

## The Relationship between Urban Morphology and Urban Designing Guidance

Amir Tayyebi<sup>1</sup>, Mohammad Azad Ahmadi<sup>2\*</sup>

<sup>1</sup> Architecture engineering college, Jondi Shapour University, North Branch, Dezful, Iran

Tel: +98-912-2063878 E-mail: [Amir.Tayyebi1@yahoo.com](mailto:Amir.Tayyebi1@yahoo.com)

<sup>2</sup> Sama technical and vocational college, Islamic Azad University, Sanandaj Branch, Sanandaj, Iran

Post Code: 66177-66869, 1st unit, no. 1320, Havarinasab St., Villashahr area, Sanandaj, Iran

Tel: +98-918-8711988 \*corresponding author E-mail: [mo.aahmadi@yahoo.com](mailto:mo.aahmadi@yahoo.com)

**Abstract:** Urban morphology as “knowledge of urban form”, has notable capacities to participate in comprehension and management of urban development, specially in this days cities have faced with unprecedented changes that create problem for cities inhabitants in perception and creation of cities image and also have confronted designers with a serious question to control and guide new constructions. Use of urban morphology in urban form and image, can take place at a more effective way while we know these cases: 1- Identify theoretical base of this knowledge field 2- Identify and separate “urban morphology techniques” 3- Identify , separate and analyze previous experience of this field in model of schools, thoughts, case studies and usage of morphological analysis. “Urban design guidance” is a comparative and pictorial explanation of policies and goals that codify at metropolis scale with physical quality promotion purpose, at a way that make them (policies and goals) executable in design language. Three techniques (plan analysis, typology and city character study) that use in urban morphology have application for policies and goals preparation in urban guidance that addresses urban form and townscape problems. This paper after urban guidance description introduces trinary urban morphology techniques and defines application method and advantages of their use in urban guidance preparation.

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### Introduction

Urban morphology as a "science of urban form" has significant capacities to contribute to understanding and management of urban development, especially in the current period that cities have faced with unprecedented changes that it have troubled the cities residents in perception and creation of mental image of cities and have encountered designers in control and guidance of new constructions with a serious challenge, too. Use of urban morphology can be formed more effectively to analysis of urban form and landscape, if we know of the following: 1- identifying the theoretical basics of this knowledge domain 2- identifying and separating urban morphology techniques 3- Identification, analysis and separation of previous experiences in this field in the format of identifying of schools and ideas and examples of studies and morphological analysis uses.

Urban Design Guidance is detailed and a possibly visual expression of policies and objectives that is codified in metropolitan scale and to improve its physical quality, in the way that evolves them (policies and objectives) in design and executable language. Three Techniques, "Map Analysis", "typology" and "study of town character" that are used in urban morphology, also they can be used for

preparing objectives and policies in the urban guidance that notice urban form and landscape issues. This paper after definition of urban morphology and urban design guidance introduces the three urban morphology techniques and specifies the way of use and benefits of their use in preparing the urban guidance.

### 1 - Urban Morphology

Urban Morphology is study of cities as human habitat. Anthropologist Levi Strauss, describes the city as "**the most complex of human invention**" in intersection between nature and artifact. Urban morphologists have a same opinion that they analyze a city changes from its initial formation to subsequent developments with identification and description of its various components. City is results of Accumulation and integration of many collective activities which are unique and small that they are guided by cultural traditions and have been shaped by social and economic forces over the years. Urban morphologists concentrates on tangible results of economic and social forces: they study results of ideas and decisions, because they (ideas and decisions) create forms on the earth and give mold(objectivity)to our cities. Buildings, gardens, streets, parks and mountains are the main elements of

morphological analysis. These elements are considered as organisms that are used constantly and afterwards change over time. They also have a dynamic and strong relationship with each other: structures formed by open spaces that around them are being formed and give them the shape, the public streets are serving private land owners, who are along them, and by them are used. Dynamic status of the city and inclusive relationship between its elements, has led many urban morphologists to prefer "urban morphogenesis" name for their field of study description. (Moudon, 1997, p.3)

