Evolution of Urban Design in Practice (Case studies of Chicago, Detroit and Cleveland through time)

Sulabh Aryal
Virginia Commonwealth University

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Evolution of Urban Design in Practice
(Case studies of Chicago, Detroit and Cleveland through time)

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Urban and Regional Planning at Virginia Commonwealth University.

by

Sulabh Aryal
B. Arch 2006, Bombay University

Director: Morton Gulak, Ph. D.
Associate Professor
Master of Urban and Regional Planning Program
L. Douglas Wilder School of Government and Public Affair

Virginia Commonwealth University
Richmond, Virginia
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ABSTRACT

EVOLUTION OF URBAN DESIGN IN PRACTICE
(CASE STUDIES OF CHICAGO, DETROIT AND CLEVELAND)

By Sulabh Aryal, M.U.R.P

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Urban and Regional Planning at Virginia Commonwealth University.

Virginia Commonwealth University, 2010

Director: Morton Gulak, Ph. D,
Associate Professor, Master of Urban and Regional Planning Program

Throughout the twentieth century various urban design theories came into light. These theories were sometimes original and sometimes derivative of some previous theory. These theories can be broadly categorized in different urban design models.

The chronological study of different urban design theories gives us the theoretical and generic evolution of urban design. The practical evolution of urban design in any city can be different from the generic evolution of urban design. This thesis examines the urban design of three Midwestern American cities from their origins to the present day. The urban design of these cities, related to different time periods is then compared with the different urban design models to understand the ‘Evolution of Urban Design in Practice’.
Chapter 1

1.1 Introduction

The stone for the foundation of this thesis was laid when I was studying architecture in Navi Mumbai (New Bombay), India. Navi Mumbai is the world's largest planned city and was initially planned as a satellite twin city of Mumbai (Bombay) to decentralize the industrial growth in Bombay region and to decongest the population by multi-nucleated settlements (CIDCO, homepage). While living and studying in New Bombay, I unconsciously observed some of the design elements of the city, the visual harmonious three-dimensional arrangement of buildings juxtaposed with landscaped open spaces, the relationship of different forms of movement within urban development, the relationship between new development (New Bombay) and existing city (Bombay) form and the importance given to non visual aspects of the built environment like pollution control, sustainability and traffic control. It was only later that I came to realize all these elements constitute what we call “Urban Design” (Gosling 2003, 13).

Although urban design is a new term coined in 1950s (Lang 2005, xxi), it has been an integral part of the process of city (or town) planning since antiquity. This is clearly evident from the different geometrical form based ideal town proposals throughout history in both eastern (Bandyopadhyay 2000, 25-28) and western (Spreiregen 1965, 12-13) civilizations.

After joining the Master’s Program in Urban Planning in VCU and taking an introductory course in urban design, I became familiar with urban design theory. My curiosity to know more about different urban design theories and their evolution through time became the basis of this thesis. The next big question is - how to study this evolution. One could start all over from ancient Greeks and Romans, covering 2500 years of city designing process. This would be quite
overwhelming for the scope of this thesis. Since the twentieth century marks the epitome of human achievement in most of the fields including city design due to scientific and technological advancements, it tends to be a natural start for the timeline study of the evolution of urban design.

The eastern and western ideologies and theories regarding ideal cities and urban design are divergent. The eastern cities are mainly kinetic cities revolving around a market place (bazaar), and in comparison to western cities have more population density, have informal and organic sectorial design and are more sustainable (not because they are designed that way, but due to economical restraints and limitations) in nature (Bhatt & Rybczynski 2001, 1.3; 2-11). The big design gap between eastern and western cities is another factor for consideration while studying the evolution of urban design. The eastern and western urban design evolution cannot be studied together. This study should be done separately. In this thesis, the focus is on western urban design ideologies and theories.

Any design, including urban design by definition involves and invokes a designer(s). The chronological study of the evolution of urban design can be best done by studying the design or theory proposals given by different urban designers (which would include architects, landscape architects, planners, urban sociologists and even philosophers) throughout the twentieth century. This chronological study gives us the theoretical and generic evolution of urban design drawn heavily from various academic theories and not the practical evolution of urban design specific for any city. For example, two cities even though initially designed using the same urban design theory over time can adopt different or contrasting theories for redesigning the city or for new developments.
This thesis looks into the evolution of urban design in practice based on the theoretical evolution of urban design and is divided into two phases. The first phase starts with the study of theoretical evolution of urban design which is done by looking into various design and theory proposals. These ideas or theories are sometimes original and sometimes derivative of some previous theories and sometimes influenced by one or more than one of the previous theories. For the purpose of this thesis, these theories are then organized and categorized. Finally, the important elements (in terms of structure (main spine, transportation), form, uses (or zoning), density, aesthetics, etc.) from each theory are extracted and synthesized as elements of different group of theories or models. This marks the end of phase one.

Phase two consists of case studies of three different cities from the time they were settled to the present time. Different factors influence the shaping of the cities. The topography of the area, the population, initial and current urban design theory of which they are based upon and sometimes the primary function or purpose (for example: university town, industrial town, book town, etc.). Studying different random cities for the purpose of this thesis cannot be fruitful. To achieve certain singularity in the evolution of urban design in practice we must consider some commonness in the cities we choose.

Chicago, Detroit and Cleveland are among the largest cities in United States and are all located in the East North Central Region of the country. The first comprehensive plan and design for these cities was adopted around the same time period (first decade of the twentieth century) and all of these cities were based on the same urban design ideology – The City Beautiful Movement. Another important common factor is the designer. The designs of all the three cities were highly influenced by Daniel Burnham. Burnham was the main architect behind the Chicago Plan (along with Edward Bennett). Burnham was also the main designer for Cleveland (the
Group Plan). On Burnham’s recommendation Edward Bennett was appointed as the principal planner for the Detroit Plan. The case study of Chicago, Detroit and Cleveland through time gives the required platform to study the evolution of urban design in practice.

1.2 Purpose

The purpose of the thesis is twofold; first, to identify and study the different ideas, design proposals and theories regarding urban design chronologically from the past, organize the main ideologies into various relating theory groups, extract the important urban design elements (in terms of structure (main spine, transportation), form, uses (or zoning), density, aesthetics, etc.), and synthesize them as the theory group (or urban design model) elements. Second, to do a case study of three Midwestern American cities i.e. Chicago, Detroit, Cleveland whose designs were influenced by the ideologies of Daniel Burnham. Review them in terms of their original theory based on which they were designed. See how they have changed over the time (if they still have that originality or are they now a hybrid of different urban design theories). Extract important elements from these cities, synthesize them and propose a combined theory of the evolution of urban design in these cities through time.

1.3 Critical Questions

1. How has time changed the urban designs of Daniel Burnham designed cities (Chicago, Detroit and Cleveland)? How much have they retained their original design characteristics? Have hybrids of the Burnham designed cities developed over time?

2. What theory would describe the Evolution of Urban Design in Practice based on the case study of Chicago, Detroit and Cleveland?
1.4 Research Methodology

Since this thesis is descriptive and qualitative in nature, most of the research is heavily based on various academic urban design texts.

The first phase of the thesis deals with identifying personalities related to the field of urban design and studying their theories, ideology and design proposals. This is done by referring to various academic books. But since, the thesis topic includes some contemporary ideas; a few websites (Archiplanet, APA (American Planning Association), Form Based Codes institute, etc.) and online reports are also used.

The second phase of the thesis deals with case studies of Chicago, Cleveland and Detroit. Starting with a study of the original plans for these cities (via academic text), the study looks to updated comprehensive and urban design plans (through online archive, academic text etc., whenever available) from their origins (almost a century for all the cities) to present day. Previous studies and analyses by other people, available through published thesis, journal articles and web-resources are also used as references.

1.5 Scope and Limitations

This thesis tries to identify all important personalities and movements in the twentieth century prominent in western urban design evolution. Although the evolution of western urban design considers both European and American theories; it’s more America-centric.

The Case Studies of three Midwestern cities are completed through the review of print and electronic documentation rather than by actual site surveys.

Evolution of Urban Design in Practice
Chapter 2

Study of the Evolution of Western Urban Design Theories

This chapter presents the evolution of western urban design theories starting from the dawn of the twentieth century (1900-Present Day). This chorological study is organized by decades. A selection of pre-twentieth century theories which were still prominent in the twentieth century are also included. Individuals (and sometimes movements) who have made a prominent contribution to the field have been identified. The conclusion offers a brief summary of their main ideologies, the basic design elements of their city plans (generic or real, if applicable) and their influences on Urban Design. Finally after all the decades have been covered the evolution is documented in a timeline.

2.1 Pre -Twentieth Century

American cities in the nineteenth century were industrial cities; ugly, poverty-stricken, congested and in constant threat of epidemics. The architects and urban designers during the period saw this and tried to rectify this problem by making cities beautiful and practical and called for the “aesthetics of order” in the cities (Tehranian 1995, 68).

The Park Movements was followed by the City Beautiful Movement. Both movements were initiated to respond the nineteenth century challenges of urban design and planning. Both of the movements however had roots in the Progressive Movement, which was an urban movement that sought to improve the moral structure of the society through a fundamental restructuring of spatial structure (Ibid. 66).
Across the Atlantic in Europe, Camillo Sitte’s ideas of city design which he derived from the study of medieval cities, influenced design of many Europeans cities. His style of urban design came to be accepted as a norm.

**Frederick Law Olmsted and the Parks Movement**

Olmsted was an American landscape designer and is widely regarded as the father of American landscape architecture. He designed many well-known urban parks; Central Park in New York City being the most famous. He was the pioneer of Parks Movement which followed.

Olmstead initiated the American Parks Movement in 1840s. Olmstead believed that the existing city problems such as congestion and separation from nature could be resolved through the efficient planning of urban services, an adequate use of technology and creation of suburban communities. Olmstead was interested in the relationship of urban space with that of the countryside. He believed urban parks in the midst of the city would provide such a relation. Parks would also be a means of social leveling and educating the city people to maintain the sense of order amidst the city’s heterogeneous population and congested neighborhoods (*Tehranian 1995, 66-79)*.

Central Park in New York designed by Olmstead reflected organic design and related the park to the city. The texture of the city intermingled with the rural texture of the park with gradual and careful intercepts. The plan was based on elaborate systems of roads, bridges and overpass – organically united and functionally separated. The roadway design of Central Park became inspiration for greenbelt city of Radburn designed by Clarence Stein. The Parks Movement also influenced the emergence of the City Beautiful Movement. Its influence continued into the first decade of the twentieth century (*Ibid.*).
City Beautiful Movement

The City Beautiful Movement flourished in 1890s in USA. The main intent of this movement was to beautify and establish monumental grandeur in cities to counteract the perceived moral decay of poverty-stricken urban environments. Advocates of the movement believed that such beautification could thus provide a harmonious social order that would improve the lives of the inner-city poor. The design of these cities was marked by particular architectural styles borrowed heavily from the contemporary “Beaux-Arts movement”, which emphasized the necessity of order, dignity, and harmony. The other major design features of these cities were the extensive use of urban design organizational elements like views, vistas and axis. (*Ibid* 83-88; *Lang* 1994, 44-45)

Camillo Sitte

Sitte was an Austrian architect and city planning theoretician. After extensive study of the medieval plazas and squares in Italy, Germany and Austria he published his major work “City Planning According to Its Artistic Principles” in 1889. Sitte influenced many European city processes in early twentieth century. The city plan for the Swedish housing area Bagaregarden by Albert Lilienberg was inspired by Camillo Sitte.

Sitte strongly criticized the prevailing emphasis on broad, straight boulevards, public squares arranged primarily for the convenience of traffic, and efforts to strip major public or religious landmarks of adjoining smaller structures that were regarded as encumbering such monuments of the past (*Sitte* 1945, 8-12). Sitte proposed instead to follow what he believed to be the design objectives of those whose streets and buildings shaped medieval cities. He advocated curving or irregular street alignments to provide ever-changing vistas (*Ibid.*). Sitte’s teachings became
Evolution of Urban Design in Practice

widely accepted in Austria, Germany, and Scandinavia. In less than a decade, of the publication of his book his style of urban design came to be accepted as the norm in those countries. (APA Individuals who influenced Planning before 1978)

2.2 The First Decade (1901-1910)

The last decade of the nineteenth century was marked by the emergence of City Beautiful Movement which would be the basis for city design in many cities during the first two decades of the twentieth century. Daniel Burnham’s Plan of Chicago was an outgrowth of City Beautiful Movement which would inspire city designers for two decades. But the breakthrough theory of the decade was the Garden City concept by Sir Ebenezer Howard. A city following this concept was designed in this very decade and in the coming decades this idea was incorporated in different parts of the globe. This concept influenced Clarence Arthur Perry (neighborhood unit concept) in 1920s and New Urbanism in 1990s.

Ebenezer Howard

Howard was a British urban planner. His main contribution in urban planning and design is the concept of “Garden City”.

His ideas were published in 1902 in a book titled “Garden cities of tomorrow”. This book offered a vision of towns free of slums and enjoying the benefits of both town (such as opportunity, amusement and high wages) and country (such as beauty, fresh air and low rents). Howard’s idea was the basis of creation of new suburban towns of limited size, planned in advance, and surrounded by a permanent belt of agricultural land (green belt). The towns would be largely independent, and managed and financed by the citizens who had an economic interest in them.
These Garden cities were used as a role model for many suburbs. The two main cities whose design and economic policies were inspired by the garden city idea were Letchworth Garden City (1903) and Welwyn Garden City (1920), both in United Kingdom. Letchworth Garden City was founded in 1903 by Howard himself and is the world's first Garden City. Both designs are durable successes and healthy communities today, although not complete realizations of Howard’s ideals as neither are entirely self-contained garden city (Howard 1985, xv-xvii).

Apart from the two Real Garden Cities, the garden city idea was incorporated in different parts of the globe. This idea was also significant in the United States as many communities were influenced by it. Radburn, New Jersey founded in 1929 is an example. Howard’s ideas influenced a host of other urban planners and designers, prominent of which are Frederick Law Olmsted II, Clarence Stein and Clarence Perry (Lang 1994, 48, 78).

**Daniel Hudson Burnham**

Burnham was an American architect and urban planner. He was the Director of Works for the World's Columbian Exposition held in Chicago in 1893. His main contribution in Urban Design is the plan of Chicago which was published in 1909 (Hines, 1974).

The plan called for the redevelopment of the whole Chicago area within sixty-mile radius of the city’s center. The plan included an elaborate system of outer parks and radial and concentric boulevards. The plan also included an aesthetic and useful lakefront park system along Lake Michigan; a grouping of railways tracks and terminals; the straightening of the Chicago River for riverside transportation; and changes in the width and general appearance of the grid as well as
radial streets. The plan also proposed a monumental civic center at the heart of the city (Ibid. 331).

The plan set the standard for urban design, anticipating future need to control unexpected urban growth (Lang 1994, 45). Burnham’s idea also helped to shape cities such as Cleveland (the Group Plan), San Francisco, Washington DC (the McMillan Plan), and Manila and Baguio in the Philippines (Ibid., APA Individuals who influenced Planning before 1978).

Frederick Law Olmsted Jr.

Olmsted Junior was the son of Frederick Law Olmsted and his “heir apparent”. Like his father he was a landscape architect. He was the leader of the American city planning movement in the early twentieth century. He believed that city planning could provide tools for shaping suburban growth and designing superior residential subdivisions. Highly influenced by Howard, he also advocated the garden city movement in United States. He is best known for the design of Forest Hill Gardens, a 142 acre suburban development, nine miles from Manhattan. Forest Hill Garden is often regarded as the first American Garden City (Klaus 2002. 5, 12, 17).

Many of the features of Olmsted’s suburban plans have had enduring influence, including the concept of neighborhood-centered development, the differentiation of streets by function, the importance of common open recreational spaces, and the need for continuing maintenance and aesthetic oversight to preserve the quality of the community. According to Olmsted, the main framework of any city plan is the transportation system including the street railways, the rapid transit railways, where such exist, the long-distance railways with their terminals, and the facilities for waterborne traffic (Reps, John W., online webpage).
2.3 The Second Decade (1911-1920)

The Second Decade of the twentieth century did not see much growth in theories of urban design mostly because of the First World War (1914 -1919). However, a predecessor of the Modernist approach (which would last until the 1960s) to city designing could be seen in Tony Garnier’s Une cite Industrielle. Prominent future city planner Le Corbusier would be influenced by this plan. After the end of the war, the Bauhaus Movement which would define the Modernist movement in architecture and urban design was initiated in Germany.

Tony Garnier

Tony Garnier was a French architect and planner. He was educated and professionally active in his home town of Lyons. Heavily influenced by the socialist ideology and writings of Emile Zola, in 1917 Garnier proposed the “Une cite industrielle” (Industrial City) in the mountainous landscape of the Lyons region. The industrial city is considered by many the first modernist city proposal. Garnier’s idea of separation of spaces by function became the key to modernist city planning (Frampton 2007, 100 - 102).

Garnier’s Industrial City was set on a river escarpment, in a mountainous landscape. The city was proposed for 35,000 inhabitants. Garnier emphasized zoning, circulation, hygiene, and industry. The three main functions of the town –production, housing and health facilities were clearly distinguished. Residential quarters were arranged on an urban grid and divided into lots of 15 by 15 meters. Each building was linked to a pedestrian route so that people could cross the city in all directions independently of the roads. All houses were of an average height of two storeys and detached. Courtyards were eliminated and every room was lit and ventilated directly from outside. Residential and public areas were placed on a plateau and the industrial complex...
was to be situated on the periphery by the river. In every respect it was a true socialist city with no churches or law enforcement buildings (Ibid., Miriani 1990, 43-48).

Garnier’s conception of urban zoning had a profound impact on twentieth century town planning. Noted architect and city designer Le Corbusier acknowledged that he was influenced by Garnier’s Une Cite Industrielle. In the following decades this idea of functional separation was taken up by the members of CIAM (APA Individuals who influenced Planning before 1978).

