



Architects

Urban Design

Course Number: AIAPDH239
5 LU|HSW

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ANSWER SHEET

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Urban Design

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Urban Design for Architects Final Exam

1. **The most common types of development in American towns and cities between the years 1890 and 1930 were known as:**
 - a. Garden cities
 - b. Radburn suburbs
 - c. Greenbelt cities
 - d. Streetcar suburbs
2. **Pruitt-Igoe was regarded as a potent example of:**
 - a. The International Style
 - b. Pedestrian-friendly design
 - c. Modernism's decline and fall
 - d. The City Beautiful
3. **The Weissenhof exhibition is known as a good example of:**
 - a. A classic garden suburb
 - b. Sensitive slum clearance
 - c. The International Style
 - d. The City Beautiful
4. **"Pedestrian Pockets" were the precursor to:**
 - a. Traditional Neighborhood Development
 - b. Dendritic design
 - c. Transit-oriented Development
 - d. The City of Tomorrow
5. **The Charter of the New Urbanism sets out beliefs about:**
 - a. Urban life, development and culture
 - b. Building aesthetics
 - c. The importance of landscape in cities
 - d. Le Corbusier's design principles
6. **Traditional urbanism places emphasis on:**
 - a. Social equity
 - b. The creation of "urban rooms"
 - c. Neo-classical style
 - d. Vernacular aesthetics
7. **The primary strategy of contemporary urban design is to:**
 - a. Prioritize efficient movement of vehicles
 - b. Assemble a series of unique buildings
 - c. Create public spaces accessible to all
 - d. Control building aesthetics
8. **Under ideal circumstances, nobody in an urban community should be more than _____ from some type of green / landscape space**
 - a. A five-minute drive
 - b. A ten-minute drive
 - c. A ten-minute bike ride
 - d. A five to ten-minute walk
9. **The primary type of public space in America is:**
 - a. A plaza
 - b. A public park
 - c. A greenway
 - d. A street
10. **Comparing the spaces of a city to the rooms of a house was first articulated by:**
 - a. Vitruvius
 - b. Le Corbusier
 - c. Leon Battista Alberti
 - d. Andres Duany
11. **American suburban planning and design in the late 19th and early 20th centuries were strongly influenced by:**
 - a. The importation of zoning practice from Germany.
 - b. The study of earlier suburban designs in England.
 - c. Manifest Destiny.
 - d. The automobile.
12. **The Radburn layout was significant for several reasons, but prime amongst these was:**
 - a. The use of cul-de-sacs.
 - b. The incorporation of parkland.
 - c. Shaping the city by connected public spaces.
 - d. Creating a new model of cities as objects in space serviced by roadways.
13. **Team X's main objective was to:**
 - a. Enrich modernism with a sense of social reality.
 - b. Reinforce the founding doctrine in the Charter of Athens.
 - c. Replace modernism with traditional city forms.
 - d. Connect city planning with modern zoning concepts.

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14. Frank Lloyd Wright claimed:

- a. To love the city.
- b. To have taught Russian planners about decentralization.
- c. To have foretold the landscape of sprawl.
- d. To densify the city in contrast to the rural landscape.

15. New Urbanism initially:

- a. Swept the market by storm.
- b. Followed public opinion.
- c. Was ridiculed by developers.
- d. Was embraced by architects.

16. Thinking about New Urbanism in the real estate and development industry was changed by:

- a. Lobbying by architects.
- b. The consumer preferences of Millennials and Boomers.
- c. Progressive attitudes of lenders.
- d. The recession of 2008.

17. Contextual analysis is:

- a. A waste of time.
- b. A precondition to repairing America's fractured public realm.
- c. A radical invention in practice.
- d. An addendum to the design process.

18. In his residential work in Barcelona, the eccentric genius Antonio Gaudi:

- a. Accepted the tight rules for urban placement and building massing .
- b. Threw the rule book out the window.
- c. Built only in areas where there were no rules.
- d. Didn't bother with residential architecture and focused on his great religious building.

19. The "Golden Triangle of Good Urbanism" is:

- a. An obscure academic construct.
- b. A template for the creation of successful sidewalk environments.
- c. A highway engineer's "rule of thumb".
- d. A means of banning cars from pedestrian areas.

20. For an active and functional pedestrian sidewalk on a commercial or mixed-use street, the minimum useful dimension is:

- a. 6 feet.
- b. 16 feet.
- c. 12 feet.
- d. 8 feet.

21. In a charrette setting, urban designers go out of their way to:

- a. Draw pretty pictures.
- b. Focus on land use diagrams.
- c. Provide generic solutions that can fit anywhere.
- d. Imagine and design real places.

22. In municipal Small Area Plans, Form-based Codes would normally be adopted:

- a. As an "overlay" code laid over existing zoning provisions to bring them in line with the plan's objectives.
- b. As replacements for the old zoning designations within the project boundary.
- c. As optional design guidelines.
- d. As conditional rezonings.

23. In developer-led scenarios, Form-based Codes would normally be adopted:

- a. As an overlay" code" laid over existing zoning provisions to bring them in line with the plan's objectives.
- b. As replacements for the old zoning designations within the project boundary.
- c. As optional design guidelines.
- d. As conditional rezonings.

24. Effective masterplanning requires:

- a. Strong individual leadership.
- b. A singular focus.
- c. Behind the scenes agreement of the main parties.
- d. A tripartite process of public design charrette, masterplan, and code.

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25. The version of the Transect methodology often used in contemporary Form-based coding was developed by:

- a. Patrick Geddes.
- b. M.R.G. Conzen.
- c. Andres Duany and Elizabeth Plater-Zyberk.
- d. Urban Design Associates.

26. Form-based Codes are:

- a. Intended to fix the final form of the project.
- b. A means of capturing the "design DNA" of a project.
- c. Optional design guidance.
- d. A set of prescriptive uses.

CONTINUING EDUCATION for Architects

Urban Design For Architects: Space, Place, And Urban Infrastructure

*By David Walters RIBA
Professor Emeritus of Architecture and Urban Design*

*“Life takes place on foot.” Jan Gehl, *Life Between Buildings: Using Public Space**

AIA CES course number: AIAPDH239

COURSE DESCRIPTION

This course explains the origins of urban design theory and practice, from its roots in modernist architectural theory in the 1950s to present-day priorities of “placemaking,” combined with increasingly urgent concerns for sustainability and urban resilience. Building from this conceptual foundation, the course teaches relevant techniques and processes used in the multi-disciplinary practice of urban design today. It charts the rejection of modernist concepts and the reengagement with principles of “traditional urbanism” and focuses on how buildings shape the public realm, relating both to the more intimate scale of urban infill development and the larger scale of community master planning. The course also introduces new skills required in urban design practice – the art of coding the “DNA” of these master plans into zoning documents called Form-based Codes that can orchestrate the implementation of the master plan over an extended period of time.

The course demonstrates how to identify and define contextual influences, how to master techniques for the effective design of public space and infrastructure, and how to integrate these factors into the design process. This enriched approach to architectural design provides the platform for an architecture that is fully engaged with the life and rhythms of cities, communities and neighborhoods, and contributes to our shared task of creating sustainable and resilient cities.

UNIT 1:

The Origins of Contemporary Urban Design Theory and Practice.

LEARNING OBJECTIVE 1

The student will understand that the design ideas common to the modernist period of city design, loosely defined as the decades between 1950 and 1980, were based on rejecting the patterns and relationships in traditional cities and replacing them with radical re-imaginings of cities in a “brave new world.”

LEARNING OBJECTIVE 2

The student will build on this background and understand how these modernist ideas were supplanted by a return to more historically based and contextually driven responses which embrace principles of “traditional urbanism.”

CONTENT

- 1.1 Introduction
- 1.2 The Evolution of Urban Design in America (1850 – the Present)
- 1.3 The Shifting Landscape of Urban Design Theory and Practice
- 1.4 The Rise and Fall of Modernist Urban Design
- 1.5 Architectural Theory Meets Zoning Practice
- 1.6 The Revival of “Traditional” Urbanism and the Birth of “New Urbanism”

1.1 Introduction

First things first: let’s not assume that we all share the same definition(s) of urban design. After all, the discipline has undergone many changes since it was founded in our modern era as part of architecture’s embrace of the city as a site for design practice and theoretical discourse. In this first unit, we will briefly review the nineteenth century origins of urban design in the modern age, and explain its main concepts as they changed through the middle decades of the twentieth century. We will then examine how this panoply of ideas about cities underwent a series of transformations and recapitulations to become the ideas that define urban design practice today, in the second decade of the 21st century.

The term “urban design” as used in this course draws on these historical precedents, but also includes more recent understandings of environmental issues and the social dynamics of places. In straightforward terms, urban design means “the art of making places for people” (DETR, 2000, 93). More specifically, urban design

...draws together the many strands of place-making

– environmental responsibility, social equity and economic viability, for example – into the creation of places of beauty and distinct identity. Urban design is derived from but transcends related matters such as planning and transportation policy, architectural design, development economics, landscape [design] and engineering. [It] is about creating a vision for an area and then deploying the skills and resources to realize that vision (Llewelyn-Davies, 2000: 12).

Although these are English definitions, they apply equally to American practice, continuing the intertwining of Anglo-American urban design theory and practice that has typified the discipline for the past 150 years.

So... here follows an edited history of urban design in the United States, including the relevant cross-references in Europe that have shaped this country’s practice.

1.2 The Evolution of Urban Design in America (circa 1860 – the Present)

While the design of cities has been practiced for millennia in different cultures, the term “urban design” as we understand it today in the 21st century was first coined in America during the 1950s. In 1956, José Luis Sert, Dean of Harvard’s Graduate School of Design and a pupil of modernist master architect and urbanist Le Corbusier, convened the first Urban Design Conference at Harvard and set up the first American urban design program at that university (Shane: 63). One year later, in 1957, the American Institute of Architects set up a committee on urban design (Rowley: 306). Other versions of the profession’s origins note the University of Pennsylvania’s Civic Design Program begun in 1957, and place the date of Harvard’s urban design program at 1960 (Barnett, 1982: 13).

All three accounts of this subject’s evolution oddly omit mention of the founding of the very first Department of Civic Design at the University of Liverpool in England half a century earlier in 1909. This historical oversight is surprising, especially as the theory and practice of city design in the U.K and the U.S. followed very similar and overlapping trajectories in the late nineteenth and early twentieth centuries.

Indeed American urbanists consciously followed, and quite often improved on English precedent. This can be seen, for example, in comparisons between the designs for new communities: Victoria Park, Manchester (U.K) by Joseph Paxton (1837); Riverside outside Chicago (1869) by Frederick Law Olmsted and Calvert Vaux; Letchworth Garden City (1903) and Hampstead Garden Suburb in London (1907) both by Barry Parker and Raymond Unwin, and Forest Hills Gardens, New York (1911), by Grover Atterbury and Frederick Law Olmsted Jr. Other examples make this

transatlantic correspondence very clear, with influences and precedents flowing both ways. This period of urban development up through the late 1920s has left a legacy of sophisticated “streetcar suburbs” in cities and towns across the United States. These so-called “traditional” neighborhoods derive their name from their use of historical types of clearly defined public infrastructure -- e.g. connected streets, short blocks, civic squares, plazas, parks, and alleys – and by the way these spaces are woven together to create the fabric of everyday residential and commercial life.

The ideas upon which current U.S. urban design is based today have direct connections back to these concepts of traditional urbanism that were taught and practiced a century ago. However, what makes the historical narrative confusing is that these ideas – ones that shaped American cities in the decades of the late 19th and early 20th centuries -- were soundly rejected, even ridiculed, by urban theorists and practitioners during the Modernist period. Between the 1920s and the 1980s, the decades we now broadly characterize as “Modernism,” we began to think about cities and how to design them in a whole new way.

But now, by the second decade of the 21st century, urban designers have intentionally discarded those once-dominant modernist concepts and returned instead to a version of America’s traditional urbanism, updated to meet new concerns about sustainability and resilience.

If this sounds confusing, let’s try to unravel this twisted skein of ideas.

1.3 The Shifting Landscape of Urban Design Theory and Practice

Urban design techniques in the years around the turn of the nineteenth and twentieth centuries were heavily influenced by the fledgling discipline’s twin lineage from architecture and landscape architecture, and the predominant method was the physical design “blueprint,” or master plan. In most cases these master plans included some form of neighborhood center, often based around a commuter rail or streetcar station, and including housing and commercial uses in buildings framing public space. This focal area was then surrounded by a connected network of streets lined with a variety of different types of housing. Parks and other green spaces were integrated into these neighborhoods, and attention was paid to the adequate provision of sunlight into dwellings, to avoid the dour and grimy spaces typical of the industrial cities of the period. These new suburban developments became known as “romantic garden suburbs” -- largely due to their origin in 19th century England as middle-class versions of the country estates of the aristocracy – or “streetcar suburbs” because of their use of streetcars as the main means of public transportation. The period

from the 1890s to the 1930s proved to be the heyday for this type of urban development.

At the beginning of the twentieth century in America the City Beautiful movement provided a grand, neo-classical vision of civic design that further informed the status of civic space and civic architecture at the heart of communities. Meanwhile in Britain, Raymond Unwin’s massive tome *Town Planning in Practice* (1909) became a seminal text that wove all these strands together into a rich historical, theoretical and practical manual for designers of that period. This book is back in print and still contains a wealth of useful knowledge for today’s urban designer.

A good example of this kind of development can be found at Forest Hills Gardens in Queens, New York, designed as a “model town” in 1909 by architect Grosvenor Atterbury and landscape architect Frederick Law Olmsted Jr. for the Russell Sage Foundation. This development illustrates perfectly both the design principles noted above, and the transatlantic influences; both Atterbury and Olmsted looked for inspiration to the contemporary English developments of Letchworth Garden City, (1903) and Hampstead Garden Suburb, (1907) in north London, both designed by Barry Parker and his brother-in-law, Raymond Unwin (see Fig. 1.1). The design quality achieved by Atterbury and Olmsted led to this suburban development being dubbed “the first Garden City in America” (Brush, 1911).



Figure 1.1. Hampstead Garden Suburb, London, begun 1907. Master plan by Barry Parker and Sir Raymond Unwin. The Free Church (at end of axis) by Sir Edwin Lutyens (1908-10). Note how the urban designers place a significant civic building to close the axial view and intensify the “sense of place.” Photo: David Walters

This pattern of urban design and planning remained mainstream American practice until the end of the 1920s. At that time much suburban development slowed due to the onset of the Great Depression, and development patterns began to change with

the increase of individual car ownership and the consequent decline of public transit. No longer was it important to construct tightly organized, mixed-use and walkable communities. The private automobile allowed the elements of city life to be more widely spaced apart, but still quickly accessible by car.

Two key neighborhood plans from the late 1920s illustrate this shift of design thinking: Clarence Perry's Neighborhood Unit plan from 1929 (as part of the New York Regional Plan), and Radburn, New Jersey (1928-33), by architect/planners Clarence Stein and Henry Wright, together with landscape architect Marjorie Cautley. Neither plan involved public transit -- the private automobile was in the ascendancy at that time, while public transit was declining -- and both designs placed emphasis on safeguarding the residential areas from fast moving traffic. Parry's plan was the more "traditional" of the two, with a connected network of small-scale streets around a local community hub, and his ideal neighborhood was still conceived as an entity embraced within a five-minute walk (1/4 mile radius). However, faster, through traffic was channeled along the edges of the neighborhood, and a larger urban area could be created by combining several neighborhoods together on either side of the main arterial roads (see Fig. 1.2). The traditional, still walkable layout within each neighborhood was likely influenced by Parry's time spent living in Forest Hills Gardens.

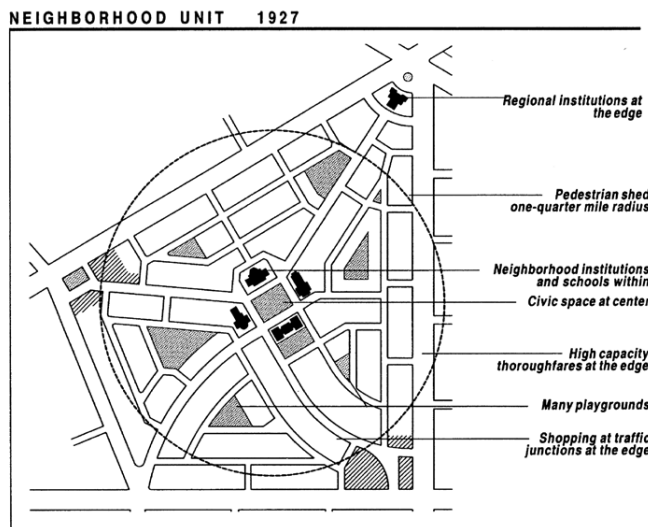


Figure 1.2. Clarence Perry's Neighborhood Unit. The circle denotes a 5-minute walk, approximately 1/4 mile. Diagram (2002 version) courtesy of Duany, Plater-Zyberk and Co.

By contrast, Radburn placed primary emphasis on the almost total separation of pedestrians and vehicles, with cars kept out of the main pedestrian, landscaped areas. These landscaped "linear parks" were crisscrossed with pedestrian pathways, which were intended to link together through underpasses beneath the major

highways, leading pedestrians and cyclists safely to commercial and cultural clusters of uses (see Fig. 1.3). All the local streets ended in cul-de-sac, but this created an unfortunate dichotomy between the "front" doors of the homes facing the public parkland and public footpaths, and the "back" doors opening off private back yards and car parking areas. (The design was never completed due to the bankruptcy of the development organization in 1933 during the Great Depression).



Figure 1.3. Radburn, NJ. 1928. Clarence Stein, Henry Wright and Marjorie Cautley. Diagram by David Walters

Increasingly most visitors arrived by car, drove down the cul-de-sac, parked and entered through the private rear garden and the "back" door. This arrangement inevitably led to confusion regarding which entry was the public "front" for visitors, and the traditional distinction between public fronts and private backs was scrambled. This led to the "front" door facing the park and its pathways falling into disuse; in some instances it was even blocked off with furniture for extra wall space within the home. This was evident to the author during a visit in the 1970s to an English housing development in Runcorn New Town that was based on what a U.K. government report later called the "failed" Radburn layout (Communities and Local Government Committee, 2008).

Radburn was a well-intentioned experiment in new patterns of residential development suited to the automobile age. Its focus on pedestrian safety from cars was timely, and the incorporation of landscaped parkland as an integral element of the design was noteworthy, but the layout of separated roads and pedestrian paths led to this major confusion of fronts and backs, and public and private spaces. These are both essential distinctions in urban design that we will return to later in Units 2 and 3.

In this context, Radburn was part of a major shift in design thinking about city form and function. Instead of using “traditional” types of urbanism rooted in the western tradition of city building – where buildings came together to frame shared networks of “joined-up” public spaces such as streets, squares, plazas, courtyards parks and alleys, the new, “modernist” concepts prioritized the idea of buildings set apart in lush landscape for pedestrians, with vehicles segregated into a separate, functional system of access roads. In essence, the concept of cities formed by shared public spaces enclosed and defined by building façades was rejected and replaced by the city of separated objects existing in a “flow” of universal space. *At a stroke, thinking of cities as a series of connected and defined spaces was replaced by conceptualizing cities as a collection of objects sitting in space and serviced by a separate system of roadways.*

1.4 The Rise and Fall of Modernist Urban Design

This tectonic shift was not one of style and aesthetics alone. Indeed, its origins resided deep inside a humanitarian desire for social and physical reform of the harsh conditions typical of the 19th century industrial city. Under the intellectual leadership of a new European avant-garde in the 1920s, featuring designers such as Le Corbusier, Walter Gropius, Ludwig Mies van der Rohe, Ludwig Hilbersheimer, and the artists and architects at the Bauhaus, architects passionately sought to rid society of the environmental and social evils of the cramped, polluted and disease-ridden industrial city. This was the setting where teeming crowds of workers lived miserable lives, crowded into dismal and unsanitary slums. In place of this old, corrupted Victorian city, modern architects envisioned a bright, new healthy environment, full of sun, fresh air, open space, and greenery, where bold new buildings, free of the trappings of archaic historical styles, were sited apart in a bounteous, sun-filled landscape. It was a terrific utopian vision and a fulfilling professional mission.