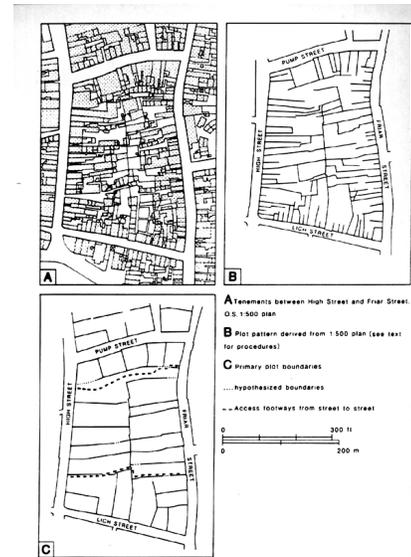
Urban morphology means study of settlements form and shape. The urban morphology understanding helps Urban designers to be aware from developments species of native and local models and transformer processes too. The main work in this regard, are concentrated on analysis of evolution and change process in traditional urban space. (Carmona, 2006, p.61)

Urban morphology, is one of the most important physical approaches to urban form and is defined so: urban morphology is a main stream of urban form study in urban geography. Word (morphology) is meaning: "Science of form" that its work is study of shape, form and external structure or sorting style, especially as a object that's under study or classification. Urban morphology is systematic study of form, shape, map, structure and functions of cities built tissue, origin and evolution method of this tissue over time. Supporters of this intellectual field, believe that human values and desires hidden in the city mold and city mold study implicitly is study of its shaping human values:

"Morphology focuses on of city study as a physical environment, but implicitly links between spatial and material elements of city and its forming social and economic forces too." In other words, "City mold is trace and footmark of human desires and activities. Thus, as the built form can be considered in relation with a particular historical period, it can be considered result of some activities which occur in it and it has been designed for placing them, too. Context of a city is not only its making history document, but also is humans living document that have made it and have lived in it. During the life of people and communities, activities and needs have not left static and have declination to change, and this change provides field for growth and transformation in city mold.

City as a whole (including its buildings and inhabitants) is a process. It is an interaction between humans and their environment. In trying to identify the character of this process, study of its physical aspect is the most appropriate basis that can built overall character picture upon it has. Because

physical essence and its organization are the most tangible and stable aspects of city. Desires, activities and human reactions that are parts of the interaction between residents and settlements are relatively impalpable and fugitive. Buildings use, changes more than their structure. Since physical essence and its organization are more obvious and consistent, can provide a strong starting point that can connect other more impalpable aspects to that. " (Mir Moghtadaee, 2006, p.23).



An example of a sociological study of the morphology

## 2 - Urban Design Guidance

In Instruction booklet published by Office of Prime Minister Deputy of England, hierarchy of programs and urban development plans in this country have been introduced as follows:

- Development Plan: Development Plan makes clear main framework of development guidance and control. Depending on geographical location the development plan may include one or more than one program.

- Supplementary Planning Guidance: local authorities convert policies to specific ideas for designing regions and sites with various ways according to specific topics of planning. Therefore, Design Guidance is a supplementary planning guide that is prepared in framework of development plan. Design Guidance more complete definition is as follows:

"Design Guidance is a document that explains in detail implementation style of Development Plan according to design policies of local authorities or other relevant organizations and

often has a special attention to protect local distinctions."

In confirming the above subjects, Ali Madani Pour Defines Design Guidance within British Planning system such: "Design Guidance is a document that prepared by local authorities as additional information and guidelines related to design issues. Design Guidance is different from the Development Plans which have legal status and regulation, and is a complementary guide in the planning field. Design Guidance and Design Brief, both are classified by Planning Policy Guidance 12 as a supplementary Planning Guidance.

However there are major differences between them that looks like this: Design Guidance are not related to specific site, while Design Briefs are related to specific site. Design Guidance has often general nature and almost cover any event, but Design Briefs are related to specific sites and more specific topics. "Another feature that is referred by this definition is generality of Design Guidance and their non-restriction to a specific site. (Mir Moghtadaee, 2006, p.11).

### 3- Three techniques of Urban Morphology and their applications in Urban Design Guidance preparation

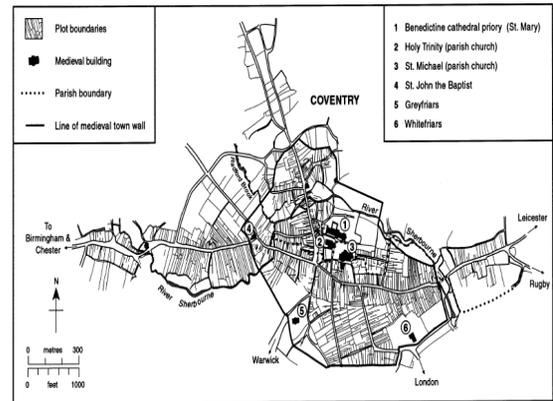
Urban Morphology as science of urban form studies varieties and types of urban form, their transformation and factors affects on them. Among these three techniques, "Map Analysis", "Typology" and "Study of Town Character" that are used in urban morphology, can be used for preparing guidelines, objectives and policies in Urban Guidance that notices urban form and landscape issues too. In the first each technique is introduced and its application in preparing Urban Guidance is given.

