

2.1 Urban Design Definition

One can possibly find as many definitions for urban design, as the number of writers and practitioners of urban design (see for example: Pittas 1980; Floyd 1978; Lynch 1981, 1984; Mackay 1990; Gosling and Maitland 1984; Tibblads 1984; Gosling 1984a, b; Barnet 1982; Colman 1988; Goodey 1988; Levy 1988; Scott Brown 1990; The Pratt Institute Catalogue 1988; Kreditor 1990; Lang 1994, 2005; Relf 1987; Madanipour 1997; Schurch 1999; Marshal 2009; Brown et al. 2009; Mumford 2009). These varieties of definitions, aside from some commonalities, reveal the very complex and multi-dimensional nature of the subject matter of urban design. Schurch, in analyzing some of these definitions, suggests that the fundamental problems with these definitions of urban design are that they lack breadth, cohesion and consistency (Schurch 1999, p. 17). Over thirty years ago Pittas (1980) emphasized on the importance of a clear definition to the success of the profession. He, then, suggest seven parameters that urban design deal with: (1) enabling rather than authorship; (2) relative rather than absolute design products; (3) uncertain time frame; (4) a different point of entry than architecture; (5) a concern with the space between buildings; (6) a concern with the three dimensional rather than two dimensional, and (7) principally public activity. Tibbalds (1984) believes that there is no easy, single, agreed definition of urban design.

Madanipour (1997) claims that urban design is a far from clear area of activity. He further adds that signs of the need for a clear definition of urban design can be seen in a variety of sources. Here we give only a few examples. Kreditor (1990) suggests that if one doubts the immaturity of urban design as a serious field of study, the search for a common definition or understanding of the term will be instructive, for there is none. He further adds that a lack of shared meaning undermines appreciation and retards development. Cuthbert (2007) reflects his frustration with urban design definition when he calls it the endless problem of 'defining' urban design. To Kreditor urban design is the institutionalization of our search for good urban form. It transcends visual perception. It is concerned with pleasure as well as performance, and it embraces traditional design paradigms with city building process (Kreditor 1990, p. 157). Some still have doubts as to the nature of urban design as a scientific or artistic field of inquiry. Kostoff, for example, maintains that urban design is of course an art, and like all design it does have to consider, or at least pay lip service to, human behaviors (Kostoff 1991, p. 9). Moughtin (1999) takes the same position when defines urban design as the art of city building, which concerned with the method and process of structuring public space in cities (Moughtin 1999, p. 1). But when he further describes the functions of urban design, he ignores that definition to state that any discussion of urban design which does not address

environmental issues has little meaning at a time of declining natural resources, ozone layer destruction, increasing pollution and fears of the greenhouse effect. In these circumstances any discussion of the aesthetics of city design in a pure or abstract form unrelated to environmental concerns could be described as superficial and rather like rearranging the deckchairs on the Titanic (Moughtin 1999, p. 1). There are also some who take a more pragmatic position by saying that urban design is what urban designers do. According to this view to know who is an urban designer is determined by appeal to historical and sociological criteria. Also the answer to the question of what constitutes good urban design, the pragmatist believe must come from the urban designer or the practices of urban design.

According to the Royal Institute of British Architects (1970) urban design is an integral part of the process of city and regional planning. It is primarily and essentially three-dimensional design but must also deal with the non-visual aspects of environment such as noise, smell or feelings of danger and safety, which contribute significantly to the character of an area. Its major characteristic is the arrangement of the physical objects and human activities which make up the environment; this space and the relationships of elements in it is essentially external, as distinct from internal space. Urban design includes a concern for the relationship of new development to existing city form as much as to the social, political and economic demands and resources available. It is equally concerned with the relationship of different forms of movement to urban development (see Gosling 1984a, b, p. 7). But while RIBA's definition is comprehensive, Banham's is too narrow and specific, at least with regard to the scale. Banham suggests that the intermediate field of urban design is concerned with urban situations about half a mile square (Banham 1976, p. 130). It seems that Banham's definition of urban design is in fact large-scale architecture, and would most likely deal with single design problems, single use, single contractor, and most important takes place in the private sector. Social, economic and

environmental problems are pressing forces in almost all cities around the world, regardless of their level of development, etc. Pollution (air, water, soil, visual,...), traffic, waste management, overcrowding, injustice, poverty, crime, alienation, segregation, housing shortages,... urban sprawl, blight are common problems in all cities everywhere.

Gosling (1984a, b) suggests that urban design is concerned with the physical form of the public realm over a limited physical area of the city and that it therefore lies between the two well-established design scales of architecture, which is concerned with the physical form of the private realm of the individual building, and town and regional planning, which is concerned with the organization of the public realm in its wider context (Gosling 1984a, b, p. 9). So it further becomes clear that urban design deals essentially with public realm, but its subject matter requires artistic, as well as scientific approaches. Its content includes social, economic, demographic, environmental, aesthetic, physical, spatial and symbolic values, both as substances and procedures of urban design. Economic factors are extremely powerful determinant of land use patterns, density, and urban form. The form of today's city tends towards three dimensional representation of land values. Overcrowding, injustice, lack of safety and security, crime and violence, frustration, alienation, isolation, segregation, delinquency, inequality, blight, social stratification have their roots in the economic, social and demographic factors. Beautification is probably the oldest aspect of city design, which is relatively well understood, not only by designers and authorities, but also by the layman. The same is also true with engineering factors, such as traffic engineering and infrastructure, simply because they are functional and their role can be understood by all users, and any deficiency in these elements is clearly reflected in the overall functioning of the city. Along with, and as a consequence of, urbanization and industrialization environmental and ecological issues have become increasingly critical in any urban design decision.

Political, technical, technological, as well as cultural and behavioral issues are also significant forces in urban design. As we saw the city, its inhabitants and functions are extremely complicated phenomena whose problems interact in complex ways. Now this constitutes the context and the subject matter of today's urban design.

Addressing some of the problems in defining urban design, Anne Vernez-Moudon describes concentrations of inquiry in this field, including urban history studies, picturesque studies, image studies, studies of environmental behavior, place, material culture, topology-morphology and nature ecology, and provides a useful list of major contributors in each area (Vernez-Moudon 1992, pp. 331–49).

Richard Marshal (in Krieger et al. 2009) suggests this definition for urban design in 'The Elusiveness of Urban Design': "Urban design...is a 'way of thinking.' It is not about separation and simplification but rather about synthesis. It attempts...to deal with the full reality of the urban situation, not the narrow slices seen through disciplinary lenses." In the same direction Douglas Kelbaugh defines Urban Design as an art not a science or an engineering discipline, but a social and public art...Unlike a painter or sculptor, in every aspect of my work I am responsible not only to myself, but to my fellow man and to future generations (cited in Brown et al. 2009, p. 4). These open-ended, nonhierarchical stances are especially important for the new approach proposed in this book. Urban design may be regarded as an art or technical practice involving the physical organization of buildings and spaces, towards a civic purpose (Marshall 2012).

legitimacy of the field, nature, characteristics and components of its knowledge base, its methods and approaches and finally its jurisdiction and its relationship with other areas and fields are examples. These are the important issues in any field, including urban design, which give an idea of the subject a particular field deals with, the body of knowledge it has constituted and the tools one may employ to possess the field and be able to communicate in it. Clarification of these issues will define the field and set its boundaries. Lack of such a clarification, on the other hand, will result in confusion, frustration, and inefficiency in the professionals' and practitioners' efforts to achieve urban design goals.

Though urban design is the most traditional field of planning, it sorely lacks cohesive theoretical foundations. Much writings takes the form of guidebooks or manuals, which rely on rules of thumb, analytical techniques, and architectural ideas whose theoretical justifications are unclear. At best we have a number of contending approaches, such as Formalism and New Urbanism, which tend to operate in a theoretical vacuum, as if cut off from larger streams of planning thought, and to invite dogmatic adherence (Sternberg 2000, 265).

The contemporary practice of urban design, according to Barnett (2003) began in the 1960 as reaction against the failures of modernism to produce a livable environment. To make cities more livable, urban designers countered modernist ideology by protecting historic buildings, by making the street the primary element of urban open space, and by using zoning and other development regulations creatively to put new buildings into context and preserve a mix of different activities (Barnett 2003).

Most of the existing urban design literature is on urban form and its attributes. Some urban geographers (Scargill 1979; Foley 1964), for example, have looked at urban form from morphological point of view, i.e., its physical fabric, office and manufacturing functions, and the assemblage of structures that are the spatial expression of urban phenomena, such as economic, social and political processes. Efforts have also been made to develop appropriate tools

2.2 Existing Urban Design Knowledge Base

Any investigation of the knowledge base requires the study of the theory of knowledge. The theory of knowledge, or what is known in philosophy as *epistemology*, deals with fundamental questions that arise in conjunction with the emergence of a new study area, or of an already established one that is developing. Questions such as the

and methods which the physical environment can be explained, analyzed, recorded and designed effectively, systematically and rationally. The majority of these methods deal with the relationship between man and his environment, and the perceptual and visual aspects of urban form.

Among various efforts made in this regard, Kevin Lynch's works are especially distinct. His well known book, *The image of city* (Lynch 1960), for example, is a tightly woven argument moving between concepts of perception and real-world research resulting in an explanation of how different formal aspects of the city design can be more or less manifested in the environment.

For Kevin Lynch, the city designer had to deal with the experiential quality of the city, what he often called the "sensuous qualities" or simply "sense" of place (Bannerjee and Southworth 1991, p. 6).