**Bauhaus: Architectural and Artistic Movement (1919-1933)**

Founded in 1919, the Bauhaus is the German school of architecture and design that influenced modern architecture, the industrial and graphic arts, theatre design, and urban design. Their basic principles were that: modern art and architecture must be responsive to the needs and influences of the modern industrial world and that good design must be both aesthetically pleasing and technically sound. The most prominent individuals associated with the movement are Walter Gropius, Hannes Meyer, and Ludwig Mies van der Rohe (Frampton 2007, 123-124).

Key words like functionalism and “Form follows Function”, of the Bauhaus Movement shaped the modernist approach of Urban Design as opposed to the flamboyant City Beautiful Movement. The Bauhaus had a major impact on architecture and urban design trends in Western Europe, the United States and Israel (particularly in White City, Tel Aviv) in the decades following its demise (after 2nd World War) till late 1960s until the Post-Modernism Movement in architecture gained momentum (Ibid.).
2.4 The Third Decade (1921-1930)

The Third Decade of the twentieth century saw the coming of a genius, Le Corbusier. His various futuristic city design proposals influenced urban designers till the late 1960s. On the other hand the garden city concept was revived in US by Clarence Perry who developed the “Neighborhood Unit Concept”

Clarence Arthur Perry

Perry was an American City Planner often credited as the Father of the "Neighborhood Unit Concept". His neighborhood concept had a huge impact on urban planning worldwide (APA Individuals who influenced Planning before 1978). Perry believed that cities should be built (or rebuilt) to consist of an agglomeration of smaller units, typically centered on and served by an elementary school, and bounded by major roads with shopping centers at intersections.

Based on the principles of neighborhood unit, Perry developed a generic plan for an ideal neighborhood. According to Perry, the plan can be regarded as somewhat elastic pattern for laying out in new or replanned urban residential sections. Its desirable size may be defined, in general terms, as that populated area for which one elementary school should be provided. In sections where single-family-per-lot housing is the rule, this means an area about 160 acres and a population of 5,000 to 6,000 people. Its size should be based upon a five-minute walking radius. The radius is measured from the center, and the center holds the cultural uses. The neighborhood has school and institutional sites suitably grouped around a community center, and shopping districts at the traffic intersections in its circumference. It is bounded and walled in by arterial highways and enjoys a special system of its own which provides direct circulation within the unit but does not invite traffic through it. The interior is restricted entirely to residential...
use and 10 percent of the area is devoted to small parks and recreational spaces (Perry 1929, 88). All of these characteristics were incorporated by Clarence Stein in the design of Radburn, New Jersey, the original implementation of the idea. (Lang 1994, 48-49)

**Le Corbusier**

Le Corbusier was a Swiss born French Architect and city planner who is considered one of the greatest architects of all time. His works on City planning and design spans from 1920s (Concentric City) to 1950s (design of Chandigarh) between which he gave many proposals on city designing.

**La Ville Contemporaine (Concentric City – 1922)**

The planning philosophy was to create urban surroundings as definitely contrasting to rural areas. According to Corbusier, the densities themselves are no problem and congestion and slum conditions in cities are due to excessive coverage, persistence of old street patterns and unrestricted land speculation. High density living should provide for classified street system, parking areas, adequate open areas for parks, sport fields and community services. If these are provided in sufficient quantity, no slum will exist. (Bandyopadhyay 2000, 45-47) This concept was shown in the Paris Exhibition. It is a city of sky-scrapers of 6 storied office buildings accommodating 1200 people per acre, and covering only 5 percent of ground area. These were grouped at the City Center. The transportation center, the rail station and the air field were also kept there. Surrounding the sky-scrapers were Apartment Districts. These had 8 storey high buildings with broad open spaces around them. On the outskirts were Cite Jardins (Garden Cities of single storied housing). The city was for 3 million people. Most of the buildings were on slits (Ibid.)
The Plan Voisin de Paris (1925)

This plan mainly is about the design of new Paris. It was built on the foundations of Concentric City he proposed in 1922. Corbusier insisted on planning for the city center as opposed to suggesting a new location of activity on the outskirts of Paris because he believed that the center formed the hub of a multi–spoked wheel, lines of almost mystically –symbolic convergence that had not changed through history. He therefore substituted a new center in place of the old center in exactly same spot. The plan is L-shaped in form and covers approximately two square miles of the Right Bank of Paris (Shaw 1991, 35-37). The design is based on vertical expansion of the city as opposed to horizontal expansion as in case of other city design proposals earlier like the Garden City. The 60 storey sky-scrappers office buildings were placed in the vast open space, the main traffic highways were defined with complete separation of traffic and parking spaces for vehicles. The plan has rectangular arrangement of streets but local and through traffic is distinctly separated and large open spaces are treated with informal pedestrian circulation and are landscaped (Ibid. 38-39).

La Ville Radieuse (The Radiant City -1930)

The Radiant City grew out of the new conception of capitalist authority. The plan had much in common with the Contemporary City - clearance of the historic cityscape and rebuilding utilizing modern methods of production (Le Corbusier 1967, 152). The pre-fabricated apartment houses, “les unites”, were at the center of urban life. “Les unites” were available to everyone (not just the elite) based upon the size and needs of each particular family. Sunlight and recirculating air were provided as part of the design. The scale of the apartment houses was fifty meters high, which would accommodate, according to Corbusier, 2,700 inhabitants with fourteen square meters of space per person. The building would be placed upon stilts, five meters off the
ground, so that more land could be given over to nature. Setback from other unites would be achieved by “les redents”, patterns that Corbusier created to lessen the effect of uniformity. Inside les unites were the vertical streets, i.e. the elevators, and the pedestrian interior streets that connected one building to another. As in the Contemporary City, corridor streets were destroyed. Automobile traffic circulated on column supported roadways five meters above the earth. The entire ground was to be for pedestrians, with pathways running in orthogonal and diagonal projections. Other transportation modes, like subways and trucks, had their own roadways separate from automobiles. The business center, which had engendered much elaboration in the Contemporary City, was positioned to the north of les unites and consisted of Cartesian (glass & steel) skyscrapers every 400 meters. The skyscrapers were to provide office space for 3,200 workers per building (Ibid. 152-153).

CIAM (1928-1959)

The Congrès International d' Architecture Moderne (CIAM) (or International Congress of Modern Architecture) was an international platform for modern architects and was founded in 1928. CIAM was dominated by Le Corbusier and Sigfield Giedion (Risselada & Heuvel 2005, 12). Based on an analysis of thirty-three cities, CIAM proposed that the social problems faced by cities could be resolved by strict functional segregation, and the distribution of the population into tall apartment blocks at widely spaced intervals. CIAM is largely responsible for the formulation and dissemination of a Modernist orthodoxy. CIAM's predominantly functionalist ethic, which included strict delineation of housing, industrial, and commercial zones by green belts and an emphasis on high-rise mass housing, was to dominate architecture and town planning until the 1950s (Le Corbusier, 1973).
Design of Chandigarh, India (1952)

Chandigarh though located in India (eastern world) was designed by a western city planner (Le Corbusier) applying western urban design ideologies. Hence it is a part of this western urban design evolution study. Corbusier produced a plan for Chandigarh that conformed to the modernist city planning principles of CIAM, in terms of division of urban functions and form, and a hierarchy of road and pedestrian networks (*Bandyopadhyay 2000, 95*).

The city plan is laid down in a grid pattern. The whole city has been divided into rectangular patterns, forming identical sectors, each sector measures 800 m x 1200 m. The sectors were to act as self-sufficient neighborhoods, each with its own market, places of worship, schools and colleges - all within 10 minutes walking distance from within the sector. The original two phases of the plan delineated sectors from 1 to 47, with the exception of 13 (Number 13 is considered unlucky). The Assembly, the secretariat and the high court, all located in Sector - 1 are the three monumental buildings designed by Le Corbusier. The city was to be surrounded by a 16 kilometer wide greenbelt that was to ensure that no development could take place in the immediate vicinity of the town, thus checking suburbs and urban sprawl (*Ibid. 95-97*).

Generations of city planners were influenced by Corbusier. Lucio Costa's city plan of Brasília and the industrial city of Zlín planned by Frantisek Lydie Gahura in the Czech Republic are notable plans based on his ideas. Edmund Bacon while redesigning Philadelphia in 1960s also took some of his ideas (*APA Individuals who influenced Planning before 1978*).
2.5 The Fourth Decade (1931-1940)

The Fourth Decade of the 20th Century saw the realization of the “Neighborhood Unit concept” of Clarence Perry. This was applied practically by American architect Clarence Stein. The decade also saw America’s Greatest Architect Frank Lloyd Wright’s major work on city planning ‘Broad Acre City’. This design was heavily influenced by the use of automobiles. This decade marked the importance of the use of automobiles in city design.

Clarence Stein

Stein was an American architect and urban planner, and was a founding member of the Regional Planning Association of America. This group strongly advocated Ebenezer Howard’s garden city concept in United States. Stein major work includes the design of Radburn, New Jersey, a partial implementation of Perry’s Neighborhood concept. Stein also planned 22 green-belt resettlement towns across United States (APA Individuals who influenced Planning before 1978).

Radburn an unincorporated new town located within Fair Lawn, in Bergen County, New Jersey 16 miles from New York City is regarded as his best design. Clarence Stein along with Henry Wright prepared the plan for Radburn. It consists of two square miles of irregularly –shaped land. This was an area sufficient for three neighborhoods, with a total population of about 25,000 (Stein 1966, 39). The vision for Radburn was of an integrated self-sustaining community, surrounded by greenbelts, specialized automotive thoroughfares (main linking roads, serviced lanes for direct access to buildings, and express highways), and a complete separation of auto and pedestrian traffic. These thoroughfares were called superblocks. This was because the block is very large with a very large road surrounding the houses within. Stein knew that the
community could not survive without a road system but he also didn't want the roads dominating the land. Instead, the superblocks make the main focus on the yards and the gardens surrounding the buildings (Ibid. 36-41).

Radburn was explicitly designed to separate traffic by mode, with a pedestrian path system that does not cross any major roads at grade. Radburn introduced the largely residential "superblock" and is credited with incorporating some of the earliest cul-de-sacs in the United States (Lang 1994, 46-48).

Clarence Stein in 1942, thirteen years after the Neighborhood Unit of Clarence Perry, prepared the diagram for the neighborhood unit. It was based on Perry’s Neighborhood Unit and the Radburn Plan with slight alterations. Perry had proposed a quarter mile pedestrian shed, while Stein proposed a half-mile walk from edge to centre. Both models have a school at their core. Stein’s diagram begins to break through the capillary network of thoroughfares into super blocks. This represents the beginning of suburban sprawl. (Duany, Zyberk & Alminana 2003, 88)

Frank Lloyd Wright

Wright is regarded as the greatest American Architect. He had a long career spanning six decades from 1890s to 1950s. Since, his major work on city planning “Broad Acre City” was published in 1932, he has been included in this decade. Broad Acre City is a concept for a decentralized City for Democracy. Broad Acre City was intended to show the principles of building cities for American Democracy in opposition to centralized European city concepts (Frampton 2007, 187,190).

According to Wright, a good community would be formed when individual families are given a one acre (4,000 m²) plot of land from the federal lands reserves. This would become the
premise for the Broad Acre City. The Broad Acre City is a hugely dispersed city and can even be regarded as an open landscape rather than a community. The main spine of transportation would be a broad freeway. The main mode of transport would be automobiles and futuristic helicopter taxis. The Broad Acres city is mainly single family residential but some office and apartment buildings also exist. There would be a provision of a pedestrian –friendly environment along streets and roads within the broad-acres plots (Wright 1958, 116-125).

Wright’s Broad Acre City had some commonness with the garden city concept like the agricultural belt surrounding the community. But the major difference is the low population density and the wide use of automobiles in Broad Acre City.

2.6 The Fifth Decade (1941-1950)

The Fifth Decade of the 20th Century did not see major new theories in urban design basically because of the Second World War (1939-1945). Greek architect Doxiadis proposed his idea of Ekistics and Dyanapolis in this decade.

Konstantinos Apostolos Doxiadis

Doxiadis was a significant Greek architect and city planner. Doxiadis is credited with distinct contribution to high modernism. Doxiadis advocated the theory of “Ekistics” or the science of human settlements. It includes planning and design of 15 different variable units ranging from Anthropos (individual dwelling) to Ecumenopolis (global city). It involves the study of all kinds of human settlements, with a view to geography and ecology - the physical environment, and human psychology and anthropology, and cultural, political, and occasionally aesthetics (Konstantinos Doxiadis, Wikipedia).
To deal with the growing CBD (Central Business District) of any city and also the city itself, Doxiadis advocated the theory of “Dyanapolis”. To eliminate the concentric growth of an urban settlement where the settlement could not expand, with increasing growth of population and consequently the services, roads, etc. become overburdened. This concept is a relief to such urban hazards where the CBD grows freely with the increase of population and such proportionate growth of CBD at various phases of time cater perfectly for the ever increasing urban settlement. The growth direction of the CBD may be conceived as the principal axis of a parabola and the growth direction of the residential districts is along the parabolic path. This could happen at all the sides unless stopped by some natural restraint like rivers or mountains. This concept is practiced in cities like Islamabad, Pakistan and Khartoum, Sudan (Bandyopadhyay 2000, 49-51).

2.7 The Sixth Decade (1951-1960)

The Sixth Decade of the 20th Century started to show the decline of Modernist approach of City designing. CIAM was disbanded and a new Modernist Group called Team 10 emerged of which Peter and Alison Smithson were prominent contributors. Urban Renewal gained momentum during the decade. Edmund Bacon spearheaded this urban renewal movement and redesigned Philadelphia.

Alison and Peter Smithson (Team 10)

Husband and wife English architects Alison and Peter Smithson are associated with the Brutalist style of architecture. They together with Aldo van Eyck revolted against Congres International d'Architecture Moderne (CIAM) and formed a new group called Team 10 or Team X. Team 10 basically challenged the four functionalist category of CIAM’s Athens Charter;
dwelling, work, recreation and transportation. Team 10 had a profound influence on the development of architectural thought in the second half of the 20th century, primarily in Europe (Frampton 2007, 271).

Among their early contributions were "streets in the sky" in which traffic and pedestrian circulation were rigorously separated, a theme popular in the 1960s. They were unafraid of large cities, of proposing the alteration of the piecemeal ownership of land into large holdings, of radical political theories, of harnessing modern technology, or of development of new aesthetic. Their designs consist of tall buildings set in open green spaces connected by, but turning their backs on, roads and highways in an orthogonal pattern as possible (Lang 1994, 50).

They speak of “unifying function” the “Urban Motorway” to uplift the lack of comprehensibility and identity in big cities. In order to perform this unifying function, all roads must be integrated into a system. As Corbusier, they speak of urban mobility as the key element of urban design. But they differ in the basic unit of a community as they speak of a community as “appreciated units” rather than neighborhood. The “appreciated unit” is supposed to be different in each type of community (Smithson 1968, 3.4; 1-2).

Edmund Bacon

Bacon was an American architect and urban planner. He was the executive director of the Philadelphia City Planning Commission from 1949 to 1970, during which period he led the revitalization of Philadelphia’s downtown, fostering a broad movement of urban renewal in other cities across the country. Bacon’s vision of urban renewal influenced a generation of city planners throughout the United States.
Bacon spearheaded the plan to redevelop Penn Center, which became Philadelphia's downtown commercial district, by demolishing a railroad yard. He replaced a rundown riverfront section of the city with high-rise apartment buildings. Residents renovated 18th-century row houses and the Society Hill neighborhood became one of Philadelphia's most desirable addresses (Bacon 1967, 277-282).

2.8 The Seventh Decade (1961-1970)

The Seventh Decade of the twentieth century was the most prolific one for the new theories of Urban Design (particularly the year 1960-61). Three of the greatest urban design books were published in this period: ‘The Death and Life of Great American Cities’ by Jane Jacobs, ‘The Image of the City’ by Kevin Lynch and ‘Townscape’ by Gordon Cullen. The Urban Renewal Movement which was popular in the previous decade was criticized. The era marked the end of the modernist approach of city designing. Lynch’s usage of mental maps in understanding of the city liberated urban designers from the previous two-dimensional physical master plans. Both Lynch and Cullen's ideas helped to change the approach of viewing a city. The ‘master of public space’ William Whyte who wrote many books on how public spaces should be designed became active in this decade.

Jane Jacobs

Jacobs was an American-born Canadian urbanist, writer and activist. She is best known for her book “The Death and Life of Great American Cities” (1961) which attacks the modern city planning. Looking into how cities actually work, rather than how they should work according to urban designers and planners, Jacobs effectively describes the real factors affecting cities, and recommends strategies to enhance actual city performance (Jacobs 1992).
Jacobs argues that modernist urban planning rejects the city, because it rejects human beings living in a community characterized by layered complexity and seeming chaos. The modernist planners used deductive reasoning to find principles by which to plan cities. Among these policies the most violent was urban renewal; the most prevalent was and is the separation of uses (i.e. residential, industrial, commercial). These policies, she claimed, destroy communities and innovative economies by creating isolated, unnatural urban spaces. In their place Jacobs advocated a dense and mixed-use urban aesthetic that would preserve the uniqueness inherent in individual neighborhoods. Her aesthetic can be considered opposite to that of the modernists, upholding redundancy and vibrancy, against order and efficiency. She frequently cited New York City's Greenwich Village as an example of a vibrant urban community (Ibid.).

Kevin Lynch

Lynch was an American Urban Planner and author. His contribution in Urban Design is through empirical research on how individuals perceive and navigate the urban landscape. This idea is presented in his book “The Image of the City”.

According to Lynch, The contents of the city images, which are referable to physical forms, can be classified into five elements - Paths: the streets, sidewalks, trail, and other channels in which people travel. Edges: perceived boundaries such as walls, buildings, and shorelines. Districts: relatively large sections of the city distinguished by some identity or character. Nodes: focal points, intersections or loci. Landmarks: readily identifiable objects which serve as reference points (Lynch 1960, 46-48).