The key summary of these new city design concepts was provided by the Charter of Athens, published in 1942 under the auspices of Le Corbusier, and which codified the modernist view of urbanity. This emerging new doctrine about cities had been formulated originally in 1933 by CIAM (Congrès International d'Architecture Moderne), a movement that was founded in 1928 as means of propagating the agenda of modern architecture. Specifically it sought to unite a series of disparate architectural experiments into an international movement with common intentions. As part of this unification, architects sought cohesion around the building style that had emerged strongly the previous year at the Weissenhof exhibition in Stuttgart, Germany, and which we know today as the “International Style” (see Fig. 1.4).



Figure 1.4. Duplex housing at the Weissenhof Siedlung exhibition, Stuttgart, 1927. A clear exposition of the “International Style.”
Photo: David Walters.

The original 1933 version of the Charter was formulated during the 4th Congress of CIAM. As a relief from the political tensions in Europe in the 1930s due to the rise of fascism in Germany and Italy, the conference itself was held aboard the steamer *S.S. Patris II* as it sailed across the Mediterranean from Athens to Marseilles. The crusading document we know today is in fact a substantial and subsequent rewriting of CIAM IV’s original maritime proceedings. The mild-mannered technical language of the original notes, *Les Annales Techniques*, was transformed by a series of working groups, influenced heavily by Le Corbusier, into a hard-hitting, dogmatic manifesto that eventually appeared in 1942 under Le Corbusier’s sole authorship (Gold; 1997).

The Charter narrowly defined the modern city under four categories – the “Four Functions” of Dwelling, Work, Recreation, and Transportation -- each with its distinct and separate location and urban form. A fifth heading briefly discussed historic buildings and suggested it was appropriate to conserve buildings if they were true remnants of the past. However, the tone of the document implied that no avant-garde architect or planner associated with the modern movement could or should allow these past cultures to interfere with the grand work of making the new city. The premise of the four functional groupings was that each category of building would be optimized within its own parameters, without any compromises from other uses. Absent from the text of the Charter was any meaningful discussion of the social, economic, or architectural character of existing residential or mixed-use neighborhoods; those “softer” areas of concern did not fit well with the hard-edged functionality of the new theories for making the “brave new world.”

The Charter’s rhetoric was powerful, however, and its vision was compelling in its distilled abstraction of

human functions. The urban ideas enshrined in the text became guiding principles and doctrine for many architects and planners involved in rebuilding British and European cities after World War Two. Moreover, these same ideas were transplanted into American practice in the late 1940s and 1950s by the many European architects, planners and intellectuals who fled fascism and persecution, starting new chapters of their professional lives in the USA.

Within the new vision of urban form that grew from the Athens Charter's Four Function model, the traditional street was singled out for special disdain. Indeed streets in old slum areas of cities were truly awful – fetid and filthy warrens of squalor. But soon this revulsion extended to all streets, even the charming streets of medieval cities and the grand boulevards of Paris. Le Corbusier famously derided medieval streets as primitive “donkey paths,” and now buildings were to arise like “Towers in a Park,” sparkling in ubiquitous sunlight. Street networks were now dissolved and bifurcated into access roads and high-speed highways. (Walters and Brown, 2004)

These theories soon translated in practice. Cities all over America pursued programs of massive land clearance and rebuilding, separating their old, “mixed-up” cities into “clean” and separated districts, each categorized by a different function: housing here, offices over there, and shopping in a third location. To connect all these separated areas together, major new road building projects carved through cities, demolishing everything in their path. Architects, planners and engineers alike were energized by the quest to build cities anew, and in so doing swept away all the unwanted detritus of past eras.

However, while the theories developed in the heady days of the 1920s painted a grand and compelling utopian vision, the implementation of these concepts in Europe and America during the decades after WW II varied enormously; a tangle gap was revealed between the promise of the utopian vision and “real-life” achievements on the ground. In America, it was often poor African-American neighborhoods that were targeted for clearance, with few, if any plans for rehousing, and the much-vaunted “Towers in the Park” all too easily became “towers in the parking lot.” By the 1970s, the planning and design philosophies of the modernist agenda were being severely questioned by the public. Planners and architects first took a defensive position. They suggested the bleak urban environments people were complaining about were simply the result of the great visions of the masters being interpreted by less talented pupils, but increasing popular discontent, particularly against racially biased programs of urban renewal in America, gradually made the modernist position untenable.

The uniformity and abstraction of modernist, “International Style” buildings puzzled and dismayed a public used to a richer and more conventional

architectural language of historical detail and imagery, even in the most modest of structures. Over time, redeveloped urban areas bred a form of distaste and antagonism among residents who lived and worked there. In particular, the large tracts of semi-public space between the isolated buildings that were the norm in most urban redevelopments, from the 1950s through the early 1970s, gave rise to unforeseen and uncomfortable ambiguities about social behavior.

This open space between buildings was prescribed by modernist doctrine to allow universal access to sunlight and greenery, but in practice this space was neither truly public nor private, and its consequent lack of spatial definition blurred boundaries and territories, raising issues of control and management, and ultimately of crime and personal security (see Fig. 1.5). Few people living in the large, modern housing redevelopments of slabs and towers favored by modernist theory felt safe or comfortable, or felt sufficient ownership of the open spaces around the new buildings to help take care of them. The list of failings in urban renewal and redevelopment schemes grew to such length and seriousness that ultimately it was impossible to treat these problems as teething troubles or poor applications of visionary ideas by less-talented designers. As urban historian John Gold has pointed out, a movement predicated on functionality as a core belief could not withstand criticism about its dysfunctional consequences (Gold; 1997, 4-5).



Figure 1.5. “Tower block” public housing in Newcastle, UK. 1967. Undefined open space between buildings became vandalized and a breeding ground for crime. Photo: David Walters.

The conclusion was unavoidable: modernism’s ideas themselves were seriously flawed. Critic Charles Jencks famously ascribed the “death of modernism” to the precise moment of 3.32 p.m. on July 15, 1972, when high-rise slab blocks in the notorious Pruitt-Igoe housing project in St. Louis, Missouri were

professionally imploded by the city (Jencks, 1977; 9). Completed as recently as 1955, the buildings had been abandoned and vandalized by their erstwhile inhabitants to a degree that made them uninhabitable.

Pruitt-Igoe became the most visible symbol of modernism's decline and fall but the seeds of doubt and discontent had already been planted as early as the 1950s in the polemics of a group of younger architects and urbanists known as Team X (on account of their role in organizing the tenth congress for CIAM in 1958 at Dubrovnik).

In contrast to the abstraction of city plans inspired by Le Corbusier, the work of younger architects, such as Aldo van Eyck, Giancarlo De Carlo, Peter and Alison Smithson, Shadrach Woods, Georges Candilis and Jaap Bakema – all of whom came to prominence in the 1950s through their association with Team X – sought to enrich modernism with a sense of humanism and social reality that the simplistic Four Function model lacked. Through the 1970s and into the 1980s, architects sought ways to enrich and transform the overly simplistic concepts of modernist urbanism. Ultimately this was to lead to a rejection of most modernist thinking about cities (see 1.6 below), but in the meantime the power of the modernist view of the city, with its single-use zones divided by major highways, and new large buildings constructed as singular objects in open space, still held sway. Indeed elements of that modernist vision of the city remain with us today in the second decade of the 21st century.

1.5 Architectural Theory Meets Zoning Practice

Despite what we might think from reading the preceding sections, the modernist view of city design in America, with buildings and uses parceled out into separate functional zones and connected together by large roads, does not owe its longevity to the leadership of architects. Instead this paradigm has persisted due to the steadfast grip on city form exercised by planners.

By a somewhat bizarre historical confluence of ideas in the 1930s, avant-garde European ideas about architecture and cities, mostly with a socialist and utopian bent, intersected with pragmatic American planning concepts based on business efficiency, real estate, and commercial development. When the leading European architects and planners such as Walter Gropius and Ludwig Mies van der Rohe fled Hitler and the rise of fascism, they landed safely in America, but found that Americans were not much interested in utopia, especially with socialist overtones. In effect, the transatlantic voyage stripped the political agenda from avant-garde European ideas. But what was left was still powerful, perhaps even more so: the Four Function model of separate zones for separate functions fitted neatly into America's evolving planning practice.

As we have noted, traditional American cities were more compact, connected, and walkable, and served efficiently by public transport, but changes to this historical pattern began out in California, in Modesto, in 1885. The white middle and upper classes in that community created regulations to restrict laundries, operated exclusively by Chinese families, to poorer parts of town, away from white residential areas. Ten years later, in Los Angeles, that city established separate zoning districts for residential and industrial areas. Partly, this was common sense; it was unhealthy to live next door to industry that might be spewing out toxic fumes. But then the citizens of LA went further – they banned all business uses from residential districts. As these ideas spread to other communities in subsequent decades, with each separate use partitioned into a separate city zone, the urban fabric of traditional American towns began to unravel. No longer could everything be mixed together as was the traditional norm. Now everything had to be sorted out into separate land areas for separate uses.

These changes were encouraged during the 1920s by the "Standard State Zoning Enabling Act" of 1924, whereby the U.S. Department of Commerce promulgated strictly use-based zoning codes across the country on the presumption that clarity and efficiency were good for business. These new zoning laws could have required new developments to follow traditional pattern of older historic American towns. But they didn't. In effect the new zoning laws made the traditional urbanism of Main Street illegal. No longer could uses be mixed together and public spaces tightly defined. The pedestrian-scaled spaces between buildings were progressively dismantled and redesigned for cars.

To understand why these ideas took hold so firmly, we need to remember that as the nation picked itself up after the Great Depression in the 1930s, and then emerged on the winning side in World War II, there was very little interest in looking backwards at the hardships of history. The future beckoned, one that was cleaner, efficient and mechanized. Cities began to be thought of as giant machines, and "efficiency" became the most important concept. Efficiency became synonymous with simplicity -- and simplicity with single-use zoning.

If one was a homebuilder, building only one particular kind of housing, say, single-family detached homes, became the most simple, efficient, and profitable way to operate. Let someone else build apartments. Each developer thus became a specialist focused on a single product, be it different types of housing, office parks or shopping centers. Each type of development gained efficiency by simplifying its operation and excluding other kinds of buildings. Here, single-use zoning was a boon to private sector developers. Land could be divided up in advance for the different uses that - if you put them all together - would have made a town.

But once they were legislated and built apart from each other, the traditional physical fabric of urban America was progressively dismantled.

We started living our modern lives in separate compartments.

This dissolution of America's traditional communities in the name of an optimistic, new, technologically-based future was hastened by the development of one particular new technology: the motorcar. After WWII, cities were planned for the automobile. Different pieces of the city could now be spread widely apart; but it still took only a few minutes to go from one part to the other, so long as you traveled at 30 miles an hour, or more – which was easy on the new wide roads. To accommodate all these new cars, mid-twentieth century zoning codes required large parking lots for each use, covering the growing suburban landscape with tens of thousands of acres of asphalt.

The zoning innovations of the 1920s became locked into proscriptive legislation by the 1950s and 1960s. Indeed, most municipal zoning codes in America today are still based on the approach set out in that model legislation established in 1924. These concepts hardened into dogma fifty years ago and have since been plastered with countless “band aid” amendments, trying to keep abreast of change. By the late 1980s most municipal zoning ordinances had become so confusing, and so devoid of anything resembling considerations of good urban design that a new wave of professionals took it upon themselves to institute radical changes. But most of these concerned professionals were not planners. They were architects, reclaiming the lost art of civic design.

1.6 The Revival of Traditional Urbanism and the Birth of “New Urbanism”

By the end of the 1980s, it became clear to members of the new generation of architects that what had been truths for their forbears had become anathema to their new appreciation of American cities. Many found they no longer believed what they had been taught. Faced with this ideological void, groups of younger architects sought to construct a new set of beliefs, and many premises of modernist urbanism were overturned in this process. Many aspects of the search for new concepts focused around the recovery of more human scaled spaces and an architectural vocabulary that reconnected with public taste and urban history. Specifically, urban design resurrected many of the precepts of traditional urbanism, and in particular it renewed a focus on the street and other clearly defined spatial types found in American cities from earlier periods. The street in particular - once identified in modernist thinking as a major cause of urban squalor - has been reclaimed as the primary form of public space in American communities.

This renewed appreciation of traditional urban forms was presaged by Jane Jacobs in her landmark book *The Death and Life of American Cities* (Jacobs, 1961). Her description of the vitality and life on the streets in her New York neighborhood contrasted poignantly with the crime and grime of the urban wastelands produced by urban renewal (see Fig. 1.6). However, professional architects and planners largely dismissed her stinging criticism of modernist planning; during the 1960s her advocacy for the importance of traditional streets and cohesive neighborhoods fell on deaf ears. But by the 1980s Jacobs' book had become a standard text, establishing a strong counter-narrative about city design, one that recognized again the importance of traditional city forms and spaces. Le Corbusier, once the hero of the modern city, soon became the arch-villain of this revisionist history, with his revolutionary and draconian proposals for “The City of Tomorrow” identified as the source of everything bad about modernist urbanism.



Figure 1.6. Greenwich Village, New York. Although considerably changed from the 1950s and 60s when Jane Jacobs lived nearby, Greenwich Village still embodies lessons from traditional urban design, with connected streets lined by buildings that create defined spaces for human activities. Photo: David Walters

Also during the late 1970s and 1980s, radical rethinking about urban design emerged from academia, initially from progressive teachers in schools of architecture, including Cornell and Yale. At Cornell, a new kind of urbanism was taught by the revered Anglo-American urbanist Colin Rowe, in conjunction with visiting professionals such as Michael Dennis and Steven Peterson. This approach to urban design focused much more on the context of cities and their history, seeking a deeper understanding of the relationship between existing urban places and new architectural projects. And, marking a major break from modernist

dogma and its fetish with single, separated uses, this new approach welcomed a return to a mixed-up and layered urbanism.

Meanwhile at Yale, the renowned architectural historian Vincent Scully taught courses on the urban form and building types of American traditional towns and cities. Two of Scully's graduate students in the early 1970s, Andres Duany and Elizabeth Plater-Zyberk, found this material particularly fascinating. A few years after graduating, these two pioneers founded their groundbreaking urban design firm DPZ in 1980 and assumed leadership roles in the development of what became known as Neo-Traditional Development (TND).

Duany and Plater-Zyberk's particular contribution at this time was the rediscovery of the urban design concept of the neighborhood, catalyzed by their graduate analysis of the neighborhoods in New Haven for Scully's class (Stern and Stamp, 2016, 397). Stimulated by this new awareness, they were able to understand many things that were wrong with modernist city planning; this critique mirrored many observations by Jane Jacobs, but was now articulated with an extra edge of practicality that presaged radical design action. This critique also led them to formulate a new approach to zoning -- writing and diagramming new rules for development that captured the spirit and essence of the rediscovered traditional urbanism. These new zoning regulations, known today as "Form-based Codes" encapsulated many qualities of American urbanism that had been effectively outlawed by the draconian use-based zoning techniques described in Section 1.5 above. This method of zoning and its relationship to urban design practice will be noted in Unit 2 and discussed in detail in Unit 4 of this course.

Traditional Neighborhood Development was one precursor to New Urbanism; the other was Transit-Oriented development (TOD), also developed during the 1980s on the west coast by Peter Calthorpe, Daniel Solomon, Douglas Kelbaugh and others. If a renewed appreciation of traditional American urbanism and the neighborhood unit were the main highlights of Traditional Neighborhood Development (TND), the emphasis of Transit-Oriented Development (TOD) was made equally clear in its title: it renewed the connection between urban form and public transportation that had atrophied decades earlier after the demise of the streetcar. TOD embodied many similar and complimentary ideas as its TND companion concerning traditional urban patterns, but it evolved specifically from the concept of the "Pedestrian Pocket." This was essentially a small town, or "urban village" organized primarily with the needs of the pedestrian in mind, like the pre-automobile suburbs that formed the basis for TNDs, but developed around new public transit -- usually light rail -- that enabled residents of one "pocket" to travel conveniently to others and to a major metropolis

(Kelbaugh, 1988). Once again (as with Clarence Perry's 1927 Neighborhood Unit plan) the concept of the five-minute walk defined the scale of the development, five minutes being established today as the maximum distance an average American will walk to catch transit.

The architects behind the TOD movement added one other ingredient to the mix of recovered "new" ideas -- energy efficiency. Several California-based designers had been involved with solar and passive energy designs in the 1970s, and this emerging interest in energy performance planted the seed of today's increasingly urgent focus on matters of sustainability and resilience.

Common to both converging design movements were parallel developments imported from Europe, from the work of Aldo Rossi in Italy and especially from Leon and Rob Krier, based out of Luxembourg. Leon Krier was especially influential - in the UK as Prince Charles' favorite architect - but more importantly in the USA as a theoretician who provided guidance to Duany and Plater-Zyberk's evolving urban design language. Krier's influence lent an increasingly neo-classical and historicist bent to the aesthetics of neo-traditional development. This was accepted by some urban designers as an effective way to reconnect with public taste and to root new development firmly in the Western tradition, but rejected by others who saw this as needless nostalgia. Even worse, it undercut the forward-looking agenda that accompanied the reconnection to history. To this more progressive group, the most important lessons from traditional urbanism were in the scale and formation of human scaled urban space and urban infrastructure, not in the aesthetics of buildings.

The confluence of Traditional Neighborhood Development and Transit-Oriented Development led to the formalization in 1996 of the "New Urbanist" movement. The name "The New Urbanism" was consciously chosen to define the return to America's traditional urban forms and spaces from the period 1890-1930. It was defined as "new" in contrast to the old and discredited urban language of modernism. And it was to be "urban" by creating a coherent urban structure to counteract the faults of a sprawling suburban model of city development.

The movement's manifesto was written out at length in the Charter of The New Urbanism. It set forth a series of principles "to guide public policy, development practice, urban planning and [urban] design," and was organized in a hierarchy of ten interlocking scales: Region; Metropolis; City; Town; Neighborhood; District; Corridor; Block; Street; Building (CNU, 1998).

It was also no accident that this new Charter for the post-modern age was ratified at the 4th Congress of the new movement, in Charleston, S.C. in 1996. The declaration and signing of the Charter of the New Urbanism at the 4th Congress can be read

as a deliberate repudiation and overwriting of the modernist concepts in the Charter of Athens, originally produced, as we have noted earlier, at a different 4th Congress, that of CIAM in 1933. The new Charter thus became a rallying cry for the redesign of American towns and cities.

By the end of the 20th Century, New Urbanism had matured into a detailed and multi-faceted approach to rebuilding America's towns and cities, with an increasingly long list of successful projects (see Fig. 1.7). As the 21st century has progressed to the time of writing (2016-17) New Urbanism has evolved further to include an environmental agenda around concepts of sustainability and resilience, now vital urban design issues in the face of climate change and ecologically damaging suburban sprawl. This, and other salient attributes of America's primary urban design philosophy are discussed in detail in Unit 2.



Figure 1.7. Birkdale Village, Huntersville, North Carolina, 1999-2003. Shook Kelley, architects. Crosland and Pappas Properties, developers. The 52-acre mixed-use center is linked to adjacent housing through a network of connected streets and parks. The urban form of the development is directly attributable to Huntersville's form-based zoning ordinance, written in 1996 by David Walters and Ann Hammond. Photo by Aerial Dimensions. Reproduced courtesy of the Town of Huntersville.