In another effort called, *City design and city appearance*, Lynch (1968) suggests a general list of perceptual criteria to be used in the analysis and research of urban form. In a quite unprecedented effort, Lynch and Rodwin (1958) provide a significant analytical methodology for the analysis of urban form.¹ For a systematic analysis of urban form they suggest six criteria: Element types, quantity, density, grain, local organization and general spatial distribution. The exceptional value of this method is that for the first time an analytical method, and not a descriptive one, is used to analyze and understand the varied effects of different physical forms. The most significant contribution of Lynch, however, is his last book, *A theory of good city form* (1981), which as a comprehensive study on urban form, includes all his previous findings. The most distinctive part of this study, which seems to be the very core of the book, is the normative criteria for the evaluation and analysis of urban form. *Wasting away* by Kevin

Lynch (1991) is in different direction than his previous works. It is a dark study showing a growing recognition that decay and waste are a necessary part of contemporary life. A collection of Lynch's remaining unpublished work was published in 1990 with great efforts of Tridib Bannerjee and Michael Southworth: *City sense and city design: writings and projects of Kevin Lynch*.

In a related but different context, Thiel (1961) has created a 'space score' which organizes the physical forms perceived by a person in motion as he/she changes speed and direction. Thiel is one of the most significant contributors of notations, perception, communication and participation in design. His major work: *people, paths and purposes* (Thiel 1997), which is based on extensive study of over forty years, covers all these areas. Appleyard et al. (1964) have also built upon this technique, placing the elements seen along a highway into such a 'score' as a way of developing techniques for communicating both orientation to place and the experience of the person in motion in relation to his surroundings. Halprin (1964) has established another technique for recording a behavior circuit. Appleyard's work, *Livable streets* (1981), provides a broad range of techniques for the evaluation and analysis of streets, neighborhoods and their components. Kostoff, through his two remarkable books (*The city shaped* 1991; and *The city assembled* 1998) made a great contribution to the analysis of urban patterns.

Katz (1994) gives an explanation of the principles of the new urbanism, with twenty-four case studies include the best-known and perhaps most controversial development of the new town of Florida, Seaside. In his "City of bits", published in 1996, William J. Mitchell described a new vision of urban living. The use of the new communication technology will have profound impact on space and time relationship and eventually the future shape of our cities.

Two other most important and valuable efforts in this regard are Foley's, *An approach to metropolitan spatial structure* (1964), and Weber's *The urban place and the nonplace urban realm* (1964). The result of Foely's efforts is a valuable conceptual framework that seeks to

¹In regard to normative aspects of urban form, for example, Lynch has suggested the following seven criteria, five of which he calls performance dimensions and two meta criteria: Vitality, sense, fit, access, control, efficiency, and justice. Kevin Lynch, *A Theory of Good City Form* (Cambridge, Mass: MIT Press, 1981).

bridge spatial and aspatial aspects and values and the physical environment.

Among other designers who have contributed to the development of methods to analyze and synthesize urban form several others are worthy of mention: Sitte's *The art of building cities...* (1945), Alexander's *Notes on synthesis of form* (1964), *Pattern Language* (Alexander et al. 1977) and *A new theory of urban design* (1987), Venturi's *Learning from Las Vegas* (1977), Steinitz's *Meaning and the congruence of urban form and activity* (1968), Crane's *City Symbolic* (1960), Mitropoulos' *Space network: Toward a hodological design for urban man* (1975), Choay's *Urbanism and semiology* (1975), Bogdonovic's *Symbolism in the city and the city as symbol* (1964), and Tugnutt and Robertson's *Making townscape* (1987).

In Camillo Sitte's classic work *City Planning According to Artistic Principles* (1965, first published in Vienna in 1889) and much later in Edmund Bacon's *The Design of Cities* (1974), good urban design was to be based on artistic principles of *good form*. Though in each of their works "art" is sometimes meant in the romantic sense as the exercise to the artist's inscrutable genius, at other points, and more importantly for present purposes, art also reflects principles that can be explicitly communicated (Fig. 2.1). These principles are based on the geometry of visual perception, the scale of beholder's body, and the continuity of the beholder's experience.

We can best understand the implications by looking at Sitte's major concern, the urban plaza. The underlying principle is that the plaza should

be made into a cohesively observable whole. It is in this respect that we should understand Sitte's dictum about proportion. He further asserts that a noteworthy building that is taller than wide should receive a deep plaza, while a building that is wider than tall would benefit from a wide plaza. Though these rules of proportion may seem arbitrary, they reflect an implicit theory about the cohesiveness of the beholder's experience of the plaza (Sternberg 2000, pp. 268–270).

Edmund Bacon (1974) adds a number of additional guides to good form, demanding that good design should interlock and interrelate buildings across space. Bacon stresses that the human experience of this articulated space happens along an axis of movement. To define this axis, the designer may strategically place small and large buildings to create scale linkages receding in space; or insert in the landscape on arch, gate, or pair of pylons that set the frame of reference for structures appearing on a recessed plane (Sternberg 2000, p. 271).

Christopher Alexander was committed to the social nature of built space. His research in the 1960s was dedicated to finding ways of configuring social forms and relationships spatially. In his books of 1970s, he reverted to a humanism, similar to that of Mumford's 1950s writing. In particular, what emerged in *A Pattern Language* (1977) was his commitment to the view that the value of architecture is in its capacity to enable individuals to realize their collective existence as social beings.

The vocabulary Alexander used to describe this, is interesting. "Towns and buildings", he writes, "will not be able to become alive, unless they are made by all the people in society, and unless these people share a common pattern language"(x) (Alexander et al. 1977).

There are, however, increasing number of theorists who explicitly oppose to Alexander's *Pattern Language* on the grounds of impracticality, lack of test, etc. (see for example Moudon 1992, 2000).

On the other hand Dutch architect Hertzberger (1991) suggests that just as mankind is distinguished by its use of language, so too does mankind have the facility to adopt and give



Fig. 2.1 Florence, Piazza of the Signoria. The relationship between buildings, monuments and public squares (from Sitte p. 9)

meaning to spaces, like language, this is not something that can be controlled by anyone individual, but is negotiated socially. This led Hertzberger to be strongly influenced by phenomenology, and the assumption that architecture is a means to revealing what it is to be in the world as a social being.

Hertzberger's descriptive language is borrowed in part from linguistic theory—hence his liking for “structure”—but in all other respects it is heavily reliant on the conventional modernist vocabulary: “form”, “function”, “flexibility”, “space”, “environment”, “articulation” and “users” are recurrent words.

Forty (2000) by questioning the capability of language in two respects: (1) Limitation to describe the “social” aspects of architecture and (2) not having the capacity to show the relationship between social practice and physical space, has put together a series of characteristics as words or vocabulary of modern architecture.

As we know, the relationship between architecture and verbal language has not been much talked about, even though, as one architectural theorist, Tom Markus, recently pointed out, “language is at the core of making, using and understanding buildings” (Markus 1993). Forty (2000) suggests the following characteristics as the vocabulary of modern architecture: Character, context, design, flexibility, form function, history, memory, nature, order, simple, space, structure, transparency, truth, type and user. Obviously, these are too general and vague to be of any use in architecture—building meaningful and purposeful buildings.

Christopher Alexander (Alexander et al. 1987) in his “A new theory of urban design”, along with his five other books, has claimed to have provided a complete working alternative to the present ideas about architecture, building, and planning. He has considered the laws of wholeness as the main quality of urban design. The task of creating wholeness in the city, according to Alexander, can only be dealt with as a process, i.e., the centering process. To achieve this goal he postulated one overriding rule—wholeness, and seven rules of: piecemeal growth, the growth of larger wholes, visions and the basic rule of positive urban space,

layout of larger buildings, construction and formation of centers. He further suggests that urban design as “process” may be taken, in the economic sense, as the response to the power of economic forces shaping the structure of the city not as a physical end but rather as part of a dynamic process. Alexander maintained that it was the process, above all, which was responsible for wholeness, not merely the form. This “wholeness”, Alexander said, can be provided by the definition of a number of geometric properties with a centering process.

Gosling (2003) reviews the historical development of the discipline and practice of urban design in America during five decades of 1950 to 2000. Other efforts in this respect are: Gosling and Maintland's *Concepts of urban design* (1984), Cullen's *The concise townscape* (1971), Row and Koetter's *Collage city* (1978), Krier's *Urban space* (1979) and *Leon Krier: Architecture and urban design 1967–1992* (1992), Aravot's *From reading of forms to hierarchical architecture: An approach to urban design*, Broadbent's *Emerging concepts in urban space design* (1990), Tibbalds's *Making people-friendly towns* (1992). Calthorpe (1989) has suggested what he calls simple clusters of housing, retail space and offices within a quarter mile radius of transit station. Lang (1994) makes an attempt to unite architecture and city planning, and also enhance urban designers' graphic and verbal communication skills. According to Lang contextual design is the most important element in urban design because without context, the city becomes fragmented. Lang examines the social and environmental issues within the context of American urban history. Lang proposes four types of urban design: The urban designer as a total designer, all-of-a-piece urban design, urban designer as the designer of infrastructure, and urban designer as designer of guidelines for design. Barnett (2003) states that urban design requires a different process from designing a landscape or building (a process involving government, communities, investment and entrepreneurs). According to Barnett urban designer should have enough knowledge of the social sciences to be able to make diagnoses about the social dynamics of the community. Barnett's main idea is urban design as public policy (1874 and 1982), he later

suggests five principles as the basic principles for city design: community, livability, mobility, equity, and sustainability (Barnett 2003). Gosling (2003) has called the techniques used by Cullen theories of the picturesque or theory of 'social vision'—sequential three-dimensional experience by moving through the city and annotating these experiences in the form of sequential perspectives.