The elements are simply the raw materials of the image of the city. They must be patterned together to provide a satisfying form. This can be done by field analysis map by both trained
observers and laymen and field reports which will deal with strength and weaknesses and which will capture general pattern as well as parts. All this material would finally be synthesized in a series of maps and reports which would give the basic image of the area, the general visual problems and strengths, the critical elements and element interrelations, with their detailed qualities and possibilities for change. From such an analysis, the future visual form of the region could be based (Ibid. 84-89).

Thomas Gordon Cullen

Cullen was an English architect and an urban designer who carried on the of the Townscape movement theme. Later on he wrote and published “Townscape” (1961). Cullen examined the traditional artistic approach to city design of theorists such as Camillo Sitte. He created the concept of ‘serial vision’, defining the urban landscape as a series of related spaces (Gosling 1996, 8-9).

Townscape, a concept developed by Cullen, is the art of giving visual coherence and organization to the jumble of buildings, streets and space that make up the urban environment. In his introduction, Cullen divides his examination of vision into three distinct elements, the first of which is ‘Optics’. This concerned the experience of walking through the town at a uniform speed in which the scenery of towns was revealed in a series of jerks and revelations, called serial vision. The second is ‘Place’, which dealt with a person’s reaction to the position of the body in an environment of exposure and enclosure. The final element ‘Content’ is concerned with the fabric of towns; color, texture, scale, style, character and uniqueness. This dynamic approach of viewing a town (as opposed to the static approach) was barely recognized until this period (Cullen 1971, 8-10).
William H. Whyte

Whyte was an American urban planner who spent many years directly observing human beings. He authored several texts about urban planning and design and human behavior in various urban spaces (APA Individuals who influenced Planning before 1978).

His book ‘The Last Landscape’ criticized regional plans and their visions of decentralized, suburban utopias. Whyte believed that the design of the city should be focused on downtown rather than in suburbs. In 1971, Whyte organized an empirical study of the way people use the streets and spaces of the city center. For this, he used time-lapse photography to chart the meanderings of pedestrians. What emerged from his intuitive analysis is an extremely human, often amusing view of what is staggeringly obvious about people’s behavior in public spaces (such as taking the shortest distance between two points). Whyte documented his findings and suggested guidelines on making downtowns livelier in his book ‘The Social Life of Small urban Places’. Whyte’s 1988 book “Rediscovering the Center” gives empirical proof that suburban plans cannot be joined with the city core plans (Whyte 2000, viii-xv).

2.9 The Eighth Decade (1971-1980)

The Eighth Decade started the Post-Modernist approach of urban design. The previous modernist cities were heavily criticized by post–modernist like Robert Venturi and Denise Scott Brown. A wide array of theories related to urban design was generated in this decade. Christopher Alexander gave his ‘Pattern Theories’ whereas Oscar Newman developed ‘Crime-Prevention through Environment Design’ (CPTED). Lawrence Halprin popularized environment
planning and Donald Appleyard gave a new perspective of streets and their importance in urban design.

**Lawrence Halprin**

Halprin was an American landscape architect and environment planner. Halprin worked in different design and planning scales. His works include designing of small water fountains to massive urban renewal projects. Halprin's work is marked by his attention to human scale, user experience, and the social impact of his designs. Halprin was the creative force behind the interactive, 'playable' civic fountains most common in the 1970s (*Lawrence Halprin, Archiplanet*).

Halprin was both process oriented as well as result oriented. He analyzed user needs to create diagrams and designs. He extensively analyzed the user desires and reflected them into his design which was very user-friendly. Halprin is credited for the design of “organic, free flowing, romantic people spaces” which he designed by synthesizing the elements from nature and user needs (*Ibid.*).

**Denise Scott Brown & Robert Venturi**

Denise Scott Brown is an African-born American urban planner, architect, and teacher, known for her contributions to theoretical research and education on the nature of cities. With her husband and collaborator, architect Robert Venturi; she launched a critique of architectural modernism that led to the development of alternative strategies (Post–Modernism) for urban design during late 1960s and 1970s. Their major work related to urban design include urban plans for South Street, Philadelphia, Miami Beach, Florida, and Memphis, Tennessee; and
advising on a regional plan for the Bouregreg Valley in Morocco (Denise Scott Brown, Robert Venturi; Wikipedia).

Scott Brown and Venturi along with Steven Izenour in 1972, wrote “Learning From Las Vegas: the Forgotten Symbolism of Architectural Form” which chronicled their findings and stirred controversy in the architecture field by suggesting that "low art" sources such as supermarket parking lots, the roadside commercial strip, and gambling casino advertising offered valuable lessons in design (Ibid.).

Scott Brown and Venturi have helped significantly to redirect the mainstream of modern architecture since late 1960s. They have helped to broaden architecture and urban design to include ideas on pluralism and multiculturalism; pop art, popular culture, and the everyday landscape; symbolism, iconography and context (Ibid.).

Oscar Newman

Oscar Newman is an American architect and city planner, best known for his work on crime prevention. His books ‘Defensible Space’ and ‘Community of Interest’ have helped frame housing policies throughout the world. U.S. Department of Housing & Urban Development (HUD) has now adopted "Defensible Space" principles for all its new projects, as well as for determining which projects to tear down. Newman along with C. Ray Jeffery together is credited for Crime prevention through environmental design (CPTED) a multi-disciplinary approach to deterring criminal behavior CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts. CPTED strategies include natural access control, natural surveillance and territorial reinforcement. Newman’s defensible space concepts have helped
communities in St. Louis, Dayton, and elsewhere redesign neighborhoods for greater safety. CPTED has become a keyword in neighborhood design (*Defensible space, webpage*).

**Christopher Alexander**

Alexander is an Austrian born American architect noted for his theories about design. His main contribution in architecture and urban design is the theory of “Pattern Language” a term which he coined. His pattern language theories were of great influence in the emergence of New Urbanism Movement and modern Form-Based codes (alternative to traditional zoning) in 1990s.

Alexander’s patterns serve as an aid to design cities and buildings and are a source of proven ideas for individuals and communities to use in constructing their living and working environment. Through his 253 patterns Alexander tries to covers the design process of all the elements of urban and rural design and infrastructure like keeping the fingers of farmland and urban land interlocked, to preserve county towns, encourage the growth of self-contained towns, breaking the city into different subcultures each with its own spatial territory (*Alexander et al. 1977, 22-50*).

Alexander speaks of using zoning laws to scatter workplace throughout the city and to intermingle large workspace and large residential area. Regarding urban transportation infrastructure, he suggests to break the urban area into local transport area; to build minor local roads and paths for internal movements on foot and to build major roads for which makes it easy for the automobiles to get to and from ring roads (*Ibid., 52-68*). On neighborhood design, Alexander suggests that the maximum diameter of a neighborhood should be 300 yards and the major roads should be kept outside it. The formation of neighborhood boundaries is important and can be done by placing gateways (*Ibid. 81-90*).
Donald Appleyard

Donald Appleyard was an English architect and city planner. Appleyard was active in projects that ranged from detailed neighborhood planning and design, such as the Berkeley street diverter program, to plans at a citywide scale, such as Ciudad Guyana in Venezuela. He was a major contributor to the San Francisco Urban Design Plan. During his career he pursued a strong interest in environmental perception and community based planning. He studied the social and psychological effects of traffic and neighborhood layout, devised sensitive tools for the analysis of peoples’ environmental perceptions, and took issue with the power conflicts inherent in mainstream urban planning processes (Donald Appleyard, Project for Public Spaces (PPS)).

In his book “Livable Streets” (published 1981) he showed that streets have many social and recreational functions which are severely impaired by fast car traffic. His research dealt in large measure with subjects including the effects of traffic upon the lives of local residents, the physical characteristics of cities as fulfilling and joyful places to live, how to manage traffic in residential areas, conservation of neighborhoods and the like. His methods involved the development of new survey techniques to relate people's perceptions and values to the design process and to resulting physical environments (Ibid.).

2.10 The Ninth Decade (1981-1990)

The ninth decade of the twentieth century did not see any new theories or proposals in urban design. Jane Jacobs, Christopher Alexander, Scott Brown and other Post–Modernist were still influential as in the earlier decade. Leon Krier campaigned for the reconstruction of the
traditional European city model and had a great influence on the New Urbanism Movement which initiated in this period but gained momentum in the next decade.

**Leon Krier**

Krier is a world renowned Luxembourgian architect and urbanist. He had major influences on the New Urbanism movement that arose in 1990s in United States. Many of his the principles have been adopted in the charter for the New Urbanism *(Economakis 1992, 9-13).*

Krier, like Jane Jacobs criticized the modernist cities. He argues that modernist planning makes what he calls “non-place” or “anti-city” and zoning (the modernist tool) fragments daily life and makes car dependency mandatory. Instead he argues that communities should be based on human scale and walkability and not by zoning and transport routes. Krier’s implementation of his theories can be seen in the English model town of Poundbury *(Ibid.)*.

**2.11 The Tenth Decade & Beyond (1991 - Present Day)**

New Urbanism Movement whose goal is to reform all aspects of real estate development and urban planning, from urban retrofits to suburban infill gained momentum in the last decade of twentieth century. New Urbanist Peter Calthrope proposed the concept of TOD (Transit-oriented Development) in 1993 and revived the possibility of integration of urban design in a regional scale. Form Based Codes – an alternative to Euclidean Zoning also emerged from the New Urbanist School of development. Co-founders of New Urbanism Movement Andres Duany & Elizabeth Plater-Zyberk in *The Lexicon of the New Urbanism* proposed the New Urbanist Neighborhood Unit which is the updated version of Perry’s Neighborhood Unit of 1929. Duany is also credited for the idea of “The Transect” which is an urban design model and is an important
part of New Urbanism Movement as well as the following Smart Growth Movement. The Transect is the basis of “SmartCode” a variant of Form-Based Code developed by Duany. Michael E. Arth proposed a more pedestrian and ecology-oriented version of New Urbanism called “New Pedestrianism” in 1999.

Apart from the design proposals, the last decade of the twentieth century also saw some studies on how cities have become (city form) today. Joel Garreau popularized the term “Edge Cities” in United States which is about the end of central city growth and population and economic activity shifting to suburbs. Similarly, Rem Koolhaas in his “Generic City” states how cities have lost their identity and have become generic in nature.

The following years of the new millennium saw the practical application of New Urbanist theories. Many cities fully or partially have adopted Form–Based Codes or SmartCode. Ecological importance and sustainability are major considerations now while designing a neighborhood or any other urban place. TODs, sustainable design, urban green infrastructure design, smart growth and smart-codes are the latest buzz words in urban design.

New Urbanism

New urbanism is an American urban design movement that arose in the early 1980s. It emerged with the urban visions and theoretical models for the reconstruction of the European city proposed by architect Leon Krier, and the "pattern language" theories of Christopher Alexander. These eventually integrated into a unified group in the 1990s. Peter Calthorpe, Andres Duany, Elizabeth Moule, Elizabeth Plater-Zyberk, Stephanos Polyzoides, and Daniel Solomon founded the Chicago-based Congress for the New Urbanism in 1993.
The Charter of the New Urbanism specifically structures its principles at three telescoping scales: the region, the neighborhood, and the building. But perhaps most important is its assertion that the three scales are interconnected and interdependent. The Charter is simply twenty-seven principles organized by these three scales. The three elements of this book—the emerging region, the maturing suburb, and the revitalized urban neighborhood — each benefit from the principles articulated in the Charter (Calthorpe & Fulton 2001, 3.10; 1-4).

Peter Calthorpe: Regional City & TOD

Calthorpe is an American architect and urban planner. He has combined his experience in both disciplines to develop an environmental approach to community development and urban design. He is a co-founder of the Congress for the New Urbanism, a professional and activist group dedicated to the principles of new urbanism, and was the organization's first board chairman.

His book, “The Next American Metropolis: Ecology, Community, and the American Dream” (1993), provides extensive guidelines for transit-oriented development. He defines the Transit Oriented Development (TOD) as a mixed-use community within an average one half-mile pedestrian shed of a transit stop and core commercial area. The TOD mixes residential, retail, office, and open space, in walkable environment, making it convenient for residents and employers to travel by transit, bicycle, foot or car. According to Calthorpe, TODs are radical alternative to conventional development. Each TOD is not self sufficient, but a network of TODs throughout a region is, offering the realistic option of reducing automobile usage. TODs may also be located on a bus route within ten minutes’ travel time of a rail stop (Calthorpe 1993, 56).

Calthorpe in his book “The Regional City” (2001) speaks of the emergence of regionalism in urban design as a necessity. The regional city should be such that, a network of regional
geography, green space, and transit establish the basis of vital networks, and transit-oriented development provides a coherent organizing system, unlike the existing “Edge Cities” (discussed later). To facilitate the shift from “edge city” to the “regional city,” the urban designer needs to reconceive the basic building blocks of the region and its jurisdictions. Rather than the twenty or thirty specific land-use designations found on most zoning maps, only four elements are sufficient to design complete regions, cities and towns. Centers: the local and regional destinations at the neighborhood, village, town and urban scale. Districts: the special-use areas, which are necessarily dominated by a single primary activity. Preserves: the open-space elements that frame the region protect farmlands and preserve critical habitat. Corridors: the connecting elements based on either natural systems or infrastructure and transportation lines (Calthorpe & Fulton 2001, 271-273).

Form–Based Codes

A form-based code (FBC) is a means of regulating development to achieve a specific urban form. It elevates physical design in city planning, by controlling physical form primarily, with a lesser focus on land use, quite opposing to the “use-based” restrictions of Euclidean zoning (Form Based Codes Institute, 2009). The first use of FBC was done in 1982 to guide the development of the Florida resort town of Seaside by Andres Duany.

“Design is more important than use” embodies the underlying philosophy behind the Form-Based Codes. Form-Based Codes represents multi-disciplinary codes that connect the design of circulation and public space networks to the design of building form. A community’s physical form—namely, its buildings, streets, and public spaces—signifies its most defining characteristic as they shape the public realm. Asserting more control over a community’s form could lead to improvements in the way the community functions. This increased control includes the fostering
of pedestrian-friendly mixed-use developments, and a range of housing types. Form-Based Codes usually consist of three primary components (and one optional component) that are employed to implement a community’s vision-based physical plan. These components include: Regulating Plan, Building Envelope Standards, Definitions, and the optional Architectural Standards (*Ibid.*).

**Andres Duany & Elizabeth Plater-Zyberk**

Husband and wife Andres Duany and Elizabeth Plater-Zyberk are American architects and urban planners and the co-founders of the Congress for the New Urbanism. Their Lexicon of the New Urbanism establishes a vocabulary and set of standards of urban form to use in the creation of traditional neighborhoods.

**Updated Neighborhood Unit**

Andres Duany & Elizabeth Plater Zyberk updated Perry’s Neighborhood Unit of 1929. This updated version of the neighborhood reconciles the current models of the Traditional Neighborhood Development (TND) and Transit Oriented Development (TOD) (*Duany, Zyberk & Alminana 2003, 88*). The school is not at the centre but at an edge, as playing fields would hinder pedestrian access to the center. The school at the edge can be shared by several neighborhoods that would continuously provide it with a new influx of students, thus mitigating the problem created by the tendency of neighborhoods to age in cohorts, which generates large student-age populations that eventually age and then drop off sharply. There are few sites reserved for local institutions at the center and more for regional institutions at the edge. Ease of transportation has made memberships in institutions a matter of proclivity rather than proximity.
The shops at the busiest intersections have been modified to accommodate larger parking plazas for convenience retail and extended by an attached main street for destination and live work commercial uses. More service alleys and lanes have been added to accommodate the increased parking requirements. The minor thoroughfares are connected with those outside the neighborhood in order to increase permeability and disperse traffic. This modification increases the possibility of shortcuts. The thoroughfares types support a transect from the rectilinear streets at the urban center to curvilinear roads toward the rural edge. The traffic along the boulevards at the edge is more unpleasant than historically envisioned. Three mitigating strategies are proposed, the provision of an end–grain of blocks at all the edges, a green buffer shown along the bottom edge, and the location of resilient building types, such as office buildings, shown along bottom edge. The traffic along the highway shown at the top is assumed to be hostile and therefore buffered within a parkway (Ibid, 84).

The Transect and the SmartCode

Andres Duany developed a version of coding that applies the basic directives of the Form-Based Code to a regional context. Duany calls his version the “SmartCode,” and it is based upon the concept of the Transect. The SmartCode asserts that there is a range of forms the built environment may take. (Duany and Talen 2002, 245-266).

The transect is a geographical cross section of six series of environments of increasing density. The cross-section is divided into six ecozones: Rural Preserve, Rural Reserve, Sub-Urban, General Urban, Urban Center, and Urban Core. A unique Form-Based Code should be devised for each of these six unique zones. Prescribing a unique Form-Based Code for each of the six ecozones facilitates the creation of the most appropriate building forms in the most
suitable ecozone. Duany asserts that most buildings the public does not like result from “transect violations”. For instance, a two or three story glass office building located in suburbia violates the suburban ecozone. While the building form might be appropriate for some type of office or commercial function, the building fails to integrate within the local community context because of its “mis-location” in an unsuitable ecozone. A Form-Based Code based upon the transect would exclude such a transect violation from occurring (Ibid.).

Michael E. Arth

Arth is an American artist and landscape and urban designer. Arth started a more pedestrian and ecology-oriented version of New Urbanism called “New Pedestrianism”. Arth advocates compact neighborhoods with focus on pedestrian friendly streets. The entry to any typical house is from the pedestrian lane. The rear of the house has "carriage house" and formal garden gate which opens to the tree-lined automobile streets (Michael Arth, Wikipedia).

