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PRESENTING THE PAST: THE IMPACT OF URBAN MORPHOLOGY IN SHAPING THE FORM OF THE CITY

ABSTRACT

What are the intrinsic qualities of our cities that we chose to celebrate? How can we observe, measure and understand these qualities? How can we enhance our cities through a categorical appreciation of its quality?

The focus of this paper is to outline an archival research method that enables quantitative morphological urban data to be analysed and transcribed through mapping diagrams; evidencing those intrinsic urban qualities from which consonant urban guidelines can be formulated, as well as incongruous development identified. A case study will provide an application of this method by using mapping diagrams of Brisbane, representing the growth of the city over the past 160 years. By presenting the past as a repository of urban form characteristics, it is argued that concise architectural responses that stem from such knowledge should result in an engaged urban landscape.

The paper furthers the geographical approach to urban morphology; the forensic taxonomy of urban archival plans that was pioneered in the work of researchers such as MRG Conzen, and suggests purposeful implications of such research on urban design.

The relevance of this research lies in its potential to breach the limitations of current urban site analysis whilst continuing the evolving currency of urban morphology as a necessary conditional preface to urban design practice; providing context to the built environment to inform building design, especially in areas of urban renewal.

If an urban ‘DNA’ can be identified and described, then the genealogy of its built characteristics can guide its continued growth.
If we would lay a new foundation for urban life, we must understand the historic nature of the city, and distinguish between its original functions, those that have emerged from it, and those that may still be called forth. Without a long running start in history, we shall not have the momentum needed, in our own consciousness, to take a sufficiently bold leap into the future; for the large part of our present plans, not least many that pride themselves on being ‘advance’ or ‘progressive’, are dreary mechanical caricatures of the urban and regional forms that are now potentially within our grasp. (Mumford 1961:11)

The significance of urban morphological study has yet to be realised amongst urbanists, it however occupies an intriguing position at the confluence of current contemplations on the nature of cities, providing a basis for a cross-disciplinary search for relevant urban design methods.

The essential proposition is that urban morphology is the missing constituent in the process of urban design. Its value is in the provision of detailed physical characteristics in the evolution of urban form, bridging the divide that exists between this geographical knowledge, urban planning and architectural design.

This paper introduces research being undertaken in Brisbane, Australia that traces the morphological development of specific parts of the city. Through the mapping of physical changes that have occurred in a particular place, by extracting information from historical maps and photographs, patterns may be identified that can convey important continuities of form and active usage. This analysis can be measured to identify developments that are proven to be incongruous, and critically, a methodology of generating predictive urban form that is indicative of a consonant urban development. Therefore the link between the understandings derived through the study of the evolutionary aspects of historical urban form, and a correlated method of predictive measures for urban design, is the basis for this research.

**Urban Morphology**

The definition of urban morphology according to Bentley and Butina ‘...is an approach to studying and designing urban form which considers both the physical and spatial components of the urban structure...of plots, blocks, streets, buildings and open spaces,’ all of which are ‘...considered as part of the history/ evolutionary process of development of the particular part of the city under consideration’ (Bentley and Butina 1990:67).

Urban morphology can be considered as primarily concerned with ‘the structure of urban form’ (Kropt 2005, 1), and as Jeremy Whitehand observes ‘an important part of urban design is the creation of urban form. It is reasonable that the discipline that has as its central purpose the understanding of urban form should contribute to both the theory and practice of designing that form’ (Whitehand 2005:1).

Peter Larkham makes the pertinent observation that in the creation of high quality, vibrant places we need to ‘...put the lessons of urban history and urban form back into urban design’.

Understanding the physical complexities of various scales, from individual buildings, plots, street blocks, and the street patterns that make up the structure of towns helps us to understand the ways in which towns have grown and developed. The qualities of place are often ascribed, to a considerable extent, to such physical characteristics as size, scale, and relative proportions of various elements. This knowledge helps us to appraise what is successful and unsuccessful....and provide design cues for future forms. (Larkham 2005:1)

**The Brisbane morphological study**

Students of architecture, planning and landscape architecture at Queensland University of Technology have been engaged in data collection and mapping process that has resulted in
the establishment of a significant archive that contains evidence of the urban growth of Brisbane from settlement to the present.

This work has required the participants to access the archives of various sources across government and local council collections to amalgamate information as a basis for focused inquiry.

The scope of the database comprises an account of the growth of the city on the peninsula of the Brisbane River, now consolidated as the city's urban centre. Intrinsically, the critical documentation collected were survey maps, to evidence cadastral property delineation; photographic records as pictorial evidence; literary descriptions of places and events; as well as postal records to determine site usage. The collected archives for each city block have been compiled into a database from which information has been drawn for mapping selected criteria for further scrutiny.