Urban Design for Architects Unit 1 Review

- 1. Urban design was first developed as a coherent discipline in the USA at a conference at Harvard in:**
 - a. 1909
 - b. 1957
 - c. 1956
 - d. 1960
- 2. The Athens Charter is significant because:**
 - a. The long urban history of Athens served as the stimulus for the Charter's focus on preserving historic buildings.
 - b. The Charter was best known as a technical manual of practical steps to make modern buildings.
 - c. It proposed a very flexible agenda for making new cities.
 - d. It provided a firmly focused and hard-edged manifesto for cities of the future.
- 3. The residential development that embodied all that was wrong with modernist urbanism was:**
 - a. Radburn.
 - b. The Weissenhof Siedlung.
 - c. Pruitt-Igoe.
 - d. Towers in the Park.
- 4. The form of the typical American city in the latter half of the 20th century was a result of:**
 - a. The collision of European socialist ideas and American planning practice.
 - b. The City Beautiful movement.
 - c. New Urbanism.
 - d. Streetcars.
- 5. The forms of the traditional American city were made illegal by:**
 - a. New Urbanism.
 - b. Modernist architecture.
 - c. Zoning.
 - d. Urban Renewal.
- 6. The revival of "traditional urbanism" in America can be most clearly traced to:**
 - a. Jane Jacob's book "The Death and Life of Great American Cities".
 - b. Urban design teaching at Ivy League schools of architecture.
 - c. The discovery of the British "Townscape" school of urban design.
 - d. The influence of Prince Charles.

UNIT 2:

The Lexicon of Contemporary Urban Design and its Impact on Architecture.

LEARNING OBJECTIVE 3:

This unit explains the founding concepts of mainstream “New Urbanist” urban design and introduces an alternative approach under the banner of “Landscape Urbanism.” After completing this course unit, the student will understand the interaction between both sets of urban design approaches and normative architectural practice.

LEARNING OBJECTIVE 4:

The student will understand the importance of urban context in formulating well-rounded architectural design concepts and will understand the importance of urban analysis and urban design.

CONTENT

- 2.1 Introduction
- 2.2 Principles and Operation Defined: The Charter of The New Urbanism
- 2.3 Market Reactions to New Urbanism: Antagonism–Acceptance-Adoption
- 2.4 Urban Form and Architecture: Contextual Analysis and the Architecture of Restraint
- 2.5 Academic Reactions: the Invention of Landscape Urbanism
- 2.6 Basic Principles of Landscape Urbanism

2.1 Introduction

In Unit 1 of this course we traced the main trajectories of urban design from the late 19th century, through a radically changing intellectual and physical landscape in the 20th century to our present day in the second decade of the 21st century. In its quest for a focused narrative appropriate to the scope of this course, this abbreviated history left out some otherwise fascinating personalities and movements, which in a full-blown urban history course would receive considerable attention. These include:

- Antonio Sant’Elia and his heroic but doomed visions from 1912 of *La Citta Nuova (The New City)* – with its mechanistic urbanism that’s said to have inspired the cityscapes of the classic movies *Metropolis* (1927) and, more recently, *Blade Runner* (1982);
- The Russian *De-Urbanists* of the 1920s, a faction of avant-garde architects who thought the goals of the Communist Revolution could best be achieved by a decentralized network of smaller suburban centers integrated with their productive landscapes and served by high-speed transportation;

- Frank Lloyd Wright's polemic Broadacre City, conceived during the years of the Great Depression in the 1930s as a celebration of American individuality and private enterprise. With great political irony, this prediction shared many conceptual similarities with the Communist visions of a decade earlier in its rampant decentralization across a new, suburban landscape.

It's well-known that Wright hated cities, and while he cannot claim to have invented American suburbia -- we have seen in Unit 1 of this course that the historical process was a lot more complicated than one person's grandiose imagination -- he certainly envisioned an endless landscape of American sprawl as the antidote to the dense urbanity he despised. (Nilsen, 2011).

All of these urban movements can provide richness to our historical narrative, but without altering the central premise -- that today, in the early 21st century, the mainstream practice of urban design has moved beyond modernist concepts of the city and now is firmly rooted in the concepts of traditional urbanism. Defined public spaces once again create the setting for public life and commerce, and form the connective tissue of settlement patterns, from village to city scale (see Fig. 2.1).

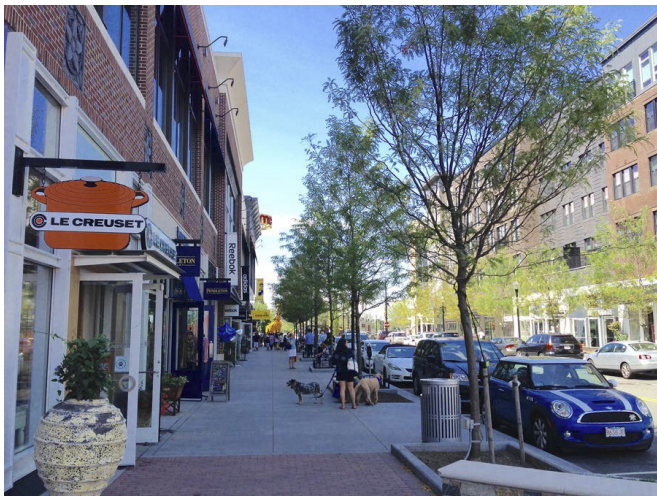


Figure 2.1. Assembly Row, Somerville, Boston, MA. A high-density, mixed-use and multi-phase development on the Mystic River. The development was begun in 2012 and has its own, purposely-constructed light rail stop on Boston's Orange Line. Federal Realty Investment Trust, developers. Master plan and urban design guidelines by Street-Works Studio.

These principles, concepts and urban design methodology form the basis of New Urbanism and are set forth very clearly in *The Charter of the New Urbanism*, signed in 1996 and published in expanded book form in 1998. The document first sets out, in the

form of a manifesto, a range of beliefs and assertions about urban life, development and culture, and its relationship to the natural world. This establishes the framework for three subsequent sections that articulate design and development principles at the interlinked scales of:

- The Region, Metropolis, City, and Town
- The Neighborhood, District, and Corridor
- The Block, the Street, and the Building.

These frames of reference set the scene for design, be it at the scales of community master plans, urban infill projects, or designs for individual buildings.

The language of the signed Charter is reproduced in 2.2 below.

2.2 Principles and Operation Defined: The Charter of The New Urbanism

THE CHARTER OF THE NEW URBANISM

The Congress for the New Urbanism views disinvestment in central cities, the spread of placeless sprawl, increasing separation by race and income, environmental deterioration, loss of agricultural lands and wilderness, and the erosion of society's built heritage as one interrelated community-building challenge.

We stand for the restoration of existing urban centers and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of real neighborhoods and diverse districts, the conservation of natural environments, and the preservation of our built legacy.

We recognize that physical solutions by themselves will not solve social and economic problems, but neither can economic vitality, community stability, and environmental health be sustained without a coherent and supportive physical framework.

We advocate the restructuring of public policy and development practices to support the following principles: neighborhoods should be diverse in use and population; communities should be designed for the pedestrian and transit as well as the car; cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions; urban places should be framed by architecture and landscape design that celebrate local history, climate, ecology, and building practice.

We represent a broad-based citizenry, composed of public and private sector leaders, community activists, and multidisciplinary professionals. We are committed to reestablishing the relationship between the art of building and the making of community, through citizen-based participatory planning and design.

We dedicate ourselves to reclaiming our homes, blocks, streets, parks, neighborhoods, districts, towns, cities, regions, and environment.

We assert the following principles to guide public policy, development practice, urban planning, and design:

The Region: Metropolis, City, and Town

1. Metropolitan regions are finite places with geographic boundaries derived from topography, watersheds, coastlines, farmlands, regional parks, and river basins. The metropolis is made of multiple centers that are cities, towns, and villages, each with its own identifiable center and edges.
2. The metropolitan region is a fundamental economic unit of the contemporary world. Governmental cooperation, public policy, physical planning, and economic strategies must reflect this new reality.
3. The metropolis has a necessary and fragile relationship to its agrarian hinterland and natural landscapes. The relationship is environmental, economic, and cultural. Farmland and nature are as important to the metropolis as the garden is to the house.
4. Development patterns should not blur or eradicate the edges of the metropolis. Infill development within existing urban areas conserves environmental resources, economic investment, and social fabric, while reclaiming marginal and abandoned areas. Metropolitan regions should develop strategies to encourage such infill development over peripheral expansion.
5. Where appropriate, new development contiguous to urban boundaries should be organized as neighborhoods and districts, and be integrated with the existing urban pattern. Noncontiguous development should be organized as towns and villages with their own urban edges, and planned for a jobs/housing balance, not as bedroom suburbs.
6. The development and redevelopment of towns and cities should respect historical patterns, precedents, and boundaries.
7. Cities and towns should bring into proximity a broad spectrum of public and private uses to support a regional economy that benefits people of all incomes. Affordable housing should be distributed throughout the region to match job opportunities and to avoid concentrations of poverty.
8. The physical organization of the region should be supported by a framework of transportation

alternatives. Transit, pedestrian, and bicycle systems should maximize access and mobility throughout the region while reducing dependence upon the automobile.

9. Revenues and resources can be shared more cooperatively among the municipalities and centers within regions to avoid destructive competition for tax base and to promote rational coordination of transportation, recreation, public services, housing, and community institutions.

The Neighborhood, the District, and the Corridor

1. The neighborhood, the district, and the corridor are the essential elements of development and redevelopment in the metropolis. They form identifiable areas that encourage citizens to take responsibility for their maintenance and evolution.
2. Neighborhoods should be compact, pedestrian-friendly, and mixed-use. Districts generally emphasize a special single use, and should follow the principles of neighborhood design when possible. Corridors are regional connectors of neighborhoods and districts; they range from boulevards and rail lines to rivers and parkways.
3. Many activities of daily living should occur within walking distance, allowing independence to those who do not drive, especially the elderly and the young. Interconnected networks of streets should be designed to encourage walking, reduce the number and length of automobile trips, and conserve energy.
4. Within neighborhoods, a broad range of housing types and price levels can bring people of diverse ages, races, and incomes into daily interaction, strengthening the personal and civic bonds essential to an authentic community.
5. Transit corridors, when properly planned and coordinated, can help organize metropolitan structure and revitalize urban centers. In contrast, highway corridors should not displace investment from existing centers.
6. Appropriate building densities and land uses should be within walking distance of transit stops, permitting public transit to become a viable alternative to the automobile.
7. Concentrations of civic, institutional, and commercial activity should be embedded in neighborhoods and districts, not isolated in remote, single-use complexes. Schools should be sized and located to enable children to walk or bicycle to them.
8. The economic health and harmonious evolution of neighborhoods, districts, and corridors can be

improved through graphic urban design codes that serve as predictable guides for change.

9. A range of parks, from tot-lots and village greens to ball fields and community gardens, should be distributed within neighborhoods. Conservation areas and open lands should be used to define and connect different neighborhoods and districts.

The Block, the Street, and the Building

1. A primary task of all urban architecture and landscape design is the physical definition of streets and public spaces as places of shared use.
2. Individual architectural projects should be seamlessly linked to their surroundings. This issue transcends style.
3. The revitalization of urban places depends on safety and security. The design of streets and buildings should reinforce safe environments, but not at the expense of accessibility and openness.
4. In the contemporary metropolis, development must adequately accommodate automobiles. It should do so in ways that respect the pedestrian and the form of public space.
5. Streets and squares should be safe, comfortable, and interesting to the pedestrian. Properly configured, they encourage walking and enable neighbors to know each other and protect their communities.
6. Architecture and landscape design should grow from local climate, topography, history, and building practice.
7. Civic buildings and public gathering places require important sites to reinforce community identity and the culture of democracy. They deserve distinctive form, because their role is different from that of other buildings and places that constitute the fabric of the city.
8. All buildings should provide their inhabitants with a clear sense of location, weather and time. Natural methods of heating and cooling can be more resource-efficient than mechanical systems.
9. Preservation and renewal of historic buildings, districts, and landscapes affirm the continuity and evolution of urban society.

In the second decade of the 21st century, this text, with its collection of design principles and underlying concepts about what constitutes good urban design may seem straightforward, even mainstream. But this was not the case at its inception during the 1990s when these ideas were regarded with suspicion and antagonism by many developers and other real estate professionals

2.3 Market Reactions to New Urbanism: Antagonism–Acceptance-Adoption

Progressive urban design practice in the 1990s faced many obstacles, not least of which were the entrenched attitudes and rigid development practices of many in the real estate and building industries. As we noted earlier, for the best part of half a century, development in the USA had followed a pattern of suburban land use divided into separate areas for different functions: single-family housing in one location, multi-family apartments in another, shopping centers in a third, office parks in a fourth, etc. Developers and builders alike had become expert at one of those development types, and rarely did a shopping center developer try his or her hand at a housing project. Even more importantly, banks and other lenders had developed their financial models around this set of single function operations; there were no financial templates readily available for mixed-use developments.

The practices and patterns of American development from the decades before World War II had long faded from personal and institutional memories; modernist suburban development organized in mono-functional zones had become so entrenched in the public and professional mindsets that it had begun to be taken for granted: this was simply the way development operated. Period. Few people outside academia remembered that this suburban pattern of development was itself a revolutionary overturning of traditional American practice in earlier decades: By the end of the 20th century single-use “pods” of segregated uses had become the “new normal” in life, commerce, and development.

But by the late 1980s, some forward-thinking design professionals began to realize that our suburban patterns no longer represented the utopian lifestyle of the optimistic 1950s and 1960s. By contrast, they were showing signs of disturbing dystopic trends. The quality of family life was being eroded for many by long and wearing commutes that extended the working day at the expense of personal and family time. Communities and neighborhoods in America saw the once attractive rural quality of their surroundings progressively destroyed by new suburbs and shopping centers. The sense of losing touch with nature, and being stuck instead with a mediocre built environment expanded across much of the nation. Suburbs were replaced in the public mind by “sprawl,” the formless, “uncontrolled” expansion of low-density and “cookie-cutter” development that all looked the same. Any sense of “place” was progressively eroded.

But of course, this much-maligned development wasn't “uncontrolled” at all. From the public side, it was all the product of detailed zoning regulations that all followed the same templates from coast to coast: from the private side it was predicated on uniform development practices that were tailored to financial

models that were based almost entirely at looking back at what was profitable yesterday and then repeating it endlessly into the future. It was a rare developer who could find a lender willing to finance an “untested” development concept.

When progressive architects/urban designers started to critique these development practices publicly in the early 1990s, they argued instead for urban places that provided a sense of place and community identity. Drawing on the recently relearned lessons of history, urban designers and other cultural critics promoted environments that mixed uses together again in buildings that created properly defined urban spaces - like the streets and squares of traditional American towns and cities. They presented these projects at conferences, promoted these ideas in their local communities, and approached developers with these new ideas.

Developers, however, were often harsh and dismissive in their reactions to these new ideas that threatened to upend their treasured and repetitive development formulas. The urban design and development communities found themselves very much at odds. But then public sentiment entered the conflict and tilted the balance in favor of the new ideas of traditional-style development.

Increasing public dissatisfaction with suburban sprawl and the stresses it imposed on family life and the natural environment was both reflected in and prompted by articles in popular magazines. Prime amongst this growing chorus of complaint and search for alternatives were influential essays in *Newsweek* (Adler, J., 1995) and *The Atlantic* (Kunstler, J. H., 1996). Entitled respectively *Bye-Bye Suburban Dream: 15 Ways to Fix the Suburbs* and *Home From Nowhere*, these articles, based on the new concepts promoted by urban designers, acted as a wake-up call to the development industry in the USA. This “New Urbanism” could clearly no longer be dismissed by developers as a fad promoted by radical designers with a disruptive agenda.

In tandem with this stinging public critique about the backwards-looking practices of the development industry came a surge of expectations from the public that municipalities could, even should, lead the charge to require higher standards of development. This was evident first in the mid-nineteen nineties, in smaller suburban towns that ringed larger cities – towns like Davidson and Huntersville, just north of Charlotte, N.C., for example. Citizens and local politicians in these towns had seen other small towns in the region submerged by placeless sprawl, and demanded that this process be reversed for their communities, and replaced by new visions and new development rules that focused instead on the unique qualities and history of their towns.

As we saw in Unit 1, Section 1.6 of this course, the husband and wife team of Andres Duany and Elizabeth

Plater-Zyberk had initiated a new type of zoning code in the 1980s that captured the qualities of “traditional” development in regulations that focused on the design of public space and the appropriate scale, siting and massing of buildings. This groundbreaking work inspired other professionals to extend the same principles to fully-fledged zoning codes for small towns, such as Huntersville and Davidson, near Charlotte in North Carolina (Walters and Keane, 1995, Walters and Hammond, 1996, Mitchell, T. 2011).

The relatively small size of these communities -- in the case of Davidson and Huntersville, N.C., approximately 10,000 – 30,000 inhabitants -- allowed for a locally responsive democratic process, one that was much quicker and flexible than for a large city or metro area (Walters and Brown, pp. 58-62).

These new zoning codes produced during the 1990s became known as “Form-based Codes” because their primary emphasis was on the *urban form* of developments, particularly the way that buildings framed a connected network of public spaces and created environments scaled to the pedestrian instead of automobiles. In return for this extra focus on urban design quality, these codes relaxed conventional zoning’s fixation with separating uses, and allowed compatible uses to mix together, thus allowing developers greater flexibility in putting their project elements together.

These municipal initiatives were, predictably, opposed at first by developers and other real estate professionals. But as some mixed-use and walkable developments that followed traditional urban design principles were constructed and evidence piled up that the public loved them, the development industry, followed eventually by lending institutions, became more comfortable with these concepts that they originally opposed. It was clear that they could be moneymaking propositions after all. A good instance of an early example of this updated traditional urbanism is Birkdale Village in Huntersville, NC, begun in 1999 (Walters and Brown, 91-93). (See Fig. 1.7 in Unit 1)

By the end of the first decade of the 21st century, the development industry’s acceptance of New Urbanism turned into an eager embrace. The catalysts were the changes in market preferences espoused by two huge cohorts of consumers who burst on the scene demanding a more active urban lifestyle than the suburbs could provide. Millions of Baby Boomers (born between 1946 and 1964) seized on the idea of walkable, mixed-use communities as supportive settings for their “active ageing” process of retirement and downsizing. At the same time, the so-called “Millennials” (or “Generation Y” or “Echo-Boomers”) born between the early 1980s to late 1990s demanded the same kind of walkable urbanity that offered many more lifestyle options than the mono-functional suburbs where they grew up.

While conventional low-density suburban development continues to be popular for some market sectors, the consumer preferences of these two cohorts changed the thinking of the real estate and development industry. Now center city locations, shunned for decades, became desirable and cool. Close-in suburbs, especially those that were, or could be served by public transit followed suit. These were largely areas of cities that embodied the principles of traditional urbanism from their inception in the early 1900s, and thus were amenable to retrofitting and infill development. To the ironic observation of many urban designers and planners, the real estate and development industries responded to the market by feverishly adopting the urban design concepts they vehemently opposed a decade earlier. And of course, many developers acted as if they invented these same design concepts themselves (author's irony intended). The Great Recession in the USA during the years 2007-2009 put a lot of developments on hold, but in subsequent years development of transit-supported, walkable urban environments has become a major urban trend in hot urban markets across America.