Hedman (1984) suggests that to achieve design unity involved the establishment of seven rules: building silhouette; space between buildings; setback from street property lines; proportions of windows, bays and doorways; massing of building form; location and treatments of entryways; surface material; finish and texture; shadow patterns from massing and decorative features; building scale; architectural style; and landscaping. Hedman regards conceptualism as one of the current trends in urban design.

Postmodern Urbanism (Ellin 1996) covers variety of writers of urban studies of the 20th century, e.g.: Katz, Peter Calthorpe, Robert Venturi, Charles Jencks, Denise Scott Brown, Elizabeth Plater-Zyberk, Doug Kelbaugh, Frank Gehry, Richard Sennett, Michael Graves, Paolo Portoghesi, Peter Blake, etc.

In an ambitious, but interesting paper, Sternberg (2000) has proposed "*an integrative theory of urban design*". He, then, identifies the integrative principles through which urban environments can transcend commodification. The principles are: good form, legibility, vitality, and meaning. He further also adds comfort to these principles.

Sternburg points out that since all these capacities to experience are combined in one beholder, the designer's task is that of integrating them through the principles of composition. Sternberg suggests foremost among these principles of composition is *continuity*. According to Sternberg, participant's experience of the city coheres according to several integrative principles, which can be understood separately or in combination. Nodes and enclosure, fine grain and ascent into space, mixed use and myth, permeability and relative proportion—guided by explicit integrative principles, the urban designer

must compose across experiential domains to produce a continuity of experience (Sternberg 2000, p. 275). Sternberg uses five criteria to be met by his integrative theory: being inclusive, substantive, based on human experience of built form, commodifiability as well as uncommodifiability, and to guide practice.

Without going into a lengthy discussion on the plausibility and validity of Sternberg's claim on the integrative theory of urban design, a few critical questions may be raised: (1) Isn't the Lynch's suggested theory in *good city form* more inclusive and practical than Steinberg's? (2) as an integrative theory it does not deal with procedural issues, (3) the principles suggested are not actually principles, but goals of urban design., (4) there are many other goals which could be included in the list, such as: safety, security, accessibility, environmental sustainability, etc., (5) and most of all the proposed theory does not really do what a theory is expected to do for the members of the discipline, as well as for practitioners. All these problems might be referred to the kind of definition Sternberg gives for urban design and its knowledge base: "*the human experience that the built environment evokes across private properties or in the public realm*", which is too general and vague and does not serve any specific purpose.

Claiming its roots in the history of theory, the New Urbanism first exercised its influence by building a supporting base in design practice. It later added pedagogical dimension, with educational programs at the University of Miami and in the Congresses (Moudon 2000, p. 42). New Urbanism has gained prominence as an alternative to traditional U.S. suburban design, through comprehensive urban design and planning, New Urbanism seeks to foster place identity, sense of community and environmental sustainability. New Urbanism began as a modest experiment in the 1980s, since then, its influence has grown significantly (Day 2003, p. 83).

At the neighborhood level, New Urbanists recommend that mixed uses (commercial, civic, residential, public spaces, and other) be incorporated in each community. The goals are to

provide jobs near where people live and allow residents to walk or bicycle to the places they need to go. Similarly new urbanists recommend that neighborhoods incorporate alternative forms of transportation to decrease auto dependence. The Charter further recommends that neighborhood design should reinforce the unique identity of each place by adopting a consistent and distinctive architectural style that draws on local history, culture, geography, and climate (Congress for the New Urbanism 2000).

New Urbanism's highest profile "urban" projects include the HOPE (Housing Opportunities for People Everywhere) IV renovating of public housing. HOPE IV strives to reduce the connection of poor families in public housing and to develop neighborhoods with residents of different economic and racial/ethnic groups.

The main principle (goal) is clearly stated by New Urbanists is *design for diversity*. New Urbanism promotes the end of segregation between rich and poor (Congress for the New Urbanism 2000).

Day (2003), analyzing the New Urbanism's goal of designing for diversity raises several concerns: First, physical changes may not be the best solution for the social problems these neighborhoods may face. Furthermore, New Urbanism ideas—"mixed use," public space, "and so on—may conjure different meanings for different groups in the neighborhood. At the same time, New Urbanist renovation may displace low-income residents from the neighborhood. Finally, New Urbanist participatory design processes may not accommodate diversity.

Moudon (2000) on the other hand, seems to be in support of the New Urbanism when she states that "as a theory, New Urbanism is notably and refreshingly free of the grand statements and obscure rationale typical of many urban design theories. As a movement, its focus is practical and didactic, providing simple, clear and hand-on directions and guidelines for designers, planners and builders making towns" (Moudon 2000, p. 38). But as she points out, its validity as an urban design theory is to be investigated: "A logical next enabling step would be to develop a research

program that would establish a substantive foundation that would test and validate the movement's ideas, ground it into actual processes of city building and contribute to its long-term viability (Moudon 2000, p. 42).

Besides the designers, there have also been experts and specialists from other areas and disciplines who have tried to develop methods and theories for their own use and also for the use of designers. Among these non-designers are behavioral scientists such as Maslow (1957), Mayo (1946) and sociologists such as, Sommer (1969), Rosow (1974), Hall (1959) and Michelson (1970, 1975). Among these the efforts of Michelson to develop a new approach for environmental design is especially valuable. Among this group there is Amoss Rapoport, who is the leader in his efforts to delineate the relationship of man and environment. His major contributions are *Complexity and ambiguity in environmental design* (1967), *Human aspects of urban form: Towards a man-made environment approach to urban form and design* (1977), and *The mutual interaction of people and their built environment: A cross-cultural perspective* (1976).

There are also behaviorists such as: Francis 'Mapping downtown activities' (1984), Hubbard's *Environment-behavior research—a route to good design* (1992), and Whyte's *The social life of small urban spaces* (1980) who, by linking behavior patterns to space, have tried to find a legitimate base for rational urban design.

A group of researchers at the University College London have been working on space syntax, which is best described as a research program that investigates the relationship between human societies and space from the perspective of a general theory of the structure of inhabited space in all its diverse forms: buildings, settlements, cities, or even landscapes. The point of departure for space syntax is that human societies use space as a key and necessary resource in organizing themselves. In doing so, the space of inhabitation is *configured*—a term that space syntax recognizes as an act of turning the continuous space into a connected set of discrete units (Bafna 2003, p. 17).

2.3 Contemporary Urban Design Movements and Their Rules and Principles

Last century witnessed the emergence of variety of urban design movements, their common purpose which was to save the city and its quality against the adverse impacts of industrialization. It is obvious that the movements have the same roots in urban planning as in urban design, and for the most recent ones the implication for urban design is to be seen in the future. Each movement is based on certain rules and principles, which will be reviewed briefly.

2.3.1 Park Movement

Park Movement was created as a response to the deteriorating conditions of American cities in 19th century. The movement was based on the revival of the relationship between man and nature. When Barron Haussmann was busy with the urban renewal of Paris, Frederick Olmsted founded the Park Movement in the United States. The success of Olmsted in building Central Park in New York made him the prominent landscape architect of his time.

One of the fundamental principles of this movement was establishing parks in order to preserve breathing space for the future of cities. The second important principle was an effort to connect city life with life in nature. Organic forms and design, rather than geometrical shapes, natural green spaces and lakes were the dominant elements used under this movement (Figs. 2.2, 2.3 and 2.4).



Fig. 2.3 Central Park in Manhattan, the first real experience of the park movement, by Olmsted



Fig. 2.4 The kind of scenes in Western cities which led to the creation of park movement

2.3.2 City Beautiful Movement

Sitte (1945) criticizes modern city planning as lacking artistic taste and regards city design as civic art. She has a romantic three-dimensional view for the city, applying a mix of classical Greek, Rome Empire, Italian Renaissance, Paris Haussmann and Beaux Arts, as neo classicism style of architecture. “Good of the Whole” was the motto of the movement to produce unity and

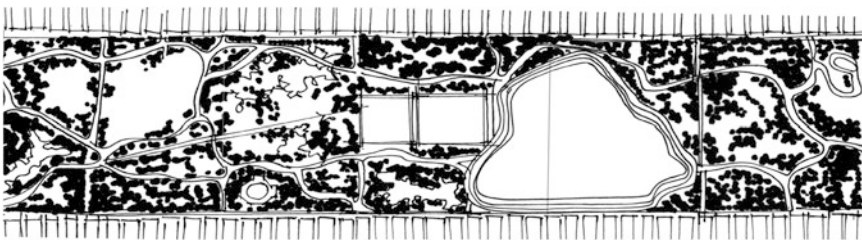


Fig. 2.2 Central Paris as one of the greatest scheme of the city beautiful movement (Brown et al. 2009, p. 6)

cohesion between the urban components and elements. Balanced relationships between these elements is regarded as beauty.

City center is the dominant element of urban design and the core of the physical and cultural aspects of the city. The centre is connected by roads from all sides, visually and physically. Public spaces are the identity of the city.

It is, however, Daniel Burnham who played the key role in introducing the Movement to the world. His vision of the city design is summarized in the following statement:

men's blood and probably will not be realized.
Make big plans, aim high in hope and work,
remembering that a noble, a logical diagram, once
recorded will never die...

Daniel Burnham's more widely known 1909 City Beautiful Plan for Chicago, with a grand boulevard system overlaid on local streets with great waterfront parks and civic buildings, influenced city development throughout the twentieth century. Movement's principles are: Urban design as civic art, balance between urban elements to create a unified and cohesive unit, city center is regarded as the dominant urban design element and the physical and cultural center of the city, visual and spatial connection of all city roads to the center create a unified and centralized structure, good of the whole, geometrical forms and order.

