld are secondary, although a good number of them do exist where citizens have voluntarily decided to plat them out. Many areas, however, lack streets entirely, producing a discontinuous and disorienting landscape. Some areas have grids platted out quite neatly, evidence either of a single ambitious citizen or of a cooperative effort between multiple settlers. The largest of these grids extend up to 2 kilometers in diameter, but most are far smaller. Even the cardinal axes do not have continuous streets platted out along their length.

Compounds

By far the most common built element in AlphaWorld is the individual compound. Compounds emphasize the personality and design skill of each settler. Although their real-world analogues are private, compounds on AlphaWorld are often designed for viewing by passers-through, with signs and pictures proclaiming the nature of the compound, favorite images or web links of the user, etc. At the same time, elements of domesticity are often present, such as arrangements of couches, fireplaces, etc. One type of compound is clearly visible from the map- the compound surrounded by water. At
least fourteen are visible in Figure 5. The popularity of this motif, despite its functionlessness— all constructions are visitable and permeable—indicates the importance of the image of individuality and inaccessibility for compounds.

Artificial Landscapes, Geometries, and Graffiti

Another popular construction on AlphaWorld are artificial landscapes that mimic the built environment to a greater or lesser degree. These can include plantings, rivers, even artificial topography. Other constructions in AlphaWorld seem entirely functionless. This functionlessness is made explicit in the constructions that I am calling ‘geometries’, large shapes that seem to serve little purpose beyond simply existing as impositions on the landscape. Within the original city alone one may see at least two large circles and a diamond that fall into this category. Other settlers have built words in large letters. These words are up to a kilometer long. It is difficult to imagine why they were constructed, since they cannot be perceived from the ground.

Satellite Cities

This section will merely announce the existence of hundreds of satellite cities ranging from large to small and arrayed in all areas of AlphaWorld, but primarily at prestigious nodes along axes as noted earlier. With more free land and therefore more room for individual efforts, these cities can be quite geometrically sophisticated. Some cities are over two kilometers wide, Much sophistication is evidenced in the design of satellite cities.

Conclusion

Despite the near-total disorder of the pedestrian level, AlphaWorld’s city form still follows rules. Teleportation produces its own order, albeit one that refers to coordinates thousands of kilometers apart. The desirability and accessibility of Ground Zero has produced a concentration of uses at or near the center of the world. The symmetrical logic of teleportation has produced a settlement pattern extending evenly and symmetrically from the center. All of these patterns, however, are imperceptible to the avatar on the ground. AlphaWorld’s illegibility at this level should be criticized. The inability of obsolete or unused structures to be removed maintains a low-density streetscape where one is inappropriate and prevents the reuse of valuable sites for better uses. The lack of a street grid or other ordering elements near Ground Zero prevents easy orientation and reduces the usability of this area for the thousands of avatars that visit it daily. The result is a visually undistinctive place.

AlphaWorld has clearly been successful in allowing for the creation of communities that settlers value. That this freedom of expression has been allowed to occur in the near-total absence of a defining context is to be regretted. It has prevented the perceptibility of an order to the settlement, especially near high-traffic ground zero. It has facilitated a low-density sprawl of little interest to the avatar pedestrian. Digital settlements of the future should learn from AlphaWorld and work toward the creation of communities that can better serve the public, as well as the private citizen.

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All images copyright Philips Electronics.

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Grover’s Alpha World Page: http://www.geocities.com/TimesSquare/3349/aworld.html
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Transitions in the Morphologies of Midwestern County Seats on the American Frontier

With westward settlement the American Midwest became a repository for a great diversity of urban forms of both European and American origins. An examination of the patterns of these forms can shed new light on how the process of urbanization affected settlement of the region. Town form has two telling components: initial land subdivision, shown in the original plat, and actual land use, or where commercial, residential and public buildings were located as the town evolved. An analysis of the interplay of these two elements not only reveals the ideologies of town planners but also the planners’ power to implement their visions. Regional patterns of town forms can show how much such power may have changed with the progression of frontier settlement. Additionally, town forms are enduring cultural landscape features. Buildings come and go, but much of the original blueprint of the town—which assigned public and private space in a town’s frontier period—remains today in the core of most Midwestern towns. Once trained to spot the essential components of town design, the casual observer can “read” a contemporary townscape, interpret much about its origins, and contemplate how forces have since shaped it.

County seats of Iowa and Minnesota are a good example of what town forms can reveal about the process of frontier settlement. During a frontier history that spanned two periods, roughly separated by the Civil War, urbanization based on commercial river traffic was supplanted by that based on railroad networks. These developments, coupled with the role of local government in the urbanization process, contributed to transitions among the patterns of central squares, linear plans and railroad plans, the dominant classes of urban forms found in the Midwest.

The basic central-square plan consists of a square surrounded by a town’s principal business district. Nearly all county seats with this design evolved into central courthouse-square forms in which the courthouse was centered on the square. In contrast to central-square towns, the core of linear or “Main Street” towns was the business district. The standard linear plan consists of businesses facing each other along a single street of the grid, but sometimes, either by design or by expansion, the business district evolved along two perpendicular streets that intersected in a crossed-linear pattern. Instead of Main Street or the courthouse, tracks, right-of-way and the depot comprised the core of railroad towns. The relative location of the business district to the core determined four subtypes. The most common was the T-town, in which the business district extended from one side of the tracks in more or less a T-shaped configuration. Other designs included the orthogonal plan in which tracks bisected the business district, the symmetrical plan in which the tracks were within and parallel with the business district, and the parallel plan in which the business district was parallel with but a block removed from the tracks.

The interplay of cultural planning traditions, physical geography, and the timing of settlement engendered the development and implementation of these classes. Ideally, town forms would mirror the interrelationships of these elements but, unfortunately, direct links between antecedent planning traditions and planners are difficult to establish. Original town plats identify proprietors and surveyors, but neither they nor local historians typically reveal who was responsible for the design of the town. Moreover, many town planners traveled widely and were thus exposed to a variety of planning traditions, further complicating associations. Despite these shortcomings, the impact of planning traditions on the general pattern of county seat forms can be assessed by comparing the pattern with culture regions established during settlement of the two states.

Scholars have documented general migratory streams into Minnesota and Iowa fairly well. Their studies indicate that people from the Yankee culture region predominated in the northern two tiers of counties in Iowa and throughout Minnesota, with a substantial Canadian-born component mixed with the Yankee in the lumbering and mining regions of northern Minnesota. On the other hand, second-generation Midlanders settled the southern half of Iowa. A Yankee-Midland mixed, culture zone spanning the length of central Iowa evolved between these two culture regions.

To the Yankee planner the business district, not the courthouse, was the focus of the county seat because in New England the town as a unit of local government was far more important than the county and because most settlements in New England originated as trade, not political, centers. Migrating Yankees brought with them the model of a town as a commercial center, but the irregular pattern of most of their towns did not move west with them because the Land Ordinance Survey of 1785 imposed a high degree of uniformity on their designs.

In the two state region, linear county seats dominated in northeastern Iowa and southeastern Minnesota. This distribution suggests a strong correlation with Yankee planning traditions with their commercial emphasis; only three central courthouse-square towns developed in the Yankee culture zone. The pattern,
however, cannot be so easily interpreted as solely an outgrowth of Yankee planning tradition because of two crucial influences: the role of physical geography in the creation of river towns, and the timing of settlement relative to achieving county-seat status. Regardless of their cultural roots, planners of river towns throughout the Midwest nearly always chose linear designs. The transportation advantages of these waterways helped establish these towns as trade and processing centers in which economic activity most frequently evolved along a linear business district that was parallel and a block or so from the waterway. Thus physical geography, not cultural planning tradition, dictated linear designs because it made business districts more accessible to commercial river traffic, and, where necessary, it allowed for the expansion of business space along level floodplains.

The timing of settlement also influenced plans of towns that became county seats. A few inland towns came into existence several years before they became county seats. County seat status played no role in their origins so these towns were destined to have linear business districts without assigned public space regardless of who platted them. On the other hand, acquiring county seat status was very important for inland towns that lacked the transportation advantages of river towns because it ensured their survival and contributed to their prosperity. Whether in anticipation of acquiring county seat status or as a result of it, planners recognized that county seat status meant higher values for commercial and residential lots and that platting the town was fundamental to selling them. Although county seat status stimulated the platting of these towns, in the spirit of the Yankee commercial towns, the business district remained as the town core throughout the Yankee culture region.

Most county seats with central courthouse-square plans are located in the southern four tiers of Iowa counties with a solid core area in south-central Iowa. The distribution correlates well with the Midland culture region in the southern part of the state. Although a valid cultural link between the two patterns cannot be made through direct cultural lineage, they can be linked generally by the commissioner form of local government, which originated in the Midland cultural hearth of Pennsylvania, and specifically by its agents, the county commissioners who are identified as town proprietors on original plats of most central courthouse-square towns. In county seat after county seat commissioners, acting quickly to plat towns on the heels of county formation, chose a plan that best symbolized the importance of county government. From 1851 until 1860, when the Iowa legislature introduced the board of supervisors system, county judges controlled local government in Iowa. Thereafter, proprietors, whether county judges or private individuals, utilized the central courthouse-square plan far less than during the commissioners’ period. Corporate forms of the railroads were beginning to dominate the pattern of urban morphology on the Midwestern frontier.

Railroad town forms dominated among county seats in northwestern Iowa and western Minnesota. The timing of railroad construction, and corporate ambitions to sell land and town lots efficiently, and to control farm commodity, timber, and ore movements were the most critical elements in siting and platting of railroad towns. In Minnesota and Iowa most railroad construction was delayed until after the Civil War when building accelerated across the western parts of the states. In heated competition among themselves, railroads platted townsites as part of a comprehensive system, locating individual towns by projected trade areas and the placement of towns along rival lines. The immediate goal was profit from the sale of town lots, but in the long run, larger profits were anticipated from commodity shipments channeled through the town.

How did the corporate vision of systematic, planned, profit-driven settlement influence the look of railroad towns that became county seats in Minnesota and in Iowa? One might expect that town forms would be highly standardized, making for many identical towns sprinkled along railroad routes. Indeed, the pivotal corporate symbols of tracks, rights-of-way, and depot were the universal elements of the railroad town core and, on some lines, towns in fact were highly standardized. The timing of intensive railroad development in conjunction with the pattern of settlement, however, allowed private proprietors to partake in town-founding processes along railroad lines. As a result, town forms became more diversified because private proprietors, whether working with railroad officials or independently from them, varied blocks, lots and street patterns primarily to relieve congestion created by the tracks. Railroads themselves also contributed to the diversity of forms by speculating in town lot sales without, in most cases, a long-term commitment in time and money to the economic growth of the towns. The result was that many towns, including a number of county seats, did not evolve as they were planned.

In summary, linear town forms dominated in southeastern and northeastern Iowa and southeastern Minnesota in conjunction with their locations along commercially viable
These towns and a few of the inland towns platted several years before they became county seats were foreordained to have linear forms regardless of who platted them. In the Yankee culture region of extreme northern Iowa and throughout Minnesota, planners who platted their towns in conjunction with the acquisition of county seat status designed them with designated or undesignated public spaces for courthouses, but their locations were nearly always subservient to the business district cores that had come to characterize Yankee towns. Where county commissioners platted inland towns in Iowa, central courthouse-square plans dominated. County seats with railroad town plans were most numerous in northwestern Iowa and western Minnesota. The plating of these county seats in settled or partially settled counties engendered a diversity of railroad town forms unmatched elsewhere.

The pattern of forms of Minnesota and Iowa presages a shift in the power to control frontier urbanization. As time passed, individuals and their ideas of towns as political and commercial centers were superseded by the corporate view of towns as modules of an expanding system devised to control frontier development. The exercise of corporate power in creating railroad and company towns ascended to new heights in Minnesota but even higher levels of dominance were achieved on the Western frontier that was so significantly shaped to their urban molds.
Graffiti as Text of Folklore

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1. Introduction

Taking into consideration new areas in the studies of folklore is today an absolute must because on one hand the researchers sense that an object of the studies has undergone far-reaching changes, on the other hand the extremely heterogeneous reality nowadays provides us with many new cognitive structures determined by culture and impossible to be described otherwise than in a circle of a widely understood study of folklore that is a discipline of anthropology.

I would like to present the speech texts of graffiti that I recognize to be texts of modern folklore. I propose they belong to the type distinguished by Piotr Kowalski (behaviours-texts), because undoubtedly they meet their important condition which is co-creating the social reality (Kowalski 1990b; 131). The texts of graffiti are absolutely diverse, from single interjections to complex literary forms. The analysis should show the characteristics and features of such texts. That will make it possible to characterize GT (graffiti text) as included or excluded from the group of folklore texts.

2. Graffiti – text of folklore (structure properties)

The name graffiti basically refers to wall inscriptions, created spontaneously by unknown "perpetrators" as comments on the surrounding world. From the semiotic point of view, graffiti is today also "taming, determining >>a human dimension<< in >>a natural<<, >>objectified<< city area." (Kowalski 1990a, 31), while from the ethnologic perspective "graffiti is (...) a cultural fact" (Sawicka 1994, 174), i.e. a phenomenon, event, certain state of affairs from the past or now, making up a (sub-)culture creature standing in opposition to the official culture" (ibidem)

Assuming that contemporary folklore exists in an unofficial circulation of the mass culture and makes up its part, existing as if independently, side by side with this culture or (according to Piotr Kowalski) in opposition to it, its very characteristic feature is spontaneity nature – it evades being institutionalized. Consequently, folklore constitutes a part of culture where a human being is able to be realized as an individual, as a group member – a subculture, trade or age group, environment or even a family, etc.

In GT we can also find unquestionable properties of traditional FT – stylistic character, which manifests itself in the type of rationality, attitude to the world and in accepting a particular viewpoint (outlook) (compare Bartminski, 1999; 131); for example graffitiers’ passive attitude to the world, limited to commenting on reality (not necessarily current one) and usually negatively evaluating. They are distinguished by a lack of objectivity and chauvinism (or even nationalism), based on the opposition FELLOW : STRANGER (compare Sawicka 1994; 169-173).

In GT, different youth subcultures (e.g. fans of music bands or music trends, punks, and drug addicts) express their attitude to the world by their ideology (the outlook of youth generation), their moods, fears (concerning being, existence etc) or simply showing their presence (compare Michow 1995; 110-113).

The features of Polish graffiti that indicate their stylistic character include humour and anonymity. Humour is manifested for example in PRECZ Z PRECZEM (DOWN WITH DOWN) (parody); LONANIZUJ SIE* (MASTURBATE) (pseudodialectical modification of graphic form) (Michow, 115, 116), LECHU ZASTALES MUR-OWANA NIE KOMBINUJ (LECHU YOU HAVE FOUND IT (POLAND) BRICK DON’T MESS UP) (example of a pun); NAM MYSLEC NIE KAZANO (WE WERE NOT ORDERED TO THINK) (travesty). GT are usually anonymous, first of all because a sender is only a representative of his/her group, or expresses existential fears of his/her generation or his/her emotions, for example PUNK JEST ESENCA ZYCIA (PUNK IS THE ESSENCE OF LIFE); BOZE ZATRZ-YMAJ SWIAT JA WYSI-ADAM (GOD STOP THE WORLD I GET OFF), KOCHAMY CIE ANIU (WE LOVE YOU ANN), MAGDA JEST PIEKNA (MAGDA IS PRETTY) (Michow, 114).

The features of Polish graffiti also include provocation by making spelling mistakes, for example SBRODNIARZE; GUPIA; lexical provocation, for example DISCOPULACJAJ DISCOPULATIONj, or moral provocation, which consists in using colloquial vocabulary, mainly expressive, including vulgar, obscene and infantile words, for example MY CHCEMY SIJUSJ (WE WANT TO PEE). NIE DJAJ SIE WROBIC (DON’T LET THEM FRAME YOU); LET’S SURF; ZZRZUTA NA LKS (WHIP – ROUND FOR LKSj), etc. (examples: Michow 1995, 115-117).

To text properties (in linguistic sense) I would include using a foreign language (usually English), which was noted by Elzbieta Michow in texts concerning the polish graffiti (ibidem, 117-118). The use of foreign phrases is probably connected with fashion for the English language culture (mostly in its American version) and also, as Michow says, with the desire to make a message secret.

One additional feature exists, which is a distinctive feature of graffiti, which is typical of graffiti texts only and even if they are devoid of all
other features this one allows us to identify them as graffiti, since graffiti are linguistic, situational and locative messages. Graffiti cannot exist without a place. This is the semantics of a place – its character, external properties and especially its features that constitute obligatory GT context, which affects the following: kind of writing, usage of material and graphic form. Graffiti are the texts of culture – multicode message in which all elements are always semiotic.

Creating place semantics involves using special procedures consisting in space taming. The space, which can be potentially filled, is “strange” – has clear destiny but certainly cannot be used for free and spontaneous writing; it has also some characteristic properties/features. Because of the space context we obtain two kinds of places – external (put in a wide spatial context of for example a city, road or a train station, etc) and internal (spatially limited).

However, relevant are those features that characterise all graffiti texts. Such feature, typical of all graffiti places, is their provocative character. Provocation can also be hidden in a dichotomy of places in which graffiti are created, as on one hand they are common and on the other hand they do not belong to anybody (compare Ciarka 1990; Kowalski 1990, Sawicka 1994). What makes these places common is their public character. But on the other hand we pass them quickly, not mentioning how they look like, not remembering their details. Whose are these places though? – train station walls, fences, subways, gates, walls, pillars, poles, spans of bridges and flyovers, as well as backs of different shops, backyards with their bins, containers, gutters or pavement fragments, etc. In all such places “shouting “graffiti provoke often only by their existence, livening these places up and making them common again.

The places, which constitute a sign themselves, are especially provocative – they play a semantic role. I call them marked places, as they already contain some writings, information or any other texts. Such places include information boards, signboards, boards with street names, notices, announcements, bus stops, timetables, advertisement media, boards containing names of institutions, etc. In these places, palimpsest like texts are often created – each level has its own sign function, each level is created by someone else, which can be recognised as a manifestation of mass culture in which GT are ingrained.

Places which I call internal, that is spatially limited, placed in something, in some other place – toilet seats, toilet walls, lifts, park benches, seats in means of transport, toilet pipes, school desks, etc provoke graffitiers into specific “art” creation. These places are smaller, separated by a green belt or room space, thus not so public. They allow a sender and a receiver to experience an intimate contact (certainly not simultaneously), and that is why they are covered with so many “poems”, sayings, and puzzles of aphostrophic character, as well as love confessions.

I shall end the discussion of the place semantics with some examples in order to emphasise the role of context for GT. A place can unquestionably change the significance of a writing, sometimes harmonising and sometimes constituting a part of it. Messages that can exist independently include writings on rubbish bins: BIERZCIE I JEDZCIE Z NIEGO WSZYSCY (TAKE THIS AND EAT); GDZIE JESTES LECHU? (WHERE ARE YOU LECHU)? 11 (SZ). This way these texts become ironic comments on reality, showing, in their deep structure, a reflection on it. Marked places always constitute a part of GT, usually for the purpose of fun, as graffiti placed on a bottle return point SKUP SIE! 12 or on a bar board SMACZNEGO! (BON APPETIT!), where someone added SEXU (SEX) 13 (SZ).

In the light of the features discussed before, both invariant as well as those conditioned by the mass property of a culture, we can say that graffiti are really texts of contemporary folklore that is, in my opinion, an unofficial trend of popular culture, in which a man can realize himself both as an individual and as a member of a fellowship. Creating texts – behaviours ensures a man an active participation in a culture. Graffitiers are unquestionably a fellowship – subculture, whose purpose is to comment on social reality, treating it as a form of participation in its creation.

GT are texts of folklore because of their structure and especially its semantics. They exist in the space of everyday life, in the semantics of a road, train station, wall, thus expressing a popular picture of the world and a popular interpretation of it. Their meanings always depend on their context and to express them they use, existing on a conceptual (mental) level, stereotypes (understood as a convention), assuming that they are not debatable and are of a priori character.

GT textual representatives include elements from different levels of formal and semantics language structure, from simple syntactic structures through intertextual operations like citations, allusions or references to calqued formulas and idioms. They are also fragmentary, invariant and tend to contaminate threads, genres, mix elements from different registers, and, as all cultural (behaviour) texts created in mass culture, are heterogeneous.

Specificity of GT consists in existing in a text the elements of many codes, where the text
(in a linguistic sense) is main code, while other elements – a place, graphic form and kind of material used by graffitiors – are its context. Different elements of context are used to express relevant contents of a particular graffiti. Different elements of context are used to express relevant contents of a particular graffiti. Specific GT features also comprise their heterogeneity and especially broad (with unspecified limits) denotation of reality – cultural and social space. Among distinctive linguistic features I would rate vulgarization and (euphemization) of a language.

The world of GT is the world – palimpsest with no specified limits (aesthetic, ethic, etc) in which the levels of matters for today, questions concerning tomorrow and reflections on yesterday join together and overlap. Their form and importance, however, is not socially accepted. In this world, important issues mix with irrelevant ones, there are no hierarchies or authorities. Everything can be placed on the wall, if, from a graffitiier’s point of view, it deserves such “honor”.

References


Endnotes

1 I have presented a detailed profile of graffiti, as a cultural fact, in a paper entitled Językowy obraz rzeczywistości społecznej i politycznej w graffiti (Sawicka 1994). And that is where I have also described a peculiar “language” of graffitiers, used for “taming” the World.
2 Should be ONANIZUJ SIE. The addition of “L” makes the word sound folk. (translator’s comment)
3 Reference to a famous saying concerning the Polish king Kazimierz Wielki, who during his reign changed the level of civilisation in Poland. “Lechu” – former president of Poland. (translator’s comment)
4 Reference to a fragment of a famous poem “Reduta Ordona”. (translator’s comment)
5 Correct spelling ZBRODNIARZE (criminals), SB in the beginning is the abbreviation of Security Service, past state apparatus appointed to protect communist regime by controlling every aspect of society’s life and fighting the Opposition. (translator’s comment)
6 GUPIA (correct spelling GLUPIA – silly) form does not have to be the provocation by making spelling mistakes as it reflects incorrect pronunciation characteristic for young people. In such case it can be interpreted as written phonetically (Volume reviewer comment). (translator’s comment)
7 Sport club in Łódź city (translator’s comment)
8 This aspect of GT was discussed in M.A. thesis written in 1996 in the University of Szczecin. In this thesis titled Graffiti – linguistic analysis. Selected issues, written under the guidance of prof. Wojciech R. Rzepka by Monika Kwasienczok, this issue was only indicated. However, because of the innovativeness of the idea I have decided to note this fact.
9 The Bible citation.
10 A question to Lech Walesa, former president of Poland. (translator’s comment)
11 This text has double meaning in Polish. It means „Return yourself” or „Concentrate”. (translator’s comment)
12 In Polish it means that the guests in the bar are to enjoy sex not a meal. (translator’s comment)
The Transformation of the Balkan House: From the Traditional to Le Corbusier’s ‘Machine for Living in’

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In 1911 young Charles Edouard Jeanneret, later known to the world as Le Corbusier (LC), embarked on a six-month journey through the Balkans, Asia Minor, Greece and Italy. In this paper we argue that LC’s seminal encounters with the spatially complex Ottoman-Balkan House in Bulgaria and Turkey during this journey proved decisive in helping the self-taught architect contextualize and problematize the design paradigms he evolved to define his modern house “type,” which he characterized as “a machine for living in.” We aim to explore the cross-cultural process by which Le Corbusier assimilated and transformed the traditional house type in the Balkans and Anatolia into an abstract, experientially coded syntax that shaped his ensuing system of ‘modernist’ design values.

In scrutinizing The Journey to the East, LC’s diary chronicling his journey, scholars initially tended to view this journey primarily as his search for Western cultural roots. Frampton suggested that the roots of the Citrohan house are to be found in the Mediterranean/Greek vernacular. Yet despite visual similarities, there are striking differences: the Greek/Mediterranean vernacular consists predominantly of load-bearing walls and cellular spaces. Foster claimed that LC’s architecture was modeled after the Pompeian/Roman villa. Yet here too, where LC’s house type develops through movement along bending and bifurcating routes, and like the Ottoman-Balkan house, refers visually and interactively both to itself and to the outer world, the Pompeian/Roman house is self-contained and its major spaces are organized along the visually dominant atrium-peristyle axis.

Paul Turner was among the first to note LC’s keen appreciation of the folk art of Eastern Europe and Turkey. More recently, studies by Francesco Passanti, Adolf Max Vogt, and Judith Bing have begun recognizing the importance of the “eastern” leg of his journey in shaping LC’s design vocabulary and sensibilities and identify certain elemental features of the Ottoman-Balkan house type that LC transposed into his designs, beginning in the early 20s.

Passanti pointed specifically to Hungarian courtyards as inspirations for the enclosed roof terrace of the Villa Savoye and to the fenestration of Turnovo houses in Bulgaria as a source of his fenêtre en longueur.

Vogt’s revelatory book Le Corbusier, the Noble Savage suggests that three of LC’s “five points” – namely, the pilotis, the free façade and the elongated window – were drawn from traditional wooden Turkish houses. He also demonstrates convincingly the influence of the projecting upper-story “oriel” windows (çikma), a ubiquitous feature of the wood-frame Ottoman-Balkan house, in shaping Le Corbusier’s house designs, beginning with the Villa Schwob.

Bing’s article, “Why Study Çardak?” points to the çardak, the in-between spatial and social platform in the upper story of Balkan houses, as the prototype of the dynamic spatial configurations that determined LC’s house type, while also discerning LC’s innate capacity for a “visceral experience of the real, built environment” as a whole rather than sensing it through an analysis of drawings and photographs alone. According to Bing, the çardak embodies the universal concept of encapsulating in a single space the essential unity of people, buildings and landscape. “Any traveler looking at traditional houses in the Balkans,” she observes, “will surely be struck by the presence and variety of these elevated, outward-looking spaces.” Bing sees the “poetic heritage of the çardak” in the semi-enclosed rooftop “rooms” of LC’s urban villas and in his design strategy of “voids injected into solids.”

Although these three studies accord with our own analysis, our paper seeks to carry these notions a step further by arguing that it was not simply an aggregate of individual elements, but rather the essential architectural, spatial, and experiential structure of the Ottoman-Balkan house in its total context that inspired LC’s ensuing conception of his “house-type” as a “machine for living in.” In that connection, we regard the Ottoman-Balkan houses as inseparable from their immediate context – the courtyard – with which they constructed self-sufficient, autonomous worlds of complex spatial and visual relationships. According to our thesis, it is the experience of these spatial configurations in their entirety, as receptacles for ongoing human habitation and activity that stirred LC’s imagination and creative impulse to conceptualize his striking paradigms of domestic space.

Before proceeding to analyze telling examples of LC’s house designs, our paper briefly delineates the essential elements of the Ottoman-Balkan house, which LC absorbed during his visits to the Bulgarian towns of Veliko-Turnovo, Gabrovo, Kazanluk, and Stara Zagora, and his ensuing stay in Turkey.

The Ottoman-Balkan House

The question of the origins of the Ottoman-Balkan house type is a contested one among scholars, with hypotheses abounding about ethnic and national distinctions and contributions. We are concerned here with the salient characteristics of the type LC encountered and assimilated in 1911 during his travels through the Balkan and Anatolian regions.

Scholars working on the problem have
identified five basic components of the Ottoman-Balkan house:

1. **Oda (room):**
   
   There is no functional differentiation between the rooms of the Ottoman-Balkan house, a fact believed to reflect the nomadic origins of Turkish habitation customs. The rooms are all similar in size and arrangement and open to the çardak.

2. **Çardak /Hayat/Sofa:**
   
   Situated in the upper story, this mezzanine-like platform covered about half the story and was open on one or more sides while providing direct access to the individual rooms. A distinctive form of living space, it was the center of various domestic activities. The çardak was, in a sense, a suspended inner courtyard within the house, connected by stairs to the courtyard below. Among its more striking aspects was its strong visual connection both to the courtyard and to its natural setting as well as to the rest of the town.