Arth claims that living in what he calls a "Pedestrian Village", coupled with a compact, mixed-use neighborhood or village center, will ameliorate a wide range of problems related to urban living. Having such a development built near a downtown area or newly-created village center reduces the amount of travel time that would normally be spent in an automobile, thus increasing the physical activity of the homeowner and saving energy. In more densely built new towns or developments, he claims that this new form of housing would greatly reduce the dependency on the automobile and the resulting village-like towns would vastly increase both aesthetics and quality of life. He also promotes the creation of similar pedestrian amenities that can be retrofitted to existing tow (New Pedestrianism, Wikipedia).
**Edge City Theory**

Joel Garreau in his book “Edge City: Life on the New Frontier” (1991) states that American cities are growing with multiple urban cores. These urban cores consist of corporate buildings, shopping malls and apartment buildings. These urban cores are tied together not by locomotives or subways but by freeways. Garreau calls these urban centers Edge Cities. Cities – because they contain all the functions of the city, but in a spread out manner. Edge - because they are located far from the traditional city center, the downtowns. According to Garreau, edge cities have become the standard for urban growth throughout the world. During the time of publication of his book in 1991, he states there were about 200 edge cities in US and the number is ever increasing *(Garreau 1991, 4-6)*.

**Generic City Theory**

Rem Koolhaas in his Generic City theory speaks of contemporary city as the contemporary airport - all the same. And this is only possible by shedding of the “Identity”. The Generic city can produce a new identity every week. The Generic City’s only identity is the lack of clear identity. Sometimes even a city with identity simplifies itself and becomes generic. The “Context” which used to be an integral part of any design process, according to Koolhaas is now outdated. *(Koolhaas 2005, 637-638)*

The Generic City is inorganic in nature. It’s in its way from horizontality to verticality. The skyscraper looks is it definite typology. The towers no longer stand together; they are spaced so that they don’t interact. It has a “free style” of aesthetics *(Ibid. 641).*
Whether its downtown New York and Chicago in North America; Bombay, Tokyo, and Shanghai in Asia; Rio de Janeiro and Buenos Aires in South America; they all look the same. They all are generic cities marked with high rise buildings, multi diverse population, narrow streets with decks, bridges, tunnels and motorways, metro rail, high density and high pace of life.

**Smart Growth, Sustainable Design & Urban Green Infrastructure**

Smart Growth, Sustainable Design & Urban Green Infrastructure cannot strictly be called urban design theories, since they cover a larger realm of ecological, social, economic and environment development. But, since the dawn of the new millennium, they have become important ingredients in the city designing process and hence are included in this timeline of the evolution of urban design.

Smart growth is an urban design and transportation theory that concentrates growth in the center of a city to avoid urban sprawl; and advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices. Smart growth values long-range, regional considerations of sustainability over a short-term focus. Its goals are to achieve a unique sense of community and place; expand the range of transportation, employment, and housing choices; equitably distribute the costs and benefits of development; preserve and enhance natural and cultural resources; and promote public health (*Smart Growth, Online Webpage*).

Sustainable design represents a set of principles of planning, design, and construction that endeavor to preserve and improve the environmental health of people and contingent natural systems. Sustainable design influences site design, rainwater harvesting, aquifer recharge,
waste prevention and reclamation, and improved quality of air, water and vegetation by elimination of toxic chemicals (Watson 2001, 4.9; 1).

The “Green Infrastructure” of a city is comprised of natural and designed systems and elements of the city that function in ways analogous to natural processes in managing air, water, microclimatic and energy resources. The most obvious part of this infrastructure are trees, open spaces of vacant lots, lawns and parks, and stream corridors, i.e., all places that have water-pervious surfaces and/or soil to support plant material. It includes the parks and wild lands, stream corridors, utility corridors and vacant regenerating sites. These fragments of city property, if considered as a single system similar to transportation or waste treatment, offer opportunities for keeping our cities clean and for providing recreational space. Because it imitates natural systems, green infrastructure is holistic and includes waterways and microclimatic systems that vegetation, land and water bodies create—essentially those parts of the urban system that are ecologically based. The green infrastructure performs ecological, recreational and aesthetic functions in the city. It improves the quality of the urban environment, provides access to natural habitats, avoids damage to the built form, and, in general, keeps all of us healthy (Schneekloth, 2001, 7.4, 1-4).

2.12 Timeline Table

The study of urban design ideas, theories and proposals from the parks movement to the green infrastructure movement concludes the evolution of urban design in the twentieth century. As we can see, the various theories and ideas presented in this chapter are sometimes original, sometimes derivative of some previous theory and sometimes influenced by one or more than one of the previous theories. The timeline presented next gives the snapshot of all the theories
covered in this chapter, the previous theories which had influences shaping them and the influences they had on future new theories.
### Timeline of Evolution of Urban Design Theories

<table>
<thead>
<tr>
<th>Year</th>
<th>Person Or Movement</th>
<th>Influenced By</th>
<th>Influences On</th>
<th>Urban Design Period</th>
<th>City Design Paradigm</th>
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<tr>
<td>1840</td>
<td>Frederick Law Olmsted</td>
<td>Progressive Reform Movement</td>
<td>City Beautiful Movement</td>
<td>Post Medieval</td>
<td>1800s-1860s</td>
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<td>Parks Movement</td>
<td></td>
<td>Clarence Stein &amp; Design of Greenbelts City</td>
<td></td>
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<tr>
<td>1880</td>
<td>Camillo Sitte</td>
<td>Medieval Cities</td>
<td>European Cities in late 19th &amp; early 20th Century</td>
<td>Baroque</td>
<td>1860-1920</td>
</tr>
<tr>
<td></td>
<td>City Beautiful Movement</td>
<td></td>
<td>Gorden Cullen, Scott &amp; Venturi</td>
<td></td>
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</tr>
<tr>
<td>1900</td>
<td>Ebenezer Howard (Garden City)</td>
<td>Beaux-Arts Movement</td>
<td>Design of many cities throughout the world</td>
<td>Beginning Of Modern</td>
<td>1920-1940</td>
</tr>
<tr>
<td></td>
<td>Daniel Hudson Burnham</td>
<td>Parks Movement</td>
<td>Chicago in US, Canberra in Australia, New Delhi in India</td>
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<tr>
<td></td>
<td>Plan Of Chicago</td>
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</tr>
<tr>
<td>1910</td>
<td>Frederick Law Olmsted II</td>
<td>City Beautiful Movement</td>
<td>Many cities throughout US; Detroit, San Francisco etc.</td>
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<tr>
<td>1920</td>
<td>Tony Garnier</td>
<td>Writings of Emily Zola</td>
<td>Le Corbusier CIAM</td>
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<tr>
<td></td>
<td>Industrial City</td>
<td></td>
<td>Separation of spaces by function (Zoning)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bauhaus</td>
<td></td>
<td>All Modernists Ideologies like &quot;Form Follows Function&quot; &amp; &quot;Less is More&quot;</td>
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<td></td>
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<tr>
<td>1930</td>
<td>Le Corbusier</td>
<td>Concentric City</td>
<td>A Whole Generation Of City Planners</td>
<td></td>
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<tr>
<td></td>
<td>Radiant City</td>
<td>Plan Voisin de Paris</td>
<td>Edmund Bacon</td>
<td>City Efficient</td>
<td>1950-1970</td>
</tr>
<tr>
<td></td>
<td>CIAM</td>
<td></td>
<td>Vertical Expansion of Cities</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Influenced Automobile Use in City Planning</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Clarence Arthur Perry</td>
<td>Neighborhood Unit Concept</td>
<td>Clarence Stein New Urbanism</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Duany &amp; Plater-Zyberk's Updated Neighborhood Unit</td>
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<tr>
<td></td>
<td>Frank Lloyd Wright</td>
<td>Wright never accepted anyone's influence on him</td>
<td>Horizontal Expansion of Cities, Urban Sprawl, Edge City</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Broad Acre City</td>
<td></td>
<td>Influenced Automobile Use in City Planning</td>
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<tr>
<td></td>
<td>Clarence Stein</td>
<td>Ebenezer Howard</td>
<td>Separation of Residential Neighborhood from major traffic roads</td>
<td></td>
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<tr>
<td></td>
<td>Design of Radburn</td>
<td></td>
<td>Pedestrian Neighborhood, Super blocks, New Urbanism</td>
<td></td>
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<tr>
<td>Timeline</td>
<td>Person Or Movement</td>
<td>Influenced By</td>
<td>Influences On</td>
<td>Urban Design Period</td>
<td>City Design Paradigm</td>
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<tr>
<td></td>
<td>Dynanipoles</td>
<td>Le Corbusier</td>
<td>Inclusion of geographical, ecological, cultural and political aspects in City Design</td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td></td>
<td>Ekistics</td>
<td></td>
<td>Revitalization of Cities (Mostly Downtowns)</td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td>1950</td>
<td>Edmund Bacon</td>
<td></td>
<td>Streets as Unifying Function, Systemic Approach in Urban Design</td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td></td>
<td>Urban Renewal</td>
<td></td>
<td>Large Cities, Modern Technology, High Rise</td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td></td>
<td>Alison and Peter Smithson (Team 10)</td>
<td>Influenced by CIAM earlier</td>
<td></td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Later revolved CIAM on philosophies of modernism</td>
<td></td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td>1960</td>
<td>Jane Jacobs</td>
<td>Empirical Theory</td>
<td>Failure of Modernist Cities</td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td></td>
<td>Kevin Lynch (Mental Map)</td>
<td></td>
<td>Mixed use, dense, vibrant urban aesthetics, New Urbanism</td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td></td>
<td>Gordon Cullen (Serial Vision)</td>
<td></td>
<td>Dynamic Approach of City Designing</td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td></td>
<td>William H. Whyte (Public Space)</td>
<td></td>
<td>Humanist Approach of City Designing, Townscape Movement</td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Designing of Urban/Public Spaces</td>
<td>Modern</td>
<td>1900-1972</td>
</tr>
<tr>
<td></td>
<td>Oscar Newman (CPTED)</td>
<td></td>
<td>Defensible Space</td>
<td>End Of Modern</td>
<td>1972-1995</td>
</tr>
<tr>
<td></td>
<td>Donald Appleyard (Streets)</td>
<td></td>
<td>Social and Recreational Function of Streets</td>
<td>End Of Modern</td>
<td>1972-1995</td>
</tr>
<tr>
<td></td>
<td>Peter Calithrope</td>
<td>Clarence Arthur Perry</td>
<td>Regional City Design Transit- Oriented Development (TOD)</td>
<td>Post - Modern</td>
<td>1972-1995</td>
</tr>
<tr>
<td></td>
<td>Form Based Codes</td>
<td>Empirical Theory</td>
<td>Adopted by many cities as alternative to zoning</td>
<td>Post - Modern</td>
<td>1972-1995</td>
</tr>
<tr>
<td></td>
<td>Michael E. Arth</td>
<td>Urban Sprawl</td>
<td>The Transect &amp; Smartcode</td>
<td>Post - Modern</td>
<td>1972-1995</td>
</tr>
<tr>
<td></td>
<td>Edge City Theory</td>
<td>New Urbanism, various other ecological &amp; environmental movements</td>
<td>Standard Form of Urban Growth throughout the world</td>
<td>Post - Modern</td>
<td>1972-1995</td>
</tr>
<tr>
<td></td>
<td>Generic City Theory</td>
<td></td>
<td>Downtowns throughout the world</td>
<td>Post - Modern</td>
<td>1972-1995</td>
</tr>
</tbody>
</table>
Chapter 3

Organization and Categorization of different Urban Design Theories

3.1 Introduction

The various theories presented in Chapter 2 can broadly be categorized into different models.

One model, of the formalist tradition pioneered by Federick Law Olmsted was the Park Movement which focused on the introduction and integration of natural systems into the city and influenced design of greenbelts cities and is still influential in designing eco-cities today. Another variant of formalist tradition was “City Beautiful Movement” which was rooted in Renaissance and Baroque urbanism and looked at the city as a network of formal streets and spaces, marked by striking monument.

A second model was that of Camillo Sitte who believed in recreating medieval cities and treated urban spaces as aesthetic arrangements of building masses, facades, and street spaces.

A third model “The Garden City”, by Ebenezer Howard was developed and advocated by Raymond Unwin, Clarence Stein, Clarence Perry and many others still influence today’s neotraditional community.

A fourth model which was introduced by Tony Garnier and developed by Le Corbusier and applied by many like Edmund Bacon and Lucio Costa, looked at the city in terms of efficiency and function and tried to create urban space using new techniques of construction and transportation.
Then there were other urban design theories by the likes of Gordon Cullen, Kevin Lynch, William Whyte, Christopher Alexander and post modernist Denise Scott Brown and Robert Venturi which cannot be really plugged into any of the four models described above and can be called a fifth model.

A sixth and the latest model is the New Urbanism Movement which aims to reform all aspects of urban design and create walkable, dense, mixed use neighborhoods.

We also have some city form theories like “Edge City” and “Generic City” which are also important while studying the evolution of any city. Probably these theories together make the seventh model.

3.2 Canvas for Formal Categorization of Different Urban Design Theories

The introduction presents the glimpses of major models of different urban design theories and gives us the direction for categorizing various urban design theories. The categorization process is not so simple because many theories tend to fit in more than one model. A formal way of categorization requires some thought process. The best way of doing this is by jotting down all the theories in one blank page (to get the holistic sphere of influence) and to see how they fit or connect with each other. This page which I have called the “canvas” is presented next.
3.3 Synopsis of Different Group Theories or Models

The various urban design theories proposed throughout history can be broadly categorized and organized into different models in more than one way. The “Canvas” presented earlier is the author’s way of categorization based on the chief concern of different theories. Based on the canvas we have six different models and one group called “others’ which basically includes the theories which do not fit in any model. Presented next is the synopsis of the different models and snapshots of the important theories which make the model. Since these different theories have been described in detail in Chapter 2, only snapshots are presented in this section.

The Formalist Model

The formalist model is the oldest model in the canvas. Developed first in the nineteenth century, the main aim of the formalist model is “aesthetics of order”. The Park Movements and the City Beautiful Movement which followed one another sought to improve the moral structure of the society through a fundamental formal restructuring of spatial structure. The parks were integrated into the city formally by the means of four avenues laid out with an elaborate system of independent traffic lanes, bridges and underpass that were designed not to interrupt the continuity of the landscape. Similarly, City Beautiful movement” which had its roots in Renaissance and Baroque urbanism entailed axial organizations and static spaces drawing upon elementary geometrics. These reflected a notion of universal order and harmony.

Christopher Alexander’s Pattern theory is the idea of capturing architectural design ideas as a "pattern". A pattern records the design decisions taken by many builders in many places over many years in order to resolve a particular problem. These patterns, formal in nature serve, as
an aid to design cities and buildings. Although, Pattern Theory could also fit in the Humanist Model, it is more of a formalist theory, and hence under the formalist model. Pattern theory also had a great influence in shaping the New Urbanism Model.

The neo-rationalist and post-modernist (Venturi & Scott, Whyte, Aldo Rossi) designers can be also called formalist in some sense with their collective form and populist ideologies (Attoe & Logan 1989, 14) but the author thinks they are more into the human scale as opposed to the colossal grandeur of city beautiful formalism and hence are a part of the Humanist Model.

The Garden City Model

The Garden City theory called the breakthrough theory of the twentieth century was initiated by Ebenezer Howard and later advocated by Raymond Unwin, Clarence Stein and Lewis Mumford. This theory is about creating suburban towns of limited size surrounded by a permanent agricultural land (green belt) independent and self contained and economically managed by the town dwellers. The Garden City Model according to some scholars can fit into the Functional Model as it also has functional concerns of making city efficient. But the way this author looks, social and economical concerns are the primary concerns of the model and function secondary whereas in the Functional Model, functioning of the city by applied technology is the primary concern. Keeping the Garden City Model outside the Functional Model is appropriate.

Clarence Perry was influenced by Howard and developed the “Neighborhood Unit Concept” but unlike Howard’s Garden City which was a self contained town, Perry’s concept was more of a residential section of the city which would include elementary school, small parks and playgrounds, local shops and churches. Clarence Stein who designed Radburn based on the neighborhood unit concept modified Perry’s neighborhood unit and expanded the definition of
neighborhood center by connecting neighborhoods together to create town. Perry’s and Stein’s theories are derivative of the Garden City concept in American context. Perry’s Neighborhood Unit was later updated by Andres Duany and Elizabeth Plater Zyberk which is the part of The Lexicon of New Urbanism.

Wright’s concept of Broad Acre City is of a decentralized city. Although Wright is associated with high functionalism his idea is opposed to the idea of density which Le Corbusier and other functionalist speak of, having horizontal expansion of the city rather than vertical, though it is similar in the functional approach due to extensive use of technology and automobiles. Broad Acre City is a less dense version of Garden City except for the extensive use of automobiles. So instead of putting Broad Acre City into functional Model, the author thinks it fits better under The Garden City Model.

**The Functionalist Model**

This Functionalist Model looks at the city in terms of efficiency and function and tries to create urban space using new techniques of construction and transportation. Tony Garnier’s Industrial City pioneered this model which was later developed by Le Corbusier and CIAM and applied throughout the world. Influential application in city design of the Functionalist Model include De Costa’s Brasilia, Tange’s Tokyo, Louis Kahn’s Dhaka and Edmond Bacon’s revitalization of Philadelphia.

In Une Cité Industrielle (Industrial City) Garnier basically speaks of separation of spaces by function (zoning concept), decentralized layouts, traffic-free pedestrian zones and residential districts with gardens which would emphasis in continuous pedestrian circulation.
Le Corbusier was influenced by Garnier and in the Athens Charter, the result of CIAM’s fourth meeting he gives us 95 clauses which are in fact his solutions for the unintended ills of the city. Like Garnier, Corbusier speaks of function based spaces and using of topography to advantage and taking climate into account. Major points in the Charter include locating residential district to the best sites within the urban spaces, the non alignment of houses along transportation routes, use of modern techniques of construction, use of high rise structures (vertical expansion of cities), inclusion of green spaces, full use of natural elements (rivers, lakes, forests, hills etc) for recreation, reduction of distance between work places and residential areas.