Periodical time snapshots were determined as moments of focus for the mapping output, aligning with the dates of key survey information as well as establishing a consistent basis of analysis for the research participants across the study area; these were established at 1840/1863/1911/1930/1960 and 2005. This approach is consistent with methods adopted by urban morphologists as a technique for observing urban changes over time. (Koter, 1990:101)

Several categories of mapping have been identified:

1. Cadastral definition: confirms the overarching dimensions of urban grid / burgage cycle / trends of sub-division or consolidation / property ownership and functions.
2. Nolli Map/ Figure group drawings: confirms the relationship between built form and public accessible space.
3. Ground level plans: confirms the level and changes to active frontage, function across the city block.
4. Street Elevations & Block Sections: confirms the dimensions and characteristics of the urban form
5. Types: confirms the characteristics and experience of buildings and urban blocks.

It is envisaged that this comprehensive database will be the basis for the scrutiny of the urban form of Brisbane; stemming from which detailed criteria for architectural design can be formulated based on the residual evidence.

**Why Architecture should reclaim its responsibility in the city making process.**

The research proposes an exposé of urban practice that has failed to curate cohesive form in our cities; as evidenced through the unconstrained architectural development that perpetuates urban discontinuity.

While there are many agents in the city making process, it is possible that the blame for the high level of disjunction in the urban form of cities should be laid squarely at the feet of the architects who have objectified the buildings they design as singular entities at the expense of homogeneous urban cohesion.

The problem resides in developments that extend the scope of projects beyond the scale of the general building unit, the infill building, block consolidation and the like. It is where architects are challenged with a ‘super sized’ project that the shortcomings in their urban propensity become most apparent. The inability to comprehend the complexities that engender a city’s urban quality is all too common.

It is not that there is an absence of international exemplars of architectural practice that have successfully confronted this condition, and are available as a point of reference for adoption. A notable starting point for scrutiny is the urban renewal projects of the International Building Exhibition (IBA) in Berlin during the 1980s; the urban renewal and reconstruction of vast areas through architectural competition.
The city as a whole has been forgotten in 20th century urban planning. Our new cities consist of collections of individual buildings. Five thousand years of urban history show that the complex structures of streets and squares are necessary as communication zones and centres of identity. The modern city needs the traditional concepts of urban planning as well. (Krier 1982:5)

A forerunner of the IBA was the housing project in Ritterstrasse (1977) by Rob Krier. In developing a plan for the urban block he sought to modulate the accommodation bulk and intensity of the facades by inviting associate architects to design within the overall scheme. The diversity of individual design resolutions evoked a sense of the diversity that exists in the urban grain of the traditional city, in this case Berlin. The architects conformed to a common purpose of building height and materiality, as well as synthesising their individual contemporary architectural statements. The outcome is an integrated precinct that has subtle surprises in the urban form, and suggested a blueprint of how to break the scale of large development into consonant parts.

The city comes to be seen as a ‘masterpiece’. Something that is substantiated in form and space but understood in time, in its different moments. The unity of these parts is fundamentally supplied by history, by the city’s memory of itself. (Rossi 1966:64)

It is hard to believe that Aldo Rossi, having scripted the influential text *The Architecture of the City*, in which he argues that the city must be acknowledged as a construction over time, with special attention to its urban artefacts and monuments that give it its structure; could have designed his IBA competition project at such odds with his thesis.

The site for the project on Block 10 Südliche Friedrichsstadt (1981-88), encompasses an entire city block, there were only a few remaining original structures, with very few at the street edge. Rossi proposed an unrelenting and repetitive building form that extruded around the perimeter edge, pausing for the solitary existing buildings or trees. Where Rossi’s monumental rationalist blocks has succeeded at the Gallaratese Residential Complex in Milan (1969-73), the challenge to address issues on a historical inner city site had not been taken.

Intriguingly Rossi, towards the end of his career, appeared to have readdressed the issue of appropriate urban scale in a subsequent project he designed in Berlin, at Quartier Schutzenstrasse (1995-97). Here he modulates the building form with sticking variation in that each component, somewhat idiosyncratically (from the hand of one designer) differs in manner to the other, but nevertheless demonstrates the imperatives of an integrative approach to the architecture.

Douglas Clelland has advocated for the role of the street and public space as the cohesive element in a vibrant city, particularly in his commentaries on the IBA. Clelland made a comparison of the street to that of a theatre, whereby the public actions of individuals were observed as part of the great urban play. An importance was placed on the buildings’ public functions, the entrances, balconies and shop fronts.