Without meaning any disrespect to architects (the author is a practicing architect with 45 years' experience), it's fair to say that good urban design practice requires some additions to the professional skillsets for architects educated by professors at schools of architecture still laboring under the influence of old-fashioned modernist doctrine. The most important of these skillsets has to do with the increased respect for and understanding of the physical and social context of new work. This means taking care to conserve a city or town's history and physical character (or at the very least not disrupt it), but even more importantly it means recognizing context as an important source of design concepts for any new building(s). This is explored further in Section 2.4 below.

2.4 Urban Form and Architecture: Contextual Analysis and the Architecture of Restraint

As we saw at the outset of this course, urban design is about making places for people – and places are best understood as spaces that are framed and defined by buildings and landscape. But, of course, it's always harder to design "space" than it is to create "form." Urban space itself is invisible; it is brought into being by the presence of its edges – the buildings or landscape elements that frame it. Urban landscapes have traditionally been created by a simple hierarchy of buildings -- "background" buildings that contain most everyday urban functions and generally define the public realm by lining streets and squares, and special civic, institutional, or religious buildings that stand out in contrast to their context, or are sited in a specific way that illustrates their importance to the urban scene (see Figs 2.2 and 2.3).



Figure 2.2. Newbury Street, Boston. Built as continuous rows of townhomes in the 1870s, the street has transformed into one of America's premier shopping and dining venues. The buildings house a variety of uses and form the backdrop to the lively pedestrian scene on the sidewalk. Photo. David Walters.

Within this frame of reference, most buildings are generally secondary to the public spaces they create. So it is not surprising that for an architectural profession trained all the way through architecture school to create beautiful unique objects and sculptural forms, one of the biggest challenges is to produce elegant and restrained "background" architecture, buildings that put "space making" before "object making."



Figure 2.3. Trinity Church, Copley Square, Boston, 1872-87. H.H. Richardson, architect. When designed, Richardson's idiosyncratic aesthetic bore little relation to the brick row houses of Newbury Street and other Back Bay avenues. But this landmark building helped frame a significant public square while acting as a civic and religious beacon in the wider city.

Of course, this doesn't mean that background buildings should be, or need be boring and mundane. They can be very special in their own right, but in ways that relate to, say, façade detail and materials rather than aggressive volumetric modeling. Spanish architect Antoni Gaudí's famous apartment block in Barcelona, the Casa Milà (1906-1912) -- otherwise known as La Pedrera, or "The Stone Quarry" -- is a case in point (see Fig. 2.4). The building height, massing and 45-degree corner splay were all dictated by the uniform urban regulations that controlled that part of the fast developing city. Gaudí, an inventive individualist if ever there was one, did not fight or break these rules. Instead he turned his genius to the façade detailing with its evocative curves, and to the roof, home to a riot of fantastical decoration. In many ways this is an ideal urban building – responsive to the controlling rhythms and scale of the context, yet a triumph of unique expression. It is at once "background" architecture that fits exactly into its place in the urban streetscape yet memorable for its idiosyncratic detailing and its relationship to Catalan culture.

Architecture occurs at the wall, where the pressures of the program meet the constraints and opportunities of the context.

What Venturi meant by this was that the modernist focus (even fetish) on program as the defining genesis of architectural form in the modernist era after World War II (see Summerson, 1957) was too limiting; in fact this more singular focus on program was a radical reversal of most architectural practice through previous periods of history. More traditionally, architectural form in city building had resulted from a dynamic exchange between program and context. Venturi was arguing for a more complex architecture that allowed for creative compromise between divergent forces. He sought architectonic resolution by embracing contradiction and showed how the architecture of earlier periods orchestrated an interplay between multiple discordant elements rather than discarding those that interfered with an architect's preferred singular expression (Venturi, 45-49).

Moreover, Venturi suggested architects focus once more on the design of architectural façades, the vertical planes that mediate the biggest contradiction of all, that between indoor private space and outdoor public space. For urban designers this opportunity is crucial: While for the architect the building façade may be the expression of her building, for the urban designer, *that same façade is a wall to the urban room beyond the building*, be it a street, a square, a plaza, park, or alley. Basically, that wall has to do two things at once, not just one. Urban designers thus ask architects to think about the design of that external façade in the same way they would an important wall in a major public space inside their building. Where are the openings – windows and doorways? How big are they? Are they shielded in any way? What do they look out on? What views do they allow in? Where are the threshold spaces defining the transition between public and private realms?



Figure 2.4. Casa Milà, Barcelona, 1906-1912. Antoni Gaudí, architect.

Gaudí illustrates one of the most important steps in broadening an architect's skillset: recognizing the importance of restraint in urban massing and streetscape while allowing unique form-making to flourish at the level of detail and façade design. Gaudí's respect for and understanding of the larger urban context, and the requirements of the pedestrian realm at the base of his building form the organizational framework for his irrepressible decorative details.

Nearer our own time, the famous American architect Robert Venturi discussed very similar themes in his seminal book *Complexity and Contradiction in Architecture* (Venturi, 1966). To paraphrase his discussion in a search for an architecture more complex than the simple reductive doctrines of modernism, he indicated that (in this author's paraphrase):

In order for cities to be "legible," that is, easily understood by their users, there needs to be, as noted above, a clear distinction between "background" buildings and those with civic, institutional, or religious importance that deserve to be "foregrounded." Clearly, in every American city up until modernist times after World War II, the number of background buildings vastly exceeded those in the foreground, the ones that could be treated as "object buildings" in their own right. Unfortunately, the modernist doctrines enshrined in the Charter of Athens paid little more than lip service to context and existing urban fabric, prioritizing instead the creation of a new architecture for a new age. Consequently, most American cities became, and still remain a battleground of competing architectural forms, each obeying their own internal logic of program, materials or construction. These buildings often have little regard for their neighbors, nor the urban context in

which they sit. Instead of coherent public spaces, each with its relevant scale and enclosure, American streetscapes are often reduced to a series of unrelated objects sitting in residual spaces between buildings. These spaces are not designed; they are simply left over scraps to be tidied up with grass and bushes.

Repairing this fractured public realm, and ensuring that it can become the reliable armature for 21st century cities is a crucial task, and giving high priority to contextual analysis at the beginning of the design process is an excellent way to start. The English architectural educator Simon Unwin has stated this importance of contextual analysis very clearly (Unwin, 2014):

Architecture in context is neither a cursory attention nor a radical innovation. Rather it is a strong and eloquent visual relationship to the surroundings. Individual buildings are always seen first as a part of the whole.

Creating places and spaces that enrich the lives of the people who use them is the foundation of architects' work... Identification of place lies as a generative core of architecture. *Place is to architecture as meaning is to language.* Recognition, memory, choice, sharing with others, the acquisition of significance; all these contribute to the process of architecture. (This author's italics).

One of America's leading urban design firms, Urban Design Associates, reinforces the importance of understanding a building's context when they write:

Architecture is the physical language of city - and community - building. The city is a living organism- with a unique culture and a past called a "contextual history" and a future in which new buildings act as the threads that weave the city's living traditions into new and whole fabric. Architecture projects need to be perceived as part of implementing an urban design project that entails gathering insights into urban fabric and how people use urban spaces.

The role of an urban designer is to work on many scales, thoughtfully designing public places and spaces, to build on the unique local character and the best qualities of the forms inherent in that geographic region. (UDA, 2003)

The process of urban analysis – understanding the sets of forces in the urban context that deal with issues of larger importance than the design of a single building - is not separate from architectural design; rather, it is the first stage in the design process.

In addition to normal site analysis operations that all architectural projects require, such as understanding climate, topography, circulation, soil types, vegetation, patterns of sun and shade, zoning controls, etc., urban designers seek a more fine-tuned appreciation of urban

context. This means, for example, focusing on key characteristics of the neighborhood or district in which the new building(s) will sit, and which can be used to develop a complex façade design vocabulary (see Fig. 2.5).

These include, but are not limited to:

- Size, scale, and character/ materials of adjacent and neighboring buildings
- Building typologies
- Fenestration pattern of solids and voids
- Relationship to buildings either side and across the street or other public space
- Height-to-width relationships of public spaces
- Quality of existing pedestrian experience
- Tears in the urban fabric that need to be repaired by infill buildings
- Any special views to and from the site / terminating vistas



Figure 2.5. Mixed-use building, Ludgate Hill, London, 1999. Cullinan Studio, architects. Note how the articulation and materiality of the façade vary across its length to relate to the very different colors and materials in the adjacent buildings.

It's clear from this abbreviated list that the quality, efficiency, and safety of public spaces is high on all urban designers' agendas. These spaces are the ones shared by all citizens, and this public realm is crucial to the operation of any free society. Any city or town that strives for sustainability and resilience in the face of future changes *must* pay attention to the public realm and public infrastructure that is shared by everyone.

It is simply that important: more important than any single building.

2.5 Academic Reactions and the Invention of Landscape Urbanism

We noted in Unit 1 how an important catalyst for new thinking about urbanism in America evolved from Schools of Architecture during the 1980s. It may be surprising to learn that as New Urbanism coalesced around a set of principles and evolved into more mainstream practice, support for traditional urbanism as an agency of urban revival and sustainability declined sharply in many architecture schools.

As New Urbanism was embraced by the development industry after 2000, those design concepts became tainted in the eyes of many architecture faculty. From their point of view, design ideas that once were radical had become commodified as tools of a consumerist and populist development industry. These ideas had lost their “edge.” Moreover, many New Urbanist projects and developments were rendered and built in traditional aesthetic vocabularies, be they “Victorian” cottages, “Craftsman” bungalows, or “Federalist” townhomes. While the Charter of The New Urbanism explicitly refrained from engaging issues of stylistic preference, arguing that urban issues “transcend” questions of style, the property market wasn’t paying attention. American consumers generally prefer “traditional” aesthetics in their homes, and that’s what developers demanded of their designers.

Truth to tell, many urban designers are not especially interested in issues of architectural style: Urban designers typically envision development scenarios that foresee 10-20 years into the future, by which time the stylistic preferences of architects and the public may well change.

Moreover, the problems of social equity and sustainable urban infrastructure in American towns and cities are so urgent that many New Urbanists worry less about aesthetics and more on designs that can help solve those more substantive social and environmental issues. Uppermost in the minds of most urban designers are the opportunities to create safe and attractive networks of street, parks, and public spaces that form a connected urban structure, one that’s suitable for walking, cycling, driving and transit. Only when these efforts are fused with tangible progress towards increased social equity through a jobs/housing balance and housing affordability, and then combined with environmental improvements do urban designers focus on aesthetics.

Peter Calthorpe, one of the main instigators of Transit-Oriented Development in the late 1980s, has been equally blunt. Critiquing a new but architecturally mediocre infill building in Berkeley, CA, Calthorpe stated:

But do I care [about the aesthetics]? Not really. What I care about is that 20 percent of the housing is affordable; what I care about is that the ground

floor is retail and active; what I care about is that there are windows overlooking University Avenue and the drug dealings and the muggings are going down (Calthorpe, 2005: 25).

This mediation with the development market and public taste was anathema to many architects. This rejection of aesthetic compromise ran deepest amongst many faculty in architectural schools, who felt this attitude betrayed one of the main dynamics in architectural discourse: the quest for the new and original work.

This academic disregard of New Urbanism was combined with other, more purely architectural reasoning derived from modernist doctrine dating as far back as the Charter of Athens in the 1940s. For many faculty, and the generations of students they taught, architecture was seen primarily as a personal, artistic task of creating new and beautiful objects. In many cases these “object buildings” could be best perceived and understood if they were not impeded or compromised by the complexities and trade-offs required by existing contexts. This artistic desire ran counter to the basic premise of traditional urbanism noted above: *that buildings exist primarily to create public space*. Historically, most buildings have functioned as “walls to urban rooms,” not as freestanding sculpture; only key civic, institutional or religious buildings were released from that requirement, allowing them to become aesthetic landmarks in a community.

It seemed to New Urbanist architects, landscape architects, urban designers, and planners (who had come late to the movement but by the mid-1990s were catching up fast) that architecture students were often taught by faculty who put aesthetic preferences and a quest for originality above the tasks of solving urgent urban issues and repairing the fabric of American communities. Only a minority of studio professors in architecture schools fully embraced the twin lessons embodied in the work of Gaudí, Venturi, Calthorpe and others:

First, architectural design gains in complexity and richness when it accepts contextual design as a partner in creativity; and

Second, hardnosed socio-economic issues are sometimes more important than aesthetics.

Instead of accepting these twin urban imperatives, many faculty in American schools of architecture considered New Urbanism’s agenda of traditional urbanism too conservative, and one that was corrupted by its relationship with developers and market priorities. Teaching its design principles, social concerns, and environmental ethics in American classrooms tended to be limited to smaller graduate programs in urban design.

During the 21st century in particular, the avant-garde sensibility in architectural practice and education has

been increasingly dominated by “starchitecture” and by buildings conceived as increasingly idiosyncratic objects, with their forms divorced from their context. The New Urbanist proclivity for more restrained, space-making background buildings held little attraction for ambitious faculty and their students. Yet these same architecture schools and faculty could not be seen by their peers and the public as ignoring important urban issues regarding the design of cities. From an academic perspective, New Urbanism was fatally compromised by its incorporation into capitalist development practice, so a new, untainted theory of urbanism was required, one that could be promoted and promulgated as a valid alternative to New Urbanism.

One such innovation in particular presented itself for theoretical and practical development within academia. This new critique of New Urbanism argued, with some justification, that the movement was dominated by architects and their concerns for the *built* environment. If a more radical design movement was going to oppose New Urbanism it seemed appropriate for landscape architecture and its emphasis on the *natural* environment to provide the theoretical and practical basis for such enquiry.

Thus Landscape Urbanism was born.

2.6 Definition(s) of Landscape Urbanism

In the same way that New Urbanism had many origins in schools of architecture during the 1970s and 1980s, Landscape Urbanism was also created in academia. In the mid-1990s, at the time New Urbanism was articulating its premises and moving from theory to professional practice, an Australian graduate student by the name of Peter Connolly first used the term “Landscape Urbanism” in his urban design project at RMIT University in Melbourne, Australia, in 1994 (Kerb, 1995).

Connolly’s valid premise was that existing versions of urbanism, which were based on “built” spatial infrastructure, were limiting the power and usefulness of landscape architecture and “natural” systems in formulating new approaches to city design. This theme was eagerly taken up by academics at several schools in Europe and the USA (including Harvard and the University of Pennsylvania on this side of the Atlantic and the Architectural Association in the UK) and was elaborated at an international conference in Chicago in 1997.

Landscape Urbanism initially positioned itself as a countervailing force to the increasingly established doctrine of New Urbanism with its clearly formulated principles in the CNU Charter (1996). However, in contrast to New Urbanism, which reconstituted principles of traditional urbanism and updated them for the challenges of the modern city, Landscape Urbanism was not so easily defined. Despite references

back to great American landscape architects such as Frederick Law Olmsted and, particularly Ian McHarg’s ecological sensibilities, initial definitions by academics tended to obscure rather than illuminate. But there were some nuggets of clarity, and below are quotations from leading academics and practitioners associated with the movement, edited from longer versions (Turner, 2011):

Landscape Urbanism is a “realignment currently underway in which landscape replaces architecture as the basic building block of contemporary urbanism.” Charles Waldheim (Harvard)

Landscape Urbanism “brings together two previously unrelated terms to suggest a new hybrid discipline.” James Corner (U. Penn. / James Corner Field Operations)

Landscape Urbanism “allows the integration of natural processes and urban development into a sustainable... ecology.” Architectural Association (UK)

Landscape urbanism “is the approach to the design and planning of open space where landscape is the structuring medium.” Christopher Grey (British architect and urbanist)

Over and above a genuine desire to raise critical questions about ecology, natural systems and processes, and to embed these issues at the forefront of thinking about cities there was one further ambition for this new movement: to redefine the practice and status of landscape architecture. It has to be said that in the minds of some architects and others in the design and development industries landscape architecture had been regarded (very unfairly) as a profession secondary to architecture. By incorporating the term “landscape” with the more weighty and holistic enterprise of “urbanism,” this new title conferred more critical substance on this emerging discipline and enhanced the profile of the landscape architecture profession in general.

A quote from the landscape architect and community activist Sarah Kathleen Peck, speaks to these twin ambitions very clearly:

“Landscape urbanism is a mode of thinking about the design and functioning of cities that places landscape as one of the first steps in urban development, rather than the last” (Peck, 2001).

Several high profile projects have cemented the relevance of Landscape Urbanism in the contemporary discourse about city development and urban sustainability. Perhaps the best known is the High Line, the linear park that threads its way above the streets on the Lower West Side in Manhattan on the line of an old elevated railroad. Designed by James Corner Field Operations (Project Lead), Diller Scofidio + Renfro, and Piet Oudolf, and built in stages from 2006 to 2014, the

linear park stretches nearly one-and-a-half miles from Gansevoort Street – three blocks below 14th Street in the Meatpacking District - through Chelsea to 34th Street near the Javits Convention Center.

Despite the fact that at the outset the initiators of Landscape Urbanism contrived a false dichotomy with New Urbanism in order to claim the theoretical high ground, subsequent practice has shown there to be considerable commonality between the kindred disciplines. These similarities are largely due to the fact that today many practicing New Urbanists are landscape architects, professionals who invest urban design with a profound sense of landscape and ecological thinking. Many New Urbanist design projects begin with a clear statement of landscape and ecological priorities and designs for “green infrastructure” often precede any arrangements of built form (see Figure 2.6).

at the core of planning and design of urban areas.” (quoted in Duany and Talen, p. 246)

This thinking mirrors the practice of most New Urbanist projects and developments; well-organized and accessible public space is at the heart of that work. The only points of disagreement might be stylistic, with New Urbanists using the physical form of successful urban places as models for creating new places, while Landscape Urbanists may lean to more open and “fluid” arrangements, where spaces intentionally blur, overlap and change over time.

From either perspective, the public spaces that create the public realm are the armature of our civic life. Whether the dominant medium is landscape or buildings, public spaces in urban settings are activated by their edges, and the human activities they shelter and support. Unit 3 of this course specifically argues

for the continued importance of physical places in an increasingly digital world, and explains key methodologies of urban design together with some tactical rules of thumb for creating good urbanism.



To view this course with color images: go to pdhacademy.com and download the course PDF.

Figure 2.6. Development plan for the revitalization of the Cowee Valley community, in the North Carolina mountains, 2008. This development strategy was based on techniques of low-tech self-sufficiency, productive landscapes and ambient energy production. David Walters / Amanda Morrell, urban designers. Image courtesy of The Lawrence Group.

One last quote, this time by Ignacio Bunster-Ossa, a leading American landscape architect and urbanist, puts Landscape Urbanism clearly into context in a way that can defuse remaining tensions between New Urbanists and Landscape Urbanists:

Landscape urbanism “plac(es) open space concerns

Urban Design for Architects Unit 2 Review

1. Teaching New Urbanism Schools of Architecture:

- a. Was initially rejected because it was perceived as too conservative.
- b. Became standard practice.
- c. Was limited to "starchitects".
- d. Was identified as valuable in professional accreditation standards.

2. Landscape Urbanism evolved

- a. From a resurgence of Ian McHarg's advocacy in Design with Nature Unit
- b. From working in the tradition of Frederick Law Olmsted.
- c. As an academic alternative to New Urbanism.
- d. As a means of subjugating landscape to the dictates of architecture-driven urban design.

3. The effects of New Urbanism were felt first in:

- a. Center cities.
- b. Far flung suburbs.
- c. In random locations.
- d. Small towns around the periphery of large cities.

4. The condition of "sprawl" around American towns and cities is caused mainly by:

- a. Uncontrolled expansion of low-density development.
- b. Wise fiscal policy by municipalities.
- c. The mandates of zoning regulations.
- d. Coordinated land use and transportation policy.