3. **Avlu (courtyard):**
   
   The courtyard was enclosed by a tall blind garden wall that extended beyond the house and was punctured by a door that protected the family’s private world while connecting it to the street. Although seldom placed in the center of the lot, the courtyard was always the center of uninterrupted daily life and women’s domestic activities; wooden stairs connected the court to the çardak on the upper story. The house was usually located on the side of the lot facing the street.

4. **Çikma (oriel):**
   
   The çikma, projecting from the upper story and supported from below by projecting wood brackets, constitutes one of the more striking features of the Ottoman-Balkan house. Although the ground floor of the house might be irregular, the upper floor projections were regularized in composition, thus creating orthogonal interiors and giving the house a dynamic appearance. The oriel windows comprising these upper-story projections served both to maximize ventilation and to provide a striking visual and social connection to the street and to the surrounding environment.

5. **Timber frame construction:**
   
   Timber frame construction typically associated with easy and rapid construction techniques, supplied an essential aspect of this house type, especially of the upper floor. The characteristic lightness of the timber-framed story allowed for numerous windows and projections. Maurice Cerasi noted that these windows exposed the rooms within to sunlight and to striking views of the surrounding landscape, transforming these rooms into a “free space” that commanded the façade planes – suggesting striking affinities, as Vogt points out, with Villa Savoye and other LC houses. “Take away these luminous facade planes, and what is left is a modular abstract construction frame” – the essential framework for LC’s “machine for living in.”

**Analysis of LC’s Houses**

It is our contention that LC’s journey precipitated a significant departure in his work, sparked a notable break between his earlier designs and those produced after his “Journey to the East.” This break was not a sharp rupture, however, but a transitional paradigm shift, one first articulated in the Villa Schwob’s volumetric and facade compositions and the particular way in which exterior and interior spaces were made to interrelate within the resulting complex volume.

This ambiguous but spatially rich interpretation of inside and outside originated in the quality of the Ottoman-Balkan house. LC’s transformation of this quality proceeded, as Bing suggests, by “spirit, not style.”

The essential elements configuring the Ottoman-Balkan house – the courtyard, the çardak, circulation space (stairs), the house encompassing the street – all correspond to those of LC’s Citrohan house – the double-height space (both interior and exterior), the raised platform (overlooking the double-height spaces or roof terraces), the cellular space (rooms), and the circulation space (corridors, stairs).

While the çardak bears some visual resemblance to a mezzanine, the analogy between the courtyard (below the çardak) in the Ottoman-Balkan house and the living room in (below the mezzanine) in LC’s houses may seem exaggerated at first glance. But there is compelling evidence to support this analogy. LC was impressed by the courtyards in a Hungarian village and called them “rooms” and “summer rooms” and sketched many courtyards both from the street and inside. He also showed interest in graveyards enclosed by high walls with window-like openings.

Nevertheless, the courtyards were incorporated as “received” elements in LC’s early projects. In the Maison Favre and the Maison Jeanneret, designed after his journey, they became defined by retaining walls and parts of the building. In the Maison Jeanneret, the courtyard was combined with a meandering path from the street to the entrance – the first occurrence of the promenade. The trellis in the garden was made part of the promenade and reappeared in subsequent projects such as Villa Schwob and the Maison Moulinet. The double-height living room in Villa Schwob appeared...
in combination with the garden. In the Villa au Bord de la Mer, the courtyard dissolved in the rectangular pavement around the house while the exteriority of the living room is strengthened by the double-height glazed walls.

In the Citrohan House, Atelier Ozenfant, and Villa Cook the courtyard is transformed from a literal to a phenomenal volume and later, in the Pavillon de L’Esprit Nouveau, Villa Stein, and Villa Savoye back to a literal one. This dialectic coincides with the evolution of LC’s concept of the modern house as an autonomous, self-sufficient world. The supporting notion of the ‘the interiorized exterior’ is clearly affirmed in Towards a New Architecture, where LC asserts that “an exterior is always an interior.”

One can also often see the çikma in LC’s designs as projections of the mass into the void (e.g. in Villa Stein and Villa Cook) and the çardak as inserted voids into a volume (e.g. in Villa Schwob, Villa la Roche, and Villa Savoye). As such, the reconciliation of the traditionally opposing descriptors of space—the inside and the outside—embedded in the Ottoman-Balkan house, becomes emblematic of LC’s architecture.

In these and in the other respects elucidated in this paper, the Ottoman-Balkan house is shown to be a prime, compelling source for LC’s innate morphological and spatial conception of the modern house as “a machine for living in.”

Endnotes
We dedicate this paper to the memory of our mentor and colleague, Prof. Emmanuel-George Vakaló.

2 Doctoral Student in Architecture
3 Doctoral Student in Architecture
4 Associate Professor of Architecture
7 Forster, Kurt W., “Antiquity and Modernity in the La Roche-Jeanneret Houses of 1923”, Oppositions, Fall 1979
12 Ibid., 193.
14 Ibid.
17 Ibid., 57-65.
18 Vogt, Le Corbusier, the Noble Savage, 22.
A Comparative Assessment of Town Centre Plans in Selected New Towns in Britain and Australia

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Introduction
Many new towns were built in different countries during the 1960s and 1970s. They allowed urban planners and designers to try out new ideas for the shaping of towns and their constituent parts. Town centres received particular attention because they now needed a different arrangement of land use, built form and circulation in order to accommodate the increasing numbers of moving and parked cars. Although individual town centres have been analysed, there have been few comparative studies of the physical layouts of these new town centres. Were similar town centre models used in different parts of the world? What did they seek to achieve and did they succeed? Why did later models seemingly reject the earlier town centre models? The purpose of the paper is to explore these questions by examining the layout plans of selected town centres in new towns in Britain and in Canberra, Australia.

British new towns are often classed, according to their planning period, into three broad types: as Mark I (1945–1955), Mark II (1955–1965), or Mark III (Post 1965) generation towns. The expansion of Canberra, within the Australian Capital Territory (ACT), was also planned as a series of “new towns” after 1960. They are not independent towns as in Britain, but they form distinct units in the metropolitan structure, and their town centres provide employment and shopping facilities. Partly influenced by British new towns, they also reflect different characteristics according to their planning period and context. The paper considers six town centres, representative of the first, second, and third generation town centres from both countries. Since they share broad similarities, it is appropriate to consider them in pairs. The British cases are Stevenage (Mark I), Cumbernauld (Mark II), and Milton Keynes (Mark III), and the corresponding Canberra cases are Woden, Belconnen and Tuggeranong. Details of the town populations, planning dates, and town centre layout types are given in Table 1.

The paper outlines the common problems faced in the planning of town centres, the models that were employed to respond to these problems in the different periods, the varied ways in which these were reflected in the layout form of each town centre, and compares the resulting patterns of pedestrian and vehicular routes, parking areas, and building development. Each period is characterised by a certain layout type: precinct, megastructure, or street and block.

The planning of new town centres: problems and models
The main problem facing town centres in Britain and Australia was the increasing car usage during the 1950s, and more particularly in the 1960s. This required the provision of major roads and large parking areas, which tended to disrupt the traditional fabric of centres. The issues for town centre planning were succinctly depicted in diagrams published in Keeble (1969, 196, 206). Existing centres could be modified only within the constraints of their block and street pattern. In the planning of new town centres, it was considered that better ways of accommodating cars, pedestrians and built forms should be possible, since they could be planned and developed on “greenfield sites”. Two models for doing this were also available: the “superblock” pattern, proposed by Le Corbusier already in the 1920s, creating safe pedestrian areas within a network of fast vehicular routes spaced 400 m apart; the recently developed American regional shopping centre, producing pedestrian precincts, surrounded by ample parking areas accessible from arterial roads or freeways. While neither model was specifically devised for town centres, they could both be adapted to their needs. They essentially converged into a single model—a large, inward looking pedestrian precinct enclosed by parking and access routes. Such a model was used in the first British new town, Harlow, planned in 1947, and Gibberd (1970, 190) described his town centre plan as follows: “The inner core of the centre is designed as a pedestrian precinct, the area being surrounded by belts of car parks connected together by inner-periphery roads.”

Precinct model
However, a simple transplantation of these models posed a new set of problems for town centres, as pointed out in Keeble’s diagrams. American regional centres were designed only for shopping, whereas the British and Canberra town centres were larger and provided a full range of uses—office employment. Each period is characterised by a certain layout type: precinct, megastructure, or street and block.

Table 1. British and Canberra town centres: Planning population, dates, and layout types

<table>
<thead>
<tr>
<th>Town</th>
<th>Planned population</th>
<th>Town plan</th>
<th>Initial centre plan</th>
<th>Revised centre plan</th>
<th>Layout type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stevenage</td>
<td>80,000</td>
<td>1950</td>
<td>1960</td>
<td></td>
<td>Precinct</td>
</tr>
<tr>
<td>Woden</td>
<td>60,000</td>
<td>1962</td>
<td>1965</td>
<td>1970</td>
<td>Precinct</td>
</tr>
<tr>
<td>Cumbernauld</td>
<td>70,000</td>
<td>1960</td>
<td>1962</td>
<td></td>
<td>Megastucture</td>
</tr>
<tr>
<td>Belconnen</td>
<td>90,000</td>
<td>1960</td>
<td>1968</td>
<td>1976</td>
<td>Megastucture</td>
</tr>
<tr>
<td>Milton Keynes</td>
<td>160,000</td>
<td>1970</td>
<td>1972</td>
<td>1980</td>
<td>Street &amp; Block</td>
</tr>
<tr>
<td>Tuggeranong</td>
<td>90,000</td>
<td>1970</td>
<td>1972</td>
<td>1980</td>
<td>Street &amp; Block</td>
</tr>
</tbody>
</table>
ment, civic, cultural, and entertainment activities—in addition to shopping. Moreover, the internally oriented precinct turned its back on surrounding inner residential areas: "The development of the precinct and the cell will result in the road ceasing to be the element about which buildings are composed. Buildings adjacent to the main town road on the perimeter of the central area will tend to have an inward orientation towards the heart..." (Gibberd 1970, 83). As a result, the continuous built forms along street frontages disappeared, to be replaced by building complexes separated from each other by vast parking areas. Keeble (1969, 205-6) suggested how the town centre fabric might be knitted together, by stretching out buildings to provide built form continuity along pedestrian routes, and by transforming parking areas into large courtyards contained by buildings. Stevenage and Woden illustrate two different ways of realising such a precinct model.

Stevenage town centre (1960)

According to Osborn & Whittick (1977, 128) the Stevenage town centre was “the first centre of a modern town with a completely pedestrian precinct.” It has an open shopping mall, as in a regional centre, but incorporates it into a continuous pattern of built up pedestrian routes, that permeate the town centre and connect it to surrounding residential areas. It provides car parking around the shopping core in the form of several courtyards. A pedestrian can walk along several pedestrian routes through the centre, almost continuously lined by buildings, often without seeing any of these parking areas.

Woden town centre (1965)

Woden town centre adapts the precinct model to the requirements of a much larger town centre than the British centres, containing offices with 6,000 employees, and having more extensive parking provision. Built areas are laid out in a cruciform shape, to break down the belt of continuous car parking. An enclosed shopping mall occupies one arm, and the others contain offices, civic uses, entertainment uses and a public transport interchange. Pedestrian routes serve each arm, creating an extensive precinct (600 m by 300 m). The initial plan lacked pedestrian connections to adjacent residential areas.

Megastructure models

For the second generation of town centres, increased vehicular usage required a more radical model, such as the one enthusiastically described by Gibberd (1970, 88): “The problems dissolve when the design is based on more than one level and...the general principle...should be to keep pedestrians on the upper level, which then becomes the centre proper and place the motor-cars and servicing below them...” Keeble (1969, 199) was more cautious, and pointed out that “there are many promising features about the idea, but on the other hand there are many difficulties and drawbacks...” citing factors such as structural complexity, construction costs, connection between levels, ventilation, and future inflexibility. Such a megastructure model was first mooted in the unbuilt, but influential, town centre plan for Hook, and was later applied in Cumbernauld and partly in Belconnen.

Cumbernauld town centre (1962)

According to Osborn & Whittick (1977, 423) the Cumbernauld town centre “is an imaginative conception... a vast multi-purpose building... on 8 levels and the aim is to comprehend in this one vast concrete building all that a modern town needs in its centre.” Built on a windswept hillside, its chequered implementation phase revealed both the advantages and drawbacks of the model foreseen by Keeble. In its finished form it is quite well integrated with surrounding residential areas, though the pedestrian approaches through parking areas and the vehicular dominated ground level are not pleasant (Middleton 1983, 224–5). Once inside, the enclosed mall environment pervades not only the shopping, but also other town centre uses. Cumbernauld offers good protection in a cold climate, but lacks a real town centre feel, seeming more like an extended shopping centre.

Belconnen town centre (1968)

Belconnen town centre was planned to have offices for 6,000 employees, as in Woden, but built as two megastructure type complexes with open planning internally. The presence of a distinct ridge and undulating topography led to the idea of a multi-level centre, made up of interconnected retail and office complexes. The original plan had an integrated pedestrian system and reasonable built form continuity, but this was disrupted by a relocation of the shopping mall for political reasons in 1976, leading to a revised plan (NCDC 1986a, vi, 47). Belconnen demonstrates the inflexibility and complications of the megastructure model—if development does not occur as initially planned.

Rediscovery of street and block patterns

Partly resulting from the complexities and difficulties encountered with megastructure models, and partly from the limitations in applying the regional precinct model to the much larger, multi-use town centres, planners of town centres in Britain and Canberra seemed
to independently rediscover the opportunities offered by simpler, more traditional layout forms. Milton Keynes and Tuggeranong explore two variations on the theme of modifying the street and block pattern, to incorporate parking areas, and to restore built fabric continuity.

**Milton Keynes town centre (1972)**

The town centre was planned to facilitate car access and circulation, and to disperse land uses in order to avoid congestion. The early consultant’s plan for the town centre had a chequer-board pattern of blocks containing parking courtyards alternating with built-up blocks, producing continuity of built form along an extensive system of pedestrian routes, connected also to adjacent residential areas. The corporation’s later plan returned even more firmly to a street and block layout pattern (Walker 1982, 54–73). The rectangular blocks are very large (440 m x 200 m), contain several sub-blocks for buildings, have a 20 m or 40 m wide strip of parking areas around the perimeter of each block, and are permeated by pedestrian routes at a regular 90 m spacing. Milton Keynes has produced a new street and block model suited to the needs of 20th century town centres, and has worked very effectively in those terms.

**Tuggeranong town centre (1972)**

The town centre, like Milton Keynes, was also planned to facilitate car access and circulation, and to disperse land uses to avoid congestion. It too was based on a modified traditional street and block pattern. The blocks were square (120 m x 120 m), and contained buildings along at least three sides of the block, surrounding internal parking courtyards (NCDC 1972, 9). The intention was to produce traditional built form continuity along pedestrian routes and streets and to connect the centre with adjacent residential areas. Though this pattern was modified subsequently, using larger rectangular blocks in parts, the Tuggeranong centre generally attains the essence of the originally intended character (NCDC 1986b, 28).

**Conclusion**

The study reveals that the planners of town centres came full circle in their journey searching for new layout models. The requirements of the car seemed to necessitate a totally different physical structure from the street and block pattern of traditional town centres. The first new town centres favoured a precinct layout, with extensive pedestrian zones surrounded by car parking areas, modelled on American regional shopping centres. They had good environments for pedestrians within the precinct, but the configuration of large car parking areas and building complexes, lacked built form continuity along pedestrian routes connecting to adjacent areas.

Having discovered the limitations of horizontal segregation of pedestrians and parking, a more radical megastructure model was soon tried, involving the use of pedestrian decks above vehicular routes and parking areas. However, these multi-level building complexes proved costly, inflexible, and difficult to implement progressively. Both of the new models also lacked the traditional built form continuity along pedestrian routes throughout the centre. Therefore planners of town centres in the 1970s consciously returned to a street and block pattern, but suitably modified to incorporate parking areas. In this they anticipated the approach to centre design, and even some of the physical forms, recently advanced by proponents of New Urbanism (NCDC 1976, 27; Calthorpe 1993, 110).

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A Utopian Town Plan? 
Savannah, Georgia, 1733-1820

Savannah is the principal city of the last-founded British colony in North America. Its unique town plan derives largely from the utopian idealism of its effective founder, James Oglethorpe, and his fellow 'Trustees for Establishing the Colony of Georgia in America'. Oglethorpe accompanied the first shipload of settlers. Within a week of landing in February, 1733 he had marked out the plan of the town and building had begun, so there can be little doubt that he was working from a pre-determined plan. The famous drawing of Savannah in November 1733, by Peter Gordon, which the Trustees had engraved in London to publicise the new colony, shows that work on four of the modules of the plan was underway by then.

Given the unique characteristics of the plan and its difference from the standard American orthogonal grids, it appears in almost every text book on the historical development of the North American city. Authors have usually used the researches of John Reps (1959-60;1992) as the basis of their work. It is important to note, however, that Reps is primarily interested in the first decade of plan foundation, not of plan evolution over longer time periods. His work also pays little attention to marginal plan-units and the morphological frame of the ideal plan, which were to have significant effects on its later evolution. The same must be said of Anderson's (1981; 1993) splendid socio-cultural analyses of the first sixty years of development of the town. He demonstrates how the plan is unusual in its unboundedness, its modularity, its lack of centrality, and its variety of locational opportunities. There has also been considerable effort by these writers, and others (Bannister 1961), to ascertain the precedents and precursors in terms of ideas, culture and actual plans, of this exceptional town design. Anderson's (1993) paper is the most recent and comprehensive of these. Surprisingly, one of the possible sources for the plan that has not been explored is Thomas More's Utopia (1965). His description of 'Aircastle' has a number of similarities to the Savannah plan suggesting that its themes were familiar to the Trustees (Slater 1995).

Most of the early buildings of Savannah were destroyed by fire in 1796, but the plan was preserved as the framework for rebuilding and its modular structure was replicated through the first half of the nineteenth century as the city was transformed into one of major ports of the east coast and the main market and transhipment centre for cotton. The plan proved adaptable for commerce, institutions and the housing of different social classes and racial groups, thereby retaining something of its initial utopian idealism. Today it forms the largest urban National Historic Landmark District in the US (Morrison 1979). This paper analyses some of these longer-term plan transformations and variations over the first 100 years of Savannah's development, concentrating particularly on the 1790-1820 period at the beginning of the cotton induced growth spurt.

The Gordon engraving provides the first 'plan' of the settlement since it is possible to transcribe this into cartographic form (Fig. 1). Comparing it with the varied descriptions of Savannah in its first year, it can be judged a remarkably accurate pictorial representation. The guard house, the wooden palisade, and the battery of small cannon guarding the western approaches from possible Spanish attack; Oglethorpe's tent, the crane, and the well, are all described in contemporary sources. The four plan modules (wards) were those under construction in late 1733, but Gordon himself reported to the Trustees that the plan was for six and these were in place by 1735. Each of the six wards was divided into four tithings of ten houses each (some 240 house plots in total) with a public central square in each ward. Four additional plots facing the east and west sides of each square were reserved for public buildings. The six wards were surrounded by an extensive common 'for light and air' as Oglethorpe put it. Beyond the common were five-acre triangular garden grounds arranged to parallel the social organisation of the plan, and further out were farms again reflecting the ward and tithing organisation. Tithing and ward were the basis of the socio-legal organisation of the settlement, and it is also worth noting that the initial allocation of plots was undertaken by lot; that rum was banned by Oglethorpe as inimical to hard work; that the Trustees had agreed that the keeping of slaves was not allowed; and that the amassing of property beyond the initial allocation of 50 acres (house, garden plot and farm plot) was forbidden.

All of this betokens the idealistic 'utopian' nature of the initial settlement. However, I want to suggest that the initial utopianism of the Trustees has been reflected in a modern utopianism of scholars seeking to analyse the plan. All of these analyses have been so dazzled by the characteristics just outlined that they have failed to take notice of those people and institutions pushed beyond the ideal plan of the six wards and the subsequent replication of this modular system. The replicated wards float in a blank white paper landscape in these analyses, as can most clearly be seen in the chronological sequence of growth plans provided by Anderson, Bannister and Reps. In fact, from very early in the development of Savannah, there were non-conforming plan elements which disrupted
the idealistic townscape, in much the same way as early colonists failed to conform to the ideals of Oglethorpe and the other Trustees.

The first non-conforming elements took their opportunity from the open spaces of the common surrounding the town (Fig. 2). Thus, there was a cemetery laid out to the south of the town. Since it did not conform to the dimensions of the ward modules, its incorporation into the plan as the town expanded towards it in the early nineteenth century proved problematic. Indeed, even the city’s numerous cartographers seem to have had difficulty placing it correctly on the map. Also located on the common to the south by c.1800 was a jail, a barracks, and a hospital, all of which required relocating and rebuilding so as not to disrupt the orderly laying out of the extensions to the modular plan thirty years later. The 1812 plan of the town shows that there was also a rope walk beside the axial road across the common, which was itself an important feature of the morphological frame through the first half of the nineteenth century, as was the Ogeechee Road which angled south-westwards across the common and farmlands. Finally, the unbalanced layout of the common itself, in relation to the original plan of the town, meant both that the town began to expand onto the garden plots to the south west in the first decades of the nineteenth century causing streets and plots to take form from their triangular pattern and, a little earlier, that the first modular extension to the original plan, on the western river frontage, was designed with fewer house plots and a smaller square to fit the available space.

The creeks and river frontage of the city formed a second non-conforming element from its foundation. The base of the cliff, beside the Savannah River, was lined by warehouses by 1800, which were quite clearly of practical use but did not conform to the ideal plan. The fifty-foot high cliff did mean, however, that they were hidden from the view of the town, whilst the irregular strip between cliff edge and Bay Street could be utilised for valued public gardens and the nineteenth-century Cotton Exchange. To the east and west of the ‘utopian’ town and its common on its sandy bluff there were swampy creeks (Fig. 2). These, too, are important parts of the morphological frame in that they largely prevented expansion of the city in these directions.

Thirdly, there are the fortifications of Savannah. The temporary palisade of 1733 has already been noted. A plan of 1757, however, shows a fully developed bastion fortification scheme for the landward sides of the town. Whether this was constructed is uncertain, but Savannah played a major part in the Revolution-
given their river frontage location and large size, were in industrial use; the wedge shaped northernmost plot of St Gall was laid out with a grid of streets and plots that took its orientation from Indian Road, not the Savannah grid, and the remaining St Gall plots were laid out with a variety of distinctive high density street grids which, given the re-naming of the southernmost block as New Leeds were clearly intended to become industrial in character. The streets were oriented with the east-west Savannah streets but were not aligned with them so that the broad tree-lined avenue of West Broad Street, marking the original western edge of the common, separated the ideal, utopian plan of Oglethorpe’s Savannah from these more ordinary American grid layouts. As is so often the case in American speculative plats, buildings followed more slowly and even by the mid-nineteenth century many of the plots remained empty. This enabled the Central Railroad to acquire the two southernmost blocks for their station and freight depot which, today, is where visitors to historic Savannah begin their explorations since it provides car parks and tourist office. The evolution of these more ordinary plan elements will form the basis of the expanded paper.

References

Figure: 2
Guidelines to Evaluate the Brazilian Landscape Seashore

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Summary
The paper focuses a special landscape analysis process created to be part of a guide to researchers and other professionals, who will study and work over coastal zone in Brazil. This is a simplified process which will allow an efficient and immediate comprehension of this kind of landscape. It is divided in four kinds of analysis, as follows:
I) Comprehension of whole of the landscape system;
II) Patch structures;
III) Urban form;
IV) Urban landscape morphology.

The result of this process of analysis over each part of the coast will be presented by a collection of graphic schemes and a single relatory.

Guidelines to evaluate the Brazilian Landscape Seashore
The Brazilian Coastal Zone has many different kinds of landscape and a great diversity of urban settlements. The Brazilian urbanism process started by the coastal zone five centuries ago, during the colonization period. Throughout the 20th century the urbanization spread countrywide, being more intensive in the coast, presenting nowadays some of the main environmental and landscape problems of the nation. These problems are caused by the extensive urbanization along the seashore and mainly by different kinds of plantations, harbors and industrial plants settled in it.

Landscape changes grew up after the fifties with the increase of the touristic destinations, which were settled by kilometers and kilometers along the Coastal Zone of the country. These urbanizations caused the eradication of the restinga’s and mangrove’s forests and the destruction of dunes and beaches.
These facts were the result of the middle class’ mobility and the expansion of the roads system through the country.

In the year 2000, the Environmental Ministry (Ministério do Meio Ambiente) decided to create a special action program for the coastal zone named Projeto Orla in partnership with the Planning Ministry (Ministério do Planejamento e Orçamento).

This program, which intends to increase the development of coastal ecosystems’ conservation, will be started in the end of 2001 in only a few parts of the coast and in the next years will be extended to the whole country.

I was invited by the development ministry program to point out special developed special guidelines to analyze the seashore landscape and make possible an easy comprehension of the whole landscape structure in all sites of the Brazilian seashore. I started to work with this subject in the Spring of 2000 and finished the work in this year.

This paper presents the mainly guidelines I adopted to analyze the coast and will be part of a guide to help the participants of the program to develop their analysis studies.

Traditionally the studies of coastal zone and their landscapes have been extended by years and years. Nowadays, there is a great knowledge about the coast and their landscapes in Brazil and I consider it is not necessary to restart from beginning studies about our coastal areas.

I organized the landscape evaluation process to Orla’s Program bared on the result of the studies that my team of pos graduation students and I have been developing in the last eight years.

The main goal is to allow many teams in different municipalities along the country’s seashore to understand Brazilian landscape more efficiently and to help them organize these information in a way to develop special regulations for investment in the coastal areas. Each team, in each part of the coastal area, must develop their own studies and they must have the ability to classify our subject (the action area) in three categories:
1) Landscape well preserved;
2) Landscape well conserved, with different kinds of little urban settlements, some inexpressive changes and few environmental problem;
3) Landscape totally changed, with extensive urban settlements, and environmental problems.

We divided the analysis process in:
I. The comprehension of the whole landscape system;
II. Coated structure;
III. Urban form;
IV. Urban landscape morphology.

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I – The comprehension of the whole landscape system
Here the studies will be done with the insertion of the focus area in development in the totality of the territory.
The main goal must be the general comprehension about the main characteristics of the landscape like mountains, lagoons, sands and dunes, forests and the urbanization.

To do this part of the analysis, we adopted the concept of landscape unity as a homogenous part of the territory.

Each unity can be divided in some others to allow specific studies, and they were denominated structures of conjecture.

II – Patch structure

They are special kinds of graphic representation of the local morphology and the special distribution of the vegetal and the urban settlements. They can be divided in three categories:

- Matrix – morphological structure that contains important and extensive environmental and morphological covertures such as forests and cities.
  - Urban matrix – contains all medium and great cities along the coast (with more than 20,000 inhabitants).
  - Vegetation matrix – contains extensive forests and plantations.
- Corridors – extensive and linear systems of forests, urban settlements or plantations.
- Fragments – isolated areas, which were occupied by small settlements or little homogenous plantation or forest.

The urban settlements can be classified in two different ways:

- urban centers – that contains the traditional urban forms;
- second residence areas – a typical kind of Brazilian urbanization that contains exclusively residences destined to vacations or holydays, and sometimes a little group of habitations for permanent residents.

Both of these kinds of urban settlements will be reclassified in two other forms.

I. Conventional – regular urban settlements.

II. Informal – urban areas occupied without legal permission and in which the urban morphology is totally different from conventional urban ways, like slums and traditional fisherman villages.

III – Urban form

Each urban settlement must be classified in three different forms:

- Horizontal – urban areas occupied by single residences and law buildings;
- Vertical – urban areas occupied exclusively by high-rise building;
- Mixed – when it is impossible to configure a homogenous continuity of the urban form, with a mix with low and high-rise buildings.

IV – Urban landscape morphology

To complement the form categorization it is necessary to include each of them in three morphological categories:

1) Primitive – areas of intermittent urbanization, with great and green open spaces, informal settlement standards and the predominance of single homes.
2) Garden areas – occupied by single homes in a formal urbanization, in the middle of a luxurious garden, arborized streets and destined exclusively to medium and high classes.
3) Standard areas – the conventional patterns of Brazilian urbanization.