#### 3-1 - Map analysis technique and its use (Design Control)

Map Analysis technique including methods which are entered by geographers to urban morphology and urbanism domain. Conzen and his followers are interested in Map Analysis techniques. In the following a description of Map Analysis technique has been com. First, the Base Map of the city is prepared. This is obtained with use of most basic and registered detailed city map that are "Equipment Evaluation" maps Based in UK and Ireland on 2500: 1 Scale or 500: 1. According to "Equipment Evaluation" map, only morphological city structure is required that means to draw street patterns and land piece for the Base Map creation. (Lilley, 2000, p.7).

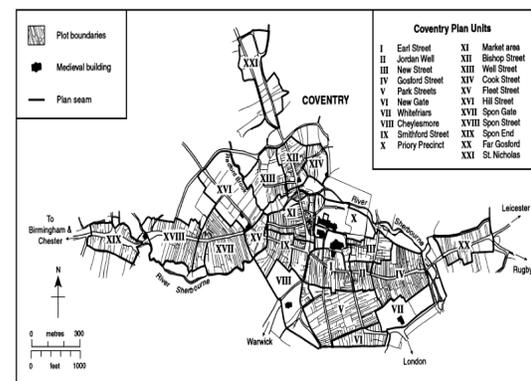
The third stage of the process is including accurate integration of historical material by mapping

them on urban map. By documents and medieval leases is proceeded for separation of urban lands patterns sequence, Also according to documents obtained from archaeological reports, an attempt is taken place to place topographic data and morphophonemic of the medieval urban landscape in their location, until medieval urban landscape characteristics are coordinated with morphological patterns of streets and lot.



Based maps of Coventry City

The second phase of the "Analysis Map" process includes defining of what is Conzen called "Map Units". This stage while that lands piece and streets resulted from the "Equipment Evaluation" maps are investigated in some categories( in size, shape, form and direction) to see whether they participate in same morphological characteristics or not. (Lilley, Ibid, p.7).



"Map Units" of Coventry City

Finally, in the fourth stage: specific "Map Units", and their morphological history combines with each other all to create a form map of medieval changing landscape. This stage meaning is "Map Units" interpretation as physical expression of urban landscape forming and also is including note of internal form changes in each of the Map Units, according to that the landscape not only changes

through the massive expansion unto out(continuous pattern) but also changes through imposing growth phases (reconstruction). (Lilley, Ibid)

"Design Control" approach is one of the most important applications of "Maps Analysis" on urban issues and "Urban Guidance" preparing. Hall, in 1989 began to investigate this issue and started case study of Chelmsford that its results have been published as a number of articles and pocket books (including the book, Design control: towards a new approach) is starting point for understanding this: urban design is a pluralistic activity including negotiations between many parties. Negotiation with clear goals, not hard and strict rules is facilitates at best way. Mutual interaction between design objectives and local characteristics should be expressed in words of design objectives. Distinction between goals and outcomes is done, goals and criteria for achieving them, physical guidance regarding how to achieve them and control approaches leading them to implementation are considered. Then the main issue is how to create goals that are unique for small areas and indicate their special circumstances. (Hall, 1997, p.225)

In the "design control" approach, design goals should show strategic policy of planning authorities, and must be related to specific places. Creating goals will be facilitated with using new concept of Hall, hence "design area". These sub-divisions within the map are related to objectives other than pre-existing concepts, such as allocations of land use. The maps limit the area to control plan with uniform land uses propagation and not complex mixed uses that have already existed or may be desired. These maps consider features that should be main subject of design strategies for streets and borders. The "Design Area" facilitates some features of mixed uses for small areas. Public spaces such as roads, squares and parks with buildings which surround them are defined and identified as a Design Area. (Hall, Ibid, p. 225)

Design objectives are related to specific types of urban form in specific tissues of their sites. They determine whether form should remain the same or be changed for other types they may also facilitate changes in planning control intensity in each place. What is repetitive issue in English style of planning? It's clear that level of intervention is central component of design control and concepts used for addressing it should be considered as used cases in changes increase. The design plans are prepared. When design strategies are developed generally, strategies establish firstly according to different levels of intervention, and then with identifying various desired qualities in these levels. (Hall, Ibid)

### **3-2 Typology Technique and Its Function (Typology Based Guidance)**

A type is defined with a certain morphological configuration that determines its internal organization and its relationship with adjacent structures and spaces. For example, has house a porch and entrance? How is the house placed in its lot? and how much space does exist between the adjacent houses?, define the type characteristics. Elements and components of type have global functions related to building such as circulation, entrance, public space, private space and etc. Specific activities such as sales, reading, learning and etc are not considered as type aspects. Designed building for specific application changes its function over time without any morphological changes. Types exist in a variety of scales. Private buildings (even rooms) have type but observed types in urban scale are very different than observed cases in single buildings scale. Larger-scale typology is determined in affected by smaller scales types of that site. House type of two families, for example, leads to a certain type of street that creates various regions and specific urban blocks.