5. By the end of the first decade of the 21st century, the development industry eagerly embraced the design principles of New Urbanism because:

- a. Compelling new architecture turned people's heads.
- b. Developers started to follow the advice of their architects.
- c. A shift to thinking in terms of contextual design.
- d. Consumers, renters, and homebuyers demanded a different lifestyle from standard suburbia.

6. The opportunities of contextual design were clearly rejected in the writings of:

- a. Robert Venturi
- b. Antonio Sant'Elia
- c. Simon Unwin
- d. Urban Design Associates

UNIT 3:

The Public Realm as the Armature of Civic Life: How Buildings Create and Support Public Space.

LEARNING OBJECTIVE 5:

The student will learn how current urban design theories and practice are now focused on creating a lively and safe public realm of streets, squares, parks and other public spaces. The student will understand the concept of “frontages” and how building façades create walls to “urban rooms.” To meet these criteria, façade composition needs to take fully into account external contextual responsibilities as well as internally generated programmatic and tectonic concerns.

LEARNING OBJECTIVE 6:

The student will understand that the lower levels of urban buildings that interact directly with pedestrians share a primary responsibility towards external public space. A building’s lower stories carry the mandate of creating people-friendly, attractive, and safe outdoor environments. This is especially important in the context of smaller, urban infill design projects.

CONTENT

- 3.1 Introduction
- 3.2 The Relevance of Urban Design in a Virtual World
- 3.3 Objectives of Good Urban Design
- 3.4 Strategies and Tactics of Good Urban Design

3.1 Introduction

The first unit of this course presented an overview of the historical and theoretical trends that have shaped attitudes towards urban design in the early decades of the 21st century. The second unit explicated the background, content, and operating concepts of “New Urbanism,” the predominant approach to city and suburban design in America. It also introduced “Landscape Urbanism,” a movement intentionally structured as an alternative approach to city design. This sequence of history and theory leads directly to the realm of informed, critical, and thoughtful urban design practice. This unit accordingly begins by updating the context for such practice. It situates this practice in our increasingly complex and digitized environment, and validates the making of tangible, physical places as critical partners to the virtual spaces of the digital world.

The majority of content in this unit is then devoted to explanations and illustrations of progressive urban design as practiced in the USA in the early decades of the 21st century. Urban design practice at this level is focused on solutions to problems of urban sustainability and community resilience in the face of future change. For architects who are familiar with urban design practice, the information presented here will likely be well understood, but its didactic presentation here it may still offer some additional insights. For those in our profession who have chosen different types of practice, this step by step guide is intended to provide insight into the particular techniques and priorities that inform urban design as its own, unique discipline.

Accordingly, this unit sets out a simplified structure of urban design practice that covers a full range of scales: master planning, block and street design, and infill urban projects. It is easiest to think about this practice as being constructed around a set of project objectives and a series of design strategies.

Objectives:

Most urban design practice is constructed around four main objectives:

1. Walkability – To promote public health and respond to consumer preference in terms of livability preferences
2. Multi-modal Mobility Options – To increase personal choices and decrease carbon footprint
3. Mixed-use or Multi-use Development – To provide market flexibility and to support choices of sustainable urban/suburban lifestyles. (This implies also that the design maximizes development yields consistent with fulfilling social and environmental goals).
4. Ecological Awareness – To understand and enhance the role of nature in an urban environment

Strategies:

In each project, these overall objectives generate a series of major urban design strategies:

- a. To Create an Infrastructure of Public Spaces that is Functional, Safe, Aesthetically Pleasing, Commercially Successful, Well-Connected and Accessible to Diverse Populations

This primary strategy relies heavily on the following three sub-strategies for successful resolution:

- b. To Design Buildings as the Walls to Urban Rooms
- c. To Create a Particular Sense of “Place” from the Generic Medium of Urban Space
- d. To Create a High Quality Pedestrian Environment

Each of these elements of the urban design process is examined in more detail in sections 3.3 and 3.4 below. But first, let’s review the role of urban design in our increasingly non-physical, virtual world.

3.2 The Relevance of Urban Design in a Virtual World

Today, many cities are envisioning a future that is ever more connected and “smart.” In this digital context, the word “smart” is defined in many different ways, but perhaps the simplest way of thinking about a “smart city” is one that has digital technology embedded across all city functions.

A smart city uses its integrated communications technologies (ICTs) to fuel sustainable economic and physical development by managing three critical areas:

1. Traditional Physical Infrastructure

- transport
- energy / utilities
- public safety
- environmental protection and enhancement

2. Civic Governance

- administrative services for citizens
- cultivating civic engagement through participatory and direct democracy

3. Economic Development

- Promoting innovation in industries, clusters and districts of the city
- Supporting “knowledge-intensive” companies and investments
- Supporting a workforce geared to the “knowledge economy” through good quality education (Kumar, P. 2015)

In such highly connected digital environments, many transactions take place in the virtual world rather than in physical space, and this has led some urban theorists to postulate that physical places are now less important than they were in traditional cities (e.g. Dear, 1995). An extension of this argument would suggest that urban design is a matter of choice, not necessity. However, the rebuttal to this “place-less” argument posits that physical places, and all the meanings embedded in them, are more important now than they ever have been. In this context, urban design is a vital endeavor.

While digital technology keeps pushing us apart, using media to bridge physical distance, we as a culture continue to gather in specific locations that are meaningful to us. The smartest places, therefore, are those that combine the best of both the physical and virtual worlds, where presence and “tele-presence” are fused together at a location (Mitchell, 1999. 143). Here, attractive and sustainable physical locations are penetrated by information and communication technologies to provide a collaborative meshing of physical and virtual environments, with both local and global dimensions. In this way the centrifugal forces of technology are balanced by centripetal ones of human interaction in physical space. And the design of this real, physical space is crucial (Walters, 2011).

To this end, it’s possible to list some of the features of smart community planning and design ranging from municipal policies to planning strategies to detailed urban design concepts. These concepts can be briefly summarized as:

- a. Promoting diverse, compact and mixed-use neighborhoods that are walkable and transit supportive
- b. Defined and accessible public spaces, both urban and natural
- c. Energy efficient buildings that follow the premise of “long life, loose fit,” making themselves adaptable to changing patterns of use without major disruption to their external form or their urban surroundings.

These principles of public space design provide a measure of stability and consistency that are the partners in the physical world to the changes and displacements of the virtual world (Walters and Brown, 2004. 235-6).

In a society that enables us to live and work anywhere we like, the places we choose to inhabit become all the more precious and important. The hyper-connected global economy, far from being placeless, needs very specific “territorial insertions” (Sassen. 1991; 2nd ed. 2002). “Territorial insertions” is academic jargon for well-designed urban places, and it’s apparent that as “traditional locational imperatives weaken, we will gravitate to settings that offer particular cultural,

scenic, and climatic attractions -- those unique qualities that cannot be pumped through a wire -- together with those face-to-face interactions we care most about “ (Mitchell, 1999. 155).

Put another way, when we can live and work anywhere we choose, we select places that please, support and nurture us on several levels. Virtual media are vital elements for places to be successful but they themselves are no respecters of location. Left to their own devices, one tele-serviced spot is as good as another, with convenience perhaps the only moderator. For locations to become places in the more meaningful sense, to hold some special status in our cultural hierarchy, they have to combine the convenience of global linkage in the virtual realm with characterful physical presence, and that comes chiefly through the quality of urban design (see Fig. 3.1).



Figure 3.1. Working from laptop in a beautiful place.: Global reach, local beauty. Dartmouth, Devon, UK. Photo. David Walters

3.3 Objectives of Good Urban Design

As noted earlier in this unit, urban design is an expansive subject area, but at its core reside four key objectives that focus on urban resilience in the face of

potentially serious future changes. Within the remit of physical design, the capacity of a community to respond effectively to these changes – in climate and in socio-economic circumstances – rests largely on four main considerations. These are all interlinked, but may be summarized as:

- Walkability
- Access to choices for personal mobility
- Mixed-use or multi-use development¹
- Ecological enhancement.

These topics have been discussed earlier in this course, but in summary:

- **Walkability** is linked today with clear consumer preferences in the property market, but at a deeper level it is linked with vital public health issues, where physical activity and a healthy lifestyle can become part of everyday life. This means having the ability to walk or bike safely and conveniently to stores, restaurants, places of worship, schools, parks, and to other **transportation options**—buses, trams, light rail, and commuter rail in addition to automobiles.
- Walkability and cycling are also connected with **mixed or multi-use development**. These development patterns provide useful and attractive destinations for walks or bike rides, and real estate development markets show distinct consumer preferences for living and working in urban (and suburban) environments that are walkable (Molinaro, 2014). Two findings in particular from the 2013 National Association of Realtors® Community Preference Survey illustrate the importance of a mixture of uses, walkability, and connected urban space:

When asked to choose between a neighborhood that “has a mix of houses and stores and other businesses that are easy to walk to” versus a neighborhood that “has houses only and you have to drive to stores and other businesses,” the walkable neighborhood was preferred 60 percent to 35 percent.

Most striking in the survey is that the preference for a mixed-use walkable neighborhood is strongest for those who are in the real estate market now. And the higher preference among those under age 40 for walkable communities, revitalizing cities, and alternative transportation tells us the high importance these community traits will have with the consumers of tomorrow.

These market preferences signal a major change from

¹ Mixed-use development is defined as having two or more uses vertically stacked within the same building. Multi-use developments may have a range of uses adjacent to each other within the same project area.

decades of suburban single-use environments. This integration of uses within a community satisfies current and projected market conditions and provides the potential for health benefits; but even more importantly the more trips that can be made conveniently without car travel, the lower will be a community's carbon footprint.

- **The natural environment and ecology** of a community is protected and enhanced by the inclusion of parks, greenways, playgrounds and ball fields; these green spaces should be integrated into the fabric of all communities at the master plan level. Beyond the benefits of walkability, studies have shown that living close to parks raises property values, and that being in parks can improve mental health, simply through contact with nature. While large athletic complexes are likely to be a drive away, neighborhood parks, ball fields and greenways can be readily incorporated into master plans. Ideally, no one living in a community should be more than a 5-10 minute walk away from some type of natural space (see Fig. 3.2). To quote from just one of many the academic and medical studies on this topic:

This research shows that the percentage of green space in people's living environment has a positive association with the perceived general health of residents. Green space seems to be more than just a luxury and consequently the development of green space should be allocated a more central position in spatial planning policy (Maas et al. 2006).



Figure 3.2. Latta Park, Dilworth, Charlotte, NC. This park, laid out by the Olmsted Brothers in 1911-12, sits within a mixed-use neighborhood, adjacent to an elementary school, and a few minutes walk from a light rail station. The park is lined along its perimeter by residential streets, and homes facing onto the park. Photo. David Walters

In addition to human needs, master plans also need to consider the movement of wildlife, and seek to connect as many elements of the green infrastructure as possible so as to provide safe and nurturing corridors for birds and animals.

In successful urban design projects all these more generally applicable factors are customized to suit site and community-specific objectives developed through locally based analyses. These local data sets comprise the analyses of site and social contexts, local and regional cultures, environmental imperatives, market trends, development programs and priorities, stakeholder personalities, public sentiments, and (inevitably) local politics. Through the analysis process, this mix of factors gives rise to particular local objectives, and the design team can fine-tune their approach to embrace both general and specific objectives. It is this mixture that makes each urban design project unique and challenging.

3.4 Strategies and Tactics of Good Urban Design

As noted in the Introduction to this unit, each project develops its own unique calibration of relevant objectives, and this mix of factors can be best addressed through a combination of four main strategies and their related tactics:

- a. Creating an Infrastructure of Public Spaces that is Functional, Aesthetically Pleasing, Commercially Successful, Well-Connected and Accessible to Diverse Populations.

One useful way of developing this strategy is through the design concepts of *Connectivity, Choice, and Identity*

- b. Designing Buildings to be the Walls to Urban Rooms

The relevant design elements here are *Frontages, Façades, Fronts, Backs, and Thresholds*

- c. Creating a Sense of “Place” from Urban Space

There is a specific design vocabulary that assists this process: *Enclosure, Extension, Continuity and Contrast*

- d. Creating a High Quality Pedestrian Environment

For this task, there is one key rule to follow: *The “Golden Triangle” of Good Urbanism*

3.4.1 Infrastructure: Connectivity, Choice, and Identity

Nothing is more important in urban design than the creation of an infrastructure of connected public spaces that are attractive, efficient, and safe. By this we mean the interconnected system of boulevards,

avenues, streets, alleys, urban squares, plazas, parks, pocket parks, playgrounds, greenways and other types of public space that may be appropriate to a particular location or culture.

At the scale of community master planning, this spatial infrastructure is of primary importance, almost the first thing the urban designer creates or enhances. At the more local scale of the block, urban square, or street, the design task is to reinforce or improve this spatial infrastructure; This is best achieved by the appropriate placement and design of the buildings that enclose or define the spaces “urban rooms” in the community. At the scale of infill urban architecture, the designer’s task becomes one of elaboration, enhancing the sense of place by the scale, materiality, and pedestrian-scaled detail of the façades that form these urban rooms.

The key words in all of this are “connectivity” and “enclosure.”

Connectivity can be best defined as the density of connections in a public space system, whether it comprises any combination of busy boulevards and avenues, quiet neighborhood streets and alleys, or landscaped greenways and trails. Connections are important because as connectivity increases, travel distances decrease, and route options and personal choices multiply. This combination of functionality, economy, and choice relates directly to two fundamental principles of public space design that focus on streets in urban areas:

- All urban streets should be multi-functional, i.e. safe and attractive for pedestrians and cyclists as well as for car, and transit where appropriate.
- Streets should connect to form a network with multiple choices of route. This connectivity spreads out traffic more evenly and reduces congestion.

Both these design attributes correlate with the “Complete Streets” policies enacted by many American municipalities to ensure safe travel for people of all ages and abilities. See: <https://smartgrowthamerica.org/program/national-complete-streets-coalition/>

This focus on streets is a natural consequence of American urbanism and its history: more than any other type of public space in America, the street, in all its different manifestations, is the primary type of public space in communities across the nation.

In this context, it’s hard to overstate the importance of connecting streets into a network in any project. Connected networks *increase* mobility for vehicles, bicyclists, and pedestrians, and *decrease* costs of civic services by having more choices of routes around any neighborhood or district. This same flexibility increases the efficiency of a wide range of city services -- from public transit and school buses, to emergency police, fire and ambulance services, and garbage collection.

Street connectivity can even lead to improved water pressure and easier maintenance of the underground pipes because of the ability to loop lines through a development rather than creating dead-ends in cul-de-sacs. Street systems either maximize connectivity or frustrate it. North American neighborhoods built prior to 1950 were rich in connectivity, but with the advent of ubiquitous automobile ownership in subsequent decades, traffic engineers discarded this “old” idea that worked for all modes of travel, and replaced it with “dendritic” systems that focused only on the movement of vehicles.

As the Canadian urbanist Patrick Condon has explained (Condon, 2010), streets in a dendritic system all branch out from the main “trunk,” which in U.S. cities is usually a freeway or major state highway. Attached to this main trunk are the major “branches,” which are the suburban multi-lane arterial streets or thoroughfares. These large branches then give access to the next category of the “tree,” the “minor branches,” which are the collector streets. Collector streets then connect to the “twigs and branch tips” of the system, the residential streets and dead-end cul-de-sacs.

In a typical residential subdivision, the dendritic system requires fewer linear feet of road length per standard-sized house lot, and as such it has become universally popular with developers, eager to reduce costs. However, it has major disadvantages: almost all trips are made longer than they would be if the system were interconnected and it is prone to extensive congestion problems since the system provides no alternative routes. All traffic has to funnel into a few main intersections, which, due to very high traffic volumes are often slow to clear and always dangerous to pedestrians and cyclists.

Most importantly in today’s environment where pollution and climate change are major issues, studies show that dendritic configurations force residents to drive over 40% more than residents in older, traditionally connected neighborhoods (Condon, 2010). This results in a 40% increase in greenhouse gas emissions per car, and because these street systems are hostile to cyclists and pedestrians, households are likely to own two or more cars. Therefore the greenhouse gas emissions per household in a dendritic subdivision are easily double that of residents of older, connected districts. This is a real problem, but it’s one that can be minimized by designing the alternative: a well-connected public street infrastructure.

At the outset of this discussion, the reader would have noticed that we used specific names for specific types of public space, and there’s a good reason for that. “Open space” is very hard to design. What are the criteria? How big should it be? The term “green space” is similarly vague and imprecise. Urban designers try hard (not always successfully!) to avoid using these terms. Naming a space as a particular type immediately puts it in context, moves it from the general to the

specific, assists in the creation of identity, and begins to suggest programmatic requirements and sizes. This of course, is exactly the same process as designing a building; the building program names and specifies various types of space - labs, conference rooms, classrooms etc. - and from these spatial types architects can construe more detailed information regarding content, relationships, hierarchies and adjacencies.

This specificity of naming spaces leads us to our second controlling design concept: spatial **Enclosure**. Whether streets, squares, plazas, or parks, urban designers should consider all exterior public spaces as a series of “urban rooms.” These exterior rooms help create identity – being in a place -- and can be designed in the same way as the interior spaces of buildings. Understanding this analogy leads us to our second of urban design strategies: organizing buildings to function as the walls to urban rooms.

3.4.2 Urban Rooms: Frontages, Facades, Fronts, Backs, and Thresholds

The analogy between exterior spaces in the city and interior spaces in a house was first promulgated early in the Renaissance by the great architectural theorist Leon Battista Alberti, who wrote: “a city is like a great house; a house is like a small city; cannot the varied parts of the house... be considered miniature buildings?” (Alberti, 1485).

In this way of thinking a city’s streets are analogous to a house’s corridors and hallways - some grand and formal, others smaller and serving minor functions. A city’s plazas are the main public rooms in the house. City parks are analogous to front and back gardens – each with different characters. Understanding this analogy allows the urban designer to position buildings to create a hierarchy of public spaces and the connections between them, where each space caters to its functionality, but is also part of a larger system.

The ability to use buildings successfully as the main compositional devices in making urban rooms depends on understanding five related concepts: Frontages, Façades, Fronts, Backs, and Thresholds.

Frontages have two components:

Private frontages are the areas between building façades and the rights-of-way lines that divide private from public property (on a typical street, this might be the back edge of the sidewalk).

Public frontages are those parts of public space and streetscape in front of buildings that are dedicated primarily to pedestrian use.

The combination of the private frontage and the public streetscape defines the character of the public realm and constitutes the transitional layer between fully public space and the private realm of buildings.

This zone can range in character from urban to rural and frontages can vary from the formal – arcades and colonnades in high urban areas, to more relaxed front yards and porches on residential streets (DPZ, 2014).

Façades are defined as the external walls of buildings that front public space. These building walls define the edges of public space (they are the walls to the urban rooms) and have a special responsibility in the urban design process. As Robert Venturi so clearly stated (see section 2.4 above) façades have to respond both to the internal pressures of the program and to the external forces and responsibilities of their context. In particular, buildings have a very special responsibility at the lower stories of their façades where they interact directly with pedestrians in public space. We will return to this vital element of building design in Section 3.4.4 below.

Fronts and Backs are self-explanatory – the fronts and rears of buildings – but this simplicity begets a universal urban design rule that should rarely, if ever be broken: *Fronts face Fronts and Backs face Backs*. This is a cardinal rule for successful public space and conforms to the simplest hierarchy of urban space design. Fronts relate to more formal public space and, usually, higher intensity uses, and the architecture should reflect that importance. Backs frame more private spaces. Uses are more relaxed and informal, and the architecture can follow suit.