Graphic Standards

To simplify the analysis process, we developed a special kind of graphic representation, based in sections, which represents the different morphological patterns along the seashore.

Each section contains the graphic representation of the sea + a landscape element along the sea + a neighbor landscape element. This is shown in figure 1.

To build these figures, we have created a system of coastal graphic references of 69 different kinds of images. When associated, it will be possible to build all different landscape configurations along Brazilian seashore.

References


The Creation of the Sub-Urban Rabad: Evidences for a New, Urban Typology in the Medieval, Central Asian City

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A. Introduction:

The geographical region encompassing Eastern Iran and Central Asia holds a myriad of mysteries for scholars. This crossroads of cultures along the Silk Road served as a melting pot that combined diverse influences from China, India, the Far East, Russia and Europe. Among the most momentous events affecting the region were the Arab invasions between 625 and 750 AD. While a substantial percentage of the region’s population converted to Islam, material destruction was limited; encroachments were aimed largely at establishing Arab supremacy through the foundation of institutions to propagate Islam. The biggest cities were left largely untouched, though a large Arab population was settled in them. The Arabs also established the Samanids as their representatives in the region, who after their initial affiliation to the Caliphate, turned quasi-independent, and developed capitals at Bukhara, Afrasiyab-Samarqand, Panjikent and Paikend and several provincial locations between 820 and 975 AD. It is these cities, and the radical changes that affected their physical character between 675 and 975 AD, which form the focus of this research.

What was so significant about these urban environments? Firstly, these cities and capitals evolved to combine the characteristics of their pre-Arab past with features initiated by the Arabs and large-scale urban and architectural interventions by the Samanids. As a result, a modified version of the city developed, reaching its apogee just before the destructive Mongol invasions in the thirteenth century. Secondly, this type of city was characterized by the development of the suburb or rabad, in place of the traditional center or shahristan, creating some of the largest urban metropolises in the medieval world. The Arab fiat city or amsar, the basis or core for several of these foundations, was hence modified in radical ways to accommodate these changes. Finally, the influence of these developed foundations spread across Iran and other parts of the Islamic world, and penetrated deep into the Indian sub-continent. The huge urban complexes of the Delhi and the Deccan Sultanates, established between the twelfth and fifteenth centuries, employed these Central Asian cities as their obvious models. Many survived in their entirety until the pre-modern period, suffering only minor destruction at the hands of Timur in 1398 AD.

In light of this background, two themes are proposed in this paper. The first will examine the evolving physical structure of Central Asian cities in the three centuries that immediately preceded the Arab invasions, analyzing each of them through evidence gained from reports on archaeological findings, interpretations of primary literature and writings from the ninth and tenth centuries, and secondary sources. The five cities to be examined in detail are Bukhara, Afrasiyab-Samarqand, Panjikent, Paikend and Kanka. Centrally, the research will examine the hypothesis that a new early, medieval “urban type” developed in the Central Asian region between the seventh and tenth centuries, which was markedly different in several of its formal and spatial characteristics from the older cities and settlements of the region. In most of the built examples, this urban type or model would have been essentially a re-working of pre-existing, indigenous urban settlements from the pre-Arab period. In some examples, elements of the pre-Arab past would have been apparent in their entirety, re-interpreted as new urban and architectural elements, but in other cases, these would exist merely as vestiges guiding the overall restructuring of each city. The first level of inquiry therefore will include an investigation of those aspects of urban form from the pre-Arab past which were retained or rejected, and those that were modified and reused, the new aspects that were introduced, and the kinds of new cities that were created in the process.

At a second level, the paper will evaluate the consistency of a single, characteristic urban model of Central Asian cities in the early, medieval period. It will begin by delineating the essential characteristics that are proposed for a hypothetical, new urban type, debating to what extent each one was unique, and how the effective combination of these features produced an urban environment vastly different from the pre-Arab city. At this level, it will refer to studies and literature on the form and structure of early Islamic cities (amsars) and east-Iranian cities, to reveal contrasting sets of characteristics. Since most scholarly works on the cities of the Islamic world written between the early part of the twentieth century and present day have essentially conflated descriptions of specific cities or regional variants through a general model, this process would significantly demonstrate how even the few existing studies of Central Asian cities have been seriously affected. Simply put, no longer can Central Asian cities be slotted or analyzed by employing the largely reductive, general model of the Islamic city. A more specific model, incorporating the specific characteristics of cities within the region would be far more appropriate in this respect. This second part is therefore, an inquiry into new ways of defining the structure of the early, medieval Central Asian city without these inherent inadequacies.

B. The Sub-Urban Rabad as the Characteristic
of the Medieval, Central Asian City:

A large number of Central Asian cities comprised of an innermost wall (around the medina or inner city), an intermediate wall (around the shahristan or outer city), and an outermost wall (around the entire urban district and external suburbs). This urban schema differs radically from the double-walled model of the western Persian or Iranian city, which has been used to analyze the Central Asian city in the past. It is evident that in the 9th and 10th centuries (the pre-Samanid and Samanid eras), this model was radically modified by the addition of the suburb or rabad - an area where the most important activities of the city were transferred. While Barthold and several other scholars believed this suburb or rabad to be a mere extension of the city, or suburbia growing beyond its walls, Scerrato, writing several years later, has proposed that the rabad - which virtually became a city after the first waves of suburbanization - attracted administrative, and governmental offices as well. This could have been possible only if it became the nerve center of control in the pre-Samanid and Samanid city, attracting activity from the traditional core of the city.¹

As the new addition to the structure of the Central Asian city in this period, the rabad was the virtual antithesis to the notion of a city as a densely built up area contained by a wall. Before the Arab interventions, the few studied pre-Islamic towns of the Zarafshan Valley usually covered a relatively small area. These were, therefore, compact structures. The walls of early medieval Samarqand, for instance, by far the largest city in the region until the seventh century, enclosed an area of 70 hectares.² Smaller capitals like Panjikent, Maimurg (Kuldor-tepe), Abgar (Durmen-tepe), Kabudanjakot (Kurgan-tepe), the royal residence at Varaksha, and the self-governing urban community of Paikend, were on the average concentrated within areas of 20 hectares.³ Even at Bukhara, most estimates have kept the urban area within a 35-hectare limit.⁴ Spurred by the effects of the Arab invasions, Samanid cities on the other hand spilled beyond their walls and formed ‘un-fortified’ agglomerations covering extensive areas of formerly rural territory. Estimates by contemporary geographers and historians on the city’s size were therefore virtually impossible, for it was unclear where the urban area actually ended and the rural area began. There is also ample evidence that fortifications no longer functioned as effective defensive devices, and had lost their significance for city dwellers (especially those residing in the area of the rabad).⁵

At Merv, the ark-shahristan-rabad tripartite plan therefore no longer held, since in the 10th century, the “true” or prosperous city of Merv, the “mother of all cities in Khorasan” according to al-Muqaddasi, was essentially the area contained in the elaborate rabad. The ark at Merv was reduced to a watermelon plantation and the shahristan almost completely abandoned. Extensive suburbs now stretched along the banks of the great canals that criss-crossed the entire urban region. Attestation to the extent to which the suburbs actually were important, among the three Jami Mosques in Merv, only the first, the Jami of the Bani Mahan, stood within the shahristan. The other two stood in the extensive suburbs outside the city gates, where the great markets of the city were found. At Nishapur, also built on a similar plan, the administrative center and the commercial life of the city were in the rabad.

It must be remembered, moreover, that in the 9th and 10th centuries, a sharp distinction was not drawn between the shahristan and the rabad. The latter, when it existed, was not seen as a true suburb, but rather an integral part of the city, often set within the walls, as at Samarqand. The focal points of these cities were the market places, surrounded by the shops of artisans, merchants and the several caravanserais. The case of the Balkh oasis was similar. Long walls for protection against nomadic invasions at one time surrounded it. As if attesting to the immense size of the oasis, and its sheer density of settlement, the total length of these walls around Balkh is given as twelve farsakhs in total circumference. By the time of the Arab domination, however, these walls no longer existed, and the city appears to have shrunk, or rather became differentiated into specific areas that were concentric in organization. The settled area was divided, like the other towns mentioned, into the town itself (the madina or Persian shahristan), and the suburb (rabad). Significantly, however, no citadel (kuhandiz) is mentioned in this period, indicating that either one did not exist at all, or else that the older structure, which still existed in some form, was probably being used for the same purpose, and did not attract special comment.⁶

At this point, in the absence of archaeological excavations on the site of the Balkh oasis, Barthold made some conjectures on the urban subdivisions of the city. Using the model provided by the other, larger towns of the region, he was of the view that at Balkh too, the innermost part of the city - the shahristan - was surrounded by its own special wall. In addition, he used the word rabad to describe the area between this inner wall and the outer wall of the town, though the term itself originally seemed to denote this outer wall. We may extend this conjecture further based on the
little information that we have concerning the history of individual cities, especially the relatively detailed information by Narshakhi on the urban topography of Bukhara in the tenth century. It becomes apparent, therefore, that the *shahristan* was in fact the earliest part of the town of Balkh, serving as the virtual anchor for the foundations of cities around it in the course of its history. It appears to have originated at the time of the exclusive domination of the landed aristocracy, while the representatives of the merchant and artisan classes lived in the *rabad*, where the markets were also concentrated. As the landed aristocracy declined, and the merchant-artisan class rose, life shifted more and more from the *shahristan* to the *rabad*.7

**Endnotes**


Umm er-Rasas Kastron
Mayfa’ah (Jordan):
From Roman-Byzantine to Islamic Town.

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The conquest of the Eastern Mediterranean basin, beginning at the initial part of the II century AD, put Rome in contact with territories where the urban phenomenon had deep roots.

The urban planning of the imperial age in the Eastern province, is inseparable from an important urbanization movement, in compliance with precise methods of subdividing the territory and the urban organism, and where regional traditions, if they exist, are ousted by Roman models.

This operation has, on the one hand, permitted the alternation of the conquered territories and on the other hand, the adoption of new formal and cultural models, adapting themselves to pre-existing conditions.

Cities and villages that sprung up or were amplified because of the numerous urbanizations that occurred during the Roman era, continue to exist and others have continued to evolve even until today.

Some of the Mediterranean areas, such as Jordan, the specific case studied, of which I would like to speak, in the Roman – Byzantine period was completely planed in every part of the valley: of the 106 survey sites, 40 show Roman – Byzantine traces.

The cities and villages born in this region, divided into cities of classic foundation (Hellenistic and Roman), the agricultural villages, created by terraced fields and the Roman – Byzantine villages fortified by enclosures or built near military establishments; present mainly in the steppe, through time have partially preserved their urban and originally inhabited structures modifying themselves following the arrival of Islam.

In fact, the Islamic religion, in its phenomenologic complexity and its thousand year old cultural traditions, has morphologically mutated the social tissues of entire populations and cultures translating itself into urbanistic and architectonic terms (transformations already verifiable beginning from the Roman-Byzantine cities).

Many of the cities and villages present in Jordan have developed in continuity with those of Islamic origin.

These urban centers are located around pre-existing roads of Roman-Nabatean epoch, along important carovan routes of the region, such settlements depended primarily on local commerce with the still nomadic tribes and on inter-regional commerce with Syria and Palestine. Between those, we find the fortified camp of Umm er-Rasas Kastron Mayfa’ah, that is the object of analysis and of reading. Inhabited up to the beginning of the 19th century and then abandoned because of the lack of a naturally replenished water supply, the population then transferred itself to the city of Madaba.

The village of Umm er-Rasas occupies a natural elevation of the transjordanic plateau, to the north of wadi Mujub-Arnon, 30 kilometers south-east of Madaba, in a central position of the Jordan steppe.

The military village is divided into two distinct parts. The northern quarter, which has developed around the outside of the military camp (Castrum), present to the South, where there are traces of Roman planning visible on the inside (a regular quadrilateral of 150 meters contained in the thick walls each one bordered by seven towers) and is preserved in its principle structure.

The urban fabric of this village presents the substantial transformation and radical changes which the various arteries and single lots have undergone, particularly on the inside of the castrum, underlining the continual changes, according to characteristic logic, through specific forms and features of an Islamic city.

Studying and analysing the Arab-Islamic city means pointing out the distinctive characteristics of the historical tissues in their present shape as a result of the
and shapes and has a proof of stratification and historical phases even if different. In this way the origin and the development of the structure is pursued since the house knowledge is prior to the aggregated one, and this is prior to the urban organism and the latter to the global sense of space.

Through very close analysis of the urban fabric, it is possible to reconstruct the typological process that allows the identification of all the phases of urban history and therefore to deduce from the actual structures, the pre-existing structures of the original antique village settlements.

The formation process of the Roman *cas- trum*, in which many cities have developed, corresponds to an enclosure, a basic gesture of appropriation of the space, sometimes irregular, often it adapts to the nature of the land.

The rectangular or regular square form of the Roman *castrum*, as in the case of Umm er-Rasas, does not correspond to the spontaneous creation, but has gained it in time, through a progressive acquisition of geometric order.

The reading of the fabric inside the *castrum*, is useful to understand if such geometric order, later altered and adapted following a different construction logic, has been the conditioning factor for the development of the entire village.

The object of my paper is the identification of the classic reality of these structures as a necessary and sufficient condition for the operation finalizing the typological research towards a reconstructive hypothesis of the Umm er-Rasas village, which has become one of the most important archaeological parks in Jordan.

The analysis of the urban fabric, combined with a comparison of biblical sources, data furnished from explorers during the 800’s and also data from archaeologists who continue digging at this village, evidences the idea that the urban structures of the Umm er-Rasas military camp, (defined as a “præsidium” location of the Roman army) was transformed into a permanent urban colonization. The structural lines characteristic of a military base, as far as the planned architectonic design is concerned, exhibit the same structural lines characteristic of a planned city.

From this Roman – Byzantine village, essentially 3 phases of development can be identified.

They are chronologically divided by the transformations and the identification of the successive phases of development through a typological colonization of the territory: the establishment of a military garrison (*castrum*) characterized by its’ placement at the head of an access route and being integrated socially and economically with the surrounding territory (by means of desert trails); the transformation of the *castrum* to a stable residential establishment through colony immission, where, as is the case with Umm er-Rasas, the families of the Arab auxiliary soldiers serving in the Roman – Byzantine army settled permanently, surrounding the camp and giving origin to the Byzantine – Omayyade village; the system of strengthening initial colonies with induction groups, and relative centurization, were no longer concentrated within the fortified village limits but were scattered over the surrounding territory.

In the first phase relative to the *castrum* the principles of centrality and peripherality and the elements that join them, among which are the four directions clearly indicated by the transversal axis (*porta principalis sinistra* and *porta principalis dextra*) and longitudinal doors (*porta praetoria* and *porta decumana*).

Of the central axes running longitudinally and transversally only the transversal, *via principalis*, is clearly visible, whereas *via praetoria* is almost visible and is interrupted where, most probably, the *polo praetorium* was located; situated at the center of the *castrum* and marked by the presence of a continuous transversal wall (probably the perimeter of the building).

The secondary axes of *via quintana* (peripheral axis) have been completely transformed, from regular routes into narrow and irregular spontaneous passageways in correspondence to the doors and the secondary exits of some of the defence towers.

The perimeter of the Umm er-Rasas military enclosure is made up of peripheral routes, *axes antinodali* in which the border of the enclosure individualizes the *antinodali* lines dividers that measure the perimeter of the space visible,
even today of the enclosed area, formed by military courtyards without the hierarchy of the internal space designated to family life, appearing to be a corona of undifferentiated cellae arranged around the wall perimeter.

The hierarchy of the military building unit, divided into groups and arranged according to the arms specialization of each complex and the numeric entity of the groupings has been completely transformed because of the strong Islamic domination that has transformed the entire castrum changing it into a series of rooms placed around a courtyard with obvious passageways and with minimum transformations to the military courtyards changing them into colonial chortes and from this germinating into the types of courtyards we see today, subdivided from one another with narrow passageways.

This second spontaneous development occurring outside the wall, or for successive individual additions, tied to the type of territorial structure, has developed into a detached position and in a different direction from the prior development, according to characteristic external diagonal routes in proximity of the porta principalis sinistra and the defense towers located on the same side.

The walls of the planned Roman – Byzantine village are identifiable through the internal development of the spontaneous routes that have formed around them, taking advantage of the free adjoining area with various casuistry passages from those found closer and then moving away from those running diagonally in correspondence to the entrances.

The spontaneous expansion of the village therefore, has formed in correspondence to the street allowing entrance into the porta principalis sinistra, provoking a typical rotation of this second development regarding the first almost wanting to delimit and include the building already realized (the castrum) creating a congruence between the corners and the towers of the old wall.

Consequently, two types of different fabric can be identified: the first belonging to the planned nucleus of the castrum; and the second, born spontaneously in correspondence to the diagonal routes.

At the base of this first urban scale reading, one can affirm that the village of Umm er-Rasas in its original castrum and outside the village itself, notwithstanding the fact that it has a true Islamic configuration, gives only a partial view of its cohabitation with the classic world.

My choice for studying this case springs from the fact that, on the one hand, as a site it has considerable historical relevance, the state of preservation of the urban patrimony and architecture (the presence of numerous Byzantine churches, among them S. Stefano, which we pointed out, full of mosaics from this period) and especially the quality of these patrimonies; on the other hand, it is interesting to analyse, through a stratigraphic diagnosis without excavating, how such cities or villages, not being immutable with time, are subject to developments and transformations starting from the conditions of origin from its first settlement to the last evolution, including everyday conditions, before it's total abandonment.
De-Urbanizing Urban Form: The Case of St. Louis

About 70 urban zones or neighborhoods in the United States are experiencing what has variously been described as undercrowding, abandonment, blight, or as I have done in my research, de-urbanization. The resulting landscape of empty blocks, boarded houses or businesses, burnt building shells and vacant lots going to seed are an ever present reminder of the ruthlessness of capitalist land markets and of the structural inequities that exist within our fiscal and regulatory institutions.

The stark physical and social contrast this landscape presents to the thriving central business districts or residential enclaves that co-exist in such cities around the country is masked by the use of metaphors of war or decay to describe these sites. Reference to the individuals and families that continue to live and sometimes make a living in these areas is controversial at best. Often as not, political debates over the equitable distribution of resources degenerate into turf wars between alderman, property owners, residents, developers and public agencies. Most policy that is developed to address these areas is social policy, geared at improving the everyday life of the remaining residents. Ironically, it has been found that these social policies generally provide resources and opportunities for more of the remaining residents to move to more prosperous residential neighborhoods in the city or more generally, in the suburbs, with better schools. Clearly such areas require a more rigorous and lucid examination in order to sort through the partial, partisan and passionate positions that they provoke and explore the alternatives that address the particular social and physical issues that prevail. The research presented below proposes such an examination through a careful mapping of the physical condition of the city of St. Louis as a whole, and of the North Central neighborhood in north St. Louis in particular. This mapping provides a more precise understanding of the morphological characteristics of de-urbanization by establishing a typology of vacant blocks and parcels in the city. It is complemented by a mapping of land tenure, which allows the social and economic dimensions of the issue to be revealed, through an identification of the actors who are perforce involved.

The city of St. Louis has an area of dis-investment that encompasses roughly a third of its land area, concentrated in the north side of the city. The usual planning indicators confirm what we know about the areas of dis-investment. Poverty and minority populations are concentrated in de-urbanizing St. Louis. African Americans, who are the only significant minority in the region, and represent 51% of the population in the city, constitute about 98% of the population in these areas. The continued growth in the percentage of African Americans in the city masks the fact that the African American population has also decreased in the city, and requires therefore the presenting of a broader demographic picture.

Over the last 50 years, the central city’s population has dropped from a 1950 high of 857,000, to a low of 348,000 this year. The region as a whole has a stable, slow growing (between 2 and 3 %) population of approximately 2,591,000. International immigration, a great reviver in many American cities, has hovered at 1% increase of the population in the last decade, and Hispanics constitute only 2% and Asians 1% of the population in the region. Population expansion has been steadily outward for the last 50 years, from the central city to the outlying counties. In 1950, St. Louis city represented 46% of the region’s population. Today, it represents 13% of the population. However, it is not only the city that is losing population and decreasing as a percentage of the regional population. Sixty of the 91 cities that make up the St. Louis county, the adjacent county in the westward path of growth, have declined in the last ten years. The county as a whole only grew by only 2.3%, in contrast to outlying counties farther west which grew by 33%.

Clearly the shift in population is both preceded and followed by the shift in capital and operational investments. We could review the familiar agents of urban expansion, responsible for sprawl around the country: the freedom of land markets fueled by public subsidy of transportation and service infrastructure and of energy resources as well the fiscal support of new construction. These we all know to evaluate in cultural symbiosis with racism, the tenuous and selective commitment to public education and the American ideology of landscape, which remains generally suspicious of traditional cities, despite a renewed predilection for some segments of the population for central city living.

In a region such as St. Louis, experiencing serious economic decline and tentative economic restructuring, regional expansion constitutes more a shift in investment and resources from the central city to the periphery, than urban growth per se. What capital there is available is fructifying at the edge of the city, where it can obtain its highest returns at least cost. This is the case around the world, but it is generally offset by continued public and private demand for existing infrastructure and the structures representing older investments in the center of metropolitan areas, whether through immigration or the renewed population. In de-urbanizing
cities, there is just not enough demand to fuel significant re-investment in the central city, and huge and growing land areas of disinvestment result. Most developers as well as individuals invest where land and housing are cheaper, newer and free from disturbing cultural and historical legacies.

The result in St. Louis is that there are roughly 23,000 vacant parcels in the central city. In addition there are a large number of parcels with vacant buildings. Over the years, the city’s Land Reutilization Authority (LRA) and the Land Clearance for Redevelopment Authority (LCRA) have acquired title to roughly half of these, most of them tax delinquent properties. These properties, either vacant land, or vacant buildings now create a landscape that challenges all pre-conceptions about what defines a city. Piece meal efforts have been made to support the purchase and re-development of parcels by individuals. It is generally believed, however, that large-scale re-development with public support is the most effective way of attracting significant private investment. In the past several years, the number of vacant parcels has attained a critical “density” that substantial aggregation of land that correspond to today’s development norms is now possible. A revived demand for central city living and until recently, a strong national economy, has coincided with this situation to create a climate in which community organizations, city officials, and private investors are interested in developing a new market for housing in the city.

The prospect of change, in St. Louis, as well as other such cities, is bringing to the fore the question of how these areas are going to change once again and what they should become. Long term solutions for capital distribution belong to the political or economic realm. What proposals can be developed that fall within our purview as designers? What considerations of urban landscape making might inform planning policy? At this time, most proposals rely on a model of re-urbanization that requires the re-densification of the city within its existing infrastructure, re-creating historic and traditional urban plats and parcel occupancy within the traditional city grid. The scale of the vacancy, however, and the continued loss of central city population, confirmed by the latest census, challenges the credibility of such an approach outside of isolated pockets in the city. Hard questions must be asked about what uses are truly appropriate for this land and what forms of re-generation are truly possible, given the American political economy and the ruthless logic of land speculation. What kind of city, what kind of metropolitan region can be projected, given the existence of a great quantities of vacant land in the central city, land that do not easily fall into the categories of greenfield or brownfield, and for which therefore there is little precedent?

The first step in answering these questions as designers, is to analyze and project what we know best: the form of the city. The morphological analysis of the physical structure of this de-urbanized landscape, notably its parcel and block structure, can then serve as a foundation for design and programmatic proposals that have an impact beyond their formal contributions. The research presented attempts to answer the question: what is the morphology of the de-urbanized city? The study of historical urban patterns has a venerable track record in support of the creative act of projecting new urban patterns. The morphology of de-urbanization seems relevant therefore to the re-urbanization of central cities, as the morphology of the agricultural landscape, for example, is to the urbanization of the periphery, or the morphology of the historic centers can be for the preservation of historic districts.

Morphological analysis generally includes the study of the physical characteristics of urban form: the street and block structure, the land division matrix (the aggregation of lots or parcels), and the pattern of building and lot organization. These parameters are used to structure the research presented. However, the work also incorporates the study of property ownership, and the analysis of patterns of tenancy. It is essential to introduce the categorization of ownership in order to overcome the formalizing trap that lurks behind any mapping and categorization of urban form, and preserve the understanding of agency that informs formal choices.

The research presented examines the resistances and potentials for development that exist within the physical structure of property, the size, shape and aggregation of parcels and buildings at two different scales: the city of St. Louis proper, and the North Central neighborhood in the city. Concurrently, it examines the resistances and potentials that exist in the nature of land tenancy and the structure of ownership. It characterizes and categorizes the physical form of property and tenure in the de-urbanizing areas of St. Louis. Maps created using GIS software identify the extent and physical characteristics of de-urbanizing streets, block by block. These are overlain with city maps that identify the parcel structure and the public or private tenancy of vacant lots and buildings. The research proposes a typology of de-urbanizing streets rather than blocks, as this more accurately captures the pattern of aggregation for vacancy and translates in plan the
perception of abandonment, which is experienced at ground level, street by street, rather than in plan view from the air. The maps present the physical impact of dis-investment and the complexity of the pattern. The discrepancy between our perception of “abandonment” or “decay” and the reality of a continued occupation is exacerbated.

Undertaking this research at the scale of the city allows for a reading of urban form writ large, as a representation of the new metropolitan mosaic that has replaced the traditional, concentric model of city. Conventional models of density gradients are called into question and the urban region requires a different conceptual model. The complimentary research at the neighborhood scale allows the close examination of the process of de-urbanization as it takes place, parcel by parcel, street by street. The categorization of ownership at this scale is also a categorization of agency. It reveals the interests of the different actors in ways that may be uncomfortable and may pose ethical questions, but certainly reveals the cards for all to see and shifts the discourse away from the generally exclusive focus on land use and social welfare that permeates planning efforts in these neighborhoods. Juxtaposing ownership with the physical record also juxtaposes the interests of individuals with the technical issues that must be addressed in any scenario of change, whether of densification or de-densification.

It is the premise of the research presented that the analysis and projection of the morphological structure, which include the street and block layout, the parcel configuration, the building mass and the structure of ownership, are essential elements of any policy, plan or strategy for change (or stasis, for that matter) because such work can effectively merge the who with the where, in the design process. An account of the existing structure and tenure of property clearly identifies who is being planned for or against, who wins, who loses, as the case may be, as well as the structural and design strategies that will be required to effect change. The research can then serve as a foundation to explore alternative scenarios of change, alternative morphological scenarios that may include de-densification or non-urban uses, as well as strategic re-urbanization strategies.

Endnotes
2 The greater part of East St. Louis as well as a number of towns abutting the north side of the city also constitute such areas.
3 This is in contrast to 19% in the adjacent county and 3% in the fastest growing outlying counties.
The Basic Principles of the Spatial Organization in Asia Minor City of ‘Antep’

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In this paper we expose the basic principles of the spatial organization which determines the city form of a Turkish city located in Asia Minor.

The Continent Asia, spanning over a rather large geographical region, had hosted many important civilizations and passed on their works of art, cultural achievements and folklore to our present. Beginning with the late 12th century Turks had played an important role both strategically, commercially and culturally by establishing settlements in Asia Minor. The Turkish settlements in Asia Minor established by the Seljukian and then taken over by the Ottoman Empire are unique samples to study the initial formation, progress, and transformation cycle over a long period of time and to examine the urban morphology. A close look at the Turkish settlements in Asia Minor reveals that three different approaches had been followed in forming their settlements, namely: to settle down in an existing city, to establish a new city around the old settlement nucleus and to settle completely new city in not settled area.

The city of Antep located in the southeast Anatolia, part of Asia Minor, had been an important center from a religious, commercial and military point of view with regard of this geographical region. Although Antep has many relics from the Paleolithic age on, the oldest building playing a key role in the formation of the city is from the Byzantine period. Until 12th century different states had taken control of the Antep area, which was finally captured by the Turks. From this time on Turks had been controlling the area and consequently they had reshaped the city of Antep accordingly to their urban understanding. Turkish settlements of Ottoman Period in Asia Minor have a hierarchical structure. The social organization of this hierarchical construction consist of: governmental organization, organizations according to religions, sects or ethnic roots, trade organizations (guild of tradesmen’s), mahalla’s (neighborhood). The city formation in terms of architectural structure is: the castle, city center consisting of trade and religious buildings, mahalla’s. In this paper, basic principles of the spatial organizations in Antep will be examined under this headlines.