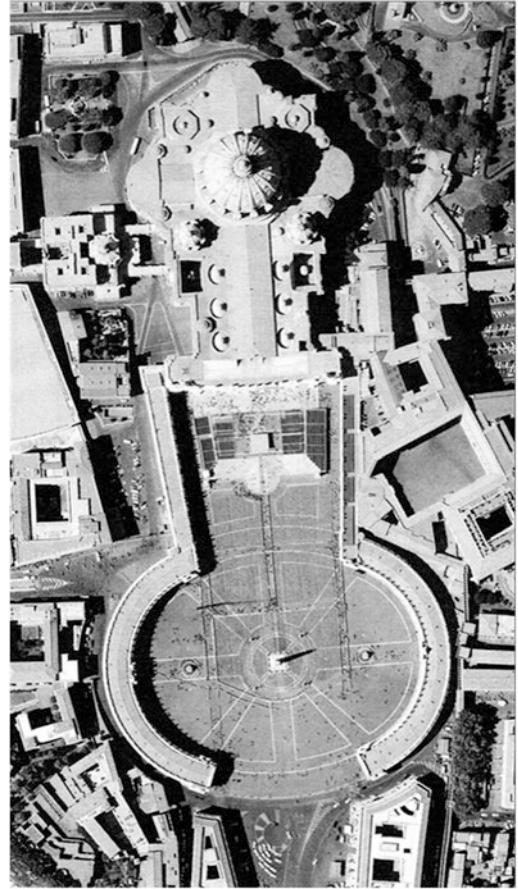


Fig. 2.5 Piazza San Pietro, Vatican City, 17th century, as the origin of city beautiful movement (Source Brown et al. 2009)

2.3.3 Garden City and New Town Movements

Ebenezer Howard proposed the landmark garden city concept in 1898 that included self-contained, self sufficient communities surrounded by green-belts. Howards's vision influenced several generations of urban designers in Europe and the United States, including many elements of contemporary new urbanism movement (Figs. 2.5, 2.6, 2.7, 2.8 and 2.9).

At the macro scale, garden city was based on two principles: one to draw urban life into the

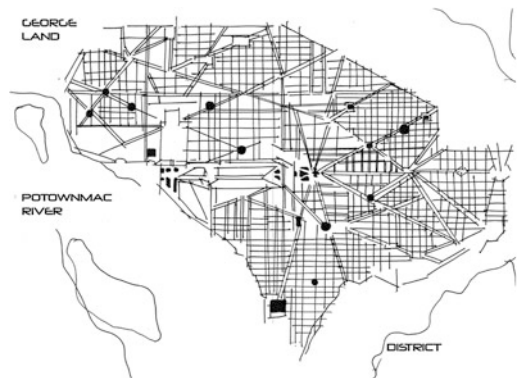


Fig. 2.6 The pattern used by L'Enfant for the plan of Washington, D.C. (Source Morris 1979)

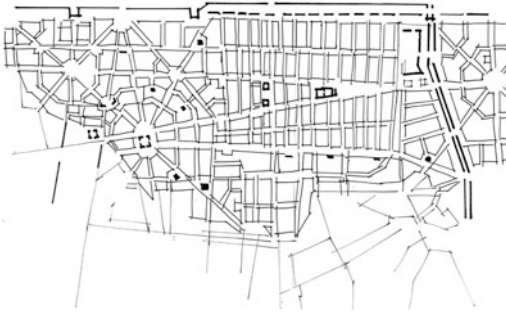


Fig. 2.7 The pattern used in the reconstruction of part of London which was damaged by fire in 1666 (Morris 1979)

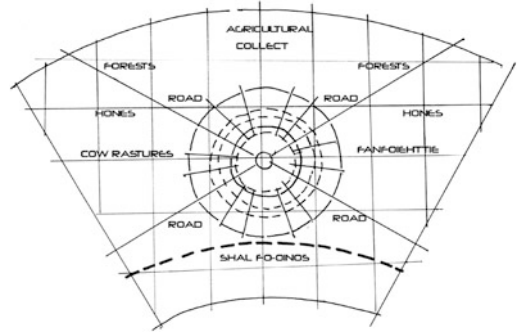


Fig. 2.9 Howard's diagram of the Garden City (Fishman 1977)

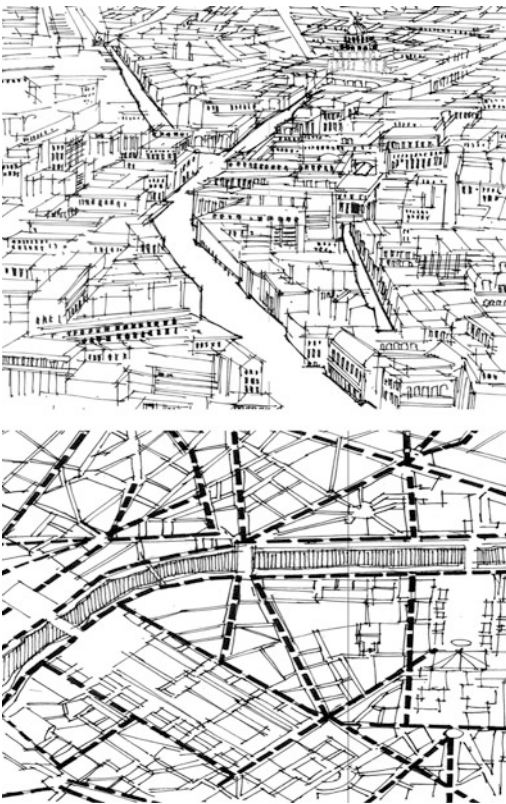


Fig. 2.8 Central Paris as one of the greatest scheme of the city beautiful movement (Brown et al. 2009, p. 6)

countryside, in order to create an environment that combines city life advantages with the rural beauty and this new settlement will replace

existing cities. The second principle was decentralization. At the micro scale Howard believed in two principles of unity and symmetry. Although Howard's Garden City did not succeed in application, it had significant influence on the future movements of city planning and urban design, including new town movement, urban village, etc (Figs. 2.10 and 2.11).

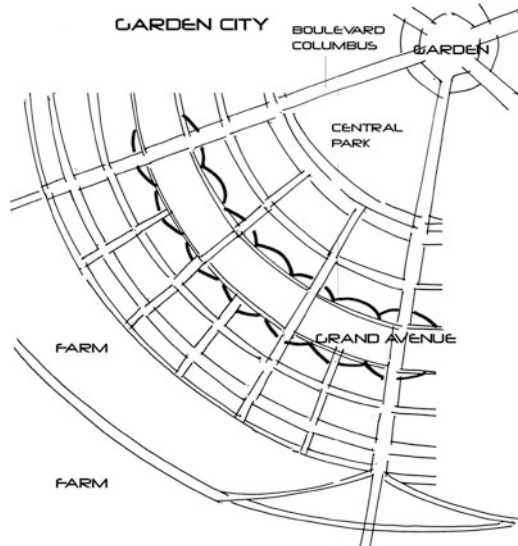


Fig. 2.10 Diagram details for a proto-typical Garden City—ward and Centre of Garden City—proposed by Howard, as the main component of the Garden city. School is located at the core of the neighborhood, where is connected by a pedestrian Grand Avenue (*Source* Dixon et al. 2009)



Fig. 2.11 Welwyn Garden City, diagram of general town plan (Neal 2003)

2.3.4 Modernism

Modernism is the only movement in the 20th century to grow and expand to become a universal school of thought. Several different factors justify this major shift: John Maynard Keynes's ideas introduced economic justification, doctrine of Luther on Protestantism provided religious justification, international expos, introduce experimental justification, reconstruction of the post-war Europe, was practical justification and cross subject application (in arts, literature, architecture, and city planning) contributed to its universalization. The new science and technology prepared the context for all these changes. Various thinkers and theoreticians put these new changes in the context to introduce theoretical and philosophical justification for such a paradigm shift.

Modernism principles were based on hygiene, justice, modern technology, building materials and techniques, speed, form efficiency and the idea of form follows function, minimum aesthetics and avoiding decorative elements, ideal city, high density, master design, expressways, zoning, mass production and standardization (Fig. 2.12).

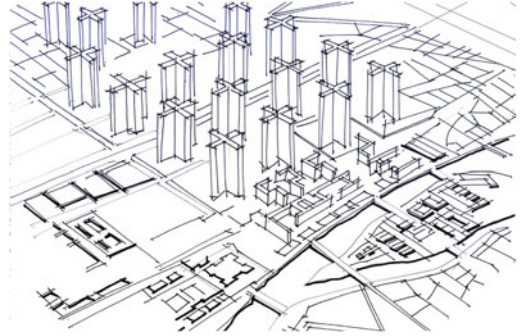


Fig. 2.12 A scale model of the plan vision, 1925, (Fishman 1977)

2.3.5 Megastructuralism

The most significant principle in mega-structural design is putting variety of elements and their relations in one point and one single building in order to all elements and relations benefit from each other. The proposed megastructure is free from surroundings and designed in a way to function independently.

Metabolism, mega-form and collective form (Figs. 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20 and 2.21).