This illustrates the principle of context-responsive architectural design. The nature of public space varies from front to back, and the architecture should reflect, embrace and support this difference. The ability for architecture to be radically different from front to back is well illustrated by one of the greatest urban compositions: the Royal Crescent at Bath, England. This speculative housing development, in reality no more than a collection of 30 townhomes, was designed by John Wood the Younger and built between 1767 and 1774. The magnificent setting of the curved sweep of townhomes – facing a preserved landscaped lawn and overlooking the medieval town of Bath – provided Wood with the opportunity to “pull out all the stops” in his façade design. His great curved façade features a uniform row of 114 attached Ionic columns, each 30 inches in diameter and 47 feet tall, topped by a uniform entablature, 5 feet deep (see Fig. 3.3).

This design raises the scale of the row of town homes to one of a major urban “palace,” a brilliant real estate development tactic and one that responded very well to the expansive scale of the landscaped setting.



Figure 3.3. The Royal Crescent, Bath, UK. 1767-74. John Wood the Younger, architect. The front façades of thirty town homes are reconceptualized as a unified composition at the scale of a royal palace – a brilliant real estate development strategy married with excellent design. Photo. David Walters.

By contrast, the backs are a higgledy-piggledy collection of ad-hoc bays, projections, and window styles (see Fig. 3.4). The informal backs have evolved over time with additions and adaptive reuse projects, but the magnificent front has remained unaltered. In this way, the building responds to its two different contexts in ways that accentuate these differences and thus enhances the clarity of the urban spaces it helps define.



Figure 3.4. The backs of the Royal Crescent, Bath. Compare with Figure 3.3. The rear façades show how many decades of additions and conversions have left their mark of building form, volume and detail, with little regard for architectural unity. Photo. David Walters.

Thresholds comprise two things at once: They are links and separators. In urban contexts, a threshold is a zone of passage or pause between two spaces of different characters. Most often, this marks the transition between public and private, clearly manifest in American domestic architecture by the front porch. Traditional front porches are miniature rooms in their own right, privately occupied but fully open to public view. They are partially separated from the public realm by being raised a couple feet above the front yard and defined by an encompassing roof, columns and open railings. As a transition between public urban space and private domestic space, they are perfect examples of a threshold that links and separates at the same time.

This same concept can be scaled up to work in a fully urban context – such as Newbury Street in Boston, MA. Built (like Bath) as developer-driven town homes, this part of Back Bay has evolved into one of America’s great shopping streets. In particular, the zone of transition between the public street and the buildings is a crucial element in the making of a memorable place. The change of levels – down to a semi-public courtyard and up a half flight of steps to the building entrance – creates a three-dimensional threshold that’s full of visual interest, activity, and visual clues that explain elements of the urban setting (see Fig. 3.5).



Figure 3.5. Newbury Street, Boston, MA. Photo. David Walters

3.4.3 Sense of Place: Enclosure, Extension, Continuity and Contrast

In earlier sections of this course we have described the differences between “space,” as a generic medium, and “place” as its special and more emotive variant. Places are effectively containers of memory and meaning; indeed, the clearest definition of “place” is “*space enriched by the assignment of meaning*” (Pocock and Hudson, 1978). In urban contexts, places in this special design sense are a function of enclosure – creating a “here” as opposed to other “theres” beyond. An easy way to think about this is to remind ourselves that “*place*” is experienced from within. We say we are “in” a place.

There is a fancy word to describe our attachment to places: topophilia. We are all topophiliacs. We all have a predisposition to invest locations with attachments, and good urban design can facilitate and encourage this process.

“Placemaking” connects directly with the concept of “urban rooms,” and making memorable places is one of the primary purposes of urban design from the human perspective. The urban design process deals primarily with the physical design of space; it is the urban designer’s task to create attractive “containers” that support and encourage a range of human activities. These intersecting patterns and rhythms of activity, and the multiple interactions they can generate between people and space, become the medium through which meanings may be generated and “places” created.

In the same way that being in a room in a building is enhanced by being able to see out, beyond the confines of that particular space, having views to other spaces, other urban rooms is a valuable element of placemaking. Seeing beyond one’s present location in an urban space, being able to look from “here” into another location, a “there,” provides a context for the experience of any particular urban place. This urban design concept is called “serial vision,” and it was developed by the great British urban designer Gordon Cullen in his book “*Townscape*,” published in 1961. This premise is very simple, but of great value to the urban designer.

Cullen defines these simple concepts of “here,” where one occupies urban space -- on a street, in a square, at a sidewalk café, for instance -- and “there,” a glimpsed urban vignette that offers other possibilities of human activities. This allows the urban designer to set up a framework of urban experience through spatial sequences of stillness, movement and progression (see Fig. 3.6).



Figure 3.6. Via Santa Chiara, Assisi, Italy. From the shaded enclosure of the street – “here” – a view is framed through the arch to “there,” the next space in the sequence at the start of the wider Corso Guisepppe Mazzini. The buildings along the Corso are angled to close the view, but in a way that creates a “deflected vista,” suggesting yet further spaces to be discovered. These principles of spatial design transcend beautiful Italian hilltowns and are applicable in most urban settings. Photo. David Walters

This process of understanding an urban area through the orchestrated experience of moving through a series of urban rooms is an excellent way to make places that are memorable and which stick in one’s memory. Whatever the size or scale of an urban space, there are three basic requirements to help spaces transform in peoples’ minds to memorable “places.”

1. *Placemaking requires enclosure.* This influences the siting and orientation of buildings and the relationship between the heights of buildings to the width of the spaces between them. To generate a feeling of reasonable enclosure, ratios between 1:2 and 1:4 (1 unit of building height to 2-4 units of spatial width) provide good rules of thumb. At ratio above 1:6, all feeling of enclosure dissipates, and the space generally fails to register as a place where we would want to visit or linger. Tighter enclosures, say 1:1 for intimate streets, or 2:1 (2 units high, 1 unit wide – as in Figure 3.6) for urban lanes or alleys are also part of the urban designer’s spatial palette.

The ways in which streets and pathways enter and exit the space is crucial. As noted above these are the “doorways” between urban rooms. The enclosing walls can be organized to facilitate long views for clarity and a desire to impress a sense of grandeur to the location, or they can be used to obscure views in ways that promote discovery as spaces are revealed through movement. Once again, Figure 3.6 provides a good example.

2. *Placemaking benefits from a Balance between Continuity and Contrast.* In practice, this balance can be hard to achieve. Many architects, this author included, were trained to be the “formgivers” for society, that is, the creative artists/professionals who could create new and original forms for buildings. This approach meant that modesty and respect for context were rarely given high priority in teaching or in practice. We see this trend alive and well today in the global practice of shape-bending “starchitects.” Pick up any architecture magazine to see the latest example.

Some of these unique buildings are indeed beautiful objects, and some do gain in visual import by being seen in contrast to their context. Frank Gehry’s original Guggenheim Museum in Bilbao, Spain is a case in point. Here the shimmering metallic shards, bulbs, and curves of the museum resonate against the hard, repetitive and rectangular masonry block structure of its urban setting.

This contrast works because it is *singular*. Being the only freeform object in a restrained rectangular context provides exceptional power. However, this power is weakened every time another zig-zag or blobby building is introduced into the mix. The more freeform objects inhabit the city, the quicker the city spatial structure dissolves. And as the city structure dissolves, so too does any sense of “place.”

The moral here is simple: only a small percentage of buildings deserve the special privilege of contrasting with their contexts. To understand this better, we should revisit points made in Section 2.4 of Course Unit 2 regarding “an architecture of restraint.”

3. *Placemaking requires active edges to space.* This is a design principle that is often not fully appreciated. While the physical proportions of the urban space are important, so too is the treatment of the edges of the space, where the buildings frame the pedestrian experience. The most important thing to do here is to *activate* the edges, and this is best achieved by providing spaces that people can occupy, for rest, leisure, business and other unscripted (peaceful) activities.

One useful concept for the design of building façades in this location is the notion of “thick edges,” such as the medieval shopping colonnades along the High Street, in Totnes, England, this author’s home town (see Fig. 3.7). or other more modest examples such as projecting stoops, awnings or balconies, or even simply recessed doorways that create shelter and shadow (see Fig. 3.8). Properly designed tree canopy from street trees can also help make the edges of urban space into places where people want to hang out.



Figure 3.7. The “Butterwalk,” medieval shopping colonnade along the High Street in Totnes, U.K. Originally designed to cover market stalls, this use continues today for retail and restaurant activity, providing very rich and active edges to the public space. Photo. David Walters.



Figure 3.8. Street in Ann Arbor, Michigan. A good illustration of the “Golden Triangle.” Photo. Craig Lewis. Used with permission.

Guidance for making places for human activity and creating memorable urban vignettes can be best summarized by the last section of this unit. Taking our cue from the precept established by the great Danish urbanist Jan Gehl, we can build on his potent statement that “Life takes place on foot” (Gehl, 2011, 72). By this Gehl means that we construct the most complete understanding of urban locations through interacting with them as pedestrians. In this way we have the time and opportunity to discover, recognize, remember, and enjoy aspects of our environment that are otherwise inaccessible to us as drivers passing by at 30-50 miles an hour.

This process of identification with our urban surroundings, the creation of memories linked to places, can be facilitated by a combination of architectural and urban design working in harmony. These two disciplines come together in the zone at the base of buildings where the vertical external wall meets the horizontal plane of the pedestrian realm. This sets the scene for one of the most important lessons that this unit can teach: How to create the “Golden Triangle” of Good Urbanism.

3.4.4 Pedestrian Environment: The Golden Triangle of Good Urbanism

The illustration that accompanies the last section of this course unit (see Fig. 3.8) illustrates a street in Ann Arbor, MI, and it contains most of the ingredients required for active public space. These can be summarized under two headings, the vertical plane and the horizontal plane, and gives rise to the phrase “Golden Triangle.” Imagine a line vertically up the building façade for about 20-25 feet, a horizontal line extending out 20-30 feet (from the façade line to the outer edge of the layer of on-street parking) and then join these two extremities by the hypotenuse. Within that triangle, you have defined the most important zone of space for placemaking.

This triangle can then be analyzed relative to the character of its vertical and horizontal planes:

1. Vertical Plane of the Façade:
 - a. Lots of windows and doors at sidewalk level. This allows for visual and functional connections between inside and out and activates the sidewalk. The façade at this level is largely transparent. People look into shop windows; shopkeepers look out at the street and provide informal supervision of public space through “eyes on the street.” People enter and exit doorways and mingle with other pedestrians in what Jane Jacobs referred to as the “sidewalk ballet” (Jacobs, 110).
 - b. Inset doorways, canopies and awnings. Apart from providing shade and shadow, these indentions and projections create a “thick edge” to public space and act as useful threshold spaces.
 - c. Vertical proportions of the buildings that line the street. Horizontal lines encourage the eye to skim quickly along the surfaces of the buildings. Vertical features and proportions establish a clear rhythm in perspective that holds the eye. This slows down the act of viewing and allows our minds to linger, process, and retain information. This aids memorability and thus the creation of memorable places.
 - d. Lots of colored signage. This provides information and adds visual interest. The variety of signs is important; too much architectural regimentation into dimensionally reductive strips is a poor substitute for this lively mélange.
 - e. Interesting architectural detail on the second and sometimes the third floor of the building façades. Cornices, moldings, projections and patterning all capture and hold the eye, enriching the visual memory of the place. Pedestrians tend to absorb architectural detail up to the first couple stories

only, and then again at roof or cornice level. Façade levels in between this “base” and this “top” condition are less important in creating a sense of a memorable place. It is thus worthwhile to concentrate resources in these two locations, with priority always given to the pedestrian level.

- f. Proportions of the ground floor façade are important. The ground floor story height should be higher than those above to create a “base” for visual stability in the overall façade. Commercial spaces in mixed-use buildings, of course, generally provide taller ground floor spaces, and this works well relative to the lower floor-to-floor heights of apartments above.

In apartment buildings this is rarely the case, so it is important to raise ground floors above the sidewalk level to create this extra height on the bottom façade story. This also provides better visual privacy inside the rooms, and also a sense of security engendered by this raised level. The common developer ploy of slab-on-grade construction should be resisted with all possible vigor and determination. Not only does this make ground floor apartments very vulnerable to breaches of privacy and security, but it also means that the lowest floor-to-floor dimension on the façade is the same as all the ones above. This results in poor proportions, as there is no sense of the building having a visual “base.”

As an even more cautionary tale, this sidewalk edge should never be formed by blank walls and grills to podium parking levels. This is a sure-fire recipe for killing street life and creating the worst kind of memories in the minds of passers-by (see Fig. 3.9 for a terrible example).



Figure 3.9. Public space killed by architecture. Blank walls, “cars behind bars,” and utility boxes all conspire to create a dead zone directly opposite a light rail station where pedestrian activity should be actively encouraged. It’s a cautionary tale that this miserable design was authored by a fully licensed architect. Photo. David Walters

2. Horizontal Plane of the Sidewalk / Street:

- a. Dimensions. This is the most critical factor in making an active and attractive street scene and a lively edge to the public space of the long, skinny urban room we call a street. For an active and functional pedestrian sidewalk on a commercial or mixed-use street, 12 feet is the minimum useful dimension; 14 or 16 feet are better. These larger dimensions allow several functions to take place simultaneously: walking by, stopping to chat with friends and neighbors, window-shopping, sidewalk dining, retail displays and sidewalk sales, and people entering and leaving buildings through multiple doors. As noted earlier, this all adds up to an everyday example of Jane Jacobs’ “sidewalk ballet.”
- b. On-Street Parking. This is an essential element for active pedestrian street life. While drivers hope to snag a convenient spot close to their destination (and this visible parking enhances the viability of street level retail) the main purpose of the row of parking is to protect pedestrians on the sidewalk from moving vehicles directly next to them. The 7 or 8 foot zone for parking (plus bike lane if applicable) makes sidewalk dining and other retail /leisure activities along the edge of the street safe and attractive.
- c. Street Trees. These are vital elements of any streetscape, both visually and functionally. The species and placement of the trees, along with the specification of their tree wells or grates (or landscaped swales/planting strips on residential streets) is critical. Unfortunately, there is a lot of misinformation provided by forestry specialists that leads designers astray concerning urban trees. Some urban forester advocates will insist that trees must be planted in unobstructed landscape beds large enough to encompass their drip lines, but everyday observation of some of America’s best urban streets shows hundreds of examples of handsome and grand street trees, flourishing in a largely paved urban environment (Mouzon, 2016).

Most urban trees do fine even though they may not reach their full potential growth compared to forest or field locations. In practice, commercial streets may have tree wells 5 feet square or smaller, while residential streets may have swales up to 6-8 feet wide and of indefinite length. Trees in most locations should be planted approximately 30 feet on center, and along a main commercial street, tree species should be taller and more vertically-proportioned, so that when they’re mature, their lowest branches are 12-16 feet above the sidewalk and don’t block business signs.

Urban Design for Architects Unit 3 Review

1. **"Public space design" means:**
 - a. The design of all exterior space.
 - b. The design of pedestrian spaces.
 - c. Creating an infrastructure of spaces that are functional, safe, aesthetically pleasing, and universally accessible.
 - d. Following the rules set down in CPTED manuals (Crime Prevention Through Environmental Design).

2. **A universal rule of urban design that should rarely, if ever, be broken is:**
 - a. Streets should be organized as a dendritic system.
 - b. Cars should be grade separated from pedestrians in urban areas.
 - c. Fronts face fronts and backs face backs.
 - d. To create a flow of "universal space" around and between buildings.

3. **In a connected, globalized economy, memorable and successful locations are created by:**
 - a. Virtual media.
 - b. "Territorial insertions".
 - c. Global linkage.
 - d. Defensive insularity.

4. **Vertical proportions of buildings that line urban streets are important because:**
 - a. This is a trick question. There should be no design controls on urban buildings.
 - b. They make the building look taller.
 - c. They allow the eye to move quickly across the façade of the building.
 - d. Vertical features and proportions establish a clear rhythm in perspective that holds the eye.

5. **The main purpose of on-street parking is:**
 - a. To maintain high-speed through lanes.
 - b. To protect pedestrians from moving vehicles.
 - c. To serve street level retail.
 - d. To protect bike lanes.

6. **British urban designer Gordon Cullen is best known for his book Townscape, where he sets out a simple yet profound theory of urban design and placemaking. His main concept is:**
 - a. "Universal" space.
 - b. Serial Vision.
 - c. The English tradition of picturesque landscape.
 - d. Urban Collage.

7. **In a successful urban design project, the general principles of walkability, mixed-use development, and ecological sensitivity are always complemented by:**
 - a. Adaptive reuse.
 - b. The adoption of existing street standards.
 - c. Local analysis.
 - d. Focusing on. "the bottom line".

On a primarily residential street, the trees can be lower and spread more broadly because the buildings (mostly houses) are set further back from the street. The lowest branches only need to be a bit above the head height of a tall person.

- d. Lighting. Some of the best sidewalk lighting for safety and aesthetic enjoyment comes from shopfronts themselves. This should be supplemented by regularly spaced, pedestrian-scaled light fittings.
- e. Surfaces and Street Furniture. These are items that get a lot of attention, as well intentioned efforts to improve the visual quality of the public space. However, when a space is actively used and enjoyed, the human activity provides much more visual stimulation and enjoyment than brick paving patterns or other expensive fixed items. It is much better to spend that money on wider sidewalks, moveable seating, or more street trees.

This unit has provided a great deal of detailed, practice-based information about urban design objectives, strategies and tactics. We hope that even those architects who have experience in this field have found it useful and that architects from other branches of our multi-faceted profession have found in instructional. The last unit in this course builds on this practice foundation to show where urban designers can have the most impact in shaping America's urban environment: the process of master planning communities. This practice has three basic elements:

1. Public design charrettes to involve the community in shaping their future.
2. Master plans that develop detailed alternative growth scenarios before settling on the most appropriate.
3. Form-based Codes -- the zoning documents that are directly tied to the content of the master plan, and which guide implementation of the plan over many years.

This trifecta of professional skillsets is described in detail in Unit 4 of this course.

UNIT 4: *Charrettes, Master Plans and Form-based Codes*

LEARNING OBJECTIVE 7:

The student will understand the most effective process of creating detailed master plans for communities involving design charrettes for maximum public participation. This unit will also explain the relationship between these master plans as visionary documents and their implementation on site through the zoning methodology known as "Form-based Codes".

LEARNING OBJECTIVE 8:

These changes in zoning practice reverse decades of zoning control by focusing now on the form and the arrangement of urban spaces and buildings instead of the minutiae of building use. The student will become familiar with the intentions, structure and components of contemporary Form-based Codes and be introduced to the basics of constructing such a code document.

- 4.1 Introduction
- 4.2 Strategies for Master Planning:
Charrettes, Master Plans and Form-based Codes
- 4.3 The Transect:
What it is and How to use it
- 4.4 Form-based Codes:
What they are and how they operate
- 4.5 Master Planning Case Study:
New Garden Suburb at Clemson, S.C.

4.1 Introduction

This final unit of the course focuses on master planning, the large-scale end of the urban design spectrum. It describes the process of creating a master plan and the related (form-based) zoning code that will guide implementation over time. The case study in section 4.5 illustrates this process as it relates to a large private sector development, working in conjunction with the municipality. While this case study was developer-led, the process would be very similar in a fully municipal context such as a Small Area Plan. In developer-led scenarios, the Form-based Code would most likely be adopted by the municipality as a straightforward replacement code for that specific property or set of properties: The old zoning designations for the land within the project boundary would be abandoned and replaced by the new code. In this way the developer could obtain zoning approvals quickly for projects that follow the code. In municipal Small Area Plans, adoption of the project-based Form-based Code would usually be an "overlay" code, that is, plan-specific requirements overlaid onto existing zoning provisions to bring them in line with the plan's objectives and urban design strategies.