Basic Principles of Spatial Organization in Asia Minor City of ‘Antep’

The geographic region and its immediate vicinity where the city of Antep is located today has served many important settlements starting from the Paleolithic age. During the first Justinianus Period (AC 527-565) the constitution of a castle, had started the physical evolution of the city of Antep. Until the 16th century, Byzantions, Umeyyeds, Halep Seljukis and Dulkadirogullari had alternately ruled in the area when Ottoman Empire had taken the control of the region finally. These civilizations had built many buildings which reflect their cultural accumulations in architecture and thus enable us to track the changes in the city form of Antep.

In the historic fabric of the city of Antep the most important building is the castle of Antep which is built on top of a high hill near the Alleben River. Trade fabric starts immediately on the foots of the castle and runs along the south-headed main road of the city. Residential areas are separated from the trade fabric by organic narrow streets. The above description of a city structure, although with subtle differences because of topographic and social factors, can be observed by most of the settlements of the Ottoman Empire. Administration center has been omitted from the previous classification since Antep does not include an administration structure common to the empire-wide centers.

The Antep Castle

The most oldest printed document known about the Antep castle is from history writer Mateos of Ruha (AC 952 - 1136). In his writings about the crusades, Mateos describes this region as safe and secure and documents that the ramparts of the castle of Antep had major damages because of the attacks during the period of Emir of Halep, Nureddin. In the 12th century when Emir of Halep, Giyasiddin had taken the control of the region, the castle had been repaired. The inscriptions on the castle walls show that the castle had undergone a through repair in 1481 during the Mamluks period. The last comprehensive repair to the castle had been applied by the Ottoman Empire in 1557.

These facts about the castle show us that
there had been no long periods of peace in this region and the castle had always been held prepared for possible attacks. As a consequence of this fact, residential areas had been within the castle walls for a long time, whereas the watery land on the brink of the river had been used for the agriculture. Oldest building within city limits dates back to 1210, so we can assume that the first residential areas outside Antep Castle had been established starting with the 13th century.

City Center

City centers incorporate activities set the lifestyle in a city. In the city center of Antep we observe in intensified number of inns, bedestens and bazaars which contribute to the commercial buildings of the city. Antep has no plaza in the city center which is common to western cities. It is important to layout the factors that influenced the Antep settlement to evolve into a city, before proceeding with the details which are fundamental in the planning and formation of the city of Antep. Turks had begun establishing cities in Anatolia, especially beginning with the 12th century, after their migration to Asia Minor. During the establishment and flourishing periods of the Ottoman Empire, Turks employed a methodical policy for improving strategically important settlements as administration, commerce, culture and religious centers.

An in-depth examination of Antep reveals traces of the transition from a “borderline” into a “trade center” similar in other Anatolian cities. During the Ottoman Empire, when a stable governance was established over the region, exploitation of old trade roads, setting up new ones and the raise on the demand of goods as a consequence of the increase in population yielded a more export oriented production. Thus the settlement become a trade center.

The fact that Antep’s vital functions depended on trade also set up this activities location within the city. Trade buildings were erected starting off immediately on the south skirts of the castle to form the “center” of the city. Although most of the trade buildings did not survive up today, printed documents show that Antep was a busy trade center in the 14th century.

Form of the Trade Fabric

In examining the origin and development of the commercial organization of Antep, the information given by Evliya Celebi about the castle is especially helpful. He points out that there were a few wheat stores but no bazaars in the castle. Thus, it seems natural that bazaars were built close by to meet the needs of the inhabitants. Construction of commercial buildings near castles was a common characteristic in many Anatolian cities. The location of the Old Bedesten (16th century) the known oldest commercial building on the southern side of the castle, also indicates that the commercial organization of the city began to develop in this area.

The location of trade buildings in the city and their relation with each other were evolved according certain rules like in all settlements. According to Cezar, starting from the 11th and 12th centuries, the buildings were grouped in specific areas of the bazaars used by the same artificer and craftsman. This pattern was followed throughout the region from Turkistan to the Mediterranean Coast. Variation in trade and crafts activities in the Ottoman Period can be determined by the names of the streets in the bazaars of Antep today.

As a result of the guild system, bazaars for different trade activities were gathered together. The guild were the most important institutions for controlling and auditing the economic activities of the empire. Tradesmen and artificers basic and luxurious consumer goods as well as a variety of different services each requiring specialization, were organized in guilds. The guilds, as it was tradition in Europe up to the French Revolution, served a variety of functions, including promoting merchants and craftsmen from apprentice to master, supervising product quality and prices, and resolving controversies between customers and retailers or between guild members.

Another factor contributing to this unity was the common use of raw materials in production. The difficulties of transport due to the poor condition of the roads forced producers to locate close to transportation routes and to each other in order to obtain raw material efficiently. Buildings within the trade fabric of Antep obey a spatial hierarchy, which is set by the value of the goods. For example, shops were goods like valuable stones, silk and the like were produced and traded, were erected nearby the castle just in the center of the trade fabric, whereas noisy workshops with stinky litters were carefully placed far from the center. Trade activities were held either in inns and bedestens, which were covered, protected and grand buildings, or in the shops and bazaars in the open. Inns and bedestens are either one or two story buildings with many entrances from the bazaar, colonnaded passages and an inner courtyard. As a result of their structural characteristics these buildings offered protection to valuable goods and they were therefore places where trades on valuable goods were located.

Residential Quarters

Residential quarters are the smallest units with an establishment with common social,
administrative and physical properties. Studies on the social formation of residential quarters in Anatolia show that factors alike being of the same religion, having the same ethnic roots were the most distinctive reasons in the establishment of residential quarters.

For example, the Muslim population of Antep were generally settled in the residential quarters starting off the castle heading north and east, like Karagöz, Çukur Mahallas. The Christian population consisting of Armenians in Mahalle-i Ermeniyan, Akyol and Bey residential quarters. A small portion of the population in Mahall-i Ermeniyan, Akyol and Bey, like Karagöz, Çukur Mahallas. The quarters starting off the castle and heading north of Antep were generally settled in the residential quarters.

Most of the buildings in city were demolished during the battle of Antep which began after the invasion of French army in 1920 in course of the Turkish Independence War. Therefore following the war, new buildings were erected either where demolished buildings were or on the agricultural land between the residential quarters. There was no noticeable change in the city limits until 1950’s, after which city started to grow rapidly as a result of drift from neighbor cities.

**Conclusion**

The city of Antep, with its castle, trade fabric, residential quarters, road network with dead-end streets, has still traces of its genuineness. Examination of traditional city fabric shows us that the city has a planned evolution set by social, administrative and physical parameters. This is the direct result of the settlement policy of the Ottoman Empire to establish settlements on the lands that were captured. Increase number of studies related on the formation of cities in Asia Minor will enable us to determine more common points about their evolution and to build a consistent scientific terminology.

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How Much Haussmann was there in

I.

The subject of Baron Haussmann’s “transformation” of mid-nineteenth century Paris has not ceased to inspire publication since the days of David Pinkney and Pierre Lavedan during the 1950’s and of Jeanne Gaillard and T. J. Clark around 1980: in the last year alone have appeared three biographies of the Prefect – those of Cremona, Valance and Chaudun – plus a republication of his Memoires with indices, notes and an introduction by Françoise Choay.

This has nevertheless left us with Pinkney’s good old Haussmann – a commanding, controlling mind confidently documentable through the elegantly-written, deceptively detailed and sometimes even dramatic pages of the Memoires. And this in spite of an array of pieces of focused research which at one point after another has shown these very memoirs to be inaccurate and obfuscating: Pierre Casselle’s 1997 presentation (and 2000 publication) of the recently-recovered file of the Siméon Commission proving that there was a serious counter-project framed for the transformation of Paris during Haussmann’s first months as Prefect in 1853 (as well as finally documenting Napoleon III’s original proposal); Nicholas Papayannis’s documentation of infrastructural projects framed by the engineer Eugène Flachat at the direct instigation of the Ministry of the Interior in the summer and fall of that year; Christopher Mead’s establishment of the date of Baltard’s iron project for the Halles Centrales previous to Haussmann’s appointment. Or, again, more general patterns of misstatement evident in Pierre Pinon re-establishment of the authority of the Bâtiments-Civils in street openings or Karen Bowie’s documentation of the development of the urban quarter around the Gare du Nord, presented at the Paris symposium of June 1999.

In what follows I too will be bringing a stone to add to this revisionary edifice. But before I present it let me ask: what sort of Haussmann are we starting to delineate? – or better, what sort of Nouveau Paris? I hesitate as to the exact formulation of the question because clearly the idea of the old Haussmann as an all-seeing, all-commanding Corbusian architect is crumbling. Haussmann is emerging as a traffic cop who, with tremendous dexterity, balanced other people’s intentions and other people’s ideas – making elaborate compromises which were neither consistent nor radical. Basically he was a catalytic agent working on the forces transforming all European cities at this moment so as to speed up their action in the case of Paris. But if Haussmann as a personality recedes the city itself pushes to the fore and we have to attempt to grasp it as an entity produced by a series of personalities and tendencies which were received and reacted to by a uniquely intelligent and eloquent population of observers. Thus the fundamental question for me becomes: Why – if the motivations of the transformation were so scattered – was the result seen as a singularity? When we face the real complexity of the phenomenon, we realize how convenient it has been to concentrate narrative evidence in the single person of Haussmann.

II

The stone which I am trying to add to the revisionary edifice is this: that Haussmann was brought into the project of the city’s transformation a year-and-a-half after the Coup d’Etat of December 2, 1851, for exactly the reason Persigny (his immediate superior at the Ministry of the Interior) gives in his Memoires: to expedite a project already in course. Haussmann tells us that on June 29, 1853, Napoleon III handed him a colored plan of Paris at Saint-Cloud with the street openings all marked. Examination of newspapers and the administrative record shows that an initial project was in course – and continued so into at least early July – which embraced: 1). The elaboration of the rue de Rivoli into a generous entourage around the New Louvre – the rue de l’Echelle expanded to 30 meters penetrating the Louvre through three archways, the rue de Rohan to 50 meters penetrating the Louvre through seven archways, the place du Palais Royal 108 meters east-west, and the shaping of the place du Louvre with monumental facades designed by the palace’s architect Félix Duban – 2). This balanced by a more modest system of street widenings to create east-west communication on the Left Bank. In addition we should remember the first pavilion of the Halles Centrales had been built by the architect Baltard in September, 1851 and June, 1853; that the railroad links of the boulevards de Strassburg and de Lyon plus the rue de Rennes from the rue de Vaugirard were already finished. On March 26, 1852, a special committee had been named to expand the demolitions along the rue de Rivoli contemporaneously with the promulgation of the celebrated expropriation law. December 10, 1851 the railroad collar of the Petit Ceinture had been decreed.

When the crisis came in the summer of 1853, the replacement of Prefect Berger by Haussmann was not the only thing set in motion. On August 2 the Siméon Commission was named to work out the revised city plan which Haussmann was named to execute – Siméon himself being a rival candidate for the prefectship. When the construction of the Halles had been suspended on June 6 Persigny had
immediately appointed the engineer Flachat in collaboration with the Pereire's architect Alfred Armand to sketch a more efficient project including a new rail-link under the boulevard de Sébastopol to both the Halles Centrales and the Hotel des Postes which was now projected at the Châtelet.

In the light of these concurrent projects Haussmann's first actions seem less ones of strategic planning than ones of assertion of personal authority. He rebuffed the intrusions national authority represented by Siméon and Flachat to leave himself and Eugène Deschamps in charge of the plan, Victor Baltard in charge of the Halles. Beyond keeping the existing city staff in control, what Haussmann did was to make already-committed expenditure effective by reducing the size of the Louvre entourage and the cost of the Halles pavilions – in the latter case from twelve million francs to eight – while increasing the street-openings. The real moment of systematic reshaping of Paris was adjourned until the Traité des 180 millions of 1858 between the city and national governments, negotiated slowly from 1854 and providing for the deuxième réseau. This was Haussmann's real accomplishment, which he slights in his Memoires, but which was also profoundly compromised politically. What Haussmann had to show by 1858 was still basically the rue de Rivoli, the boulevard de Sébastopol and the eastern corps of the Halles Centrales, all planned and underway before his arrival in office.

III

In sum, one realizes that the scholarly task to be undertaken – and a big one – is the history of the transformation of Paris written from the departmental archives and without reference to Haussmann's Memoires – like the history of the prefectship of Rambuteau we already have.

This brings me to the fundamental point: if Haussmann was merely a traffic cop, then why has his work in Paris been so consistently and insistently received as a singularity? The answer that imposes itself – easier to say than to explain – is that contemporaries wanted to see it thus: they realized that something new was arriving, wished to know what it was, and found certain cues in Haussmann's work that inspired them to fill in the gaps to imagine a consistent picture or narrative – where in fact little existed. The reception history of the Nouveau Paris is even larger than that of Haussmann – and intellectually richer – but let me here merely indicate three points:

1). That Haussmann's work was significantly incomplete upon his dismissal in January, 1870;

2). That there was an urge to imagine it whole in observing minds;

3). To a degree this urge developed from external causes after Haussmann's departure from office.

To explain swiftly:

1). Haussmann's transformation of the city was incomplete by 1870 because, first of all, we consider the most significant to be the center-city percements – rather than those over largely open ground in the periphery – key ones were only sketched: the avenue de l'Opéra, the boulevards Saint-Germain, Haussmann and Henri IV; the rue du 4 Septembre, the demolition of the place Dauphine. Secondly because the buildings which would define these percements – which to the observing mind actually constitute them – had in many cases not yet been built. Contemporary photographs make it evident that such characteristically "Haussmannian" passages as the Châtelet or the place de l’Opéra were clearly islands of new construction afloat in a then-consistent sea of older buildings, and that Haussmann's cornice line was less a limit to cut construction down that a goal to tempt building up. These same photographs show as well that if framed and cropped cleverly they can suggest a Paris Nouveau complete with its identifying staffage of street furniture.

2). Considering this, where did the leitmotif of the critical description of Haussmannism – its monotony – come from? Or, to be more specific, why did Zola systematically back-date the transformation, from the Monceau quarter of Nana and the facade of Au Bonheur des Dames on the yet un-built rue du 4 Septembre to Florent's discovery of the Halles at the beginning of the Ventre de Paris supposedly transpiring around 1858 but describing the building as it only started to be after 1866? One is clearly dealing with a very powerful wish-projection encouraged, certainly, by Haussmann's own maps and depictions of an orderly, uniform future, but actually visible in its full "monotony" only along the rue de Rivoli and the boulevards de Sébastopol and Saint-Michel.

3). Extending this to offer a last observation: that the actual scrappiness of Haussmann's Nouveau Paris was immediately followed by the devastation of the city brought about by the suppression of the Commune in May, 1871, so that in the tremendous building projects of the 1870's (to ready the city for the Exposition Universelle of 1878) the traumatic memory of the Commune was buried under the project of refabricating and completing the Haussmannian vision (carried out by his old assistant, Alphand) – leaving Haussmann less
an executant than a visionary. It is not that the fragments Haussmann left were so ubiquitous, but that in their tallness, photogenic-ness and their consistent “look” – from their bright white new-cut limestone to their consistent patterns of windows and balconies – they loomed over the Paris as New York skyscrapers later would over Manhattan and made the old city “read out”.

This brings me back to the point of this paper: that we are not dealing in the transformation of Paris with a man but with a process – or better processes, of both intention and of reception – ones that continued significantly after the man's departure and that in their last and most determined stage – 1871-1882 – were controlled by a sub-text very distinct from that at their inception in 1851.
The Transformation of Large Scale Housing Areas in Sweden

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The building heritage from the “Record Years” of Sweden

Sweden is a small country with not quite 9 million inhabitants (January 2001). During the so-called “Record Years” of Sweden, (about 1960-1975) increased standard of living and rapid urbanization laid the basis of an exceptional change in the built environment and in the whole society. The population grew by 900 000 and 1.4 million dwellings were built. At the same time over 120 000 dwellings in city and town centers were demolished and others were converted to office and commercial premises. In addition, thousands of rural homes were abandoned or turned into holiday houses when the owners moved to more urban places.

Most of the new dwellings were built in new, peripheral suburbs or on the outskirts of expanding cities, towns and industrial centers. Agricultural land and forested hills gave place to the new developments. One third of the new dwellings were single family houses of different types, and two thirds were built in rental or tenant-owned apartment blocks. The sizes of those apartment blocks vary from one-storey row houses to multi-storey tower blocks or slab blocks with several hundred apartments. Three-storey slab blocks dominate the stock; fully 50 % of the apartments were built in such slab blocks.

The suburban housing areas display a great variety of scales and building types. In bigger suburbs we usually find different enclaves of apartment blocks and single family houses, but smaller developments with just one owner and building type are not unusual. In the more “complete” suburbs, the biggest and most dense blocks are located close to the local center (and train or bus station, if there is one) and the detached houses furthest away. Depending on the local circumstances, the large-scale apartment blocks can be groups of 8-16 storey tower blocks, 6-8 storey slab blocks and/or groups of 3-4 storey slab blocks. Many of these enclaves include ten or more largely identical buildings – in some extreme suburbs they are, or were, 75-80! The conception of “large-scale” is relative, though. In old industrial villages, dominated by traditional single family houses and some blocks of hundred-year-old one- or two-storey housing for workers, even a few blocks of three-storey apartment buildings may stand out as “large-scale”.

The architectural quality of the neighbour-hoods, including the general aspect of the separate enclaves, vary just as much as the scale. Independent of the scale, some areas illustrate quite well the ambitions of this era to produce good homes designed with consideration for the place and the residents-to-be, while others are more trivial, lacking an individual expression and a design with care for the quality of daily life.

An aging colossus in need of adjustment to new ideals

The larger part of this suburban housing, even in large-scale areas, has been quite unproblematic after completion. Today, however, these buildings and environments are beginning to reach the age when more extensive renovation and up-grading can be needed. More urgent and extreme need for improvement can be found in some of the municipally owned rental housing areas. In those usually large-scale areas, there has been a whole succession of problems and rehabilitation projects throughout the decades. Unrented apartments in peripheral or otherwise un-attractive suburbs of the cities still call for more or less dramatic measures. In depopulating towns and industrial villages substantial reductions of the number of dwellings will be necessary. Oversized car traffic and parking structures need to be adapted to the actual situation. Especially in these problematic neighbourhoods all-embracing demands for sustainable local environments and life-styles call for combinations of rebuilding, new facilities and residents’ participation.

Substantial state subsidies have already been given to many problematic housing areas, and in many cases the buildings and the outdoor environments have been radically changed. In spite of the fact that several lasting improvements have been achieved regarding buildings, yards, and service, the “vicious spirals” of those areas seem hard to turn.

Today, for the five-year period of 1998-2002, 6500 million Swedish crowns are reserved for for municipal programs and projects aiming at reduced environmental impact and improved sustainability. The programs usually concern much more than housing areas, and they can include for instance environmentally friendly heating plants or sewage systems for big urban districts. Still, some 30 problematic housing areas have been granted subsidies from these funds for a variety of ecological measures. Some of the planned measures are: composting, allotment garden areas, water beds for treatment and re-use of “grey water”, reducing parking spaces by buildings or vegetation, and creating different kinds of
biotypes and outdoor environments by new constructions, planting, and reorganization of the street and pedestrian pattern. To improve the residents engagement they are usually invited to take an active part in the planning and management of the new facilities.

Projects for combining necessary rebuilding activities with conserving resources and diminishing environmental impact are going on in other housing areas as well.

In several cases the urban environment in considerably changed by such projects, especially when the environmental improvements are combined with even more extensive measures.

Planning and Building Ideals of the “Record Years”

New and old planning and building ideals were set into practice during the “Record Years”. The early modernistic ideas of “sun, air and greenery”, and “neighbourhood planning” for housing, work leisure and town center functions (ABC-cities), were fundamental. The new suburbs were to be provided not just with housing for different kinds of households, but also with a commercial service center and nurseries, schools, green spaces and public transport. However, enclaves with workshops and industry were very often excluded, partly for practical reasons, partly according to new ideas of zoning. To rationalize transportation, to facilitate future growth, and to diminish disturbances, the different functions of a city should be separated from each other. The on-going structural changes of industry and retail trade encouraged this kind of planning. The plans for old city and town centers followed the same pattern. They should be reserved for business and administration - housing in city centers was not a planning ideal in these years.

Rational production and repetition of building forms and materials were not just economic necessities at this time, but looked upon as design tools by many planners and architects. Thus, in many areas, there is little or no variation neither between buildings, yards or street scenes.

A striking feature of all housing areas from these years, as well as for city and town centers, is the space for car traffic. The rapid development of car traffic – five private cars per 100 inhabitants in 1950 and 36 in 1975 - brought new ideas, and norms, about traffic systems and parking spaces. Much of the planning aimed at separating different kinds of traffic, keeping cars and pedestrian/bicycle traffic apart, and keeping yards and green spaces free from car transports and parking. A hierarchy of roads, many of them with over- or underpasses for other kinds of traffic, were built and cover vast land areas in and around the cities. The parking norms demanded 1.3 – 1.7 parking places per household in multifamily housing. As the parking was located close to the driveways, the first thing to meet in a housing area usually is a big parking lot or garage.

Governmental goals were set to “offer good, spacious, sound and well-equipped homes, at resonable costs, for all the population”. Minimum norms were set for construction, room sizes, technical equipment, playgrounds, sun hours in apartments and yards as well as other amenities.

In the building process, when the developers were short of time and money, many ambitious intentions were not fulfilled. Especially the quality of the outdoor environment was often neglected, sometimes in spite of careful planning. The result, enforced by the traffic spaces and constructions, was uncomfortable areas with meagre greenery fading away around the buildings.

New Prerequisites and New Planning Ideals for the Redevelopment Projects

Altogether, the buildings and neighbourhoods of the “Record Years” are being dealt with in a number of different ways, from careful maintenance to radical “turn-around” redevelopment and even demolition, depending on the prerequisites in every single case. Aside from new ecological demands and ideas and predominant ideas of design and facilities for today’s living, there are some new ideas about town-scape and traffic planning which are more or less affecting the renovation and redevelopment projects all over the country.

The usually well-planned apartments do not need much more than maintenance. Still, many of them are affected by the needs for other sizes than the dominating one- and two bedroom apartments. There are as well vacancy problems in several areas. In addition, in problematic neighbourhoods a more mixed supply of dwellings of various standards, costs and forms of tenure, is considered necessary to break the unwanted segregation. A better mix of housing and workplaces is also considered favourable to improve the local social life. Last but not least, the common spaces of the buildings often need to be upgraded and made more attractive and useful for the residents.

The technical problems of the buildings are often taken as a reason for changes such as new facades with new materials and improved insulation, new pitched roofs instead of flat ones, glazed and enlarged balconies. This is also used as a way of creating variety in big, homogenous building enclaves. Different quar-
ters of the enclaves are given different materials, colours, roofs and other architectural details. Quite often two or three architects are engaged to work with the separate parts, to generate a more natural variation. In a few cases of successive rebuilding processes with a far-reaching participation of residents, the variation is distinctive. In spite of the fact that the changes are quite moderate, and in the main concentrated in the yards, the entrances, and the one or two bottom storeys of the facades, the individual needs and preferences of forms, colours and functions is enough to break the uniformity at least of the "eye-level" environment usually experienced by a pedestrian or playing children.

The new demands for recycling and selective collection of garbage is another starting point for redesigning outdoor spaces, breaking them up and make them more varied. Special buildings for garbage containers are in many cases carefully designed and located to form new "rooms" in existing yards, or to mark off parking lots or footpaths from surrounding areas.

A new and interesting way of creating variation and a richer outdoor environment is to make use of the water beds needed for cleaning "grey" water and rainwater. In a few housing areas, so far, a quite extensive system of channels and pools is built. In combination with the special vegetation for these damp areas, these structures contribute to a much more lively environment with new views and recreation spaces, and even an interesting wildlife.

The over-sized parking lots are more and more used for additional buildings, preferably of other types and forms of tenure than the existing ones. Some of the on-going "ecological" projects include using former parking lots for new two-storey rowhouses with special attention to sound materials and energy saving.

One of the special planning problems of large-scale housing areas is how to handle the conflicts between the need for car accessibility and the need for traffic security, unpolluted air and undisturbed zones for playing and recreation. In recent decades many planners have abandoned the idea of total traffic separation in favour of more mixed systems ("Wohnerf") where car traffic and even parking is allowed close to the buildings and entrances, but the speed is restricted by special street designs. This idea of mixed traffic can be seen as a part of the townscape ideals inspired by the small scale medieval city. Some district plans bearing the stamp of these ideas have been maid, and some more small scale projects have been realized. However, the idea is not easy to realize in a larger scale without very extensive and expensive changes. The idea may be especially inter-

Conclusions

Many of the on-going projects and the testing of new ideas will probably lead to useful experience for the future development of more sustainable and attractive suburbs. We also have much to learn from the ideas, achievements and mistakes of the "record years" and the many rehabilitations projects in the past decades. To save resources and to preserve a substantial part of our cultural heritage, we have to make as much use of the existing urban fabric as possible. We need to investigate and respect the qualities and character of each unique area in order to be able to develop it in a careful and sustainable way.
British Urban Morphology: The Conzenian Tradition

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Introduction
Within the United Kingdom the term ‘urban morphology’ is applied to a number of different types of investigation. Though they nearly all focus on the physical forms of urban areas, each has until recently been pursued by a largely separate group of researchers. Within architecture the typomorphologists have tended to work independently of those employing space syntax. Similarly within geography those working in the Conzenian tradition have had little contact with the adherents of spatial analysis. The lack of integration within disciplines has been paralleled by the low level of communication between architects and geographers. There is a need for the different schools of thought to set out their stalls if the intellectual trade that was showing signs of beginning in the last years of the twentieth century is to gain momentum. This paper describes the development and characteristics of the Conzenian school and gives examples of recent and current research in this tradition, including some that would benefit from closer co-operation with the adherents of other schools of thought.

The antecedents of M.R.G. Conzen
The Conzenian school of thought, founded by M.R.G. Conzen, has its immediate antecedence at the end of the nineteenth century. The early work of Schlüter was particularly important, notably two papers published in 1899, one on the ground plan of towns and the other his views on wider aspects of settlement geography. The latter was important because of its programmatic character. The former, which drew on the earlier work of Fritz, suggested among other things the scope that existed for recognizing within town plans the stages in their development. It was in this respect a forerunner of the far more sophisticated morphogenetic approach which was much later to become a hallmark of Conzen’s work.

In addition to the impact of his own work, Schlüter exerted influence through the dissertations that he supervised at the University of Halle. The most significant of these for the development of urban morphology was on Danzig by Geisler, published in 1918. The map of inner Danzig that it contained distinguished in colour land and building utilization and the number of storeys in residential buildings. This too had an influence on Conzen. It was evident in his Staatsexamen dissertation, submitted in 1932 in the University of Berlin, in which he mapped in colour the building types in twelve towns in an area to the west and north of Berlin. More importantly, it was to influence the coloured maps he produced of Whitby in east Yorkshire, published in 1958. These emphasized the importance that Conzen, like his German predecessors, attached to visual representation, especially cartographic representation. The map of building types gave high priority to the distinction, among residential buildings, between morphological periods.

Conzen’s ideas and their influence
Permeating all Conzen’s work was a concern for terminological precision. In this respect the contrast between Conzen and most of his British colleagues was striking. For Conzen terms were created to represent concepts as faithfully as could be achieved within the limits of language. This meant exploring the roots of words. It also, of course, gave primacy to concepts.

It was Conzen who recognized the tripartite division of the townscape, or urban landscape, into first, the town plan, or ground plan (comprising streets, plots and block plans of buildings), secondly, the building fabric, and thirdly, land and building utilization. However, it was the concepts that he developed about the process of urban development that did most to stimulate a school of thought founded on his work.