Urban coherence depends on typological stability that defined in this way more than architectural uniform style, landmarks and materials or colors. When people visit a historical protected city, they see stability of stylistics and typological elements. If society goal is to create a cohesive physical environment that is adaptable with changing conditions, its typological structure should be regarded more than building architectural details.

With "Design Controls" based on the typology, design guidance goals can be achieved. Result is a flexible and responsive system which values historical continuity of the city without its architecture balming because typology reflects complex and organic relationships of factors such as economy, social structure and function that are effective on the city. Benefits of typology-based guidance include: understanding mechanism of urban issues, creating typological data base, reducing importance of dominant buildings and designer-based, easy conversion of guide to criteria and faster and more systematic and flexible process. (Scheer, 2009, p.154-155)

### **3-3 -"City Character Study" technique and its function**

"City Character Study" is proposed method by Karl Kropf that's a compound of the two Italian and German urban morphology approaches. This method can be used for historic towns that have a relatively homogeneous social and physical context. But for big cities, it requires review and completion. The

followings can be counted to complete this procedure:

1 - One assumptions of the above method describes following principle: in each city development period, different tissues are generated that are proportionate to needs and conditions of that period. This point about large cities can be discussed. In these cities according to geographical ambit area, conditions and characteristics of different regions are diverse and variable. This subject is due to heterogeneous of physical and social context that formed in a wide area.

In other words, a big city can be divided into several homogeneous small towns. Therefore, in such a city, in a single period, various and different buildings types are shaped in different areas. In addition, each of the city growing areas not only represent its formation period, but if are not abandoned and also are constructed in subsequent periods, represents next period developments, too. Thus, the oldest areas of town have the highest typological diversity and presumably include all building types of city growth periods. Therefore, after initial studies in each city can find areas that represent physical character of entire city.

2 - City morphological change over times, depends on growth and economic value of land in each region, so that in some areas of the city within decades, a specific development doesn't happen, because there isn't a special economic interest in this work. But in prospering areas of city that land and building price is increasing, significant changes appear. Moreover change quality of lots dimensions depends on economic value and finance ability of various city regions inhabitants. Thus, dimensions of separated lots in affluent areas of city are often large and probability of their division into smaller pieces is less. While in middle and lower areas of city, large lots usually are divided and separated. Therefore, it is suggested for typological studies, areas of the city are identified that have a relatively homogeneous state of economic and social conditions.

3 - Another important factor that is effective in buildings three-dimensional shape, is building laws and regulations. Thus, with start of sudden and fast cities growth and tendency increase to urbanization, control and limit physical development of city is important. Before this time, people have a more freedom to form the city but in the next periods, building rules have a main influence on three-dimensional building of the city and restricted personal liberty partly. Therefore morphological study of city requires attending to local building rules. (MirMoghtadaee, 2006, p.42).

#### 4 - Results:

John Lang mentions goal of 'Design Guidance' codification such that: "access to special quality of design (and not specific designs) and development of review process to ensure that the implementation of new buildings or other projects are done according to this guide. "On the other hand urban form is outcome of economic, historical, political and cultural forces of a society that displays itself in three-dimensional mould. Human society life appears in urban form bulk. Economic incomes types, capital flows, developments and historical background of a city appear in its external shape and form as kind of government, community management methods, people aesthetic taste and community building technologies.

"Map analysis" technique with a discriminate approach to city form and structure and "typology" technique with synthetic approach to components and elements of city and "city character study" technique using both previous techniques try to identify and classify changes in form of a city, its types, its history and its future orientations. Importance of urban form as container of activities and interactions within cities confirms necessity of morphological studies on the cities. On the other hand, results and strategies come from this type of analysis are very close to the design phase for addressing urban form as the most tangible face of the city. However the certain qualities like cohesion, identity and historical continuity are accessible and can be controlled well through the 'design guidelines' that these techniques are used in their preparation process.

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