Allison and Peter Smithson of Team 10 emphasize on large-scale elements and seek an overall order for the urban place. They were influenced earlier by CIAM but later revolted it on issues of overall comprehensibility of city design. Some authors like Wayne Attoe categorize them differently as the Systemic or Structuralist Model rather than being a part of the Functionalist Model. Even though they differ from the traditional functionalist in overall comprehensibility, they still are functionalist as they speak of a “unifying function” the “Urban Motorway” to uplift the lack of comprehensibility and identity in big cities. Like Corbusier they also speak of urban mobility as the key element of urban design. The author thinks the Systemic Model is a subset of the Functional Model and Allison and Peter Smithson are a part of the Functional Model.

Doxiadis’s Ekistics theory can be seen as a correction and elaboration of the Functionalist Model. Ekistics principles include being realistic, thinking at long range with broad scope, identifying problems, and evaluating constantly. Like other functionalist Doxiadis also advocated functional separations of spaces but with much more priority to the central function or the CBD.
Humanist/ Experience Model

Camillo Sitte in the late nineteenth century talked about treatment of urban spaces as aesthetic arrangements of building masses, facades and street spaces to incorporate the human scale. He criticized the emphasis on broad, straight boulevards and monumental architecture but rather gave attention to small-scale elements and informal ordering system avoiding large scale geometry. His theory of urban design was very humanist in nature. Gordon Cullen, Jane Jacobs, Denise Scott Brown & Robert Venturi, William Whyte were and others in 60s-70s were all influenced by Sitte and approached urban design based upon the experience, perception and particular of specific places giving attention to the human scale. They all opposed the rationalism of Functionalist Model which was seen as abstract and disengaged in this era. Sitte combined with all these post- modernist theories (or approaches) of urban design can be broadly categorized into Humanist/ Experience Model.

Cullen’s Townscape concept is the art of giving visual coherence and organization to the jumble of buildings, streets and space that make up the urban environment. Jacobs advocated a dense and mixed-use urban aesthetic that would preserve the uniqueness inherent in individual neighborhoods. Her aesthetic can be considered opposite to that of the modernists, upholding redundancy and vibrancy, against order and efficiency. Scott Brown and Venturi’s theory lies in the mutual relationships between the various material and social ingredients of the design process. They have broaden urban design by including very human ideas like pop art, popular culture, and everyday landscape like symbolism, iconography and context. Whyte’s human observation in public spaces and study of pedestrian behavior has helped to find the actual use of urban plazas, appropriate sidewalk width, and overall design considerations of human scale urban spaces.
City Form Model

Edge City theory and Generic City theory give us the outlook of the form of cities and suburbs in the new millennium. They are not urban design theories formulated by anyone but self-sprung city form which became urban design theories. These two theories can be categorized into one model and can be called City Form Model. This model has been particularly added to the section so that while doing the city study in Chapter 4, it could be one of the key ingredients in evaluating the evolution of cities.

New Urbanism Model

New Urbanism is the latest model of urban design and is the hybrid of the Formalist Model and the Humanist Model. It looks at urban design in three different scales, region, neighborhood and streets. This regional perspective helps to define a meaningful edge for the metropolitan area, eliminating the danger of random growth in distant sites served only by highways. The Transit-Oriented Development (TOD) concept developed by Calthorpe is simple: moderate and high-density housing, along with complementary public uses, jobs, retail and services are concentrated in mixed-use developments at strategic points along the regional transit system. Its neighborhood-scale principles developed by Duany & Plater-Zyberk go to an urban-design philosophy that reasserts mixed-use, walkable environments. Its principles of design at the scale of the street and building seek to recreate places in which continuity and public space are reestablished for the pedestrian.

New Pedestrianism, a variant of New Urbanism developed by Michael Arth further focuses on less automobile usage and extensive usage of segways, skates and bikes.
Others

Some of the other urban design theories; Kevin Lynch’s empirical research on perception of urban spaces and Oscar Newman’s CPTED do not fit in any of the model described above and are not taken into consideration while doing the evolution study of cities in Chapter 4.

3.4 Final Organization of Theories and Interconnections

The major urban design theories, the different urban design models under which they fit and their interconnections illustrated graphically is presented next.
Organization of Urban Design Theories and Interconnections

Legend:
- Urban Design Model
- Urban Design Theory
- Direction of Connectivity
- Overlapping Theory
3.5 Critical Issues that shaped different Urban Design Models

**Formalist Model**
- To battle against urban ugliness, moral decay, and social disorder.
- The belief that nature could offer an exemplary path and the zealous environmental determinism that sought the improvement of the moral state of society in the beautification of urban physical structure and appearance.
- Civic pride and identity required a rooting of the urban design in the dominant culture, which was fulfilled by recreating the representational spaces of classic Western architecture.
- The reconfiguration of the spatial practices was based on the practical needs of an emerging industrial, cooperative economic system.

**Garden City Model**
- Industrial city of the late 19th century was monstrous in size, complex in organization, chaotic in form and had not acquired the spatial order demanded by industrialization.
- This model was an attempt of synthesis of the nineteenth-century utopian thought and need for a new spatial form and order for the modern industrial city.
- Desire to overcome the distinction between towns and country by integrating open green space inside a town.
- Desire to overcome the physical isolation of individuals and families by grouping the communities into one large family structure.
- Envisioning of ideal communities not ideal cities.

**Functionalist Model**
- To provide efficient circulation through a new, modern transportation system.
- To build differentiation into urban spaces by the functional zoning of industrial, commercial and residential areas because only in a zoned environment, activities can proceed with little or no interference from other activities.
- To provide open space - not vast spaces but controlled, demarcated spaces adjacent to functional areas. This is a reaction to crowded conditions in medieval towns and nineteenth-century industrial cities.
- To allow proper suburbanization wherein the residential districts to occupy the best locations within the urban space.

**Humanist / Experience Model**
- Initially emerged around the end of the nineteenth century due to Camillo Sitte's idea concerning community scale and his rejection to the idea of monumentality and geometric symmetry.
- Re-emerged in the 1950s and 1960s not as a new theory but as a reaction to the unsatisfactory results of functionalist thinking and design.
- Rejection of the grand utopian visions of total planning and total design believed by the functionalist. Instead call for a diverse city of many faces and neighborhoods that can accommodate a whole range of utopias in miniature.
- The need of examining the impact of small-scale elements on day-to-day experiences and enhancing preexisting and underlying social structures which was totally ignored by the functionalist.
- The need of an open spatial configuration of the cities within the confines of its organized chaos and fragmentation as opposed to the closed spaces of the formalist cities and the enclosed functional division of the functionalist cities.

**New Urbanism Model**
- Failure of modern urbanism that gave a landscape that many consider to be soulless.
- To create a sense of place since everything looked the same.
- To develop the identity and personal relationships of the community with their inhabitants.
- To minimize the traffic and pollution created by automobile usage by creating pedestrian friendly community.
- To create sustainable, eco-friendly, nature-integrated environment.
- To create vibrant and dense communities by using mixed land use where residents can live, work, play and dine.

**City Form Model**
- Edge City - Unavailability of land for office complexes in downtowns, or too expensive if available resulted in concentration of offices and commercial areas in the fringes which developed as edge cities.
- Generic City - Limited land in downtowns removed the scope of horizontal expansion of the city. To fulfill the need of more and more office and commercial spaces vertical expansion of the city was the key. Tried and tested method which got copied everywhere making downtowns throughout the world look the same.

References:
- Tehranian 1995, 66-127
- Attoe & Logan 1989, 1-18
- Hall 2002, 87-218
3.6 Extraction of Elements from Important Theories

The different urban design theories have distinct elements in terms of basic land use, the overall transportation system, basic form and architecture / aesthetics. In order to study the urban design evolution of the cities in Chapter 4, extraction of these elements is pivotal. The different urban design theories even if it fits in the same urban design model vary a lot. For example Le Corbusier (CIAM) and Team 10 (who revolted CIAM) both fit inside the Functionalist Urban Design Model but have varying thoughts in the overall comprehensibility of city design. Sometimes the scale of urban design is the whole city whereas sometimes it’s just a street or place. Some theories speak of every element mentioned above whereas some focus on one or two. The Elements table presented next tries to fill all these gaps. In cases where the theories do not particularly specify some of the elements, the author has used his own knowledge of the subject matter and deduced the elements which he thinks could have been for that particular theory. For example, the garden city theory and derivatives don’t speak about the architecture / aesthetics element. Similarly, the humanist theories of Sitte and others do give any details about the basic form of the city or the overall transportation system. These theories just focus on neighborhood or place design.
<table>
<thead>
<tr>
<th>Urban Design Theory</th>
<th>Person or Movement</th>
<th>Elements</th>
<th>Associated Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Land Use / Density</td>
<td>Structure / Street Layout</td>
</tr>
<tr>
<td>City Beautiful</td>
<td>Residential outside the city central area. Civic center, public buildings and commercial areas conveniently placed in central areas of the city. Relatively moderate density.</td>
<td>Use of grid. Parallel streets with varied width in most areas with buildings facing the streets. Boulevards radiating from a central landmark to create vistas. Overall classic civic order laid down in the street grid.</td>
<td>Beaux-Arts Architecture, Monumental Grandeur, Order, Harmony. Fine wise use of urban design organizational elements like view, axis and axis.</td>
</tr>
<tr>
<td>Formalist</td>
<td>Open and recreation spaces added to the city to change and improve the physical structure of the city. Brought back nature into the heart of the city. / Basically a place of leisure and recreation but had a multiplicity of functions.</td>
<td>The parks were integrated into the city by the means of four avenues laid out with an elaborate system of independent traffic lanes, bridges and underpasses that were designed to intercept the continuity of the landscape. Separation of traffic systems with four traffic networks (pedestrians, bikers, fast and slow traffic) were planned to function simultaneously but independently.</td>
<td>Organic design. The texture of the city and the rural texture of the parks interwoven with green belts. Natural landscape environment through adequate use of technology.</td>
</tr>
<tr>
<td>Christopher Alexander (Patterns)</td>
<td>Scattered workplace throughout the city and to interacted large residential workspace and large residential area. Overall mixed in large scale. Preferred density of 7500 people in a neighborhood of a 300 yards diameter.</td>
<td>Breakdown of urban areas into local transportation areas. Local roads and parks for internal movements on foot and minor roads for the automobiles to get in and from ring roads surrounding the community.</td>
<td>Notice that the most beautiful structures in the world have been designed by architects but by common people. Hence urban context and the users to shape their own flavor of aesthetics and infrastructure. Size varies from small blocks, neighborhoods, towns, city and region. Forms to incorporate rural and urban design and infrastructure like keeping the &quot;fingers&quot; of farmland and urban land interlocked.</td>
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</table>
## Extraction of Important Elements from Different Urban Design Theories (2)

<table>
<thead>
<tr>
<th>Urban Design Theory</th>
<th>Person or Movement</th>
<th>Elements</th>
<th>Associated Graphics</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Land Use / Density</td>
<td>Structure / Street Layout</td>
</tr>
<tr>
<td>Garden City &amp; Derivatives</td>
<td></td>
<td>Hierarchical Commercial (including public buildings and recreation space), Residential and Industrial sectors, followed by agricultural land. Gross population density of 30 persons per acre.</td>
<td>Concentric pattern with open spaces, public parks and six radial boulevards, 120 ft (37 m) wide, extending from the center. Surrounded by a permanent agricultural land (green belt).</td>
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<td></td>
<td>Mainly residential with elementary school, small parks and playgrounds, and local shops. Housing for the population for whom elementary school is required. Gross population density of 7.75 persons per acre. Single family dwellings with small proportions of apartments. Area and density could be variables.</td>
<td>Bounded on all sides by arterial streets. Efficiently wide to facilitate by passing by allowing traffic to flow. Internal street proportions and grades to promote traffic load and the street not as much designed to facilitate circulation within the unit. Shopping districts in circumstances of the unit, at traffic junctions.</td>
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<td></td>
<td>Mainly residential with elementary school and local shops in one unit, commercial area in junction of two units and high school in junction of all the three units and surrounded by greenbelts. Specialized automobile thoroughfare called superblocks and a complete separation of auto and pedestrian traffic. Gross density of 19 persons per acre.</td>
<td>Specialized roads planned and built for one use instead of all uses. Service lanes for easy access to buildings, secondary collector in radius around superblocks, minor through roads linking the traffic of various sections, neighborhoods and districts, express highways or bypasses for connections with outside communities. Thus differentiation between movement, collection, service, parkig and visiting.</td>
</tr>
<tr>
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<td></td>
<td>Decentralized City. More of a landscape than a city. Mostly single family low density residential with each house owning its own farm but has offices, small factories and shops nestled among the farms. Some more apartment building residential also existed. Minimum density of one family per acre.</td>
<td>Scattered layout, with all elements joined by a network of superhighways. No subways, no transportation is partly by automobiles, sidewalks provided for the pedestrians along the streets in the dweller's broad acres plots.</td>
</tr>
<tr>
<td>Urban Design Theory</td>
<td>Person or Movement</td>
<td>Elements</td>
<td>Associated Graphics</td>
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<tr>
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</tr>
<tr>
<td>Functionalism</td>
<td>Tony Garnier (Industrial City)</td>
<td>Separation of spaces by function through zoning into five categories including leisure/recreation, industry, work and transport.</td>
<td>Extensive use of reinforced concrete. Simple forms for the simplicity of structural expression. No ornamentation. Use of large horizontal and vertical surfaces in buildings which creates balance and harmony with natural contours of the landscape. All homes are detached. Courtyards are eliminated and every room is lit and ventilated directly from outside. Follows Climatic design variables.</td>
</tr>
<tr>
<td></td>
<td>Le Corbusier (CUAM)</td>
<td>Zoning key element. Treats residence, work and leisure as discrete elements. Activities not to mix except in the heart or core of the city where they converge. Residential locations within best urban spaces, not to align along transportation routes. Reduction of distance between workplaces and residential areas. Density of population to be increased by changing the height of the building. Density to be decided by authority once the population figures and dimensions of the level are fixed. Good range would be 300, 320 or 400 people per acre.</td>
<td>Mega City. Focuses on vertical expansion of the city.</td>
</tr>
<tr>
<td></td>
<td>Team 10</td>
<td>Comprehensibility key element which consists of two main elements; interlocked system of movement corridors and structural elements supporting housing and other uses. Large scale &amp; relatively compact population density.</td>
<td>City. The basic unit of community to be an &quot;appreciated unit&quot; rather than a neighborhood. The appreciated unit to be different in each type of community. Orthogonal pattern preferred.</td>
</tr>
<tr>
<td></td>
<td>Davies (Eletic)</td>
<td>Traditional functionalist residential, commercial, and industrial separation of uses, but relatively more importance to the central function or the CBD. Population of 1,500 for a neighborhood, 50,000 for a town and 75,000 for a city.</td>
<td>The Dymaxion House by Buckminster Fuller shows how efficient cities in the past fell as peripheral growth bubbles for new. The future city is both needs and linear and growing. New form can minimize the relationship of ever and the laissez faire.</td>
</tr>
</tbody>
</table>

*Extraction of Important Elements from Different Urban Design Theories (3)*
## Extraction of Important Elements from Different Urban Design Theories (4)

<table>
<thead>
<tr>
<th>Urban Design Theory</th>
<th>Person or Movement</th>
<th>Elements</th>
<th>Associated Graphics</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Design Aesthetics / Architecture / Building Materials</td>
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<td></td>
<td></td>
<td>Structure / Street Layout</td>
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<td></td>
<td></td>
<td>Land Use / Density</td>
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<td></td>
<td></td>
<td>Basic Unit / Form</td>
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<tr>
<td></td>
<td></td>
<td>City but main focus on city centers, public squares, plazas etc.</td>
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<tr>
<td></td>
<td></td>
<td>Irregularity of form as opposed to geometric, rectilinear form.</td>
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</tr>
<tr>
<td>Humanist Experience</td>
<td>Camillo Sitte</td>
<td>Does not speak of a overall street structure. Use of courting and varying width streets throughout to provide ever-changing views.</td>
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</tr>
<tr>
<td>Gordon Cullen, Jane Jacobs, Denise Scott Brown and William Whyte</td>
<td>Advocate mixed use of the urban environment. Oppose functional zoning. In favor of medium to high population density in order to have a vibrant community. Population density of 200 to 300 people per acre according to Jacobs.</td>
<td>Attention to small-scale elements and informal ordering system avoiding large-scale geometries. No mention of major thoroughfares but focus on domestic passageways friendly streets which become habitable places for people.</td>
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<td></td>
<td></td>
<td>Vernacular architecture, everyday landscape, contextual design.</td>
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<td></td>
<td></td>
<td>Community, Neighborhood, Place</td>
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<tr>
<td></td>
<td>City Form</td>
<td>Devise at or near existing or planned freeway intersections or major airports. Street networks are hierarchical, consisting of winding parkways (often lacking sidewalks) that feed into arterial roads or freeway ramps.</td>
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<td></td>
<td>Mid- to high rise buildings. Much box architecture. Mainly concerned with function rather than aesthetics.</td>
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<td></td>
<td>Previously Suburb or Rural area changed to more city</td>
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<tr>
<td></td>
<td>Edge City</td>
<td>High rise buildings surrounded with narrow pedestrian friendly streets with decks, bridges, tunnels, motorways and more rid.</td>
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<tr>
<td></td>
<td></td>
<td>Inorganic in nature. Free style of aesthetics. No constrained design. Hitchcock and modern construction using all sorts of materials ranging from concrete, steel, glass etc.</td>
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<td></td>
<td></td>
<td>Downtowns or City Centers of medium to high cities.</td>
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<td></td>
<td>Generic City</td>
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</table>
## Extraction of Important Elements from Different Urban Design Theories (5)