Some of his most fruitful ideas were developed in relation to the plot, which constituted a very detailed, micro-scale framework for analysis by the standards of British human geography. One aspect to which he gave characteristically detailed attention was the relationship between plots and the block plans of buildings. The burgage cycle that he recognized consisted of the progressive filling-in with buildings of the backland of burgages, terminating in the clearing of buildings and a period of urban fallow prior to the initiation of a redevelopment cycle. He also examined in detail the boundaries and dimensions of plots, and it was this aspect that

Figure 1: Metrological analysis of Lower Broad Street, Ludlow. Reproduced from T.R. Slater (1990) ‘English medieval new towns with composite plans’, in T.R. Slater (ed.) The built form of Western cities (Leicester University Press, Leicester) p. 72, Fig. 4.4.
Slater developed further, showing how metrological analysis could be used to reconstruct the histories of plot boundaries (Figure 1). By analysing measurements of plot widths Slater was able to speculate about what was in the mind of the medieval surveyor when the area was first laid out for development and infer both the original plot widths and how they were subsequently subdivided.

Of course many parts of towns and cities lack the regularity of plot dimensions that series of residential plots often have. This is particularly so in the case of fringe belts, which are comprised of plots of a great variety of shapes and sizes. The fringe-belt concept (Figure 2) was first recognized within Berlin in 1936 by Louis, one of Conzen’s mentors, but was developed to a far greater degree of sophistication by Conzen in his studies of the English market town of Alnwick and the major English city of Newcastle upon Tyne. It was then taken up by numerous other researchers in various parts of the world. In one line of investigation the relationship was developed between fringe belts, building cycles, land values and innovation adoption (Figure 3). The creation of fringe belts was shown to be associated with slumps in housebuilding, when land values were low, whereas the creation of high-density housing tended to predominate during booms in housebuilding, when land values were high. These dynamics, in combination with geographical obstacles to the uninterrupted outward growth of the built-up area gave rise to an urban area in which residential growth zones alternated with fringe belts. Fringe belts were shown to have a number of physical attributes. These included large, contiguous vegetated areas, often interspersed with large, often institutional, sometimes ‘landmark’, buildings of architectural note, the virtual absence of housing, and a sparse road network, with a low incidence of radial roads and hence a relatively low penetrability to vehicles. Fringe belts form boundary zones between historically and morphologically distinct housing areas: for example, in England, between ‘bye-law’ terraced houses and inter-war semi-detached houses.

The fringe-belt concept is linked to a basic tenet of M.R.G. Conzen’s work: the concept of the morphological frame. This relates to the fact that the way in which forms are created on the ground, particularly during the process in which rural land is converted to urban use, acts as a long-term constraint on subsequent change. Plot boundaries and especially streets exert a powerful long-term influence. Many streets and plots survive largely unchanged. If not, their lineaments are often reflected in those of replacement streets and plots. Thus town plans are powerful influences on future forms, with residual features being passed down through successive generations of society, often over very lengthy periods.

For M.R.G. Conzen the climax of the exploration of the physical development of an urban area was the division of that area into morphological regions. A morphological region is an area that has a unity in respect of its form that distinguishes it from surrounding areas. However, the boundaries between regions vary in strength. In his map of morphological regions in the English market town of Ludlow, Conzen recognized a five-tier hierarchy of boundaries (Figure 4). The map of morphological regions is a composite of separate maps of plan type areas, building type areas, and land utilization areas.

Such a map is a product of a method designed to illuminate the historical development of an urban area. However, for Conzen the past provided object lessons for the future. Such a map could therefore be harnessed to the needs of planning: it provided a basis for rooting the future management of the urban landscape in its historical development.

Recent research

During the last 35 years of the twentieth century aspects of M.R.G. Conzen’s ideas and perspective were taken up widely. To try to do justice within the space of a few pages to the various lines of investigation that could with justification be termed ‘Conzenian’ might well result in doing justice to none of them. Therefore the remainder of this paper will explore just three strands of current research and thought that personal knowledge suggests owe much to the foundations laid by Conzen. These three strands may be referred to as first, micromorphology, secondly, the relationship between morphological periods and the typological process, and thirdly, the link between
decision-taking and urban form.

The recognition of a sub-field of urban micromorphology is little more than acknowledgement that much analysis needs to be undertaken at the scale of the individual plot or indeed within the individual plot. This is new to neither Conzenian geographers nor most architects. What is fairly new is the detailed analysis of the spatial relationships between the physical changes to very ordinary twentieth-century dwelling houses. The discovery that such changes are clustered over time and space accords with various studies of spatial diffusion. The fact that the building of a house extension, for example, increases the probability of another house extension being built soon after in the immediate vicinity reflects the operation of a number of factors, in particular the fact that owner-occupiers influence one another: there is a ‘neighbour effect’. However, areas vary greatly in the incidence of changes, even when they have undergone their initial development at the same time. The lower the dwelling density of the original development of an area (i.e. the larger the plot size), the higher the probability of a dwelling having an extension. However, if small-scale changes are examined (changes such as door and window replacements), the direction of the relationship is the reverse: the lower the dwelling density of the original development, the lower is the number of small-scale changes that a dwelling is likely to have. The strength of the neighbour effect is also related to original dwelling density. In the case of the incidence of house extensions, for example, the neighbour effect is weak in areas developed at low density but strong in areas developed at high density (Figure 5).15

The evidence suggests that a high-density pattern of original development is associated with more imitative behaviour by neighbours than a low-density pattern. This is another influence of the morphological frame, but one that is attributable, it would seem, to the role that plot size, and perhaps variables associated with plot size, have in the social relationships between neighbours.

The second strand of current research and thought promises to increase understanding of another of Conzen’s concepts. While both Conzen and those who have followed in his footsteps have tended to place a good deal of reliance on the concept of the morphological period, they have hitherto devoted little attention to the process by which the forms that are characteristic of one morphological period are superseded by those characteristic of the next. For example, in England there is a sharp contrast between on the one hand the residential building types that characterize the late Victorian and Edwardian periods and on the other hand those that characterize the inter-war period. The former are dominated by the bye-law terraced house, the latter by the semi-detached house with its so-called ‘universal’ plan. Attention has been given to geographical differences in the timing of the change, including the time-lag in its adoption in areas less accessible to London, and, more recently, to the characteristics of houses that are of a transitional type, but the questions of how and why builders made the change from one type to another have only raised much curiosity in the last few years.

In contrast Italian architects of the Caniggian school have focused attention on a ‘typological process’ in which new building types are viewed as products of a process of learning from the adaptations of previous building types. There would therefore seem to be scope for exploring links between the Conzenian morphological period and the Caniggian typological process.16

The final aspect of recent research to be considered, broadly speaking the relationship between decision-taking and urban form, is concerned inter alia with the way in which numerous separate decisions combine to create regularities on the ground. In Conzen’s own work the people who created urban landscapes tended to remain shadowy figures, rarely at the front of the stage. However, among those who have followed Conzen there have been some who have focused more attention on the roles of decision-takers and decision-taking. A facet of this work can be illustrated by briefly exploring one line of investigation on fringe belts.17

Fringe belts can arise from markedly different decision-making processes. Some arise from the planning of a feature broadly circumferential to an urban area: fortification zones were common around pre-industrial cities; and there were numerous cases of amenity zones,
parkland belts and green belts around nineteenth- and twentieth-century cities. But most fringe belts are not contrived. They are products of large numbers of separate decisions about individual sites. Indeed the decision-takers frequently had no knowledge of one another and almost invariably no conception of the way in which their decisions and those of others would in combination have the effect that we refer to as a fringe belt. The factor common to those separate decisions may have been an obstacle to the growth of the housing area, a slump in house-building, the mutual attraction between land uses, or the fact that a number of land users located next to one another merely because of the lack of alternative sites. Commonly a fringe belt is the result of a combination of these and other influences. The consequent regularity has a different basis, at least in terms of decision-taking, from that of a planned fringe belt, but the fact that it is unintended does not, of course, reduce its significance. Like any fringe belt, it articulates the identities of the different historical zones of a city by separating the creations of different morphological periods. It frequently retains elements of its rural-urban fringe character long after it has become embedded within the urban area, often having a higher ratio of soft to hard surfaces than would be feasible in an area dominated by streets and relatively small residential plots. In these ways an unintended fringe belt may contribute as much to the legibility of a city as a fringe belt associated with a planned feature.

The issues that this raises for planning decisions are currently being examined in the UK. Only rarely has there been deliberate preservation or conservation of fringe belts as entities. Planning policies that have favoured the retention of fringe belts in the UK have generally related to the individual components of which they are comprised. These policies include those concerning the retention of certain types of open space, such as playing fields and allotments, and the designation of areas of scientific interest. Some sites and buildings within fringe belts are recognized to have historic and architectural significance and are given statutory protection. However, much of the survival of fringe-belt features has been unplanned. In some cases it reflects the fact that functions occupying fringe-belt sites lack alternative sites to which they might move if they are to continue to fulfil their function.

Nevertheless, there are forces tending to change dramatically individual fringe-belt sites and thereby reduce fringe-belt legibility. Within the UK there are currently planning policies that favour the redevelopment of existing urban areas for housing with the object of creating more compact cities and reducing the amount of rural land developed for housing. Even without such policies, the closure or migration of an organization occupying a fringe-belt site will trigger a re-evaluation of the site, a consequence of which may be a planning application to redevelop the site for housing. In these circumstances the wider significance of the site within a fringe belt should be a consideration, although scarcely any UK planning authorities take this view.

Conclusion
The particular British school of thought in urban morphology that some have described as Conzenian is unambiguously geographical. It is primarily about how things fit together on the ground. It is hard to envisage ideas that are more geographical than the fringe-belt concept and the morphological region. They are about how the urban parts of the earth’s surface have been configured and reconfigured. The description ‘morphogenetic’ seems apposite, as does the emphasis on cartographic representation. The entire approach, but most obviously the mode of conceptualization and the approach to terminology and visual representation, is much more German than British.

There is no doubt that the history of British urban morphology would have been very different if M.R.G. Conzen had not moved to England.

Conzen himself was too modest to feel comfortable with the term ‘Conzenian’. Nevertheless, there is a good deal of current interest in the type of research that could reasonably be described by that term. Some of it undoubtedly has relevance beyond its parent discipline of geography. Indeed, arguably some of the most exciting developments in urban morphol-

![Figure 4: The morphological regions of Ludlow’s old town. Based upon M.R.G. Conzen (1988) ‘Morphogenesis, morphological regions and secular human agency in the historic townscape, as exemplified by Ludlow’, in D. Denecke and G. Shaw (eds) Urban historical geography (Cambridge University Press, Cambridge) p. 258, Fig. 17.2.](image-url)
ogy more generally are those at the interfaces of geographical urban morphology and architecture and planning. So the title of this paper is emphatically not an attempt to ring-fence a particular domain of urban morphology, but it does refer to an approach to the city that, in the course of the twentieth century, developed distinctive features, many of which are influencing current research.

References:
8. Ibid., 92-4.

Figure 5: Relationship between the strength of the neighbour effect for house extensions and original dwelling density in inter-war suburbs in England. Based upon field surveys by C.M.H. Carr, M.D. Horne, N.J. Morton, O.M. Sanders and J.W.R. Whitehand, 1992/94, and local authority building control records.
Transformations of Space: Retrospective on Public Housing in Singapore

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Introduction
The public housing scene in Singapore today is a marked difference from the early days of crowding and squalor, when the overriding purpose of public housing had been to “break the backbone of public housing”. To date, the Housing and Development Board (HDB) has built 21 New Towns with a total of about 700,000 flats and nine out of ten Singaporeans live in public housing. With increasing affluence, higher expectations are made on the quality of the housing environment. The spaces of public housing have shifted from pragmatic spacing between buildings to become the focus of community planning and also as perceptible images of the improved quality of life. The transformations of space in the design of new towns is most impactful at the level of the residential precinct - as these are the most immediate spaces in the public realm, and for many residents of public housing, perhaps the only space which they encounter within the new town on a daily basis.

Through examining the changing design of public space in public housing through the transformations in the models of New Town planning in Singapore, this paper will trace the development of the small residential public space and seek to understand the context of planning and design with reference to the impact on the public space network in the new towns.

Structural models and the transformation of new towns
The first stage of early estate developments which were predominantly in the city provided housing for resettled residents and catered to low-income families with the most urgent basic housing needs. Queenstown, initiated by the SIT in 1952 and completed by the HDB in the early 70s, had a total population 150,000 formed by the amalgamation of smaller estates, with a town centre added later to become the first satellite town.

Toa Payoh New Town, which marked the transition to the second stage of new town development, was initiated in 1965 with a target population of 180,000 persons. No real model of town planning was used, although a town centre and complementary facilities were planned to achieve some degree of self-sufficiency.

The third stage of new town development saw the building of Ang Mo Kio New Town, commenced in 1973 based on a prototype new town model. The hierarchical model of a town centre serving neighbourhoods equidistant from the centre, and in turn served by neighbourhood centres and subcentres, was adopted on a large scale. Neighbourhoods were conceived as self-contained communities or “total living environments” of about 6000 dwelling units, sufficient to support a primary school, shopping and community activity nodes within a walking distance of 400m.

The fourth stage of new town development - when the New Town Structural Model made its first appearance in the late 70s and formed the basis of the “checkerboard” model of town planning, was characterised by the use of the precinct as a basic unit of planning. It repeated itself in clusters of 4 ha or sometimes half the size, serving 400-800 families housed in 4 to 8 blocks of flats. Each precinct had a precinct centre which might include small games courts, children’s playgrounds or landscaped gardens.

Some observations of the developments of the models over time include:
- The initial matrix-like checkerboard model gives way to the more clustered grid of which distinct zones can be identified, and eventually to the multi-cellular structure.
- Roads are also increasingly differentiated hierarchically in the new models, with more categories of roads as a result of subdivision. While the first checkerboard model shows a grid-like series of roads, the subsequent models show more zonal loops and eventually distinct neighbourhood circuits.
- There has been some experimentation with the size of neighbourhoods, with an initial serving radius of 400-450m decreasing to 300m.
- While the earlier model shows the attempts to relate the open spaces of the precincts to the neighbourhood centres, this is not evident in the later models. Open spaces do not interlock but are circumscribed within a larger spatial field.
- The use of models and a standard palette of provisions for the new towns invariably lead to some degree of repetition and predictability of the spatial structures although variations can be introduced via architectural treatment and introduction of themes.

The Punggol 21 model, or the Estate Model of New Town Planning, represents the fifth stage in the development of new towns and has been termed by HDB as “the new town model the 21st century”. The new paradigm seeks to integrate the components of housing, education, shopping and recreation into compact, pedestrian-friendly, mixed used developments served by light rail transport nodes within a walking distance of 300-350m. The
emphasis is on bringing back the “kampong” spirit through the use of smaller, distinctly designed “estates”, each with about 1,200 to 2,800 dwelling units sharing a common green which ranges from 0.4-0.7 ha. To be co-located next to school fields where possible, these open greens will help to create a sense of relief from the high-rise housing environment.

Some features of the different models of new town planning have remained constant, such as:

- The hierarchical model of planning is very much focussed on centres and in axial planning, though there is some departure from such an emphasis in the latest development

- The adherence to the high-density high-rise model, with increasing flat heights up to forty storeys built in 2001

- The high importance accorded to mobility through the use of the transport systems (like MRT and LRT) and roads as form-giving infrastructure

- The intention to achieve some form of social engineering through design, noting also the fact that HDB states as its mission “building communities” and not simply housing infrastructure

We shall now focus our attention from the macro aspects of the use of models to effects on the micro aspects of the planning of residential space.

Impact of new town models on spatial forms of small residential spaces

The concern with spatial form in the early days was only to the extent of providing the minimum spacing required for adequate light and ventilation, resulting in the pre-dominance of linear turfed spaces between blocks of flats. The conscious grouping of blocks of flats into neighbourhood groupings helped to define space to some extent, but the spatial groupings of buildings still tended to be loose. However, the beginnings of shared residential facilities like small playgrounds, local shops, and shared green open space were observed. Playgrounds tended to be situated in the space that is required anyway for building spacing.

The first precinct design implemented at Tampines New Town consisted of a children’s playground, games-courts, landscaped areas and local shops. To encourage resident’s perception of the precinct space as a locale, “clear definition of the precinct boundary has been attempted…and blocks orientate towards a central open space.” The precinct type in Bishan North subsequently was planned with clustered blocks to create a tightly knit spatial structure.

In Punggol 21, two of the stated planning objectives made by the Planning Authorities were to “create a high quality residential town which will serve as a model for the 21st century” as well as “to create an environment which fosters a sense of community bonding.” Many precincts were planned with a typical layout of blocks forming the enclosure of the precinct space, with an internal driveway leading to an integrated multi-storey car park. Playgrounds and landscaped gardens were located within such a space. Such an arrangement did not encourage non-residents to pass through the space as one had to enter into the highly defined area of the precinct space.

The arrangement of a precinct with buildings enclosing the precinct open space on a raised podium level above 2-4 storeys of a multi-storeyed car park was also quite a prevalent scheme. Such a layout was quite efficient in maximising land use and afforded a high degree of privacy, as non-residents would not pass through or use the precinct space due to the effort needed to get there. However, the elevation of the precinct space from the road level meant that the space was removed from the public space network of streets and linkages to other public spaces. Even if several of such precincts were clustered to share a common green, the green area on the ground level would still be quite remote from these elevated precinct spaces such that these spaces might no longer form part of the daily route or “corridors of activities”, nor create the affordances to form a “community of users”.

The development of residential public space over time in Singapore’s public housing depicts certain trends which may be traced at the macro-scale to the structural models of new town planning:

- The increased attention put to planning the small residential public space (or precinct equivalent) exemplifies the increasing awareness by planners that not only is the precinct space to serve as the horizontal datum of interaction, but the space has become symbolic to the creation of the idea of exclusiveness and privacy.

- While the small residential space becomes increasingly delineated and distinct as a spatial entity, its links with the wider spatial system of the new town becomes increasingly weakened. The previously lattice-like network of small open spaces has reverted to self-contained spaces which are at the end of the spatial hierarchy of the new town.

- As a corollary to the greater differentiation of functions within the new town, the design and usage of the small residential space also becomes increasingly defined in terms of...
function. Built in equipment and furniture in designated zones may not allow much flexibility in use.

- Corresponding to the increasing subdivision in the types of spaces in the new town, the gradations of spaces between public and private has also increased. New elements are now employed, such as a distinct entrance and drop-off point to the precinct, transition from more open to more enclosed spaces, elevated decks, defined entrances to blocks, pedestrian concourses, etc.
- There is an increasing segregation of pedestrian and vehicular traffic. The move away from open-air surface car parks to multi-storied car park buildings within the precinct had facilitated the differentiation of pedestrian and vehicular routes.

**Resume: spatial order vs. social order**

The use of structural models in new town planning enables the design of new towns to proceed smoothly based on paradigms which present themselves as integrated solutions premised on precedence and good practice. However, working with such models involve a high degree of objectivity in the design process, and may lead to the undermining of the “softer”, less quantifiable elements in large scale design and planning.

The structural model assimilates the precinct as another element of planning and gives short shrift to any social theories of community dynamics. The resultant spaces from such a process may be static (with fixed usage), evenly spaced out (through functionalist zoning) segregated elements (self contained units). These are opposed to possibilities of creating spaces through a dynamic process, based on interaction with potential users, feedback and open-ended solutions which allow for residents to have some degree of control or change.

It is the hypothesis here that the use of models for new town design creates an increasing abstraction of space in a reductive process which displaces it from spatial experience and disregards the history of spatial development or its use and meaning. The range of public spaces provided by the HDB tends to be hierarchical in terms of size and evenly distributed in terms of location. Yet studies of the importance of public space in the wider discourse have underscored the importance of creating networks and linkages among spaces based on everyday use by residents. The increasing isolation of the small residential public space from the larger public space network of the new town leads to these spaces becoming veritable “blind-spots” in the mental structuring of the new town space, taking away the richness and variety which could have been the outcome of better connectivity.
In Search of A Synthesis: Modernism and Tradition in Arab World

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Introduction

The ordinary modern housing design came to an end on July 15th 1972, when Pruitt-Igoe, a large modern district in St. Louis, Missouri, consisting of mostly 14-storied, clean, geometrical, highly functional buildings, was demolished. It had been designed by Minoru Yamasaki and won the American Institute of Architects award in 1951. After only 20 years, it had become rubbish.

Twenty years is a very short ‘life expectancy’ for buildings. This points to a problem with the way we conceive architecture and urbanism.

Charles Jencks used the Pruitt-Igoe incident to declare ‘the death of modern architecture’ and to announce the birth of Post Modernism, reducing Modernism to simply a “style”. There are some reasons to assume that this breakdown of modern architecture and urbanism has something to do with a lack of understanding the intricacies of traditional architecture or ignoring some issues that have greater impact than pure functionalism.

The fact is architecture and urbanism have been rationalized in all dimensions. They have been streamlined with geometry, mathematical proportions, industrialized materials and technological reasoning, etc., but the myth has survived. There has not been sufficient objective scientific research of what building and dwelling in relation to man. The various architectural identities related to personalities and social status created by humans actively interacting with the space they inhabit have been neglected and replaced with fixed icons of ready-made boxes.

Modern architecture leaves us ‘alone’. Modern society pays for its architectural and urbanistic opportunism with tremendous social costs. On the other hand, surprisingly, the enormous myriad of worldwide traditional architectural might have some simple solutions for some of the most complex modern urban problems.

Unfortunately those architectural firms who have a good understanding of the complexities of traditional architecture find it more successful and impressive to stick with the trend of stereotypical architecture, particularly those who are engaged worldwide with projects in non-Western cultures. They are increasingly engaged in practicing ‘pseudo-cultural architecture’. However, there are examples of modern building designed by western architects, which incorporate traditional elements sensitively.

A clear example of a balanced integration between modernity and tradition is the work of Sir Norman Foster and his team. The Century Tower in Tokyo is the result of a successful re-interpretation of Japanese aesthetic traditions with modern values.

The National Commercial Bank in Jeddah, designed by Bunshaft for SOM, is another example of a clever attempt towards regionalized architecture. The vertical translation of localized traditional vocabulary such as the courtyard can be clearly traced with this building form and functionality that deal with serious urban implications.

Charles Correa had formed two lines of defense to overcome the obstacle created by a high-rise building like the Kanchanjunga Apartment. The interlocking apartment system with the open sky courts investigates issues of opaque versus transparency. Yet the complexity of the spatial and constructional organization constrain the flexibility and freedom an occupant needs in order to create a certain identity for his or her habitat.

The basic aim of this research is to overcome the disastrous discontinuities of human space-organization unconsciously produced by modernism and postmodernism, and to supply a consciousness to the design of the human habitat, urban or rural. One of the basic objectives of this research is the re-evaluation of two very important elements of Islamic traditional architecture and their relation to human movement and rest. Such ‘value-focussed’ axial systems are the basic common denominator of all traditional architectures, but they are ignored by the introduction of functionalism. The ultimate goal of this research is to provide inter-subjectively acceptable knowledge about basic relations between traditional architecture and man.

Urbanism in the Arab World

The processes of modernization have changed the forms of traditional settlements in much of Arab world and, unfortunately, very few places remain where patterns of living and physical forms of settlement have survived relatively untouched. Places like these provide the opportunity to study architectural environments that are determined by factors other than superficial functionalism and modern living trends. These are environments where the physical forms of dwellings and settlements are entwined with environmental conditions, cultural values, and social systems. The rich meanings of these environments may not always be obvious to the casual observer, but have a profound influence on the future well being of these societies, including environmental, social, mental, and even physical well being.

As analyzed in the book Architecture and the Islamic World, Its History and Social Meaning, by Thames & Hudson, the traditional urban
setting of an Islamic city with its hierarchical sequences of space organization, provides optimum flexibility in issues of private versus public. The deep understanding given to details and their relation to one another and to the whole creates an ideal solution to most of the problems encountered by modern architecture. One community with a strong feeling of belonging becomes a seed in a fertile land that grows and expands to create bigger towns and cities, which are physically related to one another. The transition between accessibility and enclosure is maintained in an individual unit as well as in the city itself. Each dwelling's main gate and screened balconies act as filtering thresholds between inner and outer environments. Open land on one side of a dwelling and an open courtyard on the other create a genuine open invitation for any desired changes by the inhabitant. Therefore, an individual dwelling becomes a flexible assembly of small units gathered around an interior courtyard. The continuity of such a dwelling system creates active passages for communal activities.

What's happening now in Modern city organization is the total reversal. The consistent elementary order of social hierarchy in traditional urban planning have been the result of a foreign design that does not relate to the typology and nature of the place in which it is designed. Claustrophobic apartments with narrow balconies in huge towers have become the best ‘fast food’ for the increasing masses. The alien configuration of the new city includes not only a great deal of environmental waste, and restricts the option of expansion to its bare minimum, but it also contradicts the basic fundamentals of living, growing and aging organisms.

The United Arab Emirates have always been a mixture of epics and idylls, whose cata-tonic matrix lives along on the shores of Arabian Gulf and the precipices of the sandy desert of Saudi Arabia. From the beginning, water and sand have formed a subtle assemblage of promontories and inlets, architecture and landscape, history and nature. Most of the cities there are symbols and images of the sublime conflict between history and nature, earth and sky, and vertical and horizontal translated into civil language.

The dynamics of the United Arab Emirates’ rapid growth, urban development pressures and the excitement of becoming one of the major business hubs of the world have created a new vitality. At the same time, the existing boom of building activity presents certain problems of sustainability: Following are some of the causes:

1. The eagerness for building high and mid-rise buildings, especially housing and commercial facilities, contrary to traditional low-rise structures.

2. The West and “western modernism” becoming symbols of progress, but lacking many of the technical and environmental solutions required in this region.

3. Abstracting traditional and cultural tectonics to a bare image and applied-on skin and form.

4. Repeating some of the failed experiments of the past in architectural and urban planning.

5. Minimally responding to the regional climatic conditions and heavily depending on mechanical sources of climate control.

The goal of this paper is to search for a synthesis between the unavoidable rush of modernism and the traditional and cultural aspects of the area in order to provide some objective tools for analysis and design of the new, or the refurbishing of the “existing new,” urban structures. In other words, the goal is to create a general and inter-subjectively acceptable knowledge about basic relations between architecture and man.

The proposal presents ideas about how some of the important and most ecologically friendly elements of traditional architecture can be incorporated into new design to provide the protection of its cultural patrimony. After this, we can assume the task of reconciling the singularity of the theme with the variety of the contributions.

Multi-unit housing conditions breed a unique system of repeatability and dependence. In this system, we may find programmatic, structural, and formal architectural components that help to define this repeatability and, in combination, create the language of the architecture. In this particular case, we explore and discuss the “courtyard,” which traditionally acts as a threshold between community and privacy, the outside and the inside, and, more importantly in the Middle East and most other Arab countries, as the hearth of the dwelling. We also see it as an “ally,” being a transitional space between man and machine.

Serge Chermayeff and Christopher Alexander, in Community and Privacy, acknowledge the “Six Domains of Urbanity” which include Urban-Public, Urban-Semi-public, Group-Public, Group-Private, Family-Private, and Individual-private. We think the level or element which is missing from this gradation is “Family-Public”. This is that exterior transitional space which acts as a playground, an arrival place, an exterior living room, or a garden. Charles Correa, the Indian architect, divides the space between the living room and the vehicular street into four systems:
1. Courtyards and terraces: for cooking, sleeping, etc.
2. The front doorstep: where the children play.
3. The water tap or the village well.
4. The principal open space used by the whole community.

This requires the re-evaluation of two very important elements of Islamic traditional architecture in relation to human movement and rest. Such ‘value-focussed’ axial systems are the basic common denominators of all traditional architectures, but they are ignored by the introduction of functionalism.

The investigation in this project is one that questions the traditional notion and function of the courtyard. Through acts of peeling apart, dissolving, and understanding the formal and programmatic responsibilities of this component, we can better understand its role in monitoring our social condition. The proposal looks at housing that lacks this element, and offers a common space that blends through groups of units, and the courtyard and passage become the two gradations of family space.