This unit describes the three interlinked components of an effective master planning process. These are:

1. Public participation through the **charrette** process.
2. The design and development of a detailed, site-specific **master plan** that meshes the interests of all public and private stakeholders in the project.
3. The development of new zoning codes, known as "**Form-based Codes**," that capture the urban character of the master plan and translate it into graphic regulations to guide the plan's implementation over time.

This course unit also explains the "Transect," probably the urban designer's most important tool in the master planning process. The Transect is an environmental ordering system conceptualized as a long section through a hypothetical landscape from rural edge to city center (Duany and Plater-Zyberk, 2002). The Transect methodology is customizable to specific projects and becomes the essential framework for creating, clarifying and regulating all matters of urban character and content within the master plan.

As the final element of this course, this master planning process is illustrated through a case study for an approximately 380-acre developer-driven "garden suburb" in the town of Clemson, South Carolina.

4.2 Strategies for Master Planning:

i. Charrettes

ii. Master Plans

iii. Form-based Codes

i. "**Charrette**" is a term that's often misused for any kind of collaborative meeting. More accurately, a proper charrette is a fully public and interactive design workshop lasting several days, and one that produces a tangible design product at the end of that intensive process. Many years of practice experience has shown this to be the key to meaningful public participation in the master planning process. The charrette is preceded by extensive environmental, physical and socio-economic research on the site and its environs, including a detailed market study to assess realistic future development potential. These analyses are accompanied by a series of stakeholder group meetings prior to the start of the charrette itself. These meetings involve all the major political figures, property owners, and public interest and citizen groups in the community. The end product of the charrette is the master plan in 2-D and 3-D graphic form.

The term "charrette" is derived from the French word for the "little cart" used to collect the final architectural drawings prepared by students at the nineteenth century Parisian École des Beaux Arts. The students worked in different locations around the city,

usually in the ateliers of their professors, and when they heard the sound of the little cart's iron-rimmed wheels echoing on the cobblestone streets, they knew their design time was almost up. These sounds and the imminent arrival of the cart were heralded by frantic shouts from the students of "*Voici la charrette! "Here is the cart!"*" This induced frantic, last minute efforts by the students to complete the drawings. The term has since evolved to mean any fast-paced design activity that is brought to a conclusion at a fixed time (Walters and Brown, 145-6).

To be most effective, a charrette lasts between four and seven consecutive days: As noted above, it has shown to be a very effective tool to assist public education about planning, urban design, and participation in the planning process. Most importantly it is a way that public input can inform and enrich urban design proposals for community development -- to produce a feasible yet visionary plan that nourishes agreement from citizens, politicians and developers.

The event is an open forum that includes all interested parties in a collaborative process involving a wide range of disciplines. It adopts a generalist, holistic approach to solving the problems under discussion and sets out to produce a plan that is, above all else, practicable. Charrettes increase the likelihood of getting projects built by gaining broad support from citizens, professionals, staff, and elected officials: By fostering a shared community vision, charrettes can turn initial opposition into support.

There are five guiding principles for every charrette:

1. Involve everyone from the start to foster a shared community vision.
2. Manage the event as an open process to build trust between the team and the public.
3. Work across disciplines to maximize group learning and productivity.
4. Work in short feedback loops to test ideas graphically for the team, and to stimulate public understanding and participation.
5. Work in design detail to test the feasibility of alternative concepts.

The pace of work is fast; tentative solutions to problems get pinned up on the wall for discussion as soon as possible, often after only a few hours. Members of the public need to be able to propose ideas and see them designed briskly for review and comment. Pin-up sessions are held every evening to gather public input on the preferred direction(s) for development based upon what the team heard during the day. The end product of a charrette is almost always a detailed master plan, but for master plans to have validity, these drawings must be produced through a process that is inclusive of different constituencies. Urban design plays a fundamentally important role in this process;

it enables alternatives to be evaluated quickly and decisions taken.

Working in detail has many advantages. Opportunities can be revealed and flaws quickly reduced or eliminated by designing to a level of detail that includes building types, urban blocks, and public spaces as well as the big picture issues such as circulation, transportation, land use, and landscape preservation. Many drawings are done to a large scale, designing over aerial photographs with printed topography and property lines as a base (see Figure 4.1). The high level of detail is achievable in the compressed timeframe partly because of sophisticated base mapping, but also because of the typological framework favored by many urban designers.



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Figure 4.1. Plan Study for a piece of a new “Garden Suburb” at Summerville, SC. The original of this drawing was produced in half-a-day during a charrette, drawn and dimensioned quickly by hand on trace laid over the aerial photograph. It was subsequently scanned and photoshopped into its context for the final charrette presentation. Urban Design by Amanda Morrell / Stantec Urban Places Group. Illustration courtesy of Stantec and the Town of Summerville.

Design team members have at their pencil tips well-authenticated typologies of block sizes plus building forms and layouts (e.g. apartments, shopping centers, energy-efficient office floorplates, townhome lots and single-family plats). They have a similar dimensioned vocabulary of good public spaces (e.g. squares, parks, and street types – boulevards, “Main Streets,” neighborhood streets, alleys, etc.) and together with efficient parking layouts, all of these “ready-made” sets of information can be quickly adapted to site and market conditions. This speed of graphic representation enables the design team to test ideas quickly in site-specific detail.

Charrettes are fun and attract the interest of a broad range of people; the “all day and into the night” studio atmosphere provides many opportunities for the public to participate and creates an ambience that many find unusual and exciting. The intensive and photogenic atmosphere of charrettes also makes them convenient marketing events that can be used to raise public interest for the issues under discussion., and this on-site activity is complemented by digital media that play an important role in providing updates, information and opportunities for public response. Through this process of collaborative design and public input occurring over several consecutive days, everyone – from city planner to local business owner to local resident – becomes aware of the complexities of development and design issues, and this knowledge helps participants work together to arrive at the best possible solution.

ii. The **Master Plan** comprises a detailed “build-out” plan of the project area, with public rights-of-way (for streets, squares, parks and greenways), lot lines for private development sites, and the configuration of major buildings and parking areas with appropriate, scaled footprints (see Fig. 4.1, above). Major and minor streets are tabulated as dimensioned street sections, and major public spaces illustrated in birds-eye and eye level perspectives and photo-simulations (see Fig. 4.2).



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Figure 4.2. Aerial perspective of a proposed new “Village Center” created from a series of dead suburban strip malls. In Summerville, S.C. Urban design by David Walters / Stantec Urban Places Group. Illustration by J.J. Zanetta. Image courtesy of Stantec and the Town of Summerville.

There are two clear principles that apply to all good master plans:

- The master planning process should be shaped by the particular physical, environmental, economic and social conditions pertinent to the particular community under discussion; and
- The master plan has to find the right balance between vision, prescription and flexibility.

The master plan produced by the charrette process described in the case study is more detailed in its urban and architectural content than many examples encountered within normative American planning practice. Urban designers go out of their way to imagine and design real places rather than the more usual and simplistic land-use diagrams typical of planner-led workshops. As such, the case study accurately represents the master planning process and product typical of contemporary urban design practice. By designing in detail, they allow for planning and design concepts to be tested spatially and visually, and for projected development yields to be tabulated accurately. This allows for master plans to be numerically tested against market criteria and anticipated future trends.

By taking two-dimensional plan thinking into the third dimension of real places the plans become specific, detailed, and thorough enough in their depiction of urban qualities to create agreement about the architectural, urban and environmental character of an area. At the same time, they are robust enough to facilitate change over time, particularly when their implementation is managed by form-based zoning codes. Any examination of an older, pleasant, walkable and mixed-use neighbourhood in a typical American town or city reveals a simple yet profound fact from history: The buildings and urban spaces that generate the place's character last much longer than uses inside those buildings. Master plans that set out the components of urban form and space needed to create and develop this "sense of place" provide a much more reliable framework for a community's evolution than do abstract maps of transitory uses.

Master planning and form-based zoning create interesting challenges and opportunities. The whole concept of master planning usually involves the definition of some future state of urban development, most often in the form of an economically realistic build-out study of the land in question, but the case study example and its methodology do not imply a static or finite vision. To different degrees, the plans function as illustrations of what can be achieved rather than blueprints for precise implementation, although this case study is very much rooted in developmental reality.

Many master planning projects have a time scale of ten to twenty years for realization, and no set of drawings can fix everything about the future. Instead, the detailed master plan acts both as a signpost and a map, pointing in a clear direction and providing plentiful information about how to reach the chosen destination. It is detailed and specific because signposts and maps are useless if they are vague and ambiguous. The best master plans are always accompanied by implementation documents, including form-based zoning codes. These codes, along with detailed programs of public works improvements, public and

private sector investments or administrative actions that are prioritized and timetabled in the project report, provide the tools municipalities need to manage development over time, keeping it on track and handling variations that may arise.

3. The **Form-based Code** comprises a "Regulating Plan" (a successor to the traditional zoning map) plus a series of graphically focused regulations whose primary task is to *orchestrate the relationship of buildings to public space*. The Regulating Plan sets out the different "Districts" of urban character in accordance with the "Transect" noted in the Introduction to this unit. The Transect, discussed in section 4.3 below, is the defining armature that enables the design concepts of the master plan to be turned into comprehensible regulations to guide the development of a project or a community over a period of many years. The Transect and its associated graphic codes deal with the "community character" of urban areas: in essence, they describe and make manifest the urban "DNA" of the master plan so that this guiding structure is clear, comprehensible, and enforceable.

At the heart of any properly construed and administered form-based code is a clear bargain: If the developer abides by the detailed code provisions of the ordinance, he or she should be able to rely on speedy administrative approval by planning staff without any lengthy process involving elected officials. This cuts down the developer's costs in time and money.

Once elected officials approve and adopt the detailed form-based code -- after an extensive public debate where all shades of opinion are represented -- the bargain must hold that these same council members should not intervene and haggle over individual projects that meet their stated criteria. Nor should community groups who were consulted during the code writing and adoption process be allowed to derail the approval process for individual projects that meet the code. As many projects as possible should receive a "by-right" categorization, leading to a predictable, quick and economic approval process for developers as the reward for meeting the higher standards of urban design.

Although their scope and purpose varies across jurisdictions, effective form-based codes contain three unifying principles:

- i. First, they impose relatively strict controls on the external form and scale of buildings, and how these building address public space. The intention here is to define the spatial quality and spatial infrastructure of a neighborhood or district, and thus create the appropriate urban character.
- ii. Second, they provide broad flexibility in allowable land uses and by-right entitlements to developers willing to construct projects in conformance with a community's articulated vision. Both of these

first two features represent sharp departures from traditional zoning ordinances that previously discouraged or even outlawed mixed-use development and subjected developers to time-consuming and costly project entitlement processes.

- iii. Third, the codes do *not* regulate aesthetic styles. At the pedestrian level of buildings, codes *will* require appropriate *design* features, such as plentiful windows and doors, and banning blank wall areas along sidewalks, but these are done for reasons of pedestrian safety and to protect the design quality of the public realm. Regulating the aesthetic styles of buildings is a grey area legalistically, and is generally a topic that is studiously avoided by most form-based zoning documents. (There are some exceptions for historic districts, etc.)

More details of form-based zoning, and the importance of the Transect as an organizing tool for form-based codes are described further in sections 4.3 and 4.4 below.

4.3 The Transect: What it is and How to use it

The Transect is one of the major tools used in urban design and code writing practice. As noted above, it is an environmental ordering system conceptualized as a long section through a hypothetical landscape from rural edge to city center (Duany and Plater-Zyberk, 2002). In its generic form, it identifies six types of environmental character zones, moving from preserved natural areas through ascending scales of suburban and urban areas leading to the densest zone at the urban core. The Transect zones are:

T1 (natural zone), T2 (rural zone), T3 (suburban zone), T4 (general urban zone), T5 (urban center zone), and T6 (urban core) (See Fig. 4.3). A seventh classification, an “assigned” or “specialized district,” exists for non-urban uses such as airports, landfills and the like that do not fit easily into urban or suburban zones.

This hierarchical scale of different environments enables urban designers, planners, and the public to see the various kinds of rural and urban landscapes as a continuum that relates different types of urbanity to the ecological factors of particular zones. This approach is then transferred from the hypothetical landscape to the particulars of the specific location under consideration, setting out an overall planning strategy for the community (Walters, 2011, pp. 205-6). Customization of the Transect zones (T-zones for short) can either use an appropriate selection of the seven generic districts, or new T-zones may be added and recalibrated by subdividing one or more T-zones into more specific districts to suit the particular conditions of a project or community. In general practice, as these T-zones are not based primarily on uses but on the urban character of locations within neighborhoods and districts, the number of T-zones developed and utilized in any master plan rarely exceeds six to eight. Only in major citywide ordinances, such as “Miami 21” for the city of Miami in Florida, does this number increase to deal with the complexity of the whole metropolis. Even then, the Miami 21 code has only 14 T-zones, and seven of them are place-specific calibrations of the T-6 urban core zone. http://www.miami21.org/zoning_code.asp

The Transect methodology is now widely used in urban design and progressive planning practice across the USA. Its central concept of an ordering system for environments ranging in character from rural edges to city centers owes a debt to the classic valley section of Scottish geographer Patrick Geddes (1854-1932), which set the various sectors of urbanization in their regional geographic context. Geddes and other users of similar concepts utilized the technique to describe and analyze existing situations (Conzen, 1968; Coleman, 1978). By contrast, urban designers today use the Transect to describe the future -- the way things *ought to be* (Brower, 2002. p. 314).

In an attempt to standardize principles of good urban design and sustainable development, Duany and Plater-Zyberk initiated the “Smart Code” in the USA in the late 1990s. This was, and still is an evolving methodology to formalize the planning and urban design principles of New Urbanism and the Transect into a comprehensive zoning ordinance that could be customized, or calibrated for any site or municipality. Now in Version 9.2 (2010), the

Smart Code provides a framework to integrate the urban design principles discussed in this course with basic architectural controls, public works standards, zoning, and subdivision regulations. At its largest scale

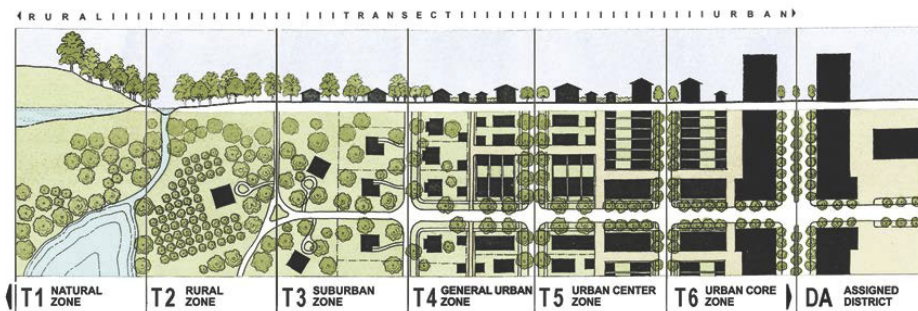


Figure 4.3. Transect Diagram. Image courtesy of Duany Plater-Zyberk & Co.

it can create a single unified development ordinance (UDO) for large and small municipalities (<http://smartcodecentral.com>). At smaller scales of operation, the Smart Code can provide the template for zoning controls applicable to a city's Small Area Plans, and more locally for individual projects such as the one described in the case study. Most of the form-based codes drawn and written today are based off the Smart Code template; section 4.4 below explains the content and operation of these codes, and in tandem with section 4.5 provides excerpts of typical documents.

4.4 Form-based Codes: What they are and how they operate

First, it's important to reiterate one very clear statement: Form-based codes *do not* regulate the aesthetics of buildings. What they *do* regulate are the overall form and massing of buildings, and their disposition on sites relative to public space. But those are matters of urban design, not aesthetics. Form-based codes establish baseline good urban design for communities, taking into consideration all the points raised in earlier sections of this course.

A key to understanding form-based zoning is the recognition that this land use regulation is primarily intended to enhance the "public good" that can be derived from private sector development. This involves managing the siting, massing and frontage layout of buildings in ways that create public spaces promoting pedestrian interaction and safety, usually through the incorporation of active streetscapes, squares and parks.

The history, development and operation of form-based codes have been documented by Walters and Brown (2004), Walters (2007), and by Parolek, Parolek and Crawford (2008) among others. An updated survey in 2016 found a total of 618 form-based codes in communities across the USA. Big city adopters include Miami, Nashville, Dallas, Ft. Worth, Denver, Albuquerque, El Paso, Memphis, Baltimore, Tulsa, Portland, Cincinnati, Philadelphia, Los Angeles, San Diego, Austin, Chattanooga, Atlanta, Jacksonville, and Calgary. <http://www.placemakers.com/how-we-teach/codes-study/>

Several key points were learned from the process of creating early codes in the 1980s and 1990s, especially the relationship between urban morphology (the sense of overall grain and character of an urban area) and building typology (a lexicon of different types of buildings based on their formal characteristics). The renewed interest in traditional urban forms of public space (street, square, alley, park etc.) and neighborhood layout, (connected streets, grids, mixed uses etc.) suggested a way of coding based on hierarchical spatial zones of urban or rural *character* rather than specified uses, and these "character zones" dictated the overall scale and arrangement of building types within their

areas (Keane and Walters, Town of Davidson, 1995). Within this morphological urban categorization, form-based codes regulated new development by building types (with flexible patterns of use), design standards for streets, parking areas and public open spaces, and by provisions covering landscape and signage.

Central to most urban design projects is the concern for how we make public gathering spaces -- focal places in our communities -- and how we design a connected public realm that links the different parts of a community together efficiently and which helps create a specific identity. Ancient Romans believed that each particular place had a characteristic spirit -- its *genius loci* -- and form-based or design codes seek to capture this "spirit of place" in the physical environment. Codes can encourage or mandate key aspects of sustainable community design while disallowing other patterns that erode community character and would otherwise perpetuate practices that waste energy and resources.

Form-based codes have thus become the tool of choice for the creation of communities that seek to create or maintain a particular character. In addition, form-based codes are generally much more respectful of the natural environment than conventional, use-based ordinances, and this environmental impetus has increased over the years of their use. As issues of sustainability and resilience become more widely recognized, the emphasis placed in design codes on the longevity and adaptability of building forms and urban spaces become positive factors in sustainable design. When buildings are more durable, they are adaptable to change and their environmental impact can be spread over a longer period of time (Symes and Pauwells, 1999, p. 104).

As shown in the typical list of contents for a form-based code (below), most of the variables regulated have to do with the way buildings create and address public space. While uses inside buildings are relevant as part of any regulating code, the general presumption is that mixing together uses that are compatible -- as was the norm in traditional American towns -- is a positive factor in creating special places that are both full of character and economically successful.

The urban design objectives and strategies discussed at length in Unit 3, section 3.3 "Objectives of Good Urban Design" and section 3.4 "Strategies and Tactics of Good Urban Design" provide the intellectual and creative underpinnings of all form-based coding. These are the design principles that set the directions for urban design master planning, and they give rise to the following organization for a typical form-based code document. This same form-based code (for a municipal Small Area Plan from Greenville, S.C.) is available for more detailed study as a full pdf download. (See Haynie-Sirrinc Neighborhood Code 2013.pdf).

ARTICLE 1: ADMINISTRATION

How the code operates and how it's administered

ARTICLE 2: REGULATING PLAN

A map of the form-based zoning districts and a summary of their urban character

ARTICLE 3: USE

A table that relates uses in this code to other relevant codes. Establishes as many "by right" conditions as possible

ARTICLE 4: DISTRICT PROVISIONS

Diagrams for building height, setbacks, building disposition on site, "build-to" lines, frontages to public space etc.

ARTICLE 5: GENERAL PROVISIONS

How standards are measured and applied

ARTICLE 6: BUILDING DESIGN STANDARDS

More detailed provisions of building form and spatial conditions, infill conditions, entrances, façade transparency etc.