To break free of the banality of much architecture since 1945, Rationalism, from the mid 1960s, re-asserted the historically tested spatial typologies of the city- its streets, public spaces, urban blocks, public monuments –and claimed for them the status of theoretical anchors strong enough to renew the dignity and value of architecture. (Clelland 1987:43)

Another key example of how to overcome the complexities of the urban mega-structure within the traditional city has been posed by Sir Richard MacCormac. The realisation that the form of the city is dependant on the interactions of its local inhabitants through the processes of various exchanges, whether economic, political or social is a theme that has been articulated his writing and the built work.

By understanding how places have evolved, we are better able to guide development and change in the urban fabric, and avoid the incongruity created by so much of the
By examining a sectional study through two areas of London, MacCormac develops a rich discussion that explores the presence of two types of transactions that take place. The first is identified as being ‘local transactions’, the myriad of small scale local urban events such as shops, restaurants, small businesses as well as people living behind their own front door; these are the transactions MacCormac identifies as being the essential commodity of vibrant urbanism. However, he goes on to point out, that too often these local events are displaced by larger scale operations, warehouses, offices and banks; labelled ‘foreign transactions’. MacCormac thus identifies the important relationship between urban activity and urban space. This is demonstrated in his original masterplan for the redevelopment of Spitalfields Market in London (1987) where the large functional entities of the brief were placed the centre of the precinct, allowing for smaller intimate accommodation to interact with the surrounding streets, thereby enhancing the well-established urban fabric of the inner city.

Architects have consistently demonstrated that ultimately the success or failure of urban environments is vested in the quality of the constituent part, the building design. However it is only a very few who rise above the limited horizon of the clients brief, by guiding development in a way that prefaces the city over the singular entity of the building itself. This is the responsibility of the architect, to be the advocates for quality in the urban landscape.

Urban renewal; interrogating the Urban Village as a new method of urban design?

In A New Theory of Urban Design, Christopher Alexander demonstrates a practical methodology of how urban design can address the problems faced by large developments through the identification and simulation of the small grain, plot related incremental scale of buildings, an observation that so many of these large developments fail to acknowledge. Alexander introduces a proposition of ‘growing wholes’ to students participating in a design studio proposition for a large waterside development in San Francisco. There is no masterplan, no preconception, no contrived ordering, only a single over-riding observation that each design proposition must enable, suggest and make allowances for the next incremental stage (Alexander 1987). The over-riding rule is then made clearer and simpler through seven intermediate rules, the theory is then tested. The sequence of student proposals enables a morphology to emerge, reminiscent of traditional incremental development, resulting in a urban proposal that assimilated the characteristics of traditional urban form.

The polemic put forward by Alexander is the challenge to achieve planned cohesive urban form on a large scale, that is concurrently imbued with the diversity and complexity; that is recognisable in the existing city fabric.

Recent discourse in the design of urban environments have witnessed the ‘New Urbanists’ advancing “… a design- oriented approach to planned development’ (Berke 2002:26) while the advent of Form Based Zoning controls recognises the need to ‘address form without regards to use’. (Hecimovich 2004:1)

Form based coding seeks to regulate the form of the built environment. In contrast, conventional zoning primarily seeks to control land use and density, but is largely silent on matters of form… The new approach builds on the idea that physical form is a community’s most intrinsic and enduring characteristic. (Katz 2004:16)

Paul Murrain discusses measures to achieve the quality of urban space in the presence of permeability, variety, concentration and proximity. He discusses attributes in the making of better places which includes the need for a robust building form, and as Murrain argues is an essential part of the ‘recipe’ for a mixed use town.

Good mixed-use can be defined as a finely grained mix of primary land uses, namely a variety of housing and workplaces with housing predominant, closely integrated with all other support services, within convenient walking distance of the majority of the homes. (Murrain 1993:86)
The Urban Village emerged as a concept in the UK during the late 1980s to further the agendas for a ‘humane, sustainable and mixed use urban living’ (Franklin & Tait, 2002). This movement promoted the neo-traditionalist tendencies in planning that has resulted in such outcomes as the vernacular replicate suburbia of Poundsbury. Franklin and Tait have drawn to the conclusion that the concept of the urban village is ‘fluid, contested, contradictory and capable of multiple interpretations’.

**Urban Villages in Brisbane**

In Brisbane, recent large scale urban precincts have been touted as ‘Urban Villages’, but what exactly does this imply? A village in the city? Or is it referring to an extension or new part of the existing city? What innovative parameters for urban design will deliver the envisioned environments?

Kelvin Grove Urban Village is a 17 hectare mixed use development, 2km north-east from the city centre; that integrates university facilities, commercial buildings, public facilities and 800 residential dwellings, including 100 affordable housing units (Woods, R 2003:22).