The architecturally philosophical concept of metabolism dates back to 1960s. The leading figures at the start of the Metabolic movement were Kenzo Tange and Kisho Kurokawa as well as Kiyonori Kikutake and architecture critic Noboru Kawazoe. Their architectural approach linked the late modern, technologized New

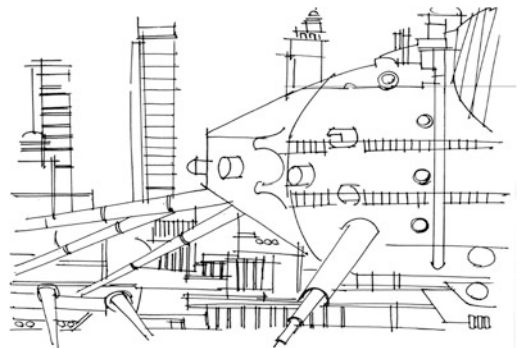


Fig. 2.13 Waling City, as mega structure, By: Herron (1964)

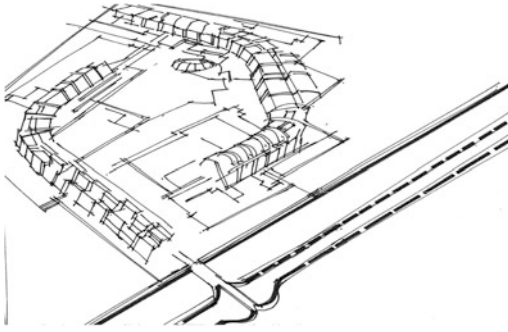


Fig. 2.14 Metabolism, mega-form and collective form

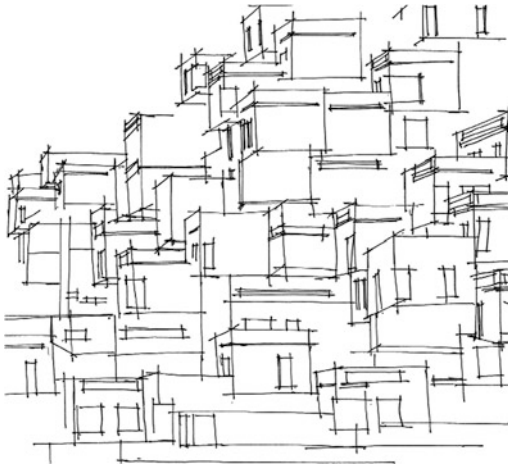


Fig. 2.15 Mega form, Moshe Safdi: habitat. A community of 25,000 (from Banz 1970, p. 108)

Brutalism with the concept of architecture as analogous to biology.

In 1960, Kurokawa, together with Kikutake, Fumihiko Maki, Mosato Otaka, and Kizoshi Awazu published a manuscript entitled 1960—A proposal for a new urbanism, which expressed the basic outlook of the group members: We regard human society as a living process (Taschen 2003) (Fig. 2.22).

The city is divided into two parts: essential and nonessential. The essential part (main structure) is fixed and stable in the short time, but the rest will continuously undergo changes. This will lead to a division of responsibility of the part of public and private sector.

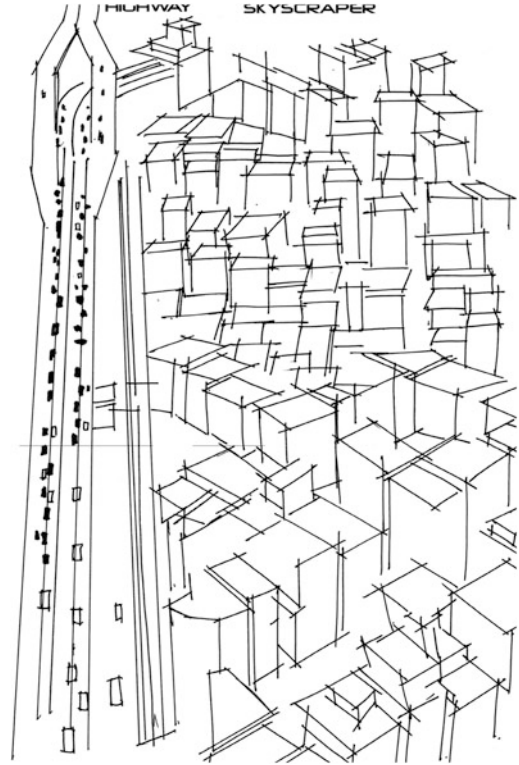


Fig. 2.16 Mega structure, a model of new Yokohama

2.3.6 Team X

Team X movement was emerged due to the inadequacy of architectural and urban design ideas that were presented in the framework of the legacy of modernism and also the dissatisfaction with the Garden City idea. Each generation should be able to have the desired form for its own place. The purpose was to find a new path and method: a new start. A different style and feeling. To know and feel today's patterns, desires, tools, transportation and communication modes in order for the society to achieve its goals. But the path to the future should be left open, because time changes everything. This was a practical utopian, and not a theoretical one. Clustering of residential units will produce meaning and lead to the dominance of man over his home. Human hierarchy should replace functional hierarchy of Athens Charter.



Fig. 2.17 Rome was built in a day, by Mark Copeland (1997)

City as a collective/public art. To revive the sense of feeling toward the environment. To eliminate the discontinuity of the city. Non-Euclidian thinking. The emphasis will be on differences, rather than commonalities. To build the spirit of the time. A new definition for the relation between man and his environment.

According to this movement urban design should follow an organic process, based on the main structure (backbone), which includes public utilities, and cluster city, hierarchy, twin phenomena (e.g. diversity vs. unity) concepts. The car is halted at the appropriate point, and vertical mechanical circulation is located at key points in the scheme (Figs. 2.23, 2.24 and 2.25).

2.3.7 Symbolism and Semiology

The main ideas behind this movement are: Historical continuity of sign, uniqueness, spatial dominance, containing unique activity, containing

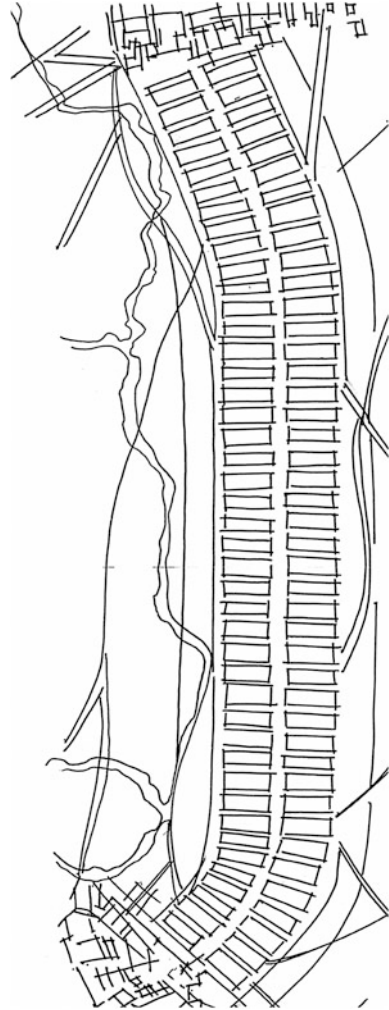


Fig. 2.18 Ciudad Lineal, a linear city capable of extension across land. By: Arturo Soria Marta (1892)

secondary features, sequence of signs, scale, location, context, preventing redundancy (Fig. 2.26).

2.3.8 Behaviorism

Giving priority to pedestrian movement in urban spaces, mix uses, involving space users in decision-making process and implementation, paying attention to human needs and characteristics are the principal ideas of behaviorism movement. One of the primary principles of this movement is creating the kind of urban space

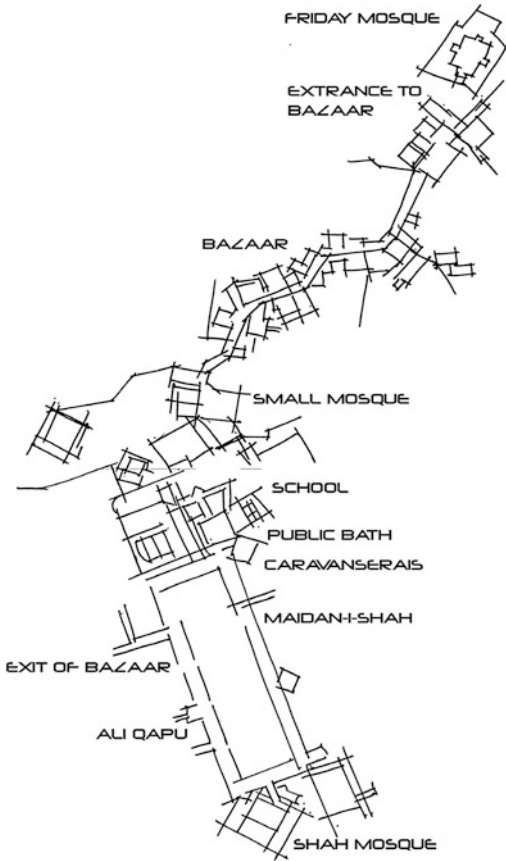


Fig. 2.19 Mega structure in Isfahan during Safavid period (Source Ardalan and Bakhtiar 1975)

that could secure behavior needs of people completely and clearly. Urban spaces can be preventive, in the same way that are provocative. Territories are determinant factors in the design of public spaces (Lang and Moleski 2011). Lang has always believed that behavioral sciences provide a great potential for developing architectural and urban design theories. In their recent book, Lang and Moleski (2011) argue that the model of ‘function’ and the concept of a ‘functional building’ that we have inherited from the 20th century Modernists is limited in scope. They propose a new model which responds to the observations about the inadequacy of current ways of thinking about functionalism in architecture and urban design.