<table>
<thead>
<tr>
<th>Urban Design Theory</th>
<th>Person or Movement</th>
<th>Elements</th>
<th>Associated Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Land Uses / Density</td>
<td>Structure / Street Layout</td>
</tr>
<tr>
<td>New Urban</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Peter Calthrop (TOD)</td>
<td></td>
<td>A mixed-use community within an average one-half-mile pedestrian shed of a transit stop and core commercial area. A mix of residential, retail, office, and open space, in a walkable environment, making it convenient for residents and employers to travel by transit, bicycle, foot or car. A minimum required density of 1,000 dwelling units per acre.</td>
<td>The TOD site to be located near existing or planned transit stops (light rail, heavy rail or express bus) line or on a feeder route within 10 minutes transit travel time from a stop on the transit line. The auto usage for a TOD is to be 40% of all trips. Hence, internal systems to be planned for on-going auto use. Adequate auto access from arterial roads and highways needed. Interconnected local streets converging to smooth streets, commercial zones, schools, and parks. Local trips not to be connected with arterial streets. Pedestrian friendly streets with proper sidewalks, trees, building entries and grade separations.</td>
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<tr>
<td>Andres Duany (Updated Neighborhood)</td>
<td></td>
<td>Mainly residential with houses, row houses and apartments as dwelling types. A few sites reserved for local institutions at the center and regional institutions at the edge. Schools, shops and offices are also located in the edge of the neighborhood. Overall focuses on the mix of uses residential, commercial and institutional uses. Relatively moderate population density.</td>
<td>The neighborhood has a discernible center with a park or a green space and a transit stop. Streets within the neighborhood form a connected network, which disperses traffic by providing a variety of pedestrian and vehicle routes to any destination. The streets are relatively narrow and shaded by rows of trees. This allows traffic and creates as a environment suitable for pedestrians and bicyclists. Walkability is the key.</td>
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<tr>
<td>Michael Arth (Pedestrian Village)</td>
<td></td>
<td>Compact, mixed-use neighborhood at village center. Built near a downtown area in new or re-created village. Population density medium to high medium.</td>
<td>Tree-shaded, pedestrian and bike lanes in front of all residences and businesses with tree-lined automobile streets at the rear. With eliminating the front street and replacing it with a tree-lined pedestrian lane, emphasis is placed on low-impact alternative travel such as walking and cycling. Pedestrian lanes have 12 to 15 feet (3 to 4.5 m) wide, with one smooth side for rolling conveyances such as bicycles, wagons, and skateboards and the other, narrower, striped side for pedestrians and wheelchairs.</td>
</tr>
</tbody>
</table>

*Excerpts: TOD diagram showing urban and neighborhood TODs, Transit center and mixed-use TODs. Pedestrian urban TOD model with a 1,000 foot radius from the transit/transit area with other amenities like offices, parks, residential and greenspace (top left). Illustration from Calthrop's "The Next American Metropolis."*
3.7 Group Elements of Different Urban Design Models

The previous section presented the elements of different urban design theories, which now have to be generalized and synthesized as group elements of different urban design models. This is important to get a unified view of the urban design model which is needed to compare the different city plans throughout time and see whether it fits in anyone of these models.

The group elements of different urban design models which comprise of urban form, density, regional perspective and concern over city nature integration is presented next.
<table>
<thead>
<tr>
<th>Urban Design Model</th>
<th>Chief Concern</th>
<th>Urban Form</th>
<th>Relative Density</th>
<th>Regional Perspective</th>
<th>Way of City-Nature Integration</th>
<th>City Design Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formalist</td>
<td>Aesthetical, some social</td>
<td>Relatively Compact</td>
<td>Moderate</td>
<td>Basic focus on existing city, some regional perspective</td>
<td>Formal Integration of public parks in the city.</td>
<td>City Beautiful</td>
</tr>
<tr>
<td>Garden City</td>
<td>Social, some functional and economic</td>
<td>Moderately to extremely dispersed</td>
<td>Low to moderate</td>
<td>Strong Focus, Central city to be surrounded by small garden cities</td>
<td>Green belt (agricultural land) to surround the city, new towns to be constructed in greenbelts.</td>
<td>City with Gardens</td>
</tr>
<tr>
<td>Functionalist</td>
<td>Functional, technical, some social and economic</td>
<td>Relatively Compact</td>
<td>High to very high</td>
<td>Basic focus on existing cities. Major focus on regionalism in Doxiadis's Ekistics Theory.</td>
<td>An adequate amount of green space provided in each group dwelling. Also massive public parks in high dense areas.</td>
<td>City Efficient</td>
</tr>
<tr>
<td>Humanist</td>
<td>Social, functional, economical and aesthetics</td>
<td>Relatively Compact</td>
<td>Moderate</td>
<td>Basic focus on reurbanization and rebuilding of existing cities</td>
<td>Providing human scale green spaces in the city.</td>
<td>City Efficient &amp; Beautiful</td>
</tr>
<tr>
<td>New Urbanism</td>
<td>Ecological, aesthetical, some social</td>
<td>Relatively Compact</td>
<td>Moderate to high</td>
<td>Major focus on regional perspective through the use of public transit.</td>
<td>Preserving green spaces outside the urban borders. Green Infrastructure.</td>
<td>City Sustainable</td>
</tr>
</tbody>
</table>

Reference: Hirt 2007, 138-165
Chapter 4

Case Studies of Cleveland, Chicago, & Detroit through time

4.1 Introduction

This chapter presents the evolution of city planning and design in Cleveland, Chicago and Detroit by looking at all the various plan proposals for these cities starting from the City Beautiful plans (in case of Detroit even before that) to the present day comprehensive plans. The chapter also tries to briefly explain the social, economic and political conditions (for that particular time period) of these cities which influenced these comprehensive plans. As stated earlier, the aim of this thesis is to understand the evolution of urban design in these cities. The author figured out that the best way of doing so is by studying all the comprehensive plans of these cities throughout time. The focus of the study in these comprehensive plan documents is on physical planning from which the author would extract the major urban design concerns and compare them with the various urban design models presented in Chapter 3.

4.2 Cleveland

Cleveland is a city in the state of Ohio located in northeastern Ohio on the southern shore of Lake Erie. Cleveland’s planning dates to the city’s founding in the late eighteenth century (1796) when a team of surveyors laid a simple grid pattern around a town square. Through the next century, Cleveland entered an era of phenomenal growth. By the year 1900, it had become one of the wealthiest cities in the United States, a leading center of finance and commerce (Chakalis et al. 2002, 79-93).
Inspired by Chicago’s 1893 Exposition, Cleveland’s elite searched for ways to bring some order and dignity to the polluted city. A committee was formed in 1899 to study the possibility of erecting a group of public buildings to serve as the city’s civic heart. In 1900, the committee delivered a proposal for a civic center near the lake. A Group Plan Commission was formed, comprised of Daniel Burnham, John Carrere, and Arnold Brunner. The commission published its plan in 1903. It was only the second City Beautiful plan in the country after Washington’s. Inspired by European design, the plan’s authors proposed the design of a monumental civic center between the lake front and the large public square that was laid out in 1796 (ibid.). The main axis of the composition ran North and South, and the secondary axis East and West along the Lake Front. The main axis was placed on a line with the centre of Wood Street and the Mall (group of public parks) was developed on each side of it. The Mall was to be framed by various civic buildings unified by a neo-Renaissance style “example of order, system and reserve”. The parks and squares were in harmony with the important avenues connecting these parks. In designing the Group Plan the authors were not unmindful of the rest of the city. They had dreamed of a comprehensive plan, but in Arnold Brunner words “the time had not yet come for its preparation” (Brunner 1916). Like other City Beautiful plans, Burnham’s 1903 plan of Cleveland was one in which aesthetics was the main concern. Beauty was the vehicle through which it was to achieve its more implicit goals from civic unity to economic growth.

Cleveland’s population continued to grow to the mid of the twentieth century and by 1950 its population was almost a million. By the 1940s aesthetics had nearly vanished from city design and had shifted in a more practical direction. Around that time Cleveland produced its first master plan (the plan of 1903 was basically a civic center plan), the 1949 General Plan. The plan was the result of several years of technical studies on population, land use, and transportation, many conducted at the regional level. Unlike Burnham’s plan, which focused on downtown’s physical form and was to affect the rest of the city through inspiration, the 1949 plan
was an example of citywide, analytical planning: a functionalist City Efficient plan which focused in the function rather than the form. The 1949 plan laid the foundation of the largest urban renewal program in the country, covering more than 6,000 acres of land; 12 percent of the total city area (Hirt 2005, 27-42).

Two competing downtown renewal plans were put together in the following decade. The first was Downtown Cleveland 1975, published by the Cleveland City Planning Commission in 1959. The second was the Erieview Plan I and II prepared by the Urban Renewal and Housing Department and authored by architect I. M. Pei. The two plans embodied intergovernmental rivalry and disagreed on key points (e.g., whether to strengthen the old retail core along Euclid Avenue). Yet they held deep philosophical similarities - both espoused ambitious agendas for social progress through “blight” clearance, and both were bold visions of the high functionalist type (Ibid; Keating et al. 2005 129-154.). Pei’s plan was inspired by Le Corbusier’s idea of towers in the park an “ivory city-within-a city of office towers and apartment megablocks,” Beauty and efficiency comingle in the urban renewal plans, more prominently in Pei’s Erieview, which was to be “beautiful as well as useful” (Ibid ; Encyclopedia of Cleveland History: Erieview, 2009). Yet, in both plans, the urban assets were viewed primarily in efficiency terms. For example, the downtown was the highest and most efficient focus for the operation of the region’s business and government functions (Hirt 2005, 27-42).

The urban renewal downtown plans were similar to that of the rest of the country and envisioned massive demolitions. Pei’s plan described the city core as a dilapidated neighborhood in the middle of the city and seventy-one percent of the buildings being sub-standard. The plan called for the total renovation of old existing urban forms. Dense streets were to make way for superblocks each taking several former city blocks. The built-to-open-space ratio was reversed
in favor of the latter, and skyscrapers were to replace the old, small-scale buildings (Keating et al. 2005 129-154).

The acute urban crisis of the 1960s and 1970s and the failure of urban renewal to solve it contributed to the birth of Cleveland’s most innovative planning tradition - equity planning. With Norman Krumholz as planning director from 1969 to 1979, planning shifted gears from being comprehensive and land use driven to being focused on the needs of disadvantaged groups and social-policy (Chakalis et al. 2002, 79-93). The product of this planning model was the 1974 Cleveland Policy Planning. Its authors named it “not a plan, at least not in the traditional sense,” not a “series of colored maps,” but a “catalog of objectives, policies and action programs,” and defined its goal as “promoting a wider range of choices for those individuals and groups who have few choices” (Krumholz 1982, 163-174).

Between 1950 and 1990, Cleveland lost nearly half of its population and more than half of its jobs in manufacturing, historically the city’s top job-producing sector. The concurrent increase in urban sprawl left behind a host of problems including vacant property, unemployment and contaminated land. As these challenges became increasingly evident, so too did the lack of a comprehensive strategy to address them and to take advantage of the emerging market for redevelopment (Ibid.). The Civic Vision 2000 Plan, confronted these challenges by presenting a vision to re-structure Cleveland as a smaller but more viable city. Cleveland’s Civic Vision 2000 Plan was the first comprehensive land-use plan that the city had prepared since 1949. It consisted of two parts, a 1988 Downtown Plan and a 1991 Citywide Plan. The plan fostered the concentration of retail businesses in strategically located “neighborhood town centers.” The plan also facilitated creative re-use of excess industrial and commercial land, resurgence in residential development, new industrial parks near freeway interchanges, and increased attention to urban design issues (Cleveland City Planning Commission, online web page).
Cleveland latest comprehensive plan is the update of its 1991 Citywide Plan named Connecting Cleveland: 2020 Citywide Plan. The theme of the new Citywide Plan is “connections”. The premise of the plan is on the understanding that a great city is not merely a collection of buildings, but it is a place of connections – connections between people and places and opportunities. The connections as defined in the plan “can be a shared space – an urban plaza, a neighborhood park, a community institution or even a coffee shop – that connects people to one another in a way that creates a sense of “place” and a sense of belonging – that elusive but enduring thing that we call community.” The plan proceeds in the context of the city’s tentative “comeback” in terms of a stabilized population and a diversifying economy through the 1990s the planning focus is less on massive physical initiatives of the 1990s type and more on pursuing livability issues of preserving open space, having lakefront access, enhancing pedestrian connectivity and diversifying service and improving economic viability. According to the Cleveland Planning Commission the Connecting Cleveland 2020 Citywide Plan is a plan that connects the “physical” and the “social” to create communities that are truly viable and sustainable (Cleveland City Planning Commission, 2007).

4.3 Chicago

Chicago is the largest city in the state of Illinois and was founded in 1833, between Lake Michigan and the Mississippi River watershed. Until 1893, Chicago had a gridiron street pattern, a haphazard lakefront, congested streets and a few recreational facilities (Chicago History Museum, Digital Encyclopedia of Chicago).

In 1893, to mark the 400th anniversary of Christopher Columbus’s discovery of America, the World's Columbian Exposition also known as The Chicago World's Fair was held in Chicago.
The fair had a profound effect on architecture, the arts, Chicago's self-image, and American industrial optimism. The fair was designed by Daniel Burnham and Frederick Law Olmsted. Overall, the fair inspired a new vision of what city life could be. This fair was the background of the Burnham Plan, the first comprehensive plan for Chicago or any other American city (Wrigley Jr 1960, 31-38).

The Merchant’s Club of Chicago commissioned a Plan of Chicago in 1906. Daniel Burnham and Edward Bennett were the main authors of the plan which was published in 1909 which is known as the Plan of Chicago or the Burnham Plan. Unlike Cleveland’s Group Plan which was basically a city center plan the Plan of Chicago was a citywide plan having regional perspective. Burnham and Bennett were determined to give Chicago more than the orderliness of grid iron or mere additions of public squares and parks system or just widening and aligning of streets. The plan intended six major changes in Chicago. First, a lakefront setting to transform the series of frog ponds at the shore into princely settings for the city and a public recreation grounds for its citizens. For this purpose twenty-three miles of harbors, piers, parks, lagoons and extensive riverbank developments were included in the plan. Second, a system of highways outside the city to give easy access to and from the center of civic life and unite it with the suburbs and outlying districts. This was to realize the truly regional character of Chicago even connecting all the towns on Lake Michigan. Third, the improvement and consolidation of railway terminals into three areas and development of four rectangular loops to facilitate the transit facilities of people and freight. Fourth, an extensive park system all connected to each other by tree lined boulevards. Existing parks were used and new ones were added to complete the scheme. Fifth, the systematic arrangements of the streets and avenues within the city to facilitate traffic. Three classes of streets were designated, local for residential and neighborhood traffic, through avenues for longer distances and landscaped boulevards which would connect Chicago’s new and existing parks to each other in a continuous chain of drive. And sixth, the cultural center of
Chicago as the backdrop of the harbor, the opening of the city from the lake front, and the beginning of park systems (Burnham Library of Architecture 1979, 6-10).

The growth of the city was phenomenal after the adoption of the plan in 1911. Industry was given every concession and encouragement to build almost as it wanted to. Skyscrapers were erected with great pace. At the same time the city was busily engaged in the development of public facilities to keep pace with the rapid expansion of private enterprise building Street widening, schools, sewers, water extensions, bridges, and other public improvements claimed the attention of the Plan Commission and the City Council as the city spread outward. However little attention was given to good neighborhood design or the protection of older neighborhood design (Wrigley Jr. 1960, 31-38).

In the Great Depression years, like other cities of US, Chicago was also under a financial shock and not much development took place in these years. By the end of the depression in 1933, at the beginning of Chicago’s second World’s Fair, the Chicago Plan commission published The Chicago Plan in 1933 -Twenty-five Years of Accomplishment. According to the report 85 public improvements outlined in the Plan of Chicago was completed till then (Burnham Library of Architecture 1979, 17).

Around the end of Second World War in 1945 the city had recovered from its financial shock. The 1945 Chicago Comprehensive City Plan focused in the development of existing property, the rehabilitation of depreciated areas, and of public improvements. The plan also had proposals focused separately on parks and parkways, a new subway system, and water and sewerage facilities. The authors of the plan concentrated on reviving the city's industrial base and making older areas of Chicago more appealing places to live. This was a response to the
aging of the city's infrastructure, factories, and housing stock, in part because of deferred maintenance due to the Great Depression and the Second World War (Kincaid 1945, 23-27).

In 1909 the planners were concerned with how to continue attracting people to Chicago. Following World War II, the issue was how to get them to stay. After peaking in the early 1950s, Chicago's population began to decline. Meanwhile, the percentage of African Americans rapidly rose from 8.2 percent in 1940 to 13.6 percent a decade later. To maintain a sense of community in a city sharply divided by race was an important factor in the migration of white Chicagoans to the suburbs. New suburban neighborhoods were developed around this time that would keep Chicagoans in Chicago. This marked the start of sprawl in Chicago (Smith 2006, digital essay).

The 1958 Development Plan for the Central Area of Chicago as the name suggests only covered a new renewal plan for the central area and was an update in the Plan of Chicago's chapter "The Heart of Chicago". The plan recommended construction of some new buildings like the Civic Center, Federal Center, etc. and residential development south of the Chicago Loop (Chicago's CBD) and on the Near North Side, and the major construction south of the Main Branch of the Chicago River and east of Michigan Avenue (Ibid.).

The Chicago Plan Commission's 1966 Comprehensive Plan of Chicago discussed the city as a whole, but it emphasized a quality-of-life agenda much more than Burnham and the Commercial Club had done. It discussed the need to improve living conditions for families, working people, and the disadvantaged. Issued shortly before the urban riots of the late 1960s and at a time when Chicago's era as an industrial giant was nearing its end, the Comprehensive Plan was concerned with countering residential segregation and creating more service-economy jobs, as well as improving housing, transportation, recreational facilities, and public education (Wetmore 1967, 353-359).
The 1972 Lakefront Plan of Chicago focused just on the area specified in its title. The Lakefront Plan aimed at consolidating public control of the lakefront, maintaining and enhancing the lakeshore parks and water quality, and ensuring that Lake Shore Drive retained the qualities of a scenic parkway (*Smith 2006, digital essay*).