The development promises a spatial framework that will establish a clear urban outcome for the Village that optimises physical, virtual and social links. It strives for a positive identity and urban performance; a dynamic, vibrant quarter with extended hours; a strong sense of place and cultural identity. The Built form agenda promotes excellence in design delivered through a planning framework driven by the City Council and supported by the project partners. It is the reliance on the participating developers that is proving to be its shortcoming; while addressing performance criteria that includes environmentally sustainable design principles, the individual buildings are disconnected from each-other with the architectural outcomes being autonomous, without a cohesive urban form that could be associated with town or city. It resembles an office park in the sense of its detached building events set on demarcated development plots.

These shortcomings are even more exaggerated at the Boggo Road Urban Village some 2km to the south of the city. Sited on the site of the heritage listed first gaol in Brisbane (established in 1883), the planning process dates back to 1999. The proposal aligns with the State Government’s regional plan for Transport Orientated Development (TOD) that seeks to capitalise on densification around nodes of major rail and bus interchange. The historic hilltop site is a fantastic opportunity for a high quality integrated densified urban precinct. Once again however the urban design guidelines are limited to a thinly veiled set of guidelines and performance criteria. The role of urban design as a cohesive tool in urban form control is sidelined at the expense of transport engineering belligerence and short-sighted State Bureaucrat expediency.

What is clear is that a methodology for designing cohesive urban form has been lacking in these built and/or planned Urban Village developments.

**Architectural integrity and cohesive urban form: Melrose Arch, Johannesburg**

The initiative for the 18 hectare development at Melrose Arch was the result of the innovative traditional urbanism of Paul Murrain in association with local urban designers. The development originally destined to be another ubiquitous shopping mall, was transformed into a precinct defined by a series of perimeter urban blocks, comprising high street and integrating two urban squares. A number of architectural firms were engaged to design the various buildings that comprised the blocks, recalling the approach of Rob Krier in Berlin. The blocks were subdivided to achieve a series of land parcels of appropriate scope to accommodate buildings of urbane scale. Furthermore architects collaborated in resolving the formal junctions between buildings, resulting in a level of variety and cohesion. The architects designed in accordance with well-defined form based codes that articulated the overall urban strategy and emphasised points of special interest within the precinct. Melrose Arch represents one of largest new urban developments of its type to be conceived and executed that demonstrates how urban design and architectural practice can mutually synthesise to achieve something close to a contemporary expression of good city making.
Melrose Arch is set within the context of rapid urban change in the South African, and suffers from the perplexing dichotomies that pervade that society. Furthermore the overarching model is Euro-centric, the strictly adhered to common building heights more in reverence to Berlin, than in reference to the original city of downtown Johannesburg.

Conclusion: Identifying the gap

There remains a gap in urban design practice….the gap is in taking responsibility for the overall shape of a town….as a coherent and legible spatial structure which originates from a pattern of movement lines which will be unique to a particular topography’. (Evans 2005:1)

Urban morphology as an analytical process of understanding the evolving form of a specific place can reveal the evolutionary patterns of the city; an urban archaeology, an urban DNA. The correlation of this particular kind of research that can inform the ‘creation of new urban landscapes’ (Whitehand 2005:2) is a practice yet to emerge. The discussion developed in this paper argues this to be a gap in the knowledge within the field of urban design.

Elsewhere Richard MacCormac has highlighted the disjunction of much modern planning and development:

…the unpopularity of what is called the ‘modern environment’ is partly due to a deep sense of incongruity and a feeling that the nature of change is such that instead of affirming what exists and adding to it, the modern environment is perceived to have destroyed what was good and not to have improved on it. (MacCormac 1994:70)

The recognition of the lack of site specific quality in much urban development vindicates the need to research and understand better the plot patterns, amalgamations and subdivisions that have responded to the city’s evolutionary economic and social transformations, that result in its built form. Architectural practice has rarely sought to understand the minutiae of the urban environments within which buildings are to be constructed; invariably the implicit codes of urban form are not observed. Urban Morphology has a potential custodial role in the dissemination of knowledge, information that can be formulated into the urban design process.

A Balance needs to be found between a desire to control every move of development, a folly that may thwart the very essence of the city we wish to protect; and as Kostof further reminds us:

Cities are never still; they resist efforts to make sense of them. We need to respect their rhythms and to recognize that the life of city form must be loosely somewhere between total control and total freedom of actions. Between conservation and process, process must have the final word. In the end, urban truth is in the flow. (Kostof 1992:305)
REFERENCES


Online resources:
http://www.boggoroadurbanvillage.com/content/standard.asp?name=Project_Overview last accessed on 03/06/08.