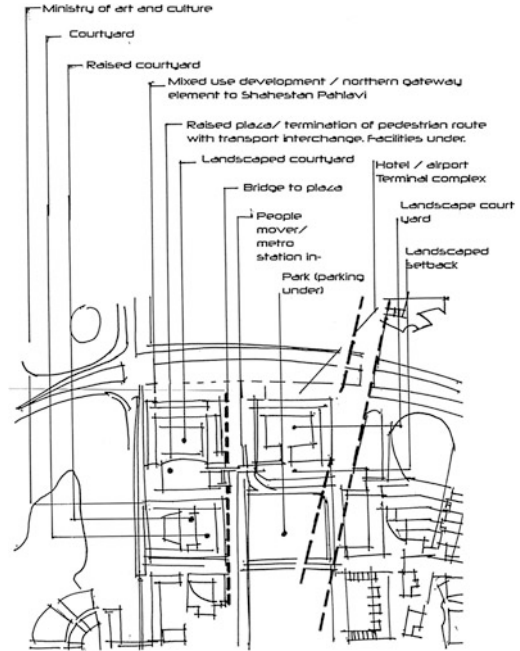


Fig. 2.20 Shahestan Pahlavi as a mega structure developed for a new diplomatic centre of the city of Tehran, in 1970s (Source Barnett 1982)

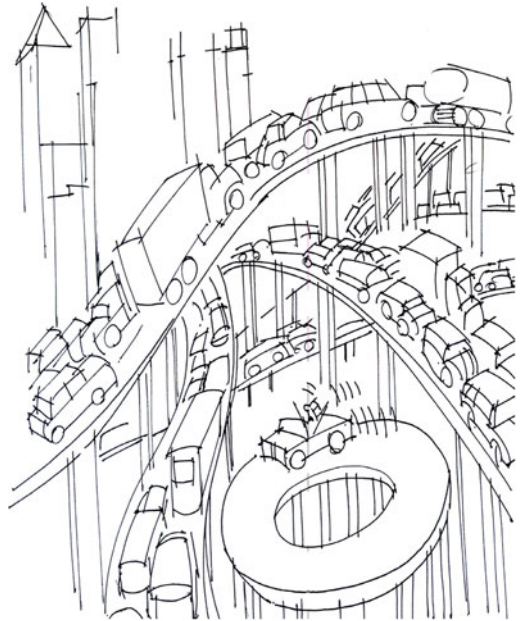


Fig. 2.21 An artist's presentation of traffic problems and solutions following the industrial revolution in the cities of the western world (Gruen 1964)

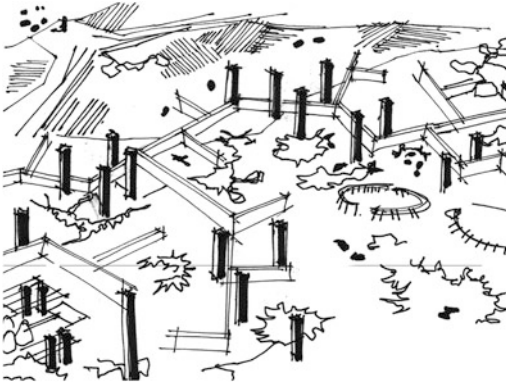


Fig. 2.22 Diagram, A.M.S. Greenspace compliments streets-in-the-air patterns for dwellings. 1952 (Smithson 1974, p. 61)

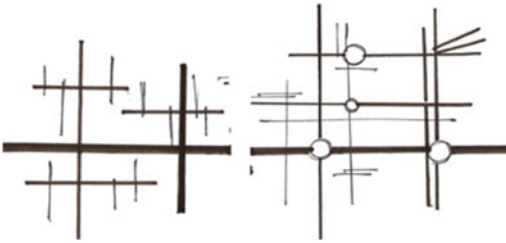


Fig. 2.23 Two types of megaform, hierarchical structure (left) and open-ended structure (right). Smithson (1974, p. 84)



Fig. 2.24 Smithson (1974), p. 95

2.3.9 Traditionalism

Over the last several years, urban designers have made a remarkably concerted movement toward

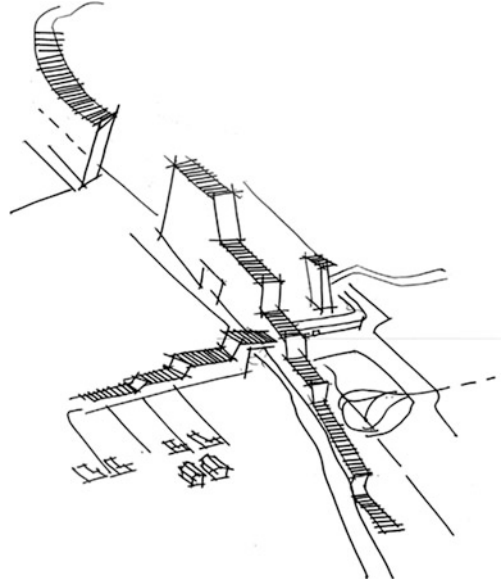


Fig. 2.25 The hierarchy of activities and spaces (Source Team X)

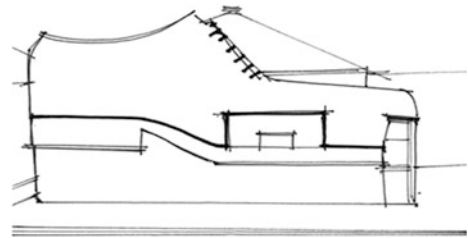


Fig. 2.26 Symbolism in urban space. Anon, Deschwan-den's Shoe Repairs, Bakersfield, California (from Jencks 1979, p. 77)

healing their breach with past. What comes through in many projects these days is a desire to apply, to today's circumstances, the traditional urban framework of streets, squares, and pedestrian-scale spaces (Fig. 2.27).

A key to the traditional city was its pedestrian orientation, and urban designers are energetically reaffirming this shoe-leather view of community structure. Key elements of traditional urban design include: Human ecology, territory, man-environment relationship, patternization, unity-multiplicity (order-disorder), sign and symbol, duality and contrast, balance, economy, and hierarchy.



Fig. 2.27 A cul-de-sac in the old section of the historical city of Tunis (photo by: authors)



Fig. 2.28 Michael Graves's landmark building in Portland, Oregon (Photo by: authors)

2.3.10 Postmodernism and Contextualism

Ethics and change in meaning and concept of time and space and uncertainty towards future are the corner stone of Post-Modernism movement. It may be regarded as Post-Fordism and Post Industrialism. Diversity, pluralism, difference, parts and fragments, heterogeneity, paying attention to women and minorities, in search of a guide in a changing world, doubt on the value of money and capital, return to realism and uniformity and totality. It is process-oriented, based on deconstructivism, decentralization, discontinuity, difference, and pluralism. It supports democratic forms, open and disjointed process, weak centers, traditional and new, and collective identity.

The last three decades have witnessed a growing awareness and engagement by a number of planning and design theorists with what has been called 'postmodernity' and 'postmodernism'. These textual excursions, in what can accordingly be termed a 'postmodern turn', have taken variety of forms, largely as a result of different readings of 'the postmodern' and planning and design (Fig. 2.28).

Jenks was one of first to transfer the term 'post-modern' from literary expression, where it was first used in 1975, to architecture. He regarded metaphor as an architectural form and

contended that architectural language of form is made up of words (established motifs and elements like the column and the pitched roof) Taschen (2003).

Diversity and multiplicity, contextualism, participation, small-scale, process-oriented, eclecticism, city as a landscape, mix uses, priority of pedestrians, decoration, dialogue, decentralization, and discontinuity are regarded as some of postmodern urban design.

2.3.11 Practice Movement

A 1974 article by Martin Krieger sets out many of the basic concepts that were later to inform the practice movement. Krieger questioned the desire for formal generalized models of planning that remain at the level of generalization and that are contextual. He goes on to argue that a model that is not formal, but rather one that incorporates people and that makes sense, is the model of the everyday life of the community. He suggest sources of theory that could be drawn on to develop this model: phenomenology, language philosophy (Wittgenstein), linguistics, ethnomethodology, and idea put forward by Habermas (Krieger 1974).

Pragmatism or practice movement is concerned with the practical application of ideas and with

what is evidently useful in an instrumental sense. Some of the key characteristics include: a recognition² of the fallibility of knowledge, an emphasis on the outcomes of knowledge rather than on the relationship of knowledge to the 'truth', an emphasis on experience rather than on abstracted theory, a rejection of the dichotomies of modern science and philosophy, for example, belief/action, theory/practice, facts/values, intellect/emotions; the centrality of community and social relationships; and a recognition of the importance of language in creating realities and in shaping social practice (Thayer 1968; Seigfried 1995). Gradually a number of planning and design theorists have come to accept the conceptual openness and radical indeterminacy of pragmatist thought. The following movements are directly or indirectly influenced by the pragmatist thought (Watson 2002). Hoch (2007) describes the pragmatist approach of how meanings are made to understand "comprehensiveness: in a systemic rather than an analytic way through analogy and metaphor writes: instead of using comprehensiveness to mean complete, we can use it in this pragmatic sense to describe a richer and more meaningful grasp of unfamiliar relationships in terms of more familiar ones. The pragmatic approach makes room for practical wisdom, public sentiment, and imaginative conjecture as these add value to the meaning of the consequences that ensue as people act on a comprehensive plan (Hoch 2007, pp. 278–279) (Figs. 2.29, 2.30 and 2.31).