The 1973 Chicago 21 Plan was an updating of the 1958 Development Plan for the Central Area. Chicago 21 intended to revitalize the areas surrounding the Chicago Loop, Chicago’s central business district. The plan responded to the continuing deterioration of the central city. The Chicago 21 Plan proposed to create a 600 acres residential neighborhood in railroad yard near the Chicago Loop (Chicago’s CBD). This was basically to stop the white flight. Improvements in transportation, the location of some city colleges and private university facilities in or near the Loop, and the residential boom throughout the central area demonstrate the considerable influence of Chicago 21 proposals (*Chicago 21 Plan, Wikipedia*).

Between 1970 and 1990 Chicago’s population barely grew at all. The central region and the close-in suburbs lost some 800,000 residents whereas the outer suburbs added almost a million people. Urban sprawl and racial segregation became the identity of Chicago in 1990s. Chicago Metropolis 2020 subtitled The Chicago Plan for the Twenty-first Century, which was published in 2000 tries to address these twin problems of sprawl and inequity in Chicago. Like the Plan of Chicago, Chicago Metropolis 2020 was sponsored by the Commercial Club. Chicago Metropolis 2020 takes as its starting point some of the premises of the Plan of Chicago, most notably that Chicago is a commercial city that must plan ahead very carefully and find sensible solutions if it is to thrive. Chicago Metropolis 2020 talks about the necessity of thinking regionally; pointing out that the region of Chicago now includes Cook and all of the five contiguous counties (*Calthorpe, & Fulton 2001, 176-179*).
Chicago Metropolis 2020 discusses economic vitality, transportation, recreation, and land use. Like the 1909 Plan, it discusses the legislation required to bring about change and the need to educate the public on the virtues of planning. But its approach is quite different from the 1909 Plan in some important ways. Basing its analysis on recent historical and social trends, Chicago Metropolis 2020 puts much more emphasis on the issues of better schools, expanded health and child care, and improved services for low-income families (Chicago Metropolis 2020, homepage).

Chicago Metropolis 2020 is based on the idea that public and private interests can and must work together to remake a metropolitan community for the benefit of everyone. It believes that idealistic and practical goals are not at odds with each other. It is similarly concerned with sustaining Chicago's growth by disciplining it. The plan believes in Burnham's "make no little plans" philosophy. However there is a fuller recognition now that the planning effort requires facing more complex human issues and cannot be solved by mere building of more parks, enforcing sanitary measures or by design and engineering solutions that do not take fully into account the social as well as physical structure of the metropolis (Ibid.).

The latest iteration of a city-sponsored plan for the downtown Chicago is the Central Area Plan of 2003, which was prepared by the departments of Planning and Development, Transportation, and Environment. It's the first plan for downtown produced by the City since 1958. Predicting that by 2020 there will be more jobs, residents, tourists, students, and retail establishments in the Central Area, the plan calls for some of the same things the Plan of Chicago discussed a century ago, notably better public transportation facilities and further development of the waterfront for public use. But it speaks more to current concerns than those of 1909 when it
discusses the need for Chicago to be a sustainable city that respects and preserves its past (City of Chicago Official Website, Central Area Plan).

The Central Area Plan like the Connecting Cleveland Plan talks about making real connections between people and their jobs, the urban and natural environments, and downtown and the rest of Chicago’s neighborhoods. Another key element of the plan is to make Chicago the international model of a sustainable city. This will be done by the city’s commitment to transit, use of renewable power and green technologies, smart energy management, environmentally-sound building design, and attention to its open spaces and water fronts (Ibid.).

4.4 Detroit

Detroit is the largest city in the state of Michigan and was settled in 1701. It is one of the oldest cities in the Midwest. Detroit experienced a disastrous fire in 1805 which nearly destroyed the city. After the fire, Judge Augustus B. Woodward laid out a plan for Detroit, according to the ideas of L'Enfant used in Washington which consists of evenly spaced public parks with interconnecting semi-circular and diagonal streets. The main thoroughfares radiated outward from the center of the city like spokes in a wheel, with Jefferson Avenue running parallel to the Detroit River, Woodward Avenue running perpendicular to it and Gratiot and Grand River Avenues interspersed. However, the city did not develop entirely according to the Woodward Plan (Bennett 1915). The Woodward Plan was a Baroque Plan which had components of aesthetics but it cannot be called a City Beautiful Plan.

Detroit's industrial boom in the later 19th century created a great stream of immigrants into Detroit. The first automobile factory in Detroit was opened in 1889. Soon the development of the automobile industry started to boom which led to rising demands for labor, which were filled by
huge numbers of newcomers from Europe and the American South. Between 1900 and 1913, the city's population almost doubled. The landscape of the city also changed dramatically. The Baroque city had become an industrial one, polluted, lacking order and congested (Bluestone 1988, 245-262).

Around 1913, many cities in United States had already adopted City Beautiful plans, the 1909 Plan of Chicago being the most inspirational. Like other cities, Detroit also had City Beautiful proponents who were centrally concerned with restoring the dignity and dominance of the civic and cultural landscape. On Daniel Burnham’s recommendation Detroit City Plan and Improvement Commission appointed Edward Bennett as the chief architect for Detroit’s City Beautiful Plan which is known as the 1915 Preliminary Plan of Detroit (Bennett 1915).

Some of the proposals in the Bennett’s plan for Detroit can be seen as an addition to the Woodward Plan like the provision of additional diagonals running out from the city center to accommodate the southeasterly and southwesterly traffic in the city. One diagonal that he proposed extended from the Michigan Central station to the new Center of Arts and Letters. Another diagonal extended from the center of Arts and Letters to Belle Isle Bridge. Bennett wanted that the traffic, instead of passing through the center of the city to be diverted to thoroughfares on either side of Woodward Avenue so that it could reach its destination in the eastern or the western section of the city (Ibid.).

Bennett was also asked to develop a "broad scheme" for the arts center. Bennett set the library and museum on axis to either side of Woodward Avenue, and surrounded them with nine secondary structures housing schools of art and music as well as historical, horticultural, orchestral, and various learned societies. The center’s nine peripheral buildings framed the library and museum and created an enclave of classical structures. Bennett also proposed
height restrictions for adjacent buildings, thus protecting the center from being overshadowed by other buildings (Bluestone 1988, 245-262).

The most ambitious proposal of the plan was making of the entire Detroit River, from the head of Lake St. Clair to Lake Erie, one great park. Bennett’s idea was to develop all of the islands in the river in a park-like fashion. Other city beautiful components which Bennett proposed in the plan included a 200 acre forest park, the development of the river front at the foot of the Woodward Avenue, development of a plaza in front of the Michigan Central Depot and an avenue 200 feet wide leading from Michigan Avenue down to the Michigan Central station (Bennett 1915).

The decades from 1920s to 1940s were Detroit’s glory days. The city saw extraordinary industrial growth during World War II due to the production of artillery supplies for the Allied forces. The city added tremendous population in these years reaching a population of almost 1.85 million (only in the city itself) in 1950 (History of Detroit, online web page).

Around the same time Detroit’s City Plan Commission published the first comprehensive plan for the city. The plan was called 1951 Master Plan and the main concern of the plan was to provide efficient functioning of the city taking into consideration the incredible growth of population the city had in the previous two decades. Heavily inspired by the functionalist approach of planning the plan had five major goals; the designation of the most appropriate locations for homes, industry, commerce and other major types of urban land use; the provision of schools, recreational areas, and other public service facilities adequate to the needs of all neighborhoods and communities; the development of traffic ways and transportation facilities to interconnect and serve the needs of all parts of the city; the establishment of a pattern of neighborhoods and communities to protect good residential areas, and to rebuild areas which
were blighted and out-worn; and development of a Civic Center, a Cultural Center and Detroit's natural heritage in the riverfront (City Plan Commission, City of Detroit, 1951).

After reaching a population peak in 1950, in the following years Detroit’s population started to decrease dramatically. Consolidation of the automobile industry and the construction of the freeway were the main cause for the population decrease. Construction of extensive freeway facilitated commuting and shifted the population to the suburbs. Another prominent reason for the central city decline was the racial riots which initiated the white flight. By 1970 the population decreased to 1.5 million (History of Detroit, online web page).

The Detroit Master Plan of 1973 was an update of the 1951 Master Plan. As the previous plan functioning and efficiency of the city was one of its chief concern but unlike the previous plan it was a very neighborhood and community centered plan. Using Clarence Perry’s Neighborhood definition the plan defined the term neighborhood as the area of usually a square mile or less, which served as an elementary school district and a group of neighborhoods forming a high school district as a community. The plan intended to provide a good pedestrian friendly environment by only using the major thoroughfares as neighborhood and elementary school district boundaries so that each neighborhood can be made an area within which pedestrian movement is relatively unbroken and safe. The plan’s proposal to designate space for industrial growth along industrial corridors, while keeping scattered manufacturing and commercial activities out of residential areas still showed separation of land use by function. The plan also proposed formation of new industrial corridors along the borders of or near each community in order to have opportunities for employment near each community and reduce the necessity for long trips to work. The plan also proposed to have large parks within twenty minutes travel time of all homes placement of which would be along the borders of the communities. A system of thoroughfares with park drive treatment, pedestrian walkways and bicycle paths were to be
provided to connect parks, residential areas, and other community facilities. Massive extension of the Detroit riverfront by almost 500 acres was one of the other ambitious proposals of the plan (*City Plan Commission, City of Detroit, 1973*).

From 1970 to 1990 the trend of population decrease remained the same in Detroit. While the central city deteriorated and lost population, which went down to less than a million, the suburban sprawl flourished with population and jobs growth. In the 1990s, the city began to receive a revival with much of it centered in downtown Detroit with the addition of some new skyscrapers in the city’s skyline. In 1992 City of Detroit’s Planning Department published the Master Plan of Policies 1992. The plan had different proposals for city-wide policies and urban areas (or community) policies. The need to stabilize the level of population in the city, the need to diversify the economic base, the need to train and retrain workers for future jobs, and the need to reinvest in underutilized facilities and infrastructure were the chief concerns of the plan (*Planning Department, City of Detroit, 1992*).

To stabilize the population the plan provides extensive goals for revitalizing the neighborhoods. The major physical development goals of the plan included conservation of the city's physical resources, stopping the demolition of old structures, and special incentives for rehabilitating existing structures; promotion of optimal reuse of vacant land; combat against neighborhood and commercial blight; removal of blighted structures; and relocation of families into other neighborhoods with better social and physical conditions (*Ibid.*).

The plan called the Central Business District (downtown) Detroit’s “gateway" and proposed numerous goals to enhance its image. These goals included promoting downtown Detroit as a “walking city” through the creation of a superior pedestrian environment and linking major activity centers by pedestrian pathways, establishing a variety of downtown neighborhoods each
with its own unique character and by providing "people-oriented" landscaped open space in carefully planned locations. The plan also had a major goal of historic preservation and encouraged restoration, rehabilitation, and reuse of older building facades to reflect the original architectural character (Ibid.).

Detroit did not see any population growth in late 1990s or in the initial years of the new millennium. Census 2009 estimates shows a historic low population for Detroit. Population stability is the main concern of the City even in the present day. The latest master plan of Detroit supersedes the Master Plan of Policies of 1993 and was adopted by the city in 2009. Like the current comprehensive plans of Chicago and Cleveland, Detroit’s current master plan has proposals for the interconnectivity of neighborhoods, communities and districts; a smooth regional mass transit structure; mixed land use (officially for the first time in city’s history); non-motorized transportation routes; pedestrian friendly environment; and sustainability. As the previous master plan the current master plan also has different proposals for city-wide policies and urban areas (renamed as neighborhood clusters) policies (Planning and Development Department, City of Detroit, 2009).

The City Design section of the plan includes three major goals. First goal is to ensure development that contributes to the City’s vitality. This is to be done by connecting dispersed and isolated districts, neighborhoods and communities through street and pedestrian improvements; by development projects which would maintain views and vistas to the riverfront and along major thoroughfares; by encouraging development that is sensitive to the city’s historical and architecturally significant buildings and districts; and by encouraging development in commercial and mixed-use corridors with consideration for components like walkability, scale, continuity of street wall and streetscape, gateways and view corridors. The second goal is to improve city’s vacant space (both land and structure) by adaptive reuse and brownfield
development and the third goal is to use urban design visions for the development local commercial districts, downtown and the riverfront (Ibid.).

4.5 Synthesis and Summary Tables

The study of all the plan proposals for Cleveland, Chicago and Detroit throughout time now gives us the platform to extract and synthesize the urban design concerns of the plans and make them fit into different urban design models.

Cleveland’s downtown planned by Daniel Burnham in 1903 with strong emphasis for order and beauty is an obvious example of formalist urban design model and can be considered as a landmark case of the City Beautiful. The 1949 General Plan, with its no-aesthetics but practical concerns and with its intimidating urban renewal programs was a strong example functionalist City Efficient. The Erieview Plan by architect I. M. Pei in the early 1960s, with its very ambitious downtown urban renewal plan and with its aesthetical waterfront development shows equal concern for beauty and function. This plan fits in both Humanist as well as Functionalist Urban design Model. These plans were followed by a pioneering experiment with equity planning under the leadership of Norman Krumholz during the years 1969-1979. Equity planning had little concern with urban design but would still be classified as a Humanist Model. From the late 1980s and early 1990s Cleveland had Civic Vision 2000 focusing on neighborhood design and revitalization and had concerns for “god of small places”. All of the concerns for Civic Vision would fall under the Humanist Urban Design Model. The latest citywide plan, Connecting Cleveland: 2020 with its “Connections” theme, regional design approach, and sustainability ingredients has some partial influences of New Urbanism and if implemented as proposed in the plan will make Cleveland, City Sustainable.
Chicago’s 1909 Burnham Plan, the first comprehensive plan for any city in United States, with its strong axial order, monumentality and ambitious proposal for the lakefront development, represents the quintessential City Beautiful formalism. The 1945 Chicago Comprehensive City Plan which focused on revitalization of depreciated areas, introduction of new parks and parkways and an efficient public transit through the subway system was a comingle of functionalist as well as the humanist urban design model. The 1958 Development Plan for the Central Area with its downtown renewal programs, and construction of new high rise buildings, with very limited aesthetics concern in Chicago’s Loop (Downtown) fits well in the Functionalist Urban Design Model. The 1966 Comprehensive Plan of Chicago with social and economic growth as its main concerns is an example of Humanist Model. The 1972 Lakefront Plan of Chicago with concerns of uplifting the scenic beauty of the area by proper lakefront development and the 1973 Chicago 21 Plan which intended to revitalize the areas surrounding the Chicago Loop, Chicago’s CBD can also be considered as examples of Humanist Urban Design Model. The 2000 Chicago Metropolis 2020 plan with regional transit and connectivity, and sustainability as the main concerns, follows the New Urbanist approach of Urban Design. The 2003 Central Area Plan aims to revitalize the downtown and improve the lakefront development. The plan also aims to make Chicago a sustainable city. This plan fits in both the New Urbanist as well as the Humanist Model of Urban Design.

Detroit’s Woodward Plan of 1805 with its evenly spaced public parks with interconnecting semi-circular and diagonal streets was not just a mere Gridiron Plan. Although not as ambitious as L’Enfant’s Washington Plan it was to some extent a Baroque Plan. With its Baroque formalism this plan fits into the Formalist Urban Design Model. Bennett’s 1915 Preliminary Plan of Detroit with a broad scheme for the Arts Center, the proposal for a massive park along the Detroit River and addition of more diagonal streets to the Original Woodward Plan was a plan which the proponents of City Beautiful in Detroit wanted. The 1951 Master Plan with its major concern of
efficiency and function, innovative methods of public transportation and a proposal for the waterfront development had elements of both City Beautiful and City Efficient. The 1973 Master plan with its strong focus on the neighborhood and the community, pedestrian friendly environment, and waterfront development had elements of the Functionalist, Garden City and Humanist approaches of Urban Design. The 1992 Master Plan of Policies had extensive goals for revitalizing the neighborhoods, in order to stabilize the ever decreasing population trend of Detroit. The plan aimed to establish Detroit downtown as a “walking city” through the creation of a superior pedestrian environment. The plan also intended the central city neighborhoods to develop their own unique character and to provide “people-oriented” landscaped open spaces. This plan represents a full Humanist Model of urban design. The current Master Plan adopted in 2009 has chief concerns for interconnectivity of neighborhoods, regional mass transit, and concern of unique sense of place for each neighborhood like the previous Master plan, and the ongoing sustainability movement. The Plan in a nutshell has an ambitious aim to make Detroit, a Sustainable City.