“Housing” presented the formative realization of research in the area of design for mass-customized, partially pre-fabricated housing. This research addresses the increasing worldwide need for quality affordable housing, particularly in third-world countries.

About the Future:

The world has moved into the 21st century; both the practice and the very idea of architecture will experience dramatic changes. The population growth, the information-knowledge revolution, the changing social and cultural realities, the globalization of the economy, the increasing environmental degradation and consciousness, the pressures of urbanization and migration, etc. will pose unprecedented challenges. These circumstances make it advisable to engage in a serious preparation for the future. Preparation here means developing a critical understanding and approach to the issues and events that will most likely impact society, architecture and the urban fabric.

However, this is no easy task. The discourse on futures and forecasting remains a rarity in our field; there has been little consideration of the future of architecture, and thinking about the future is essential. This paper presents arguments for the necessity of future thinking within the agenda of dwelling design.

The Future in the Architectural Discipline

The Modern movement paid much more attention to the future of society, architecture and human settlement than we have for the last 20 years. Examples abound the writings of Wright (1963) and Le Corbusier’s (1986) or the principles and visions behind movements such as the CIAM, Metabolism, and the Archigram. Although the Modern images of the future may appear today as naive if not frightening, their inquiry helped to advance our understandings of urbanism, technology, and growth (among others) and placed architecture in a leading role in society. One could go as far as to say that the largely utopian visions advanced by Modernism changed our way of seeing human development.

In conclusion, we suggest that the relationship between the thresholds of habitation, the past and the future is critical, and requires our ability to sustain a kind of middle ground.

References:
Portland, Oregon’s widely recognized urban growth boundary (UGB) is changing the form of Portland’s suburbs. Established through state legislation in 1973, UGBs were developed from a rural perspective to protect farm lands from urban encroachment. Little initial thought was given to patterns of development within the boundaries. Oregon’s UGBs must undergo periodic review to ensure that an adequate 20-year land supply exists. Portland’s UGB, adopted in 1979 and covering 24 cities and the urban portions of three counties, included just over 232,000 acres of land, or 363 square miles. In 1998, an additional 3,500 acres were added to the UGB, an increase in area of 1.5% while the number of households grew 34%. Only another 14,500 acres are planned to be added over the next 40 years, despite a reduction in buildable lands within the UGB due to environmental constraints and a continuing moderate to high rate of regional population growth. This limited expansion of the UGB is made possible by a transformation of suburban development patterns driven by four factors: the Metropolitan Housing Rule, escalating land and housing prices, transportation and light-rail station planning, and Portland’s relatively low base development densities.

The Metropolitan Housing Rule (MHR), imposed by the Land Conservation and Development Commission in 1978. Goal 10 of “Oregon’s Statewide Planning Goals and Guidelines,” calls for plans that “encourage the availability of housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type and density.” To meet this goal — and to reduce exclusionary zoning — the MHR requires that each jurisdiction zone a sufficient amount of land for at least 50% of new residential units to be attached single-family or multi-family units. In addition, specific minimum residential zoning densities of from 6-10 dwelling units per net buildable acre were set for communities in the Portland area. Potential new housing densities changed significantly from 1978 to 1982 — from 4.4 units per net acre to 9.4 — as cities adopted new comprehensive plans.

These were potential densities, with no requirement that housing be built at those target levels. Undeveloped acreage within the UGB remained large, and regional household growth was a modest 1.3% per year in the 1980s. There was widespread consensus on regional growth. In 1990, 1000 Friends of Oregon (a land preservation group) and the Home Builders Association of Metropolitan Portland undertook a joint study of growth from 1985-89, “Managing Growth to Promote Affordable Housing: Revisiting Oregon’s Goal 10,” to compare actual building with the potential created by the 1982 comprehensive plans. They found that the volume and proportion of multi-family and attached single-family development increased dramatically, the proportion of smaller and more affordable developed single-family lots increased, and the region’s pro-housing policies helped manage regional growth while promoting affordable housing. The report did not concentrate on UGB and its possible expansion, concluding that compliance with Metropolitan Housing Rule standards would “satisfy the region’s housing needs and regional urbanization needs through a 20-year planning period.”

Rapid household growth of 2.3% per year in the early 1990s, escalating real estate prices, and required periodic review of land needs by Metro, the regional governing agency, led to a parting of the ways of 1000 Friends and the Home Builders. Required to make several regional land use decisions by 1995, Metro undertook “Region 2040” as a first step in adopting a growth management strategy that would accommodate 720,000 additional residents within the UGB. The “base case” scenario — if past development practices were continued — estimated a need for an additional 47,000 acres of land in 1995 plus another 25,000 acres every ten years. Three alternative concepts were examined, exploring the proportion of growth to be captured within the UGB, the split between single-family and multi-family housing, redevelopment potential, new lot size and density targets, and UGB expansion. The recommended alternative modeled a 2040 population of 1.9 million residents in 804,000 households with a total of 18,000 new acres (or 28 square miles) added to the UGB. That would represent a change from 1990 to 2040 in household density from 1131

Table 1: Metro population estimates, within UGB (2001 data)

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Population density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>977,000</td>
<td>2,691 per square mile</td>
</tr>
<tr>
<td>1990</td>
<td>1,053,000</td>
<td>2,900 per square mile</td>
</tr>
<tr>
<td>2000</td>
<td>1,281,470</td>
<td>3,476 per square mile</td>
</tr>
<tr>
<td>2017</td>
<td>1,775,000</td>
<td>4,536 per square mile</td>
</tr>
</tbody>
</table>

2000 number is U.S. Census count; 2017 density is based on anticipated UGB expansion of 14,500 acres. Source: Dennis Yee, Metro, June, 2001.
per square mile to 2,055 per square mile, and a change in population density from 2,843 to 4,759 per square mile. More recent estimates of the within-UGB population and refined growth projections suggest that Portland will come close to the 2040 model numbers by the year 2017, Metro’s current planning time frame.

Between 1990 and 1995, land and housing prices increased dramatically in the Portland area. In a report issued in 1995, Don Morissette, a home builder and then a Metro councilor, estimated that the cost of an acre of developable residential land had more than tripled from $25,000 to $80,000 in four years; that the cost of a 2,200 square-foot home had escalated from $80,000 (on a 7,000 square foot lot) to $173,400 (on a 5,000 square foot lot); and that in housing affordability Portland dropped from 55th rank (on a 5,000 square foot lot); and that in housing affordability Portland dropped from 55th rank among 179 cities in 1991 to 165th, making it one of the 15 least affordable housing markets in the country. Morissette called for the addition of 8,000-10,000 acres, not the 3,500 that Metro adopted. The Home Builders Association lobbied aggressively for a greater expansion of the UGB, and 1,000 Friends sued Metro over any further attempts at expansion onto prime farmland. The debate over the UGB’s role in driving up housing prices continues, with no sign of resolution. Expansionists argue that a constrained land supply must drive prices up. Hold-the-liners argue that land is not the major determinant of house prices and that western cities without growth controls show similar house price trends. There is little doubt, however, that housing prices have encouraged Portlanders to buy rowhouses, condominiums, and smaller houses on smaller lots.

In a recent study in *The Oregonian*, Bill Graves and Steve Suo examined population growth and changes in population density by census tract from 1990 to 2000 in the four-county Portland region. The study included Clark County, Washington, which only recently adopted a growth boundary and which Metro does not include in its population counts. Total population grew from 1.4 million to 1.78 million. Overall density increased from about 3,500 to 3,814 persons per square mile. The paper defined four levels of density measured by persons per square mile: rural (0-1,000), suburban (1,000-4,000), urban (4,000-10,000), and very dense urban (over 10,000). “Suburban” growth accounted for 62% of the increase — new suburbs (19%), old suburbs filling out (19%), old suburbs becoming urban (19%), and new urban density suburbs (5%). Rural areas grew by 14%, and “urban” areas grew by 17% — urban areas getting denser (13%) and very dense urban areas (4%). The balance of 7% of the new residents was accommodated in “no change” areas, where in-fill development did not significantly alter local population densities. Within each category (excluding that of “no change”), average residential density increased, often dramatically. These changes resulted from an increase in and wider distribution of multifamily housing and smaller lot sizes for single-family houses. Notably, 800,000 of the region’s 1.4 million residents in 1990 lived in “no change” tracts and thus did not experience density increases in their immediate neighborhoods over the decade.

In a comparison with fifteen similar sized cities, Portland ranked fourth in population growth over the decade (32%, with three cities growing at 33%); second in its increase in population density (8%, with 9% the maximum and with eight places failing to increase in density); but only eighth in density (behind not only San Francisco and Miami, but also San Jose, Ft. Lauderdale, Denver, Sacramento, and Seattle). These results are not directly comparable to Metro’s UGB-bounded analyses and projections (for the national comparisons, the Oregonian looked population densities in “urban” areas with over 1,000 persons per square mile and included a six-county definition of the metropolitan area), but they do suggest that Portland’s projected population density for the year 2017 of 4,500 persons per square mile will be something like that of Ft. Lauderdale or Denver today.

In its 2040 Growth Concept, Metro defined eight types of residential communities with target densities. The suburban communities include “outer neighborhoods,” light rail “station communities,” and “town centers” — the locations of new development opportunities outside of the region’s built up landscape. While the bulk of new development in these areas is yet to be built, we can see Portland’s emerging suburban morphology in selected communities. Perhaps the most dramatic change — in the proportion of recent growth and the impact on the landscape — has been relatively traditional suburban developments on greenfield sites at the edge of the UGB. Building lots are getting smaller and the new neighborhoods are more

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**Table 2: Population density, 1990 and 2000**

<table>
<thead>
<tr>
<th>Category</th>
<th>1990 density</th>
<th>2000 density</th>
<th>Lot size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural areas</td>
<td>79</td>
<td>134</td>
<td>13,600</td>
</tr>
<tr>
<td>New suburbs</td>
<td>581</td>
<td>1,626</td>
<td>9,550</td>
</tr>
<tr>
<td>Old suburbs filling out</td>
<td>1,730</td>
<td>2,670</td>
<td>9,850</td>
</tr>
<tr>
<td>Old suburbs becoming urban</td>
<td>3,010</td>
<td>5,155</td>
<td>8,550</td>
</tr>
<tr>
<td>Urban areas becoming denser</td>
<td>5,243</td>
<td>6,481</td>
<td>7,400</td>
</tr>
<tr>
<td>New, urban density suburbs</td>
<td>435</td>
<td>4,982</td>
<td>N.A.</td>
</tr>
<tr>
<td>Very dense urban areas</td>
<td>9,776</td>
<td>12,358</td>
<td>N.A.</td>
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</tbody>
</table>

Lot sizes are for Oregon metro area only; Clark County, Washington lots are larger.

Source: The Oregonian, April 8, 2001.
likely to have multi-family components that in
the past. These are seldom “new urbanist” ver-
sions of suburbia, however, and in basic form
they look much like older suburbs. Rapid recent
expansion, the lack of leapfrog development,
and the collision with the UGB give one a sense
that suburban space is filling up. In four case
study areas straddling the UGB, less than 10%
of the inside-UGB land remains undeveloped,
and much of that has already been platted.
Of the developed urban parcels in 1998, 41.9%
were developed from 1989-1994 and 35.9% from
1994-98. Average parcel sizes have decreased in
each area. In the Bethany study area, for example,
94% of the development has been within the
last decade. Residential lots developed before
1989 average 9,100 square feet; those developed
from 1989-94 are 7,010 square feet, and those
platted after 1994 average 6,560 square feet.
Even though Portland’s residential density is
modest, there is a strong visual impact of higher
density subdivisions at the outskirts of the
built-up area and dramatic containment at the
UGB. The region’s “outer neighborhoods,” like
Bethany, are often denser than older suburbs.

Steele Park, a small-lot development near the
Elmonica stop on the westside light rail
line, is an early transit-oriented project that was
highly promoted by Metro, Washington County,
and the local media. The transit line was being
planned and built just as Metro was addressing
UGB expansion and the need for increased resi-
dential densities. Station areas were rezoned to
require (and not merely allow) densities of
12 units per net acre. The 1995 development
included 74 single-family houses on lots ranging
from 2,000 to 3,000 square feet, along with 18
apartments and a 1.4 acre open space, all on ten
acres. At 60% plot coverage, and with only three
feet separating some of the homes, Steele Park
was affordable and basic and remains typical of
the region’s new small-lot developments which
tend to be small subdivisions with detached
houses.

Orenco Station plays off downtown
Portland’s Pearl District in promoting its lots
and townhouses. Directly across the road from
Orenco, new “Central Park” and “East Village”
developments are advertised.

It remains to be seen how the Portland
region will develop as population growth com-
bined with only modest expansions of the
UGB alters the suburban landscape. Models
of future suburban forms are in place. Com-
munity resistance to increased housing density
in existing neighborhoods and concerns about
affordability will continue to put pressure on
the UGB. With few greenfield sites left within
the UGB, the Portland region will have to dra-
matically expand its alternatives to the 7,500
square foot building lot.

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Abstract.

The two axioms mentioned above reveal the binary code of urban becomings, viz. urbogenomy - anthropogene and sociogene as well as the corresponding pairs of categories: human-social, formal-informal, inductive-deductive, monistic-holistic, monologue-dialogue, emotional-rational, spontaneous-planned, realistic-abstract, anthropomorphic-sociomorphic, amorphic-morphic, organic-voluntaristic.

It is an irrefutable fact that every urban form/structure is the result of some human activity. In this case we proceed from the definite distinction between human and animal activities because “if the stick is the link between the ape and the human being, then the wall is the border between the human being and the animal.” In other words, architecture is that conscious activity which is a saltatory rather than evolutionary act of the development of the biological creature into a human being.

Tracing back the historical urban facts, we face all the time plenty of proofs of the two main types of spatial becomings - amorphic/irregular and morphic/regular. Since the definite phenomena could be observed as repeated or revived not exactly in their mode, but in their type, i.e. in their character, it could be said that there is historical morphologic regularity.

Sociology has established the two main types of relations: formal and informal. The first ones, being mainly human, are spontaneous, possible and non-obligatory; the second ones, being social, are planned, necessary and obligatory (Gemeinschaft and Gesellschaft) and they produce all urban forms and structures.

Thus, the two main types of urban structures could be defined as follows:

Additive - resulting from not entirely planned activities, developed as non-rhythmic addition of elements in time and space, which are normally formed as amorphic, Cyclopean, fractal structures of the “network” type;

Divisive - resulting from entirely planned activities, developed as rhythmic addition of elements in time and space, which are normally formed as morphic, quadratic-matrix structures of the “grid” type.

Thus, in the first case we face “unexpected” becomings and in the second one - “expected ones.

From the aforesaid it is obvious that we deal with an urbotopic approach which enables us to develop a “relief method” of urban analysis and synthesis.

Proceeding from the two axioms above, we will focus our attention on the study of the origin of urban forms on the structural level as an adequate expression of some human social activity. Civilisation results mainly from the manifestation of the two basic forms of social structuring as defined way back by Ferdinand Tonnis: Gemeinschaft (the community as a natural, spontaneous, intimate form of vigorous life manifested as an irrationally acting strong-willed structure) and Gesellschaft (the society as an artificial, institutional, official form of life manifested as a purposive, rationally acting strong-willed structure), in their “pure” form, in their opposition, conflict or in their continual interpenetration and intertwining. These two basic sociological categories, the first one being formal and the second one informal, are key categories not only in sociology but also in town planning as a theory, methodology and practice inasmuch as they continuously demonstrate their structural stability in time and space. In this sense they should be accepted as basic, main objective laws of the socio-spatial structuring of reality such as it presents itself to us by its historical forms.

Our aim is to prove that the genesis of urban becomings and forms is an expression primarily of one or the other type of behaviour - informal or formal depending on which one is being manifested as dominant in real time and space, as well as to define the two types in a proper way.

Without going into detail, we will point out the essential features of each archetype of social behaviour.

The first archetype of behaviour, the informal one, is an expression of relations created as a result of everyday human practice,
which can be characterised as some kind of agreement within a group of people and which are achieved by a community consensus and have no strict and obligatory sanctioning character. Their non-observance leads mainly to moral isolation supported jointly by the other members of the group or community.

The second archetype of behaviour, the formal one, is an expression of relations created as a result of social practice, which are obligatory within a given group of people and are achieved by statutes which apply to the whole society even if not fully accepted by separate individuals, groups or communities. Their non-observance leads to sanctions stipulated by the laws.

Thus, the first archetype can be defined as anthropogenic and the second one as sociogenic. The first one is shared and desired whereas the second one is imposed and obligatory. The first one is characterised by some “organicity” and “softness” of form while the second one manifests some “sharpness” and “hardness” of form. We draw attention to this fact because, as we will see below, it is immediately expressed in the urban forms themselves. The two sociological archetypes normally presuppose two urban archetypes.

The first urban archetype results from not entirely planned and irrational activities, from the continuous organic addition of elements-archefacts, in time and space. This process of urban becomings will be defined as additive and the result of it, i.e. the urban structures themselves, as additive. This fitting of each new element-archefact to the already existing situation resembles the construction process where masonry is made with “natural” irregular, crudely-shaped blocks (Cyclopean masonry), looking for the block which should “fit” the other blocks. Such tectonics obtained from non-uniform elements will be defined as a fractal structure (ill. 1). All urban configurations obtained as a result of this morphological process have a unique character inherent in human nature as granted by God, i.e. a tactile effect. The first urban archetype can also be defined as a dialogue and a posteriori urban archetype.

The second urban archetype results from entirely planned purposive-rational social activities concerning a given community or society as a whole, which is actually an unreal abstract union of people. The functioning of society as a social abstraction takes place by the respective abstractions, i.e. laws, regulations and norms. These tools epitomise the power and the state, regardless of its dimension, as well as the time of its functioning. This was demonstrated as early as the time of the first civilisation forms. The elimination of the separate, individual, random occurrence inevitably gives rise to a representative archetypology which is inherently abstract. This process of urban activities will be defined as divisive and, consequently, the resultant urban structures will also be termed divisive. It resembles a construction process where the elements-archefacts have been prepared in advance and their “fitting” is a mechanical process (quadratic masonry). Such tectonics obtained from uniform geometric elements will be defined as a quarter (quadratic-matrix) structure (ill. 2). All urban configurations obtained as a result of that morphological process have a unified, uniform character corresponding to the very social nature of society as an unreal and abstract form of human relations. The second urban archetype can also be defined as a monologue and a priori urban archetype.

Urban morphology, considered from a sociological perspective, enables us to define its irrefutably binary sociological code: anthropogenic and sociogenic; with respect to urbogenomy - anthropogene and sociogene as well as the structural categories: human-social, informal-formal, inductive-deductive, a posteriori-a priori, monistic-holistic, dialogue-monalogue, emotional-rational, spontaneous-planned, realistic-abstract, anthropomorphic-sociomorphic, amorphic-morphic, organic-voluntaristic.

By these categories the history of every urban situation can be traced back and interpreted as a structural socio-cultural morphology. This approach will be defined as a relief method of urban morphology, which can also be termed urbotopic and which offers a new methodology for studying urban history.

In conclusion we will emphasize that the sociological approach enables us to reveal

Figure: 2 Pirea Vth Century BC
the two basic archetypes of urban structures:

- **additive** - resulting from not entirely planned activities, as non-rhythmic additions of elements-archefacts in time and space, which normally form “unexpected” amorphic, Cyclopean, fractal structures of the “random network” type, and

- **divisive** - resulting from entirely planned activities in advance, as rhythmic additions of elements-archefacts in time and space, which normally form “expected” morphic, quadratic-matrix structures of the “grid” type.
Quintal: The Backyard as a Defining Element of Brazilian Cities

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Introduction

The quintal (quintais plural) is the Portuguese word designating the uncovered, private space behind a house inaccessible to public scrutiny. This article will focus on the physical aspects and the use of these “backyards”, or quintais, as one of the defining elements of Brazilian cities. Using historical and comparative perspectives, it will conclude by identifying traces of the quintais reflected in the layout of contemporary apartment buildings. The study of these spaces greatly helps to understand Brazilian cities, not only from utilitarian aspects, but also from more subtle and subjective facets. The lack of organized information on this subject necessitates the use of fragmentary citations obtained from studies on architectural, housing and urban history, as well as from private life, master/servant relationships, iconographic material and travelogues.

The central debate in the existing literature on Brazilian urban morphology contrasts two interpretations. The first sees Portuguese colonial cities as the fruit of chance and insouciance. The other states that formal concerns were not absent, and that this urban tradition developed in a very pragmatic and flexible spirit. The objective of this study is to make a contribution to the understanding of Brazilian urban form by focusing on these particular spaces (quintais).

The quintal in the physical organisation of the colonial city

During the colonial period the organisation of plots consisted in concentrating the building at the front, without any lateral or frontal setback, leaving an open space behind the building until the property line. This procedure corresponded to a building technique based on non-specialized, slave workmanship and local materials. Walls made of earth (taipa) had to be protected from water. The solution was a sloping roof, with dripstones, protecting front and back façades. The lack of lateral retreats from the property line protected the lateral façades. In the institutionalized system of land concession of that period the access to the public road was more important than the plot’s surface. The resulting fabric consisted of very deep and narrow plots. The blocks were only peripherally occupied with the open space at the rear divided among the plots (quintais).

This formation appeared highly dense, but resulted in a lower density than in Hispanic-American cities where the whole plot was occupied except for the courtyards. Besides this particularly deep and narrow configuration, the Brazilian colonial quintal differs from the backyards of other western cities by the practices occurring on them.

The quintal and the production of foodstuffs

Linguistic traces, iconographic documentation, information on food supply, travelogues and even legal land concession documents all support the historical link of quintais to alimentary production and shall be explored here briefly.

Quintal, according to the Aurélio dictionary, is defined as 'little quinta' (small farm) The very etymology of the word implies ‘rural’ production in an urban area (not only in its suburbs) independent of social class or geography. The iconography of this period shows that quintal areas covered a larger surface than the buildings surrounding them. Several literary passages about Brazilian cities prior to the 20th century mention the existence of vegetable gardens, orchards and small animal farmholds in quintais. Colonial and 19th century Brazilian society was based on an export economy. The best lands were taken for export producing activities forcing urban homes to adopt strategies for complementary food supply.

The importance of the quintais can also be perceived through their mention in urban land concession documents. The land is defined “for building houses and for the establishment of quintais”. This clearly signals that quintais were not residual spaces, but important elements of urban functioning.

The quintais : annexes and sanitary function

Before the end of 19th century the quintais were occupied by several installations linked to food production and detached from the main building, such as henhouses and pigpens. Urban houses functioned as domestic production units. The stocking of foodstuffs, the production of manioc flour, cake-making and confectionary production destined for sale by the escravas de ganho, as well as small cottage industries, all resulted in the construction of annexes in the quintais. The kitchen itself was one of those annexes. In Portugal the kitchen used to be in the centre of the house. Hot Brazilian weather forced it to the rear extremity and an extra kitchen could also be found in the quintal. In affluent households, slave lodgings also gave onto the quintais. Sanitary installations such as outhouses, dry ditches or excrement tanks were also found there. Prior to the 20th century, quintais hid archaic functioning of the Brazilian city, almost entirely based on...
slave labour, which included the supplying of water and the manual discharging of sewers\(^{10}\).

**The quintal: a feminine and intimate space?**

Functional aspects do not exhaust the roles of the *quintais*. Until the 19th century, public spaces were associated with danger and the unknown and thus inaccessible to white women from ‘good families’\(^{11}\). “House interiors, reserved for women, were a sanctuary into which the unknown never penetrated”\(^{12}\). Verissimo and Bittar (1999 : 22) affirm that the enclosure of women inside houses had Muslim roots via Portuguese tradition. The *quintal* was by definition a more intimate space, being located in the interior of the plot. Was it a distant vestige of Muslim conviviality? This aspect could certainly be enriched by more studied observations of anthropologists and ethnologists. Algranti (1997 : 92-3) mentions that the *quintal* was where “a lot of time was spent, especially by women” (my translation). DaMatta (1991 : 57), cited Saint-Hilaire (who visited Brazil between 1816 and 1822), for whom “the gardens, always placed behind the house, were feeble compensation to women for their captivity; these spaces as well as kitchens were scrupulously forbidden to strangers”\(^{13}\).

**Changes during the 19th Century and beginning of the 20th Century**

The development of a global capitalist economy entailed a new phase of Brazilian mercantilism. The export/import economy caused cities that were the most connected to it to expand, with the ensuing development of new neighbourhoods. In 1850 the old land concession system was replaced by a system that institutionalized private property. The development of new districts became a merchant transaction where land was morselled out and sold in square metres. This differed from the old concession system where public access was paramount. Generally, the newer plots remained rectangular in shape but to a much lesser degree\(^{14}\). This had direct implications on the geography and surface of the *quintais*. Brazilian cities did not contain alleys, as most of North-American cities did during the 19th century\(^{15}\). Ever-increasing social complexity caused the emergence of new architectural typologies. In city centres, many buildings experienced a role change and thus many *quintais* were transformed by building extensions or the introduction of warehouses, etc. Slums were the most practical alternative for a good part of the population of larger cities. Small rooms encircling an entry hall do not correspond to the morphological typology of *quintais* as defined in the space of this work. However, *quintais* continued to exist in more traditional domestic typologies and were affected by the transformations that occurred in cities.

The utilisation of new industrial materials, and an increasingly specialized craftsmanship, entailed the possibility of constructing elaborate roofs and walls less vulnerable to water. This permitted a change to the lateral limits, first on one side of the plotline: with the appearance of a small garden; and then on the other side: with the insertion of an uncovered service passage directly accessing the *quintal*, which had previously been the only uncovered space on the plot. The detachment of the two lateral sides was accompanied by very clear zoning (within the plot) between a ‘public/social’ circuit and a service one. Finally, the plot’s front boundary also changed with the addition of a front garden representing the ‘public face’ of the property. It was exactly what proprietors wanted to show. While orchards and vegetable gardens continued to be found in the *quintais*, with Brazilian, African or Asian species predominant, the front garden was completely off-limits to non-European vegetation\(^{16}\). In the second half of the 19th century, the Brazilian elite found themselves in an ethno-cultural paradox. They identified Brazil as a country having its roots in a European lineage. However, after almost four decades of slavery, the country had been rendered too racially interbred, too dark-skinned for this ideal which had to be reconstructed in every moment and in every space.

New hydraulic sanitary materials led to the disappearance of ‘outhouses’\(^{17}\) and the bathroom was moved into the main building\(^{18}\). The enlargement of urban centres saw the advent of new individual transportation methods for the more affluent classes. The *quintal* could accommodate garages for this sort of equipment and a few decades later for the automobile. Its role as a place to provide foodstuffs came secondary in a society increasingly marked by merchant-capitalist interaction. Urban dwellings became less and less places of production, only to be more narrowly defined as places of consumption.

New European customs spreading throughout the 19th century and the abolishment of slavery transformed public/private exchanges. Women began to play a more significant role in social/public activities. With the advent of kerosene lamps, and later gas lamps, private homes became more open to visits, even during the evening\(^{19}\). Slaves used to mix with their masters and were not restricted to kitchen areas\(^{20}\), but in the post-slavery era, the public/private sphere was redefined by two different circuits: a ‘social/public’ one and a service one. “Promiscuity was no longer tolerated”\(^{21}\).
The quintais in the 20th Century

The quintais’ position as service areas, par excellence, was strengthened to the detriment of their ‘social functions’: maids’ room and the laundry are found here. The existence of maids, even amongst the middle class households, is one of the characteristics of developing societies. In Brazil it assumes forms rich in ambiguities and contradictions. Domesticics (primarily women) share the intimacy of the family without ever becoming completely integrated. During their rare leisure time, the quintal is their habitat. Here, and in their rooms, they have the right to receive female friends, but never male ones.

In the 20th century as a whole, this reinforcement of the quintais’ service role constitutes a Brazilian characteristic. In North-American cities, by contrast, alleys introduced during the 19th century became increasingly associated with slums, the down-and-out and clubber. They were not present in suburban developments. Houses turned towards the rear, where leisure constructions, such as back patios or decks, predominated to the loss of more utilitarian functions.