2.3.11.1 New Urbanism

The last few decades have seen what must be one of the most dramatic reversals in urban design theory from modern urban order in the decades following the Second World War, to a neo-traditional urbanism, which can be described as the philosophy and practice of recreating the best of traditional urbanism for today. This was perhaps the most significant movement in urban planning and design in recent decades, because it



Fig. 2.29 Robert Venturi's postmodern architecture and urban design. Seattle museum of modern art (Photo by the authors)

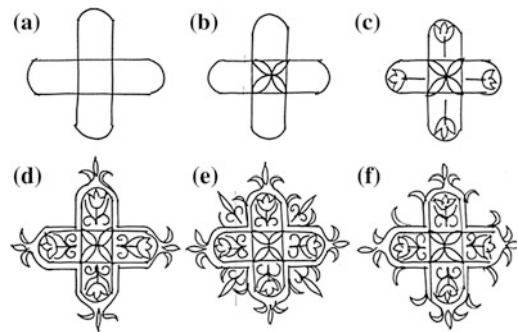


Fig. 2.30 Various forms of symbolic application of cross in Christianity

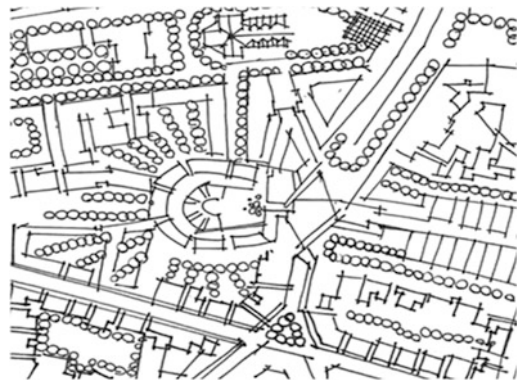


Fig. 2.31 Robert Krier' plan for part of Stuttgart, Germany (1979). (From Brown et al. 2009, p. 73)

²Human knowledge is defined by Hegel as the 'result or product of a process called cognition, which is the process or act of knowing. G.W.F. Hegel, quoted in *Problems of Knowledge* by Earnst Cassirer (New Haven: Yale University Press, 1950), p. 3.

constitutes a clearly identifiable movement, with well-defined aims and methods, and principles set out in the Charter of the New Urbanism (see Marshall 2009).

New Urbanism is a philosophical and practical way to recreate the best traditional urban form for today, such as court yard and mixed use streets. It is a neo traditional movement based on pragmatism, which focuses on public realm, relation between work and living, environmental sustainability, product (rather than process, which is contrary to communicative planning) and quality of life. Some regard New Urbanism more as an ideology, rather than theory.

New urbanism refers to a design-oriented approach to planned development and may regard it as one of the movements of the practical movements. According to this movement development should be based on compact pattern and a mix of different housing types, and mix uses. Land uses should be distributed in a way to let people walk to their destinations easily and in short time. New Urbanism involves an urban form that stimulates neighborliness, community involvement, subjective feelings of integration with one's environment, and aesthetic satisfaction. As a theory, New Urbanism is free of the grand statements and obscure rationales typical of many urban design theories. As a movement, its focus is practical and didactic, providing simple, clear and hands-on directions and guidelines for designers, planners and builders making towns (Fig. 2.32).

The Congress for New Urbanism has formulated some principles under the Charter of New Urbanism in three categories of: The region: Metropolis, City, and Town; The Neighborhood, the District, and the Corridor; and the Block, the street, and the Building (Congress for New Urbanism 2001).

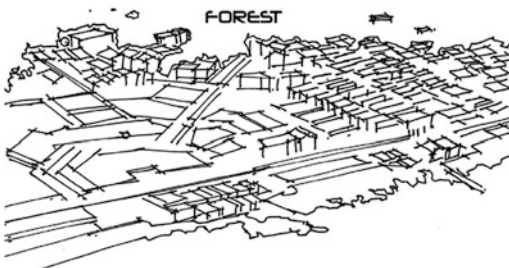


Fig. 2.32 Seaside (Florida) by Dauny @ Plaer-Zyberk in 1983 (from Kostof 1991, p. 277)

2.3.11.2 Transit-Oriented Development (TOD)

Transit-oriented development, emphasis on city centre, regional development, historical preservation, green buildings, safe streets, redevelopment of brownfield lands, self-sufficient neighborhoods, neighborhood centers. Variety of building types, mixed uses, intermingling of housing for different income groups, and a strong privileging of the "public realm." The basic unit of planning is the neighborhood, which is limited in physical size, has a well-defined edge, and has a focused center (Figs. 2.33 and 2.34).

2.3.11.3 Urban Village

The 'urban village' is another model of neo-traditional development that appeared first in

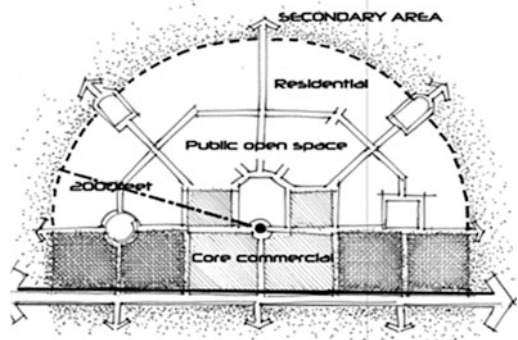


Fig. 2.33 Generic plan for a transit-oriented development (Calthorpe 1993)

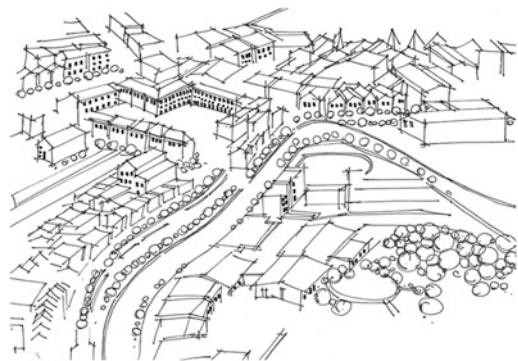


Fig. 2.34 Celebration Park, Florida, a New Urbanism project, 1994

the early 1980s in the UK and in the late 1980s in the United States (Aldous 1992; Neal 2003). The popular idea of sustainable development in the 1990s contributed to the formation of the goals of the urban village. According to the Urban Villages Forum, an urban village is a settlement created on a greenfield or brownfield site, or out of an existing development. Its features are high density; mixed use; mix of housing tenures, ages, and social groups; high quality; and walkability (Aldous 1992). Citing examples from the United States and Canada, Kenworthy (1991) states that the urban village is a trend that attempts to respond to an emptiness in community life and fulfills deeply felt needs for convenience, efficiency, beauty, and connection to a larger portion of humanity. Other reasons for the trends toward the urban village include factors such as traffic congestion, pollution, infrastructure costs, and low quality of life.

Urban village principles: a development of appropriate size and density, walkability, appropriate combination of uses and job opportunities, diversity of architecture, sustainable urban form, mixed income of residents, income producing uses, providing basic needs of shopping, health and education, relative self-sufficiency, lower car-dependency, citizens participation in decision-making (Fig. 2.35).



Fig. 2.35 The key components of a mixed-use and integrated neighborhood proposed by the Urban Task Force (Neal 2003, p. 8)

2.3.11.4 Traditional Neighborhood Development (TND)

Traditional Neighborhood development movement is counter-revolution and against suburban sprawl. It uses morphology and typology and focuses on spatial order, as well as diversity, by using traditional concepts of urban design. The design base unit is neighborhood, which is defined, limited and has specific center. Unique identity of each place is emphasized (architectural style is derived from local history, culture, geography and climate), and the sense of neighborhood is promoted.

A subset of urban villages comprises traditional neighborhood developments. Typically new construction, often built on greenfield sites, TNDs are more compact than the usual subdivision, favor walking over driving, mix uses where possible, and provide narrower roads, few or no cul-de-sacs, and common greens and squares (Fig. 2.36).

2.3.12 Critical Theory

Critical theory is an evaluative attitude towards reality, a questioning rather than an acceptance of the world as it is, a taking apart and examining and attempting to understand the world. It leads to a position not only necessarily critical in the sense of negative criticism, but also critically exposing the positive and the possibilities of change, implying positions on what is wrong and needing change, but also on what is desirable and needs to be built on and fostered (Marcuse 2009).

Critical theory which is also placed under the headings of “communicative” and “collaborative”

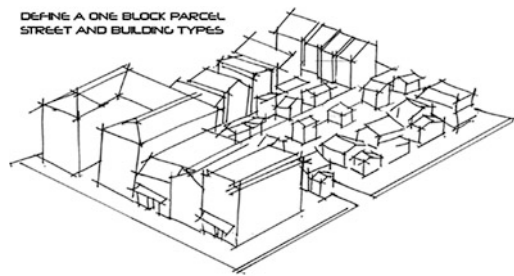


Fig. 2.36 Form-based development

modes, has provided the main theoretical and philosophical foundation.

Public domain is where political life and participation in political activities is open to all citizens and all people. Three kinds of interests may be found: Instrumental interest, which determines the relationship between humans and nature and physical and material environment. Practical interest, which deals with understanding, communication and also inter-mind relationship. And emancipating interest, which represents the ability and capability of humans in critical thinking, self-knowledge and rational action. A knowledge which lead to the increase of independency and responsibility. In the same way, critical theory relies on communicative action, rather than instrumental or deliberate rational and strategic actions. But in the case of knowledge, the three kinds of knowledge are used together: practical knowledge, which governs the method of control and intervention in the environment. Experimental knowledge, which deals with the social interaction among humans. And the emancipating knowledge, which deals with emancipating the controlling forces of his/her decisions—self knowledge.

Within the practice movement, the communicative theorist appear currently to hold a dominant position, largely inspired by the writings of Habermas. This approach focuses broadly on processes of communication and knowledge producing in planning and design. Critics of modernity, rely on communicative rationality, mix of science, ethics and art, continuous criticism, education, duality, and normative principles. Communicative model, which is the result of communicative rationality, means practices that allow people to shape the places in which they live. In communicative action, process design is participatory, transparent, and evolutionary. The goal is to enhance the quality of deliberation and lead to consensus-based decisions. Seeks to approach conditions for undistorted communication and discover and reconcile issue frames. Meeting leader actively manages deliberation processes. The goals are innovative plans and building social and intellectual capital. In the case

of implementation, it pays attention to the “story” of the design effort and attends to relationships that will support participation. The term collaborative planning feature as an increasingly prominent part of the vocabulary used in the range of planning and design literature.