The summary of the synthesis in tabularized manner is presented next.
<table>
<thead>
<tr>
<th>Time Period</th>
<th>Main Plan/Comprehensive Plan</th>
<th>Chief Concern</th>
<th>Urban Design Model</th>
<th>Planning Area</th>
<th>City Design Paradigm</th>
</tr>
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<tbody>
<tr>
<td>1796</td>
<td></td>
<td>City layout</td>
<td>Formalist</td>
<td>New Settlement</td>
<td>Grid Iron</td>
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<td>1903</td>
<td>Group Plan</td>
<td>Aesthetical, Beautification, water front development</td>
<td>Formalist</td>
<td>City Centre, Downtown</td>
<td>City beautiful</td>
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<td>General Plan</td>
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<td>Functionalist</td>
<td>City wide</td>
<td>City efficient</td>
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<td>Downtown Cleveland</td>
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<td>Functionalist</td>
<td>Downtown</td>
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<tr>
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<td>Erieview Plan</td>
<td>Urban renewal, Blight clearance, aesthetical, Water front development</td>
<td>Functionalist</td>
<td>Downtown</td>
<td>City efficient &amp; beautiful</td>
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<td>1974</td>
<td>Cleveland Policy Planning</td>
<td>Social, economic</td>
<td>Humanist</td>
<td>City wide</td>
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<td>1984</td>
<td>Civic Vision</td>
<td>Social, economic, Revitalization, some aesthetical</td>
<td>Humanist</td>
<td>Two plans city wide &amp; Downtown, some regional perspective</td>
<td>City efficient &amp; beautiful</td>
</tr>
<tr>
<td>2007</td>
<td>Connecting Cleveland</td>
<td>Social, Functional, Ecological, aesthetical, Water front development, mass transit</td>
<td>Humanist, New Urbanism</td>
<td>City wide, strong regional perspective</td>
<td>City Sustainable</td>
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<tr>
<td>Time Period</td>
<td>Main Plan/Comprehensive Plan</td>
<td>Chief Concern</td>
<td>Urban Design Model</td>
<td>Planning Area</td>
<td>City Design Paradigm</td>
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<td>1833</td>
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<td>Formalist</td>
<td>New Settlement</td>
<td>Grid Iron</td>
</tr>
<tr>
<td>1909</td>
<td>Burnham Plan</td>
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<td>Formalist</td>
<td>City wide, focused on city center. Some regional perspective</td>
<td>City Beautiful</td>
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<td>1945</td>
<td>Chicago Comprehensive Plan</td>
<td>Urban revitalization Transit, functional</td>
<td>Functionalist, Humanist</td>
<td>City wide</td>
<td>City Efficient &amp; Beautiful</td>
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<td>Downtown</td>
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<td>Comprehensive Plan of Chicago</td>
<td>Social, economic, some aesthetics</td>
<td>Humanist</td>
<td>City wide, Some regional perspective</td>
<td>City Efficient &amp; Beautiful</td>
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<td>Lakefront Plan of Chicago</td>
<td>Aesthetical, Beautification, water front development, ecological</td>
<td>Humanist</td>
<td>Lakefront area</td>
<td>City Efficient &amp; Beautiful</td>
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<td>1973</td>
<td>Chicago 21 Plan</td>
<td>Revitalization of downtown, aesthetics</td>
<td>Humanist</td>
<td>Downtown</td>
<td>City Efficient &amp; Beautiful</td>
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<td>2000</td>
<td>Chicago Metropolis 2020</td>
<td>Transit, connectivity, Ecological</td>
<td>New Urbanism</td>
<td>Whole Region, Chicago plus five neighboring counties</td>
<td>City Sustainable</td>
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<td>2003</td>
<td>Central Area Plan</td>
<td>Water front development, revitalization, ecological</td>
<td>Humanist, New Urbanism</td>
<td>Downtown</td>
<td>City Efficient, Beautiful and sustainable</td>
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<tr>
<td>Time Period</td>
<td>Main Plan/Comprehensive Plan</td>
<td>Chief Concern</td>
<td>Urban Design Model</td>
<td>Planning Area</td>
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<td>New Settlement</td>
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<td>1805</td>
<td>Woodward Plan</td>
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<td>Formalist</td>
<td>City Center</td>
<td>Grid, Baroque</td>
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<td>1915</td>
<td>Preliminary Plan of Detroit</td>
<td>Aesthetical, Beautification, water front development, some social</td>
<td>Formalist</td>
<td>Mainly city centre, some adjoining area</td>
<td>City Beautiful</td>
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<tr>
<td>1951</td>
<td>Master Plan</td>
<td>Functional, Some Aesthetical, water front development</td>
<td>Functionalist</td>
<td>City Wide</td>
<td>City Efficient &amp; Beautiful</td>
</tr>
<tr>
<td>1973</td>
<td>Master Plan</td>
<td>Social, Functional, Revitalization, Aesthetical, River front development</td>
<td>Functionalist, Garden City (Focus on Neighborhood Unit) &amp; Humanist (focus on community)</td>
<td>City Wide, Individual focus on each neighborhood</td>
<td>Garden City, City efficient &amp; Beautiful</td>
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<td>1992</td>
<td>Master Plan of Policies</td>
<td>Social, Revitalization, Blight removal, historic preservation</td>
<td>Humanist</td>
<td>City wide, Individual focus on communities, some regional concern</td>
<td>City Beautiful &amp; efficient</td>
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<tr>
<td>2009</td>
<td>Master Plan of Policies</td>
<td>Mass transit, connectivity, ecological, adaptive reuse, brownfield development sustainability</td>
<td>New Urbanism</td>
<td>City wide, individual focus on neighborhood clusters, strong regional concern</td>
<td>City Sustainable</td>
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Chapter 5
Conclusion

This chapter evaluates the general trends in evolution of Urban Design in Cleveland, Chicago and Detroit based on stylistic classification as well as performance based classification. The central city layout of Detroit in different time period is studied next, as an example to see whether the original city beautiful plan is still intact in these cities. Finally the generalized ‘evolution of urban design in practice’ is discussed.

5.1 Evolution based on Stylistic Classification

Like most of the American cities Cleveland, Chicago and Detroit started as small settlements. The initial city designs of these settlements were limited to a simple grid pattern around a town square. By the first decade of the twentieth century, these cities had become leading centers of finance and commerce with a phenomenal growth in population. At the same time these cities had become ugly, poverty-stricken, polluted, congested and were in constant threat of epidemics. The urban designers during the period saw this and believed the solution to this problem would be the beautification of urban physical structure and appearance. Heavily influenced by the City Beautiful movement, the early twentieth century updated city design of these cities had aesthetics, order and monumentality as their prime concern.

By the mid of the twentieth century the population of these cities had reached its zenith and the city central had started to deteriorate. The prime concern of urban design now shifted from aesthetics to function. Ambitious urban renewal plans came into play. Influenced by the functionalist philosophy the skyline of the downtowns of these cities became prominent with skyscrapers. The heights of the skyscrapers were their greatness and expression of aesthetics. This style of urban design; aggregating tall office towers in downtowns has been copied
throughout the world especially after 1970s making downtowns throughout the world look generic. At the present day the downtowns of Cleveland, Chicago and Detroit with their high rise buildings which dominate the skyline have some elements of the generic city. In 1950s with very few cities having skyscrapers, these downtowns were not so-generic and had their own charm and uniqueness.

Around the same time the construction of extensive expressway system facilitated commuting and shifted the population to the suburbs. This marked the beginning of the urban sprawl in these cities. The central city started losing its population and old neighborhoods became blighted. Urban revitalization became the key. The urban design focus shifted from the big picture of holistic city design to individual community or neighborhood design. The humanist approach to urban design became the key.

By 1990s, these cities still continued to lose population. Even the downtowns, though revitalized lost their charm. The downtowns which used to be the office hub of these cities no longer remained so as new office buildings were constructed in the edge city and the edgeless cities (a form of sprawling office development that does not have the density of edge cities (Lang 2003, 1)). According to Joel Garreau, Chicago and Detroit each have 6 edge cities and Cleveland has 4 edge cities and, according to Robert Lang, all of these cities have numerous edgeless cities.¹

As these cities entered the new millennium the urban design focus changed back to the big picture. These cities have regional design approach now. The Humanist approach of community design to create a sense of unique identity and the revitalization of older neighborhoods still remains intact. Sustainable and energy efficient design is the latest urban design strategy in these cities.

¹ The detail study of the edge cities and edgeless cities of Chicago, Detroit and Cleveland is beyond the scope of this thesis.
The waterfronts in Chicago, Detroit and Cleveland had important role in shaping these cities. Almost every plan (throughout history) for these cities had proposals for waterfront development. Initially, transportation (both shipping & railways) and commerce dominated the waterfront usage. Around the first decade of the twentieth century with the population boom, the open space in these cities became rare. The city beautiful plan proposed some parks along the waterfront for public recreation. But even in this period, public access to the riverfront was limited. The main usage of the waterfront remained industrial and commercial in the central areas and private residential in other areas. After the decline of manufacturing and industries from these cities, there were proposals for the development of the waterfront in terms of tourism, commerce, public recreation and private residences, though there was never a consensus among the stakeholders. The question of public use versus private development is still visible.

In a period of one or two centuries, it is extremely rare to give cities a completely new layout unless there is some catastrophic event like war or high magnitude earthquake. It takes more than the period mentioned above for a new city to grow on top of the older one. The major city layouts of these Midwestern cities were designed before the City Beautiful plans. The City Beautiful plans included some major changes in the city layouts and added some new developments. The plans which followed after city beautiful did not have substantial impact in the city layout. These plans focused on renewal, redevelopment and revitalization. This is the reason why the urban design models whether functionalist or humanist could be seen most prominently in new-developments around these cities, rather than the city centers.

The summary tables in Chapter 4 shows that the first major plans for these cities, the City Beautiful plans fit totally into the Formalist Urban design model. The later plans, although categorized into one of the urban design models do not completely fit into one model. These plans have prominent elements from one urban design model and other minor elements from
other urban design models. In reality, these plans also don’t fully fit into a single city design paradigm like City Efficient or City Sustainable. Every plan proposal overlapped with different city design paradigm and developed its own custom-made paradigm. For example, the functionalist plans of 1950s and 1960s focusing on urban renewal had its own city design paradigm, ‘City Renewal’. Some of the plans of 1960s and 1970s and even the latest ones with more focus on vision and less on implementation, whether it is a functionalist or a humanist plan can be called ‘City Visionary’. Similarly, the humanist plans of 1970s -1980s and the latest plans which focus on the individuality of each neighborhood (specially the Detroit Master Plans of 1992 and 2009) can be called ‘City Grassrooted’. In practice, the urban design models do not always follow the associated city design paradigm.

5.2 Evolution based on Performance Classification

This section evaluates the evolution of urban design in Cleveland, Detroit and Chicago taking into account the performance based set of criteria like the urban structure, density, accessibility and transit.

Initially, Chicago, Detroit and Cleveland as designed by the City beautiful designers had a concentric ring model. The city center was the hub and the city grew outward. In the later decades, edge cities began to flourish, and these cities developed multiple urban cores. Presently, these cities’ urban structure can be classified as multiple nuclei model. The construction of expressway was mainly responsible for the development of multiple hubs.

Even though these cities have developed multiple cores, the downtowns have always remained important. Preserving downtown districts through historic preservation has been a common goal in these cities.
The city beautiful plans of Chicago and Detroit had major concerns over public transportation through railways. After the construction of expressways autos became the most dominant means of transportation. By the end of 1980s, there was a revival of mass transit in Cleveland and Chicago. Cleveland and Chicago both have metro rail system now. Detroit, being the hub of automobile industry is an exception and has no rail system but the mass transit is provided by bus.

As discussed earlier, after peaking in 1950s the population of these cities started to decline. The decline in population also suggests demolition of houses and buildings. The figure ground maps of the central area of these cities, through time suggests the gradual increase in the ‘void’ component of the map and the gradual decrease of the ‘mass’ component of the map. The mass void relationship over the years clearly indicates a decrease of population density.

The recent plan proposals for all the three cities focus on pedestrian friendly environment, mixed use and walkability. Major change in land use of these cities over the years is the addition of mixed use category. The city beautiful plans and the functionalist plans had mixed use limited to the city center. Recent plans have mixed use category all over the city.

5.3 Detroit City Structure over Time

This section examines the central city layout of Detroit over the period of time to see whether it has retained its original city beautiful characteristics. This is done by studying the figure ground plans of downtown Detroit from different time period. The figure ground plan gives the change in the city layout and structure in two–dimension. To see the change in three-dimension some visuals of different time are compared.
By looking at the four figure-ground maps of Downtown Detroit from 1916 to 1990, we can say that the basic street layout which was laid in the City Beautiful Plan is still preserved. The main civic center seen in the maps as the white semicircle through which the main thoroughfares are
radiating outward seems to be constant in all the four maps. The prominent change as seen in the figure ground plans over the years is the ratio of mass (black) and void (white) components of the plan. There is a gradual decrease in the mass component and a gradual increase in the void component. The gradual decrease in the mass component means more building demolitions and less new constructions.

The two pictures above are views of Woodward Avenue near downtown Detroit in different time periods. The buildings in Woodward Avenue in 1942 show visual coherence and harmony which
was achieved by the city beautiful plans. On the other hand the visual coherence of the buildings seems to be lost in 1980s.

The above picture shows the physical look of Detroit Downtown today. Marked by high rise structures most of which built after 1950s, the downtown only retains few structures conceived in City Beautiful plan (we cannot see any Beaux-Arts architecture in the picture).

Finally, taking Detroit’s city structure study into consideration we come to a point to discuss the critical question, ‘have these cities retained their original design characteristics’. The answer is “only to some extent, limited to the downtowns.” The basic road layout and some of the buildings conceived still exist in the downtowns retaining some original City Beautiful layout. The Detroit downtown has changed significantly in its physical outlook. The visual coherence of the buildings achieved by the city beautiful plan is lost today. Instead we have visual complexity.
Similarly, the Cleveland Mall and the Chicago Loop also noticeable with high rise buildings have changed drastically from what they were after the implementation of city beautiful plans. Overall, these cities have some city beautiful character in the downtowns but other areas outside the downtown have whatsoever no original character. Designed in different time periods based on different urban design models, they have a hybrid character (discussed later).

5.4 Understanding the Evolution of Urban Design in Practice

This section discusses the evolution of urban design based on the stylistic classification and the performance based classification of Evolution of Urban Design in the three cities; and the city structure study of Detroit.

In practice the proposal for complete layout of cities is very rare. Therefore, the updated plan proposal focuses on renewal, redevelopment and revitalization of cities. Since the original city plan is already based on some urban design model, the new design based on a different urban design has to consider the existing conditions. This makes the new model to co-exist with the previous model. In other words total urban design based on a certain urban design model is not possible. For example, the Functionalist urban design coexists with both the humanist and formalist urban design in practice. The combination of different elements from different urban design models makes a hybrid urban design model.

Based on the three Midwestern cities the hybrid urban design model has the following characteristics:

- There is an overall functionalist domination in the model. This can be seen due to the overall efficiency needed in transportation, sanitation facilities and minimum housing standards.
• High rise tall towers in the downtowns which is again an element of the functionalist model.


• City beautiful formalism still present. The axial order laid in the city beautiful plans still preserved. The inner city main streets laid in city beautiful plans become interstates or major highways.

• Revitalization and historic preservation key for downtown neighborhoods. A humanist element.

• Attention given to Neighborhood design. Attention to small details, human scale streets, gateways, and pedestrian friendly environment. Humanist/ New Urbanism element.

• Presence of edge cities which has changed the city layout from single hub to multiple hubs.

This hybrid urban design model although derived from the three Midwestern cities can be generalized to any other American city with almost same population and location type (proximity to lake, river or ocean). So this model will also fit to cities like San Francisco or Charleston. These cities as the three Midwestern cities had city beautiful plans for their initial city layout. The populations of these cities have shifted to the suburbs from the central city. These cities also have multiple hubs instead of traditional one hub. These striking similarities make the Hybrid Urban Design model valid in these cities too.

The Hybrid City Structure illustrated and described graphically is presented in the next page.
HYBRID CITY STRUCTURE

Monotonous, static, repetitive, auto & cul-de-sac dominated - non-vibrant, 'American Dream' Functionalist element

Function more important than aesthetics. Mainly Business and commercial uses. Functionalist Element.

Attention given to Neighborhood design. Revitalization key for downtown neighborhoods. Attention to small details, human scale streets, gateways, pedestrian friendly environment the key. Humanist/New Urbanism element.

Importance of Historic Preservation in downtown. Humanist Element

Formalist layout still present but the visual coherence achieved by City Beautiful has changed to visual complexity.

High-rise towers: Functionalist & Generic City element

Effort to make the waterfront scenic and beautiful. Humanist element

Suburban Sprawl. Big plots, single family residential.

Edge city with some high rise, big box retail and some residential apartments.

The main spine in the inner city becomes Interstates or major highways

Original City Beautiful axial order still preserved. Main straight & diagonal streets and some of the buildings still exist.

Narrow Streets in Grid with tall towers.

Waterfront Primarily used for transportation and private use. Public access and recreation. Secondary

SCHEMATIC CROSS-SECTION AA'

SCHEMATIC LAYOUT
With the evolution of urban design the main concern of urban design also has changed over the period of time. The main concern started with aesthetics as can be seen in the city beautiful plans and then it shifted to efficiency as can be seen in functionalist urban renewal plans. After some time aesthetics and efficiency became the combined major concern. This can be seen in the humanist revitalization plans. Currently sustainability, efficiency and aesthetics are all the major concerns. This can be seen in the latest plans - Chicago Metropolis 2020 or Connecting Cleveland Plan.

Unlike in theory the urban design model does not always follow the associated urban design paradigm. In practice, every plan proposal can have a customized city design paradigm. As mentioned earlier, some of the plans of 1960s and 1970s and even the latest plans with more focus on vision and less on implementation, whether it is a functionalist or a humanist plan, can be called ‘City Visionary’. Similarly, the humanist plans of 1970s -1980s and the latest plans which focus on the individuality of each neighborhood (specially the Detroit Master Plans of 1992 and 2009) can be called ‘City Grassrooted’.

There have been some consistent and some non consistent features in the evolution of urban design. Features like revitalization and waterfront development have always been consistent whereas elements like urban renewal were short lived. Both revitalization and waterfront development to some extend require minute detailing and falls under Humanist urban design model. This means the Humanist urban design model has been the most consistently used urban design model.

Over the period of time the scale of urban design also changed. The Functionalist Model (but not all the functionalists) of urban design looked at the big picture and avoided minute details whereas the Humanist Model looked at the minute details and avoided the big picture. The
Current Model (the hybrid model) tries to look at both the big picture and minute details. Big picture - because it looks at the overall city structure. Minute details - because special attention is given in designing individual communities or neighborhoods.

In any neighborhood design; vibrancy, pedestrian friendly environment and human scale recreational open spaces are the key now. Every neighborhood is supposed to have a gateway and a prominent boundary.

After the domination of functional separation of spaces for a long time, mixed use has become a key land use element today. Presently, segregation and mixed use both co-exist. Mixed use is seen in downtowns, downtown neighborhoods, community centers and edge cities. Other land use categories like residential, commercial etc can be seen in their respective areas throughout the city and the suburbs.
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