The quintal ‘in apartments’

One distinctive building type of mid to large-sized Brazilian cities in the 20th century is the apartment building. The internal plan of these units is indicative of the transformation and reproduction of the quintal in this non-traditional typology. On the ground floor, the ‘social/public’ circuit is always distinct from the service one. This applies even to elevators. In the internal regions of the apartment building, as well as in the access corridors on each floor, these two circuits are kept as separate as possible.

Inside the apartments the geographical reproduction of the quintais can also be perceived. There is almost no shared infrastructure among apartments – not even the laundry. Each apartment has its own private service area, reminiscent of the quintal. The kitchen exit, the service entrance and access to the maids’ quarters, all give onto this service area, following a schema similar to that which existed in proper quintais. Reaffirming the symbolic permanence of the quintais’ influence is the fact that even in very small apartments, where the inhabitants can less and less afford a servant, the maid’s room continues to exist, although in ‘comic’ proportions.

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Exploring the Future, Morphological Study as Urban Design Subject

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Introduction
This paper presents the methodological conclusions of morphological research conducted on an industrial town in The Netherlands, Tilburg. Research was conducted by the Eindhoven Technical University, at the request of the Tilburg municipality. The aim of research was to give a characterization of the morphological main structure of the city, which is of instrumental value in future physical plans. Thus to use morphology as a grounding of a city design. The morphological main structure was also to function as a basis for an image quality plan for the city, shaping future zoning plans.

In the first two parts of the research (called ‘City form Tilburg’), the morphological development of the city was characterized, and a number of distinctive morphological cycles were established. These took into account not only morphological growth and evolution, but also the influence of urban plans and various spatial concepts overlapping in each historical cycle. Finally, this analytical part of the research concluded with a structural characterization of a number of (historical) formal concepts of the city.

The territory city
The third part of the research draws on the analysis to conceptualize an approach to morphological study that can inform planning. A general model of four phases of urban growth was used as a starting point (see box).
André Corboz talks of the territory city, which essentially is a city that no longer has territorial ties, but supersedes the boundaries of the city and region. The contemporary process in Europe would be the rise of an urban field, containing urbanized centers -junctions- that rise up out the urban fog that covers this area.

This can be seen as part of the well-known theme of the disappearance of the city. Supposedly, all cities will look alike, because their planning uses the same concepts. This is the type of criticism often heard. The phenomenon has arrived if we look at how all sorts of cities work with the same kinds of slogans: technology first, modern industrial city, digital city, high-tech, urban junction, center of something or other, electronic highway, Euro-region etc. Using theory to justify commercial development, contexts can be brought to bear: the culture of the motorway, dromology (the philosophy of the road), the globalization of space and time, etc. Tilburg has not passed untouched by such trends:

Tilburg in an urban field
Tilburg has once again become an extensive area: an urban field. However, it is not an uncultivated and empty landscape with some few inhabited centers and buildings, as it was in the middle ages. Now it is an urban area containing an enormous and still expanding building stock that is subject to spatial expansion. An extensive urban field is arising with a mosaic of living and working environments, each with their own color. Reference is made in strategic plans to the so-called patchwork metropolis. Instead of urban extensions we now have the extensiveness of the patchwork metropolis.

The image of the city
The building typology passed down to us is unable to give a coherent image of Tilburg as a city in the future. Parts of the built environment will be able to continue carrying the memory of Tilburg as a city of textile production. These parts have to be selected and conserved. Post-war and modern buildings can express the image of the Tilburg of the present as a modern industrial city. It was however uncertain what means (concepts, architectonic and urban growth typologies, and elements) can shape the image of Tilburg in the future.

Despite the forces that tend to render cities uniform, surely it is necessary to pay considerable attention to a city’s particular history and identity? The period we live in is somewhat ambivalent as far that is concerned, and one can only ask, for each city, what are the characteristics of spatial identity? How can these be projected in the future?

The fragmented city
The morphological research ‘City Form Tilburg’ made clear, that the general history of urban growth and development did not pass Tilburg by. Emblematic urban growth trends are visible in the city. In brief, one can distinguish both a general and a specific aspect in the urban history of Tilburg. We come across general urban growth concepts, but in which specific historical morphological structure do we find them? The specific structure of Tilburg -can

Table: 1

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<td>Urban growth next to the city</td>
<td>Garden city and Camillo Sitte</td>
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<td>Urban growth against the city</td>
<td>Functionalism and CIAM</td>
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<td>Urban growth in the city</td>
<td>The fragmented city - a postmodern</td>
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<td>collection of architectural projects</td>
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<td>Growth of the territory city</td>
<td>The urban field</td>
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be grasped if we take a locally well known plan, the Rückert Plan (1917), as reference moment in the morphological history of the city.

There is a history that goes back to the period before Rückert Plan. This is a period that stretches past the second world war. In that period the plan functioned as a city design, and more particularly the conceptual line of his ring road. There is a history that has moved away from the Rückert Plan. The city design of this plan lost its meaning as a city concept, it had gradually become an inner ring. This finally led to the description of Tilburg as a fragmented city.

There is a history of the Rückert Plan. This is a period that stretches past the second world war. In that period the plan functioned as a city design, and more particularly the conceptual line of his ring road. There is a history that has moved away from the Rückert Plan. The city design of this plan lost its meaning as a city concept, it had gradually become an inner ring. This finally led to the description of Tilburg as a fragmented city. The city design of this plan lost its meaning as a city concept, it had gradually become an inner ring. This finally led to the description of Tilburg as a fragmented city.

We now find ourselves in the on-going history that overlaps the previous period, in which time is moving in the direction of a new city design. It has not been created yet.

The point of departure is the idea of Tilburg as a fragmented city. The compartment city is set against the notion of the fragmented city. The fragmented city is viewed as a point of departure, which is historically correct as far as Tilburg is concerned, but it is not an end point: a notion that is in search of its morphological confirmation from within some kind of postmodern idea of the city.

Tilburg, a city of compartments

To move closer to a city design, the concept of the city of compartments is introduced.

Traditionally, the city was viewed as a composition of parts: districts, neighborhoods, clusters or blocks. In this part of the research compartments are defined in the city. They may coincide with part of the city, a neighborhood or district, but do not have to. Compartments are parts of the city that are taken to be morphological units that have their own limits, characteristics, building typology, and public space, which can be traced back to a specific urban morphological concept. It is true though that this concept is only incompletely present, sometimes it is opaque or even potentially present, and now in hindsight it can be reconstructed and made operational.

The point of departure is that the whole urban territory can be subdivided into compartments that each have their own interpretation, where a choice has been made or still has to be made. The image of the city in a certain stage of decision making can be reduced to one or more compartments, which can vary between highly urbanized to rural. The compartment-city is not limited to the body of the city. The compartment-city can cover the entire urban field. We only need to know what function and meaning has been allocated to a certain compartment: highly urbanized, a living compartment with a specific typology, a rural compartment, etc. In this way the traditional contrast between the city and the landscape, which now is overcome, is easily absorbed and processed within the concept of the compartment-city. City and landscape are as equals, both can be regarded as interpretations of compartments. Both polar substances are neutralized as it were, so that no contrasts are left and then they are planned next to each other. However, they are not independent domains, which continue to expand and spread, they are always set within a limited compartment.

In the research two examples are given of how compartments can be morphologically analyzed and treated. Here, too, it is important to work with concepts as the basis for the image quality of such a compartment. At the level of the compartments, each with it’s own morphological characteristics (own concept of shape, building typology, and public space), we find the morphological grounding for the management of the city.

The compartment city clearly distinguishes itself from the patchwork metropolis. The latter is no more than a 2D map where the various motifs of the urban patchwork are categorized. In the idea of the compartment city, each compartment has its limits and its own morphological structure.

The compartment city is set against the notion of the fragmented city. The fragmented city is viewed as a point of departure, which is historically correct as far as Tilburg is concerned, but it is not an end point: a notion that is in search of its morphological confirmation from within some kind of postmodern idea of the city.

Territories

Given the eclectic mix that is Tilburg, such a neat compartment making was perceived as insufficient to shaping an operational tool for future spatial planning. A second division, morphological territories was defined (see fig. 1,2).

Not only the tissues of the city, delimited within compartments, determine the image of the city. There are many other parts that have many different names in the literature: transitional zones, fracture zone, boundary zones, buffer areas, etc. These parts are called territories in the research. Often these are highly complex as infra-structure and have not been designed in a consistent fashion, but nevertheless determine the image of the city to a great extent. Territories cannot be defined in terms of tissues, they are places where the periphery penetrates the city. They testify to a certain randomness, incompleteness, or non-organiza-
tion in the city’s growth. To define the city as a system of territories contains the concept of what is known as the network-city in literature.

Territories are striking because of their specific problems of morphological growth and development. In the city design these areas have to be characterized, they have to be worked out as kinds of compartments. They are areas in the city that have to be delimited on the basis of their unity concerning physical growth problems.

Territories define a localized urban developmental task that supersedes the division into compartments or parts of the city, neighborhoods and districts. For the Tilburg case, territories are decisive for the image of the city at an urban and regional level.

Formal concepts and synthesis

A third perspective was opened, where the city form was seen as the juxtaposition or stacking of various formal concepts or models driving each historical cycle. These models, as they imprinted themselves on the territory, have destroyed each other, or overlap one another, and perhaps even enhance one another, or finally extinguish each other. In summary, ‘Tilburg is not a city without concept’, a manner in which the city has often been characterized, but ‘Tilburg, a city with a rather eclectic multitude of formal concepts’. Identified as models were: (a) the closed city, (b) the organically grown city, (c) the grid city, (d) the baroque city, and (d) the radial concentric city.

These diagrammatic concepts were projected on Tilburg and we then looked where any them could be recognized. This never was 100% the case, but in parts, flawed, or reflected in elements here and there. However, the grown line structure is for example an expression of the concept of the organically grown city. These and other concepts have been traced on the street grid and some have been selected as conceptual lines determining image.

Next, an attempt was made to draw up a characteristic synthesis. A strip diagram was defined as overlapping compartments and selectively assembling a number of the morphological territories and conceptual lines. The diagram is not a comprehensive account of the whole typology of Tilburg. It is however a selection, from an extended morphological study, of the most significant areas for future intervention. In this sense morphological study can contribute to spatial planning. A qualitative and structural understanding, offered as the basis of a spatial plan and city design.

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Endnotes

1 The quality and shape of the built environment are the subject of recent interest in Dutch planning. A ministerial Bill ‘More room for Architecture’ calls for image quality plans to shape development decisions. Tilburg gave it’s own interpretation of the image quality plan drawing up objectives: (a) it should cover the whole area of the city, (b) it should prospect the future spatial qualities and morphological structure as well as explain and characterize the past structure, (c) research has to lead to drawing up applicable guidelines and boundary conditions.

2 Described under separate cover - see paper ‘ Morphology of a 19th century industrial city: the Tilburg case’
Morphology of a 19th Century Industrial city: the Tilburg Case

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Introduction

A morphological study for Tilburg, a middle sized industrial city in the Netherlands, is here presented. In the course of the study the morphological analysis method was adapted to the highly fragmented city form in question, and to its particular genesis. Adaptation called for differentiation from the established morphological analysis methodology, as it appears in the Italian, French or British traditions. Where the latter methodologies originated mainly (though by no means exclusively) from examination of preindustrial city form, Tilburg is mainly an industrial city, and one with apparently little cohesion compared to pre-industrial examples. The study was commissioned by Tilburg Municipality to fundament it’s Image quality plan. Tilburg gave it’s own interpretation of the image quality plan drawing up objectives:

(a) it should cover the whole area of the city, (b) it should prospect the future spatial qualities and morphological structure as well as explain and characterize the past structure, (c) research has to lead to drawing up applicable guidelines and boundary conditions.

From these objectives, deciphering the morphological main structure of the city became the main goal of analysis. In a second step, understanding this main structure is to be of use in planning. The image quality plan is to lay the basis for a city design, in which the main traits for the future spatial development of a city are set down for the long term.

Eindhoven University of Technology was asked to investigate what could function as the foundation for such a city design. The investigation led to the study’s three parts or volumes:

• Historical development - City Form Tilburg, Part I
• Development between 1975 and 1995 - City Form Tilburg, Part II
• City design and image quality - City Form Tilburg, Part III

Morphological history of Tilburg

Tilburg was a challenging case: a city that developed during the 19th century from rural settlements through industrialization (first in textiles) to a middle-sized Dutch city. Often Tilburg has been characterized as a city without urban history and without any discernible formal concept. The point is to however to move from anecdotes to systematics.

Thus research started by asking if existing urban models are truly operative in this case? Particularly the traditional formal city concept (the concentrically built city with its structure of historic core and outskirts) is hard to apply. The city initially grew by non-central accretion of housing and cottage industries along rural routes – in a so called ‘grown line structure’.

It soon became apparent that the morphological structure of Tilburg does not derive its principles solely from the application of town planning, and therefore cannot be attributed to any single planning model. The structure then had to be examined as the result of it’s own particular succession of urban morphological and historical cycles.

Consequently, the first two parts of the study treat the historical spatial development of the city of Tilburg from its earliest beginnings – as landscape formation – to about 1980. This is done systematically. For this a division into urban/morphological cycles or periods was made, which specifically applies to the spatial development of Tilburg (see box).

Early history: Landscape as morphological process

Early history: The first habitation

• Period 400-1200: Agricultural settlements
• Period 1200-1826: Pre-industrial textile city
• Period 1826-1904: Industrial textile city
• Period 1904 -1940: The general plan for expansion of 1917 and effects
• Period 1940 -1960: Completion of the city body within the ring roads
• Period 1960 -1980: Urban expansion and maintenance of the old city
• Period after 1980: The city management plan

Each of the above cycles was characterized by:

(a) the architectural and urban typologies used in the given period (sorts of built and un-built spaces);
(b) the architectural and urban objects made in a period and which cannot be listed under the typologies because they have a unique nature;
(c) the spatial concepts that shape space within the urban plans, or that underlie the spontaneous (non-planned) growth processes.

By means of such a temporal division and the naming of the relevant concepts, typolo-
gies, and elements in each period, the city can be apprehended as a historical phenomenon – traceable through a visible architectonic and urban development. Following the above cycles, the morphological history of Tilburg (as described in parts I and II of the study) can be summarized in a number of historical moments, as follows:

The area of Tilburg in the Middle Ages

Tilburg used to indicate an area, a region of settlement with a number of denser patches. Tilburg literally meant The Tilburgers and encompassed the present Tilburg and Oisterwijk. Gradually, the single settlement arose through an agglomeration of hamlets or native villages. As a result of the connections that came about between these hamlets, the so-called line structure grew.

The line structure and its building typology.

In Tilburg the old hamlets are called ‘herdgangen’ (which literally translates as: shepherd’s ways). The names of these ‘herdgangen’ still are used to indicate parts of the city. The ribbon development that grew between these small settlements are still present as so-called radials (radial routes) in the map of the city. Small-scale buildings arose along these radials, which are very typical of Tilburg. Later on the open spaces between these radials was built up and morphologically a street map of the city arose that makes a fragmented impression.

Together with the gradual industrial evolution of the city and morphological development of the city’s street map, the building typology transformed.

At the end of the Middle Ages the weaver’s house arose, a specific industrial building for the textile industry: living and working (weaving) were combined under one roof. With the growth of the textile industry and the growing complexity of the processing, the need arose for larger buildings. So-called factory houses were built where a number of processes could be carried out under one roof. The factory houses became bigger and bigger with the growth of the textile industry. Additional sheds were built. In the middle of the nineteenth century many companies were expanded with large multi-story factory buildings. As the ribs of housing were densely built up, the extensions had to be built behind the original buildings. This was possible because the agricultural plots were historically long. In order to open up the factory buildings at the back of the terrain, back roads were made. The factory building became part of a factory complex. Two other building types, the workers house and the factory owners’ house arose and followed ribbon development. An illustration of these processes of the grown line structure is given in figure 1.

The Rückert Plan and the designed line structure

Tilburg achieved a degree of national fame with the expansion plan by engineer Rückert, in 1917. The Rückert Plan was based on systematic research into the development of the city from a demographical, sociological, and economic perspective. The plan introduced a garden city typology with single-family dwellings, squares, and picturesque streets. These typologies are distinctive of the image of the old city of Tilburg. The contrast between the grand gesture and the extensive scale of the square, and the much smaller scale of the buildings, was striking.

In terms of the main spatial structure, Rückert brought cohesion to the fragmented Tilburg with his design for the ring road as an agglomeration of smaller settlements. The ring road is the important conceptual line of the so-called designed line structure.

However, the ring road became an inner ring, the significance of the conceptual line has changed, and at the city level it has been lost entirely. From the point of legibility and image construction, the Rückert Plan no longer is an adequate city design.

Transformation into a modern city

The post-war period was a phase of social transformation and Tilburg became a modern medium-sized Dutch city with a mixed population, differentiated employment, and numerous educational facilities. One important symbol was the disappearance of the skyline of the Tilburg of old: the city as a forest of chimneys.

Large scale residential extensions were built in this period, which cannot be said to be typically Tilburg. They were copies of projects in the western part of the country that served as a model.

In this phase the original socio-cultural identity was pushed into the background, and the modern spirit not only manifested in large-scale residential extensions, but also in plans for the center. For instance, the plan of architects Van de Broek and Bakema, where the spatial concepts applied did not take the historical spatial structure into account.

Structure Plan of the Old City (SPOC): a theory of the existing body of the city

Like the Rückert plan before it, this structure plan was considered something of a national model, this time a model reacting to...
the ‘uncaring’ modernist approach (see above). The SPOC drew attention to the qualities of the existing, historic body of the city. It supplied a kind of urban developmental theory of the inner city, in which clear use was made of morphological aspects, like historical building typologies. Tilburg’s own history and its own identity were taken seriously again after a period that had been mostly geared towards making a comeback: from a traditional, isolated city with a closed agricultural and later industrial community, to a modern city following a general concept.

City management plan of 1989

This plan conceived of Tilburg as a patchwork metropolis, formed by the guiding elements of the spatial structure of the city: the pre-modern grown line structure and the later, modern, designed line structure which followed the Ruckert plan. The idea persisted that the line structure can continue to function as a city design.

In retrospect, the period 1975-1995, was one in which the foundation was laid for city management. This period is extremely important, as the starting point has been created for urban development in the future. Through plans like the SPOC and the City management plan, the municipal council of Tilburg forged pre-suppositions (strategic points of departure) regarding the management of the city, including a desire to maintain coherent spatial development. But to what extent is an older typology adequate and should it be decisive for the image of today’s city and the future city?

Morphological Interpretation of Tilburg

To answer these questions, a series of presuppositions were formulated.

Firstly, that society is designer of the city. In other words morphological concepts, typologies and elements should not, in such a study, be separated from the urban plans. Autonomy of shape was not a hypothesis sustained in the research, instead planning was examined as a co-production of space.

Secondly, city plans embody social aims and, significantly for morphological study, they imbed on the territory a number of ideal city concepts, particular to their age.

Thirdly these formal concepts are multiple and overlapping in any age, and even within one plan.

Lastly that the articulation of the formal concepts at any time is of prime importance to understanding both past morphological development and the present or even near-future.

Thus a plan such as the Ruckert plan embodies a certain set of developmental concepts. These in turn are only partially realized. In their materialization they may be imbedded in, overlap, cancel out or juxtapose, those of other periods. Research concluded the analysis of the existing morphology with an identification of the structuring formal concepts for each morphological stage. (see figure 2 where these are given a diagrammatic structural representation).

On the methodological side, research concludes that, for a city like Tilburg: of eclectic formation of morphology, it is crucial to identify and characterize the formal concepts in each morphological period. These concepts can be synthesized using structural representation. Equally important is to characterize the historically specific and multiple articulations of these formal concepts, within each period. The typology of the city appears, from such an approach, a typology of elements and articulations of urban form, surely, but equally it is a typology of articulation of concepts per historical period.

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Figure: 2
Saverio Muratori and the Italian School of Planning

Typology: Summary

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In 1950 Saverio Muratori (born in Modena in 1910) published the fundamental essay *Vita e storia delle città*, culminating point of his critical thought and architectural experiences for almost twenty years. In this essay, he outlines the hypothesis of overcoming the contradictions between intentions and realizations typifying the Modern Movement through the fundamental concepts of towns as collective works of art and of type as a synthesis *a priori*, i.e. as a prefiguration, in dialectic continuity with the building and urban history of a place, of all the parts necessary for the realization of an organism, be it a building, cluster or town. In *Studi per un'operante storia urbana di Venezia* (1959) he expressly systemizes his method, which can be summed up in the concept of working history. He owes to his pupil Paolo Maretto the systematic check method in studies on *L'edilizia gotica veneziana* (1960).

During the same years, Muratori produced four major public buildings in three different cities: the church of San Giovanni al Gatano in Pisa, the “Enpas” office building in Bologna, the Christian Democrats’ headquarters and the incomplete church of Tuscolano in Rome. In this way, he was able to experiment what he considered the fundamental queries of modernity: the technical evolution (linked to the use of new materials, especially of reinforced concrete), style and the environment. These plans critically covered the whole span of Italian architecture, from Romanesque to Renaissance and Baroque and issues connected to its relationship with history and place were sped up by several decades.

Called to Rome University (1954), he renewed teaching of architecture, founded on the response to functional, constructional and linguistic queries in relation to various values inherent in town forming phases: responses in close continuity with what exists in stratified areas (historic downtowns), with greater freedom of innovation and alternatives in expansion areas. At the same time, he formed his “historic team” of assistants, who included Maretto, Renato and Sergio Bollati, Gianfranco Caniggia, Guido Figus, Sandro Giannini, Romano Greco and Guido Marinucci. With their collaboration, he took part in major architectural competitions, including the Barene di S. Giuliano competition in Venice (1959), reposing in contemporary terms three significant moments of urban formation. In 1963 he published *Studi per una operante storia urbana di Roma*, in which the double life of this city, which arose from its ashes during the Middle Ages, stimulates the conception of the cyclicity of urban formative processes.

The radicalism of Muratori’s teaching, so far removed from fashionable trends and, therefore, apparently antimonist, was opposed by part of the students and lecturers, leading Muratori out of pride to choose isolation, which coincided with his inner need to extend his philosophical thought beyond the specific disciplinary field. *Civiltà e territorio* (1967) is the complex culminating point of a speculative course that started in 1962 with *Architettura e civiltà in crisi*. In the former, the architectural crisis, starting from Enlightenment, is grasped as a concrete expression of the more general civil crisis; point by point, the latter traces its phases, analysing the involution processes of self-awareness or critical awareness: the only possible solution to the crisis lies in man’s will and capacity to asymptotically establish, on a global scale, a balanced relationship with his territory, indispensable to his becoming part of history.

He passed away in 1973 in a moment of great intellectual fervour. The projects of his major *Atlante territoriale* and so-called *Tabelloni*, a sort of universal logic classifier of manmade structures, remained on paper. We owe the transcription and publication of the recordings of the last cycles of his lessons to Marinucci’s dedication and patience.

Muratori’s isolation and disappearance drove his assistants away from Rome; they were given the opportunity to pursue their careers in other Universities (Reggio Calabria, Genoa and Florence), thanks to the help of Luigi Vagnetti (1915-1980), who, having also trained in Rome, shared Muratori’s initial interest in “adapted architecture”. Teams of lecturers, who revived the method of working reading – each processing it in the light of its own attitudes, capacities and interests – formed in these towns. This gave rise to a series of essays, research on the regional areas of influence of the three Faculties and teaching experiences that were important to the school’s diffusion and establishment.

The figure of Gianfranco Caniggia (born in Rome in 1932) stands out from the others. In his study *Como: lettura di una città* (1963), the “replanning” of formation phases enabled him to stress, vis-à-vis Roman row house fabrics, the persistence of the *domus* as a type of substratum, opening the research series on formativ procedures of medieval courtyard houses in European historic cities. His studies on Como triggered off a series of research collected in *Strutture dello spazio antropico* (1976).

In his teaching activities, he mainly continued examining the themes of joining the urban fabrics of historic downtowns, at the same time as planning urban fabrics springing up in quarters. This gave rise to vast experience poured into his work *Composizione architettonica e tipologia edilizia*, conceived as a real manual. The
former two volumes, dedicated to Reading and Basic Building Plan, were published with the all-important contribution of Gianluigi Maffei, having been widely diffused in Italy and abroad, especially the volume on reading.

Based on the conviction that the diffusion of Muratori’s ideas was obstructed by their formulation in markedly neo-idealistic terms, not in keeping with the pragmatist, structuralist developments of contemporary thought, Caniggia aimed at managing to transmit them effectively in the specific terms of architecture. He therefore tended to simplify and reduce the theoretical system, highlighting its more directly operative aspects. In this sense particular significance lies in the definitions of type, of level of typicalness, of typological process, of cultural area, of environmental preference and, above all, of basic building, considered the formative matrix of all building, especially of the typological series of special building, a term that Caniggia uses deliberately as synonymous with architecture to emphasize that individual creativity cannot be assessed in itself but must be traced back to the historically identified culture and language that substantiate it.

The same importance lies in Caniggia’s achievements and projects, in which he endeavours to overcome the inductive logic of typological reasoning to interpret and enhance them in relation to individual places and eras: the law court of Teramo (1967), the Quarto district in Genoa (1975), the competition projects in the 80’s for the railway junctions of Pescara and Bologna, for the Murate area in Florence, for the Giudecca building expansion in Venice and for the “holes” in Rome. They appear as the steps of a single consistent process intended to demonstrate that the only really innovative way to plan today in towns is to get to know and interpret historic development lines, updating them and, ultimately, building language to avoid indiscriminate standardization or solutions professing aestheticism and individualistic solutions.

After Caniggia’s premature death, the numerous studies he set up were gradually integrated and published by Gianluigi Maffei.

Following on the diaspora from Rome and the passage from the second to the third generation, that of pupils of pupils, the school exists, with numerous centres in various Italian universities: from Reggio Calabria to Genova, Florence and Rome, not to mention Ferrara, Cesena, Bari and Bologna.

At present, the Florentine group (Cataldi, Maffei, Vaccaro and their colleagues) is the most active and academically established. It has conducted wide-ranging interdisciplinary research on the town and territory of Cortona, primitive architecture and historic Tuscan building subject to earthquakes.

Furthermore, through the Centro Internazionale per lo Studio dei Processi urbani e Territoriali (CISPUT), to whom the first exhibition and conference on Muratori’s thought and work is owed, it plays a useful role as a point of aggregation and comparison for the entire school.

Lastly, mention must be made of the participation of the group or its individual members in major international initiatives, including the International Seminar on Urban Form (ISUF), whose 1999 conference was organised by it in Florence. With regard to the comparison among the various national schools forming part of ISUF, the group is currently producing a Muratorian Lexicon, which is of great importance to clarification within the Italian school of process typology.
Good Squares-in-Orbits:
Planning and Designing Central City Squares in the Urban Context

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Introduction.
What makes central city squares successful? What sets ‘good’ (i.e., vibrant and dynamic) spaces apart from those that are dreary and dull? How can we, as planners and designers, contribute constructively to the realities of public space development with regard to this key element of urban form? In this discussion, we explore the ways in which city squares and the urban milieu (or ‘orbit’) are closely interrelated as elements of urban form, with a focus on the North American context. The word ‘orbit’ is used in a more technical sense, i.e. the cavity containing the eye. The open space in its orbit can thus be seen as analogous to the eye, whose vitality depends in part on its ‘container’, the orbit. Our term ‘square-in-orbit’ thus refers to the major urban space that is a central city square plus its physical surrounds and the socio-economic, political and cultural features of those surroundings. This presentation briefly outlines the findings of a review of the Euro-American literature on urban open space from which five themes emerged as characterizing good squares-in-orbits: humanity, complexity, connectivity, comfort, and civility. We then explore examples of ‘connectivity’ by referring to a particular public space project: the Yonge-Dundas redevelopment in Toronto, where a square is being created ‘from scratch’. We seek to illustrate the importance of understanding city squares in their orbits, and that this requires linking the knowledge, skills and interests of designers with those of planners. While this argument is often made, we show that the literature directed to designers and planners does not support the argument with evidence. With the Toronto example we hope to show how the need for that evidence is acute in the current climate where private consumption-driven urban space development so often substitutes for fully public space.