Critics of modernity, rely on communicative rationality, mix of science, ethics and art, continuous criticism, education, duality, and normative principles. Communicative model, which is the result of communicative rationality, means practices that allow people to shape the places in which they live. In communicative action, process design is participatory, transparent, and evolutionary. Collaborative planning is regarded as a theory of practice (Harris 2002). There are, of course, some who believe that Critical Planning Theory is inadequate as a design and planning theory (Mantysalo 2002).

2.3.13 Just City

In the coming years, designers, as well as planners will face decisions about where they stand on protecting the green city, promoting the economically growing city, and advocating social justice.

Just City concerns the development of an urban vision that also involves material well-being but that relies on a more pluralistic, cooperative, and decentralized form of welfare provision than the state-centered model of the bureaucratic welfare state.

2.3.14 Normative Ethical Theory

Ethical theory arouse out of attempts to give an account of moral goodness and the morally good life. Normative Ethical Theory has been divided into two levels—substantive and procedural. Substantive ethical theory advocates actual normative ethical principles and judgments. These principles are applied to judge the rightness or wrongness of specific social institutions, actions, plans, policies,

etc. Procedural ethical theory is a level above substantive theory (Harper and Stein 1992).

2.3.15 Smart Growth

While there has been a strong association of urban design with “downtowns,” demand for suburban growth management and reinvestment strategies for the older rings around city centers has gathered many advocates. Indeed, to protect urbanism, not to mention minimize environmental harm and needless land consumption, it is imperative, many argue, to control sprawl and make environmental stewardship a more overt part of urban thinking. Since a high percentage of development takes place at the periphery of existing urbanization the urban designer should be operating there, and, if present, advocating “smarter” planning and design. Conversely, ignoring the metropolitan periphery as if it were unworthy of a true urbanist or limiting one’s efforts to urban “infill” may simply be forms of problem avoidance (Krieger 2009). The principles are: mixed uses, compact buildings, wide range of housing types, pedestrian-oriented neighborhoods, building attractive settlements with a strong sense of place, preserving open spaces, agricultural lands, reclaimed lands, water sources, air quality, historical districts, natural assets, alternative transport, cost-effective and transparent decision-making for development, encouraging interest groups and local residents to participate in the development decisions.

2.3.16 New Urban Design Theory

Christopher Alexander (Alexander et al. 1987) in his book ‘New Urban Design Theory’ suggests one overriding and seven intermediate rules for urban design. According to him The overriding rule: every act of construction, every increment of growth in the city, works towards the creation of wholeness. The seven intermediate rules are: piecemeal growth, the growth of larger wholes, visions, the basic rule of positive urban space, layout of large buildings, construction, and formation of centers.

2.3.17 Sustainable Urban Design

The requirements of sustainable development are compatible with, and closely mirror, the Post Modern agenda in urban design. The current pre-occupations of urban designers are with the form of urban space, the vitality and identity of urban areas, qualities of urbanity, respect for tradition and preference for medium rise development of human scale. These and other features in the best of Post Modern urban design can be absorbed within the schema of sustainable development. The two movements—sustainable development and Post Modern urban design—are mutually supportive: Indeed, they are both expressions of current philosophy which has rejected the grand development strategies of the 1950s, 1960s and 1970s together with the modernist architecture which gave those strategies form. Post Modern urban design gives form to the ideas of sustainable development while in return it is given functional legitimacy. Without this functional legitimacy and the discipline it imposes on the urban design process, post modern urban design, like some of the buildings of post modernism, may develop into the whimsy of another esoteric aesthetic. The foundation of urban design is social necessity. The social imperative of today is an environmental crisis of global proportions and it is coming to terms with the efforts of this crisis on cities which gives purpose and meaning to urban design (Moughtin 1996, pp. 1–2).

Sustainable Development attempts to weave together multiple values to confront the challenges of reversing environmental degradation and reducing overconsumption and grinding poverty. These values are sometimes referred to as the three Es of sustainable development: environment, economy, and equity. Sustainable development has implication at international, national, state, regional, and local levels. Smith et al. (1998) suggest the following practical features of sustainable development that can be implemented directly in policies aimed at the built environment.

Environmental limits: The environment imposes thresholds for certain human activities in

terms of resources, absorption of waste and maintenance of life support serving such as temperature and protections against radiation. These resources are intrinsically of value to humanity and should not be ‘traded’ against the benefit of a particular development or a particular activity as a whole (Fig. 2.37).

Demand management: involves more subtle and responsive planning to meet basic objectives rather than some derived demand. Hence it is possible, for example, to reduce energy consumption by a variety of conservation and efficiency measures as an alternative to building new power station.

Environmental efficiency: means ‘the achievement of the maximum benefit for each unit of resources and waste products’. This could be achieved increasing durability; increasing the technical efficiency of resource conversion; avoiding the consumption of renewable natural resources, water and energy faster than the natural system can replenish them. Closing resource loops: by increasing reuse, recycling, simplifying

and avoiding the need for resource use (non-renewable).

Welfare efficiency: expresses the direct equivalent of environmental efficiency and describes the objective of gaining the greatest human benefit from each unit of economic activity. It requires a much more diverse social and economic system with many more possibilities for satisfying lifestyle requirements than at present.

Equity: Environmental policies have the potential to deliver significant improvements in the quality of life, health and job prospects of the marginalized, dispossessed and socially excluded in the society. Even the narrow notion of physical sustainability implies a concern for social equity between generations, a concern that must logically be extended to equity within each generation (Smith et al. 1998, pp. 18–20).

Berke and Manta-Conroy (2000) propose three conceptual dimensions [System Reproduction, Balance between Environmental, Economic, and Social Values; and link local to global (and regional) concerns] and six operational

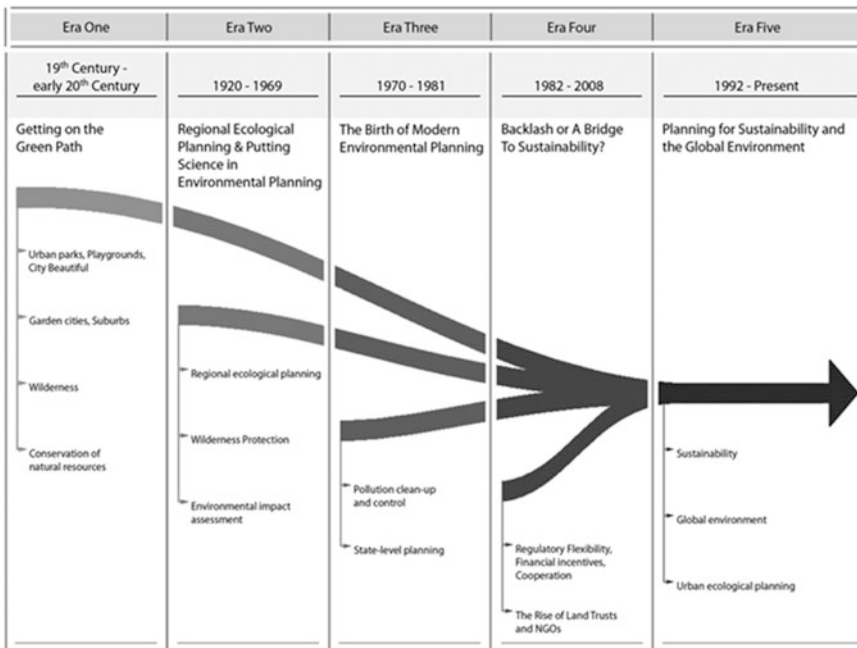


Fig. 2.37 The evolutionary trend of sustainability concept (Source Daniel 2009)

performances principles (harmony with nature, livable built environment, place-based economy, equity, polluters pay, and responsible regionalism) for sustainability. These principles are expected to play a key role in guiding evaluations by designers of the potential environmental, social, and economic impacts of urban forms and ensuring that design solutions integrate a balanced, holistic vision of sustainability (Berke 2002).

2.3.18 Urban Design for an Urban Century

Brown et al. (2009, 102–111) suggest five general urban design principles for what they call ‘urban century’, each of which is broken down into more specific guidelines:

Build community in an increasingly diverse society

- i. Create places that draw people together
- ii. Support social equity
- iii. Emphasize the public realm
- iv. Forge strongest connections

Advance sustainability at every level

- v. Foster smarter growth
- vi. Address the economic, social and cultural underpinnings of sustainability
- Expand individual choices

- vii. Build densities that support greater choice
- viii. Build interconnected transportation networks
- ix. Provide choices that enhance quality of life

Enhance personal health

- x. Promote public health
- xi. Increase personal safety

Make places for people

- xii. Respond to the human senses
- xiii. Integrate history, nature, and innovation
- xiv. Emphasize identity
- xv. Celebrate history
- xvi. Respect and engage nature
- xvii. Introduce innovation

A review of the contemporary urban planning and design movements and their relevant principles indicates that most of them are piecemeal and disintegrated ideas focusing solely on some aspects of the subject matter of urban design, often substantive issues, disregarding the rest. Integrative theory (language) of urban design, as will be proposed later, will include all aspects of urban design—substantive, as well as procedural. (For more information on contemporary urban design movements see: Bahrainy et al. 2006. *Analysis of Contemporary urban design theories*. Vol. 1: from late 19th century to 1970s. Tehran: UT Press).

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