Theory.
To briefly encapsulate our theoretical perspective, we looked at squares as elements of urban form, which is understood to be a complex phenomenon. Inspiration came from among others, Levy (1989) – urban planning and design cannot be divorced from the structure of the public realm as a major determinant of urban quality; Gehl (1996) and Urbahn & Bobic (1996) – human behaviour has to be understood and taken into account when planning and designing urban spaces; and Lynch (1981) – more ‘abstract’ urban processes such as economic activity, social behaviour, and the like have to be linked to the physical form of the city for good urban form. The essence of these ideas – the hypothesis that it is crucial to understand squares in terms of their urban context, and not just the characteristics of the site itself – is found elsewhere in the literature, but scholars rarely go beyond making that basic statement. Thus, as a hypothesis it is present, but barely developed. Squares are most often discussed separately from the conditions that surround them, and vice versa.

Based on an overview of the Euro-American literature on urban open space, we drew out a tentative theoretical model for good squares-in-orbits. It is presented as a step toward clarifying the relationships between major urban spaces and their physical, socio-economic, political and cultural context, and thus also as a step toward developing the hypothesis that resides in the literature, but is ill-defined. Our review generated five themes:

- **Humanity.** The human element is the logical starting point: since what seems to attract people most is other people, a good square-in-orbit must be appealing to its users.

- **Complexity.** Good squares-in-orbits are characterized by complexity and intricacy of form, activities, uses, and user groups. Complexity entails a wide range of sensory, visual and experiential choices.

- **Connectivity.** The good square-in-orbit is characterized by an integration of uses, functions, and roles in three important ways: internally, with respect to the paths feeding into it, and with respect to the land uses and activities adjoining it. It blends seamlessly into the broader urban fabric, and functions as part of a broader urban whole in terms of circulation. It cannot be viewed as a unique point in space and time.

- **Comfort.** A good square-in-orbit will be a pleasant place in which to be. Provision is made for the basic human needs of comfort, relaxation and discovery; it also feels safe for all members of society.

- **Civility.** This perhaps more abstractly refers to the sociable qualities inherent in public space, i.e., spatial form based on social equity, entailing tolerance and respect for the rights of others as well as the knowledge that to be a member of society is to have a set of responsibilities as a citizen.

Case.
Our research was motivated by a desire to critically assess the planning and design integrity of one such major open space in the centre of Toronto that is being created where none existed previously. This space, known now as Dundas Square, is part of a public-private entertainment-based downtown redevelopment project intended to revitalize a relatively stagnant part of the otherwise vibrant city core. The
open space is being developed on a site where four buildings were expropriated and demolished by the City (Figure 1). While in principal the square-in-orbit should be examined in terms of all of the above-mentioned five themes, for this presentation we describe just two examples concerning connectivity, using the Dundas Square project to make them concrete.

Example 1.

We first refer to ‘seamlessness’, the knitting of the urban fabric functionally and morphologically. In our Toronto case, the square is located on one side of Yonge Street (see Figure 2). Yonge plays a double role as Toronto’s principal north-south axis and the symbolic dividing line between the eastern and western halves of the city, and even the region. Within the study area, its two flanks are very different: functionally, Yonge is the eastern edge of Toronto’s vibrant central core area, but it is also the western edge of the depressed ‘Downtown East’ area. This is a challenge for planning and design in at least two ways.

First of all, in purely physical terms, the street network on the eastern flank has a stronger north-south orientation, while to the west, there is a predominantly east-west orientation. Yonge is thus an axis for urban tissue that is much more permeable on one side than on the other. Unfortunately, Yonge has been perhaps inadvertently treated in this redevelopment project as a tangent to the central area, rather than its bisector.

Secondly, in functional terms, the eastern flank is insulated from Toronto’s effective centre of gravity by the continuous institutional buffer of Church Street so named for its predominant use. This almost continuous wall of retail- and entertainment-deadening activities historically helped to prevent the core from spreading in this direction (although it was also being pulled west for other reasons). As can be seen in Figure 1, Dundas Street breaches this buffer to the east, but it does not attract enough activity to bring much development impetus in that direction.

The implication of the street patterns and functional relationships stretching across Yonge Street, and thus across the new square, is that there is no significant non-residential polarity in the ‘Downtown East’ area, whereas the western part of the central area contains several such ‘natural’ poles and can develop them more easily. There are no major attractions to draw the general population of users across Yonge Street and deep into the Downtown East area. Moreover, there are differences in the socio-economic groups that frequent either flank – although a wide variety of users are found to the west of Yonge, the relative concentration of social services and lower-income housing found to the east narrows the range of user profiles. In fact, this may ‘repel’ certain core area users from crossing over Yonge into the Downtown East area. All of this seems to point to the need to ‘knit’ the two flanks of Yonge Street, by improving permeability, creating additional poles of activity, and enhancing Yonge’s role as a major unifying axis for the city. The creation of new public space was thus an opportunity to turn Yonge into more of a bisector than a tangent. The opportunity slid by. If the new square is successful it will be in spite of key morphological and functional relationships, not because of them, according to existing theory.

Example 2.

We now turn to transportation and circulation. In this Toronto case, the centre of gravity is the northeast corner of Yonge and Dundas, not the southeast corner where the square is being developed. Pedestrian counts demonstrate this point: before the redevelopment began, the volume of pedestrian traffic at the northeast corner was more than four times that of the southeast corner (Ontario Municipal Board, Exhibit 138, 1998: 9). Three reasons explain the overall dynamics of this rather crowded intersection. First, one of Toronto’s three universities has its campus just steps from the intersection, to the northeast. Second, the primary north-south subway line and a major cross-town streetcar service meet here; passengers pass through the intersection on foot when going between the two. Finally, an entrance to the massive Eaton Centre shopping mall disgorges large numbers of people at the southwest corner, many of whom continue northwards on Yonge Street, which remains an important shopping axis for the city. Each of these three major activity poles was referred to in the planning and design for the Yonge-Dundas redevelopment scheme, but none seem to have been appropriately considered in terms of making connections among the square, transportation, and general circulation. For example, the square itself was designed by a private firm that won an international competition run by the City. It is a fine design. Nonetheless, the square will be completely surrounded by vehicle-bearing streets, three of which have heavy traffic (see Figure 1); as a result, it will be relatively cut off from the intense, prosaic, day-to-day activities of going to university, to work, or to shop on both the northeast and southwest corners of the intersection. Although there will be a new subway entrance/exit within the square, it will compete with one opening into the new shopping and entertainment complex planned for the north-
east corner, and another within the Eaton Centre on the southwest corner. How many people will cross a major street for access to the subway, unless they are also expressly using the square? In fact, the design of the square and the planning of the area appear to have been going on in near-isolation from one another, or at least with only modest discussion between the two (e.g., situating the subway access and the timing of development of a parking lot being built below the square). Analysis of this case using our theoretical framework suggests that if the new square is successful it will not be due to the contribution of transportation and circulation systems. If it works, it will be for other reasons, presumably some combination of the other four themes.

Commentary.

Analysis shows that Dundas Square is being developed in a way that contradicts fundamental connectivity considerations as outlined in the literature. Would a more detailed examination according to each of the five themes identified above for good squares-in-orbits reveal that Dundas Square is in still further jeopardy? The key question is why does such a misconnection occur? On the one hand, ‘designers’ concerned with the character of public spaces like squares seek to achieve good urban form through appropriate physical design (from the perspective of architecture and urban design), but they lose out if the design isn’t lashed to the functional realities such as transportation and circulation that profoundly influence the use of public space. On the other hand, ‘planners’ pushing for financial investment and general urban well-being (from the perspective of planning and urban development) lose out when their work is not interwoven with architectural design and morphology. Given that sets of knowledge and skills from both planners and designers are available, what keeps them from being tied together?

Moreover, both fields of practice lose out if they are separately or jointly unable to marshal arguments in support of good public space that will influence development otherwise driven by money and political power. In the Dundas Square case, we know from a detailed review of a hearing into the Yonge-Dundas redevelopment before the Ontario Municipal Board (a quasi-judicial body that deals with land-use planning conflicts) that this square arose in conjunction with a proposal from a major international cinema developer to build a large entertainment and shopping complex on the northeast corner and, while unconfirmed, it seems that the City actually capitulated to pressure to build the square to enhance the private development. This is not a particularly unusual circumstance in American and Canadian cities today.

In sum, are we doing enough to ensure that the knowledge of planners and designers can be put to good use proactively, to ensure that our work has traction in a world driven hard by politics and capital? As a result of studying this case, the best antidote to watching economic and political arguments overwhelm decision-making around public space would be for planners and urban designers to join forces in research with the express goal of coming up with tough evidence about the essentials for creating and maintaining good public spaces. An urgent task is to test the hypothesis put forward by leading scholars in the area of developing good public spaces – those mentioned earlier – that good squares are ones that are well-integrated with their surroundings.

References

**Morphological Forms of Medieval Towns in Poland**

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**Introduction**

Spatial forms of Polish towns reflect man’s activities on a certain territory, affected by numerous internal and external factors, as well as the period of the town’s foundation and duration of its existence. Among the factors affecting spatial form of towns the most important are: its situation and conditions of geographical surroundings in which the town was founded, inheritance of older settlement forms (from pre-locational period), main functions deciding about the town’s development, urban concepts and aesthetic patterns at the time of its foundation as well as main stages of its development, and finally disasters (wars, fires, floods) which might have led to destruction and devastation of essential fragments of the original form.

Poland is a relatively large country, so her geographical surroundings created a varied base for the location and layout of towns. Thus, particular regions in Poland had different type of economy and level of development and to a different degree were open to contacts with the outer world.

Generally speaking that receptivity was considerable, particularly in the sphere of culture, including architecture. One can easily notice various elements of architecture and town planning, respectively: German, Byzantine, Hungarian, Italian, Dutch, Russian and others. Historically the territory of Poland had different political borders and often particular parts of the country for centuries remained within separate political organisms, hostile, as a rule. Towns in particular regions of Poland took shape independently of one another, according to different aesthetic patterns, in relation to separate economic and geopolitical systems.

Thus the rise of towns on the territory of Poland was not a single or a homogeneous process. From the morphological point of view there are four basic, regional varieties of medieval towns in Poland: Silesian, Pomeranian, Prussian and Wielkopolar.

Silesia can be characterised by the largest variety of genetic types and morphological forms. Being situated on Polish-Czech-German borders it was influenced by all the three cultures. In the early Middle Ages Silesia was the richest Polish province, so the first pre-locational towns began to appear there. According to different roles that they played - military, commercial, handicraft or mining - the towns adopted different spatial forms. Due to its borderland location Silesia was the first to be affected by diffusion of West European innovations, including the idea of Gothic towns.

Pomerania, which only temporarily - in the 11th and 12th century, was part of Polish state, and later functioned as independent duchy and was more and more subjected to German influence, formed its own morphological type of medieval towns. Absorption of pre-locational relics by medieval towns led to deformation of their regular plans. In some cases those pre-locational relics to such an extent disturbed the proper locational layout that even German researchers perceived them as continuation in development of Slavonic settlements (Bobiński 1975). A characteristic feature of many Pomeranian towns layout is their general form reflected in the outline of medieval fortification walls resembling a circle or an oval, just like in old stronghold towns. In towns of Western Pomerania there are few segments of walls in form of straight lines, which was a rule in towns funded in crude root (in cruda radice). Locational towns were founded in Pomerania according to the Lübeck pattern which was a chessboard-type foundation with an oblong market place of Brandenburg type, partly taken by the church and the stalls surrounding it, and partly by a townhall which appeared a bit later.

Prussia (the former German Eastern Prussia and the present Warmia and Mazury) were in the early Middle Ages populated by small, pagan Prussian tribes related to Lithuanians. In 1226 the Polish duke Conrad II Mazowiecki, to defend his lands from Prussian invasion, brought to their borders a German order of monks, commonly known as the Teutonic Knights. In a short they conquered all their lands and founded their own state on that territory - entirely independent of Poland and soon hostile to it. On the conquered territories the Teutonic Knights formed a new dense network of towns, strongholds reinforced by castles. Due to insignificant role of pre-locational settlement elements, those towns were in fact founded in cruda radice according to the model of Gothic locational town transferred directly from the West. Thus, Prussian towns like no other towns on Polish lands are characterised by regularity and almost ideal chessboard-type layout.

Wielkopolska was the nucleus of Polish state already at the end of the 10th century. The towns founded there, such as Gniezno, Poznań and Kruszwica belong to the oldest pre-locational towns on Polish lands. The process of their formation was evolutional, without any specific plan, either resulting from castle systems or market settlements. The idea of loca-
tional town, transferred there in the middle of the 13th century partly based on Silesia model and partly on Magdeburg law, thus, had to adapt to the existing pre-locational forms. In consequence, in locational plans of towns in Wielkopolska one can perceive numerous reliefs of older forms. The dominant role of Wielkopolska within the borders of Polish state caused that both pre-locational and locational towns in the remaining Polish provinces (ie. Małopolska, Kujawy, Masovia and others), developed according to a similar model.

Native pre-location layouts

Genesis of particular towns was not a homogeneous process—the rise of larger and the oldest centres of state character or capitals of particular provinces differed from the history of smaller settlements which appeared later in the period of feudal splitting up. Estimation of those processes can be particularly characterised by the period at the end of 12th and the beginning of the 13th century, that is directly prior to town locational processes based on German law. That is when we start to deal with pre-locational towns. Fairs were first mentioned in sources at the turn of 11th and 12th century. They were formed both in urban castle complexes and outside them. At the end of the 12th century the number of the existing open market settlements on the territory of Poland amounted to about 250. Even today in the landscape of many old pre-locational towns there exist outlines of the then market places of different geometrical shapes, mostly resembling elongated oval or rectangle and sometimes even triangle, trapezium and rhombus. Thus, the old market place is the true origin of a town.

Transition period

On the territory of Poland there are some towns exemplifying a transition period - from pre-locational native forms to new, adapted locational forms. Most of them are to be found in Silesia, the part of Poland where new urban, locational law had been introduced according to German pattern, later called German law. The law was granted to over 130 centres, as Silesia was the richest province in the 13th and 14th century Poland. It had a complex network of market settlements, most of which received civic rights. Many of them preserved elements of pre-locational layout, mainly of the market place. Ośroda Śląska in Silesia belong to the most interesting examples of such evolution. Already in 12th century Ośroda Śląska was mentioned as a trade settlement, which later gave rise to a town located in 1214 (Fig.1). The main part of the urban complex is, preserved up till now, oval market place with the church situated at its Western exit, which was a characteristic element of the early-medieval layout of market settlements.

New simple locational layouts

On the territory of the present-day Poland about 500 towns had been granted location rights based on German law. The newly received spatial solutions could be divided onto simple, complex and multicomplex. Simple forms are the ones in which there are no intermediate elements between the simplest, basic elements and the whole, complex layout of the town. In case of complex forms there is a two degree hierarchic relation between basic elements. One can say that in such case a town is composed of quarters. In case of multi-complex forms the number and interrelations of intermediate forms grow, get multiple. In the full sense of the word a town becomes a settlement or urban complex (Dziewoński 1962). The spatial planning of a locational, Polish town required first of all determining the location of the market and blocks running perpendicularly to it, which, depending on the market proportions and the whole outline of the town, had a shape of a more or less regular cross. The remaining area was meant for public services constructions (church, castle), or were left as land reserve. Only further development of towns led to lotting out, often not as regular as in blocks nearby the market place. A simple locational layout can be found in, for example, Paczków.

New complex locational layouts

Toruń, situated in the south of Eastern Pomerania, had been founded in the 9th century as a stronghold, with a nearby market settlement. The locational town was erected on the right bank of the Vistula in 1233. In its full form it comprised 3 parts: The Old City, The New City and the Teutonic Castle between them. The first stage of its spatial development took place in the thirties of the 13th century with permanent constructions upon the rectangle parallel to the Vistula. A spacious market place, a network of streets
and construction plots were laid out within its boundaries. In the middle of the 13th century that space turned out to be too small, so fortifications line was extended towards the north, thus doubling Toruń's size. In a short time a new settlement arose outside the town's walls and in 1264 was granted civic rights. It was called New Town to distinguish it from the Old Town. The layout was similar in both. As early as the 13th century there was a transport connection between them, and each of the towns had an independent double circle of fortification walls and a mote separating them (Fig.2). Between the two towns there was a Teutonic castle and outside the walls of the Old and New Toruń outskirts extended vastly.

In contrast to rich West European towns, where handicrafts and trade gave employment to many inhabitants, many poorer Polish towns, particularly the small ones, to a large degree dealt with agriculture. Thus, they were appropriately provided with agricultural grounds called tracts. (expanses) They are one of the most characteristic and distinctive features of the locational medieval towns in Poland. Those elements (in fact rather morphological units) were vast, exceeding the urban construction area in size. The building development territory amounted to 0.5 to over 3 feuds (ie. 8.5 to 54 ha) the size of the tracts, even in small towns was at least 20 to over 100 feuds (ie. 340 to 1700 ha)(M. Koter, 1970).

Conclusions

There is a common belief that the Polish network of towns was formed at location time in the 13th - 14th century and that those locations were done by German settlers. However, majority of Polish towns had risen earlier and developed in an evolutionary way. The original spatial form of pre-locational Polish towns was a polyfunctional settlement complex consisting of the castle - which was the seat of the local ruler or manager and also served fortification purposes, - artisan borough or several of them and a market settlement with a market place. Since a lot of those settlements functioned as a source of supervision and services, in fact, in the early Middle Ages they already formed quite large towns and were described in Latin documents as civitas.

The locations based on German law must not be identified with German colonization as solely German organizational-legal and urban patterns had been adopted. However, in many cases, particularly in Silesia and Pomerania, the number of German settlers in certain towns was significant.

Introduction of location based on German law depended first of all an acceptance of new organizational-legal patterns. Spatial plans resulting from that law in the beginning were of secondary character and mostly took form of urban fortifications surrounding the old layouts, only slightly regulated. In time, particularly in larger towns, the inherited, native, morphological elements were complemented with new ones of greater regularity. That particularly applied to the area surrounding the market place.

Entirely new locations, founded in cruda radice, i.e. the so called „crude root” were less common in Poland than it is usually supposed (eg. in Central Poland by the end of the 16th century out of 200 towns only some had been located from rudiments). Yet, their number was probably bigger than on German lands. It happens to be a paradox that theoretical, geometrical concept of locating Gothic towns, born in Western Europe, here on Polish lands achieved its purest form, purer that in native countries. There, at the time when the concept was being born, towns had already been spatially shaped, and little could be changed in their layout. Here, there were more opportunities, such as introduction of new fortifications which gave the town outer, geometrical form, then adding to the old elements new, chessboard-type supplements and finally, very few but extremely striking - similar to the theoretical model of a town - locations in cruda radice, or even locations transfered from the old site to a new one, more appropriately adapted to their development (the so called translocation of town). Thus, for the first time in history, the grounds of „new colonization” achieved more beautiful, spatial forms, close to a model ideal, than the countries where that model had been born.

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Reality is a word in our language suggesting a clear, unambiguous entity; it appears to have qualities of factualness, concreteness, and uncontrovertible provability. Yet, reality itself is, that is, what is considered to be real, varies from culture to culture. For Greek traditional culture when gods were considered to determine all events, physical events were not necessarily considered to be truth, as only the sacred actions of gods were thought of as ultimately real. For rationalist, the real is physical and we search for the presence of God as exhibited in visible manifestations; spirits having no material evidence cannot be considered to be real. Reality is a social product affecting not only beliefs, but perception of objects themselves.

The definition of reality can be done socially through habitualization or the development by an individual of systematic response for any frequently repeated action. An act can then be reproduced with an economy of effort and is perceived in essence not as a unique occurrence but, rather, as a pattern or habit. Cities have been extensively analyzed both in historical and theoretical terms. The city can be redefined—and built—from scratch. Implicit in this concept was the idea that society would accommodate itself to its proposals, and that it had to be persuaded to live within the new social and formal context. Urban change and transformation occur at a slow pace. It is an ongoing process in which strong interventions mark specific periods and moments in urban history.

Design of urban form has been reorganized more and more as a process of technical instead of social choice. Cities have not been seen as products of architectural design but rather as an outcome of technical decision making. Form and space have resulted to be products of material heaping, and are deeply imbedded in the history of urban society. Whenever regard has been given to them, cities have remained in the memory of dwellers. They have been mythified as works of art and kept as monuments in the history of the city.

The modern movement has produced just another framework in the history of the city. This was its accomplishment. But cities are composed through one framework, they are a succession of frameworks over time; superimposing, overlaying, colliding with each other. The framework has been used in two different ways to identify a specific phenomenon in urban history. On one side it means a model, a formal composition which is repeated over time. On the other side it means a type, a generational root which induces the formulation of another framework.

Frameworks are schematic formal solutions imposed, overlaid or attached to the ongoing process of formal transformation because a city is a framework of multiple frameworks and the representation of the simultaneous interaction of different models. To read and understand the city, it is possible to depict some of their parts and relationships, seeing them as an object with an organized structure. Any classification of certain elements is in its final sense an arbitrary decision. Aldo Rossi explains for example the difficulties underlying any classification of urban form, because of its constant, inseparable relationships with the social context. In order to avoid the arbitrariness of separating two facts that are in dialectical relationships to each other, he explains the need for a classification that may include both.

It has been considered necessary to establish urban form in its pure formal sense, as if it would be an object without the content of human life. This sounds like a radical abstraction from reality, but only in this sense frameworks can be understood as products of formal creation, of the design process; and urban form as a product of art, a work of art.

The Framework

A critical analysis of the urban condition in Busan reveals a city shaped over time by the forces of topography, transportation, and nature. Rather than creating a cohesive whole with a singular identity, the interaction of this complex system of forces results in a city of parts-fragmented neighborhood and discrete areas loosely linked by a diffused transportation systems.

Topography

Busan is a city surrounded by water on 3sides which is a located at the southernmost of the Korean Peninsula. Topologically Busan has a Rias coast, and several small islands spread at the bay of Busan. In addition, there are lower independent hills and mountain ridges and small eroded basins between the mountains and the independent hills. The mountains are neither high nor craggy, but low in general.

Nature
One of the strongest contextual givens of Busan is the mountains and the sea—level is 400-800 m. These two elements have mainly influenced upon the urban fabric of the Busan—the formation of modern city of Busan. Though the distinction between these two natures is often blurred, the simultaneous existence of both should be addressed.

Transportation

Busan is fundamentally resistant to the implementation of a classical order. However, the port opening during the Japanese colonial period strongly impacts the way in which the city is accessed and experienced. In looking at the economic structure of the Busan region, internal trade showed constant growth after port opening in 1876. Especially after the Russo-Japanese War there was rapid growth. The main reason for this is that the settlements around the Busan-Seoul railroad became a prospective market for Busan after the opening of the railroad. Moreover, as the voyages on steamships increased, direct trade with Busan and various areas of Korea. This can be achieved by allowing significant moments within the transportation to amplify an awareness of directional orientation within the city as well as providing a threshold between individual neighborhood parts and the city as a whole. The notion of flow, both as a fact of city life and as a metaphor for the urban experience, should be addressed as it relates to the character of movement and the perception of Busan’s image.

To understand and read the city, in his book, Discovering the Vernacular Landscape, J.B. Jackson argues four things should be addressed: boundaries, roads, open space and parks.

Boundaries: The boundaries, which are the primary marks that we make in organizing and defining the world around us and which divide our landscape into understandable, comprehensible pieces. A boundary simultaneously binds people to the world around them and separates people, as individuals, from it. It is through this framework that all of the individual pieces of the city are connected one structure, and are thus understandable.

According to unequal treaty between Korea and Japan, the port has been a common region used by citizens of both countries for a long time. Also, the government of Korea (Choson) shall open two ports as stated separately, in order to accommodate the traffic of the Japanese people. The land of this area shall be rented out to the Japanese people and housings shall be provided, and if there is the need to lease the house of the Korea people, it shall be left up to the convenience of each situation.

In 1877, about 80 Japanese started to live in Busan and possessed 363,638 m². They selected their settlement locations unjustly for their own use. In 1908, Japanese owned more than half of the landownership of Busan (61.3%). The ownership was mainly concentrated in the current downtown of Busan. The landownership by Japanese tended to extend out to the entire Busan region after the opening of the port. This colonial boundaries reinforced the Japanese realm and radically redrawn the urban fabric in terms of intervention. In fact, they make otherness out of the inhabitants, strangers out of neighbors, strangers out of enemies. Yet while boundaries give a permanent human quality to what would be an amorphous stretch of land, in the case of downtown of Busan and surrounding existing neighbors, boundaries serve to further amplify social and economic extremes, reinforcing the qualities of isolation and fragmentation that much of the city’s overall condition until 1970s.

Roads: Busan was very natural coastal region before the opening of the port with rudiment stage of urban fabric. At the starting stage of development by Japanese, there were two aspects of urban elements, present roads and railroads. The street system, which allowed transportation and communication between people and places formed mainly along the coast, and adopted typical grid systems, which is laying out of an abstract ordering device across the land, indifferent to existing topography and other natural formations. Busan has a number of different grid patterns in its urban fabric system because the Japanese arranged the building by piecemeal infilling, rather than total developments with a larger grid. Two grid systems have been used in the initial stage of urban development of Busan. There is the formal character of the city for Japanese to help their activities and trade, and protect them from Korean inhabitants. There is the curvilinear block which uses the irregular character of the area’s original topography. Inhabitants were segregated from the new developed grid pattern of streets. Inhabitants were completely excluded in the initial stage of urban development and became a very unique system. Public buildings such as the police station, bank, hospital, commerce center, and telegraph office were built one
by one establishing a new town. This became the origin for the center of Busan. Later, the Japanese filled-up part of ocean and built roads to expand their settlements.

Because the downtown area is imbued with significance to the city and its users, any system or new buildings cannot be considered as an isolated object, and any theoretical bases for its design must be related to the issues of place and context. Frampton argues a framework for considering architectural design as a tool for strengthening the user’s consciousness of a specific place:

The fundamental strategy of Critical Regionalism is to mediate the impact of universal civilization with elements derived indirectly from the peculiarities of a particular place...Critical Regionalism depends upon maintaining a high level of critical self-consciousness. It may find its governing inspiration in such things as the range and quality of the local light, or in a tectonic derived from a peculiar structural mode, or in the topography of a given site.

Recognizing elements of a site that exist because of where it is and the culture that uses it is regionalism; choosing and analyzing the elements that may architecturally reinforce that regionalism make the observations critical. In fact, architecture and urban fabric can and should reinterpret the character of the region to aid in its perpetuation has an obvious corollary. The act of preserving the existing context can become too simplistic and imitative, and in its zeal may inhibit rather than stimulate the building and street system of modern day culture. Here, however, a case has already been made in favor of respecting the existing context in the downtown of Busan.

The main means of transportation on land was the railroad system, and the increase of cargo transport by rail not only changed the growth of the import and export trade, but also the whole situation of the traditional product distribution path. The railroads were built to transport Japanese commodities to the northern area and rule over Korea. Since the coastal area was flat, railroads were constructed along the coast. Later the street system was also arranged along the railroad, and expanded the city into a linear form in 1970s.

Public space: According to Hannah Arendt, public means, first, everything that appears in public can be seen and heard by everybody and has the widest possible publicity; second, the public signifies the world itself, in so far as it is common to all of us and distinguished from our privately owned place in it. In addition, to live an entirely private life means to be deprived of things essential to a truly human life. Since the public buildings were built one by one in downtown by Japanese, public space were minimized. How a person is intended to react, as he or she moves through the city, is seen in a limited spaces, and thus public spaces are mainly symbolic structure rather than the experience can be manipulated to focus inward, outward, upward, etc. In addition, it is difficult to access that area.

Natural Park: The park is a space where people may gather for a variety of activities, and are allowed to gather due to their status as citizens of community. Since the downtown of Busan is narrow and hilly area, and developed by Japanese, the park is on the hilly mountain, and thus the role of park is to break the parts of the area into whole, reducing gathering of people. The park is mainly for symbolic icon rather than giving a feeling those who come there that they are members of community or city.

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