ARTICLE 7: SITE STANDARDS

Parking, Access, Landscaping, Signs, Lighting, etc.

ARTICLE 8: RECREATION /PUBLIC SPACE

Diagrams and descriptions of Public Space Types plus relevant standards

ARTICLE 9: STREETS AND CONNECTIVITY

A lexicon of street types are set out in a Street Regulating Plan with (usually) street types illustrated in section, plus requirements for connectivity, maximum block lengths etc.

ARTICLE 10: DEFINITIONS

Definitions of terms used in the code

Just like the Transect, this list of typical contents for a Form-based Code can be modified to suit individual projects. Sections may be combined and arranged in the order that makes most sense for each particular set of circumstances. Examples and excerpts from a simplified code for a specific private sector master plan that uses such customization are included in the Case Study in section 4.5 below, and the full code for that project is also available as a pdf digital download (See [Clemson Hwy 76 Planned Development Code.pdf](#)). This case study has been chosen because its smaller scale makes it easier to understand, and it illustrates how a simplified code can be calibrated and arranged in a format that's specific to a private development project and a specific location. This code was quickly adopted by the municipality: Such project-based codes can then usefully establish a template that can be extended to other locations in the municipality.

This case study serves also as an illustration and summary of the approach to progressive urban design discussed in this course.

4.5 Case Study: New Garden Suburb at Clemson, South Carolina.

This section is divided into three sub-sections:

- i. Site and Project Description**
- ii. Master Plan Process and Final Plan Description**
- iii. Form-based Code Excerpts**

i. Site and Project Description:

The site for this project comprises an approximately 380-acre greenfield site, prime for development and sandwiched between the southern edge of Clemson, S.C, and the northwestern boundary of the adjacent community of Pendleton, S.C. The western boundary of the site provides direct access from U.S. Hwy 74, a major highway running between Chattanooga, TN to the west and Wrightsville Beach, N.C. in the east. The property is owned by Pacolet Milliken Enterprises Inc., a private, family owned investment company active across the nation with a diversified portfolio of interests including energy and infrastructure projects, "legacy lands" for long-term investment, and real estate holdings for present-day development. The company's real estate arm engaged the Stantec Urban Places Group to prepare a comprehensive master plan and code for the property. (Full disclosure: this author is a consultant with Stantec and was a member of the design team for this project).

Clemson is a town of approximately 14,000 people, and home to Clemson University, one of South Carolina's premier teaching and research institutions, with approximately 24,000 students. The adjacent community, Pendleton, a former small mill town of approximately 3,000 people, shares a boundary with Clemson and the project site. The landscape comprises gently rolling fields and woodland interspersed with pockets of suburban style development. Directly to the west of the site is an active light manufacturing building that requires truck access from Hwy 76 across the site. A single-track freight railroad runs beneath the highway and bisects the site into northern and southern segments of approximately equal size.

The project featured an extensive public outreach process prior to and during the development of the design. As the centerpiece of the public process, Stantec organized a four-day charrette, and prior to this event, members of the design team worked extensively with the client's representatives, the town of Clemson, and the adjacent town of Pendleton to develop an inclusive process of public consultation over several weeks, involving landowners, civic groups and citizens of both communities. This process explored community views about a major new development, about what kinds of housing, commercial space, and other uses that might

be suitable. These views were cross-referenced with a detailed market analysis that identified the most appropriate market segments plus types and amounts of development for that location. The project required a detailed urban design master plan, and, working in consultation with the town of Clemson, a form-based zoning code for the project as the primary tool for implementation of the plan over time.

The 15-person on-site design team comprised urban designers, architects, landscape architects, planners, transportation, bicycle and pedestrian specialists, a market analyst and an illustrator.

ii. Master Plan Process and Final Plan Description:

The on-site charrette process had three major components:

- A series of stakeholder group and “drop-in” public meetings
- A continuous public design process on the boards in the same room
- Regular public pin-up critique sessions at the end of each day

For example, the schedule of meetings for the first two days of the 4-day charrette in this case study was as follows:

Day 1

- 9:00 am Housing Design & Affordability
- 10:30 am Healthy Living
- 1:00 pm Environment and Natural Resources
- 2:30 pm 18-Mile Creek Greenway/Green Crescent
- 4:00 pm Pedestrian, Bicycle & Transit Planning
- 5:30 pm Daily Project Update/Design Pin-Up Session

Day 2

- 9:00 am Highway 76 Signage and Landscaping
- 10:30 am Streets & Highways
- 1:00 pm Retail and Shopping
- 2:30 pm Jobs and Economic Development
- 5:30 pm Daily Project Update/Design Pin-Up Session

While this series of stakeholder meetings were taking place at the central table in the temporary studio space (in a church community hall adjacent to the site), the urban design process began on Day 1 with three teams from within the group producing a variety of quick design plans for the whole site. These plans were completed within a six-hour period interspersed with quick site visits, and were drawn (by hand) accurately

to scale with building lots and building footprints of large buildings, and with development yields tabulated (see Fig. 4.4). This quick turnaround is normal and is facilitated by the use of two techniques:

- a. The use of a common lexicon of building types and public space types as noted earlier. This provides standard footprints for offices, retail, apartments, mixed-use buildings etc., and a dimensioned lexicon of typical street types – boulevard, avenue, Main Street, neighborhood street, alley, etc.
- b. The use of a consistent graphic language specifying not only colors and symbols – for street trees or tree masses or stream and lakes, for example -- but also drawing technique and specific line weights for different purposes. In this way drawings from different people can be accurately compared and compiled through the consistent graphic language.



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Figure 4.4. Initial charrette drawings for a new “Garden Suburb” at Clemson, S.C. 2015. These three alternative site plans were produced in the first few hours of the charrette and then critiqued in public session to establish preferred development and environmental concepts. Drawings by the Stantec Urban Places Group. Illustration courtesy of Stantec and Pacolet Milliken Enterprises Inc.

The purpose of these initial master plan studies was to understand the forces and factors inherent in the site and its context, and to investigate how a preliminary development program derived from the market study might fit onto the project site. Similarities in these alternative plans suggested the emergence of common themes, locations, or spatial arrangements that could be firmed up in later drawings. Dissimilarities offered clear options for further study and discussion.

These three alternatives were pinned up for public commentary and internal team critique. From this feedback, subsequent design work focused on the creation of two more formal, alternative master plans based on an agreed set of priorities and assumptions derived from the community discussions and internal team debate.

These alternative master plans provided detailed development yields, public space networks of squares, streets and alleys, parks, greenways and trails in plan, section, and simplified 3-D visualizations. As a result of further debate and discussion amongst community representatives and the design team, one final master plan was agreed and developed for the public presentation of the team's work. This presentation was held during the week following the on-site charrette; this allows time back in the office to produce final graphics and an exhaustive overview of all aspects of the charrette. A pdf of the final presentation, including the alternative plans, is available as a separate download: see [Clemson-Milliken Charrette Closing.pdf](#).

This final master plan (see Fig. 4.5) accommodates roughly 1,500 housing units, including a wide variety of homes: single-family detached, townhomes, apartments, assisted living bungalows and flats, and housing over shops. In addition, the planned 500,000 square feet of commercial space could include medical offices, general offices, retail shops, restaurants, flex/incubator space, hotels and theaters. The master plan organizes these into a series of connected "neighborhoods" scaled to be walkable to a variety of different uses.

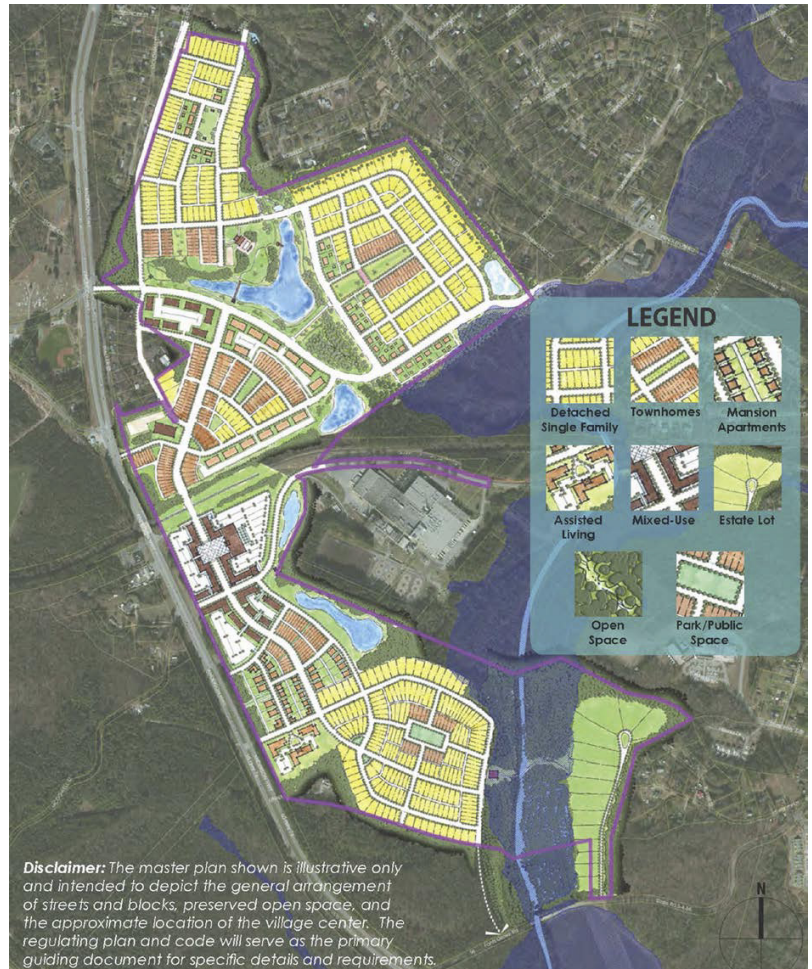
The plan preserves approximately 90 acres of open space and reserves more than eight acres for churches, community centers, amphitheaters, parks, playgrounds, community greens and an urban piazza. The urban design layout ensures that every home is within a two- or three-minute walk to a public space. <http://upstatebusinessjournal.com/news/highway-76-revisited/>

The basic arrangement accepts the division of the site into two parts by the below-grade railroad, and positions the "village center" immediately south of this, served by a new bridge over the tracks and from a signalized intersection on Hwy 76. This same signalized junction also serves traffic to and from the manufacturing plant, but the main pedestrian piazza is set slightly to the north of this main access street to minimize traffic conflicts. The piazza is framed by apartments and offices over retail, creating the main urban "living room" for the community, with a significant entertainment or civic building (typically a small multiplex, music venue, or a religious building) occupying the most prominent location (see Fig. 4.6). Sites can also be identified for a boutique hotel if the market validates that concept.

The master plan's emphasis on connectivity includes an extensive trail network runs through the neighborhoods and the village center, as well as along

Highway 76. In the future, these trails will connect to the pathways planned by the municipality to reach the Clemson University campus. Intersections of existing rural streets with Highway 76 will be improved, and, as noted above, connectivity will be provided to adjacent residential areas to allow them to access the village center and other amenities on site.

The final component of this master planning process is the Form-based Code that will orchestrate the implementation of the master plan during its build-out period and beyond. The contents of the code formalize the urban design principles of the plan while allowing for market flexibility. Extracts from this code are illustrated below.



To view this course with color images: go to pdhacademy.com and download the course PDF.

Figure 4.5. The final Master Plan for a new "Garden Suburb" at Clemson, S.C. 2015. The project accommodates roughly 1,500 housing units and 500,000 square feet of commercial space. The master plan organizes the project into a mixed-use Village Center and series of connected "neighborhoods" all scaled to be walkable and including a variety of different uses. Urban Design by Stantec Urban Places Group. Image courtesy of Stantec and Pacolet Milliken Enterprises Inc.



Fig. 4.6. Master Plan for a new “Garden Suburb” at Clemson, S.C. 2015. Perspective of the central Village Square. Urban Design by Stantec Urban Places Group. Illustration by J.J. Zanetta. Image courtesy of Stantec and Pacolet Milliken Enterprises Inc.

iii. Form-based Code Excerpts

As noted previously, the main purposes of a form-based code are:

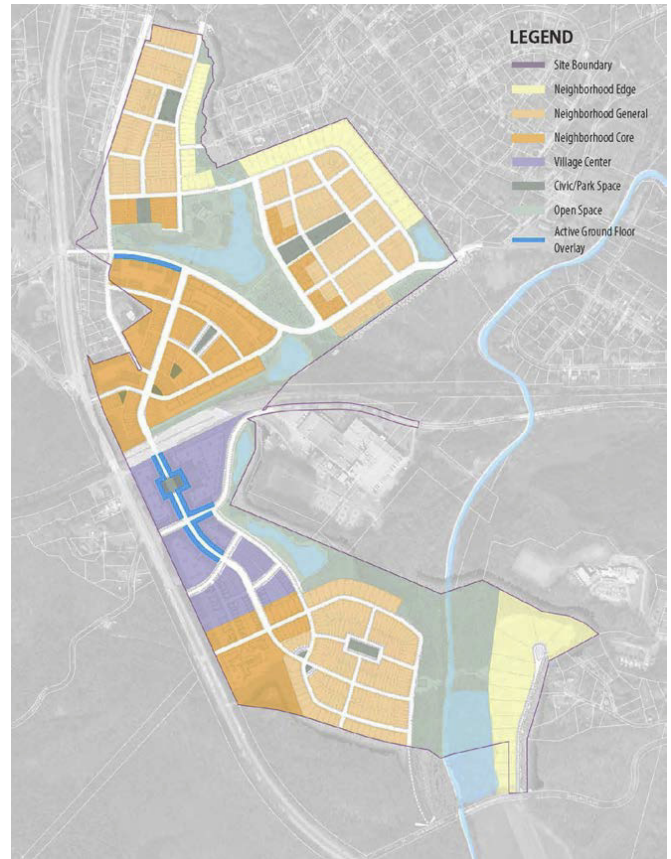
- a. To capture and preserve the “DNA” of the master plan in regulatory format.
- b. To orchestrate the implementation of the project over time.

The code achieves this by establishing benchmark standards for design development, against which future variations and potential improvements to the master plan may be judged.

We noted earlier the “bargain” at the heart of form-based coding: if developers work in accordance with the code and the regulating plan, they receive quick and efficient approvals. This process is embedded in the case study example: It is true to say that smaller, more local projects tend to adhere to this agreement more reliably than larger, more contentious projects. In the case study example, the town’s zoning administrator has wide authority to review and approve projects that conform to the code. In other cases, where design proposals would require changes to the provisions of conceptual master plan or the code, the town’s appointed planning commission has the deciding role. Once the full town council adopted this master plan and code as part of their municipal ordinance, they have no further executive role in project approval except in extreme and unforeseen circumstances.

The illustrations in this final subsection (see Figs. 4.7 – 4.11) comprise sample code pages as follows:

- The Regulating Plan (to be read in conjunction with the Master Plan – see Fig. 4.5)
- Village Center District Standards diagrams
- Frontage diagrams
- Street Regulating Plan
- Street Sections



To view this course with color images: go to pdhacademy.com and download the course PDF.

Fig. 4.7. Regulating Plan for a new “Garden Suburb” at Clemson, S.C. 2015. Each color represents a district of different urban character related the Transect. Darker colors indicate increased urban intensities. Form-based Code by Stantec Urban Places Group. Image courtesy of Stantec and Pacolet Milliken Enterprises Inc.

A. VILLAGE CENTER (VC)

All properties within the VC District shall be subject to the following standards.

1. Building Placement		Minimum	Maximum	Setback Measurements
a.	Front Setback from right-of-way	0 ft	6 ft	
b.	Side Setback from right-of-way	0 ft	10 ft	
c.	Side Setback from adjacent lot	0 ft	5 ft or 0 ft if attached	
d.	Rear Setback	5 ft or 0 ft from alley	n/a	
e.	Accessory Structure Side Setback (corner)	3 ft		
f.	Accessory Structure Side Setback (Interior)	0 ft		
g.	Accessory Structure Rear Setback	0 ft		
h.	Accessory Structure Rear Setback (alley)	0 ft		
i.	Attached Garage Setback (from front facade)	Front loaded garages are prohibited		
j.	Detached Garage Setback (from side street)	10 ft		
2. Building Height		Minimum	Maximum	Building Height Measurements (see 4.1)
a.	Building Height	2 stories	6 stories (65 ft)	
b.	Accessory Structure Height	n/a	2 stories (24 ft)	
3. Required Frontage Buildout				
a.	Frontage build-out (min.) - The Sidewalk Story façade shall extend along the minimum percentage of the Frontage Line within the Setback range	80% of total lot width		
4. Frontages (see 4.2)		Permitted	Not Permitted	
a.	Front Yard		X	
b.	Porch and Fence		X	
c.	Terrace or Lightwell	X		
d.	Forecourt	X		
e.	Stoop	X		
f.	Shopfront & Awning	X		
g.	Gallery	X		

Fig. 4.8. “District Standards” extract from the Form-based Code for a new “Garden Suburb” at Clemson, S.C. 2015. District standards establish the basic arrangement of buildings relative to public space in terms of height, massing, build-to or setback lines and frontage conditions. Form-based Code by Stantec Urban Places Group. Image courtesy of Stantec and Pacolet Milliken Enterprises Inc.

LOCATION	DESCRIPTION	SECTION		PLAN	
		LOT PRIVATE FRONTAGE	R.O.W. PUBLIC FRONTAGE	LOT PRIVATE FRONTAGE	R.O.W. PUBLIC FRONTAGE
PERMITTED AS DEFINED IN SECTION 2.4	<ul style="list-style-type: none"> Front Yard: a frontage where the façade is set back from the frontage line greater than 15 ft and is not otherwise demarcated from the public right-of-way 				
	<ul style="list-style-type: none"> Porch & Fence: a frontage where the façade is set back from the frontage line with an attached porch permitted to encroach. A fence at the frontage line maintains the demarcation of the yard. 				
	<ul style="list-style-type: none"> Terrace or Light Court: a frontage where the façade is set back from the frontage line by an elevated terrace or a sunken light court. This type buffers residential use from urban sidewalks and removes the private yard from public encroachment. The terrace is suitable for conversion to outdoor cafes. 				
	<ul style="list-style-type: none"> Forecourt: a frontage where a portion of the façade is close to the frontage line and the central portion is set back. The forecourt created is suitable for vehicular drop-offs. This type should be allocated in conjunction with other frontage types. Large trees within the forecourts may overhang the sidewalks. 				
	<ul style="list-style-type: none"> Stoop: a frontage where the façade is aligned close to the frontage line with the first story elevated from the sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground-floor residential use. 				
	REQUIRED IN ACTIVE GROUND FLOOR OVERLAY AREA	<ul style="list-style-type: none"> Shopfront & Awning: a frontage where the façade is aligned close to the frontage line with the building entrance at sidewalk grade. This type is conventional for retail use. It has a substantial glazing on the sidewalk level and an awning that may overlap the sidewalk. 			
		<ul style="list-style-type: none"> Gallery/Arcade: a frontage where the façade is aligned close to the frontage line with an attached cantilevered shed or a lightweight colonnade overlapping the sidewalk. This type is conventional for retail use. The gallery may encroach into the right-of-way. 			

Figure 4.9. Frontage Types: extract from the Form-based Code for a new “Garden Suburb” at Clemson, S.C. 2015. Frontage types determine the relationships of buildings to public space. Note the special conditions for active building frontages - Shopfront and Gallery/Arcade. These are required in the active frontage overlay areas – see the bright blue lines on the Regulating Plan (Fig. 4.7). Form-based Code by Stantec Urban Places Group. Image courtesy of Stantec and Pacolet Milliken Enterprises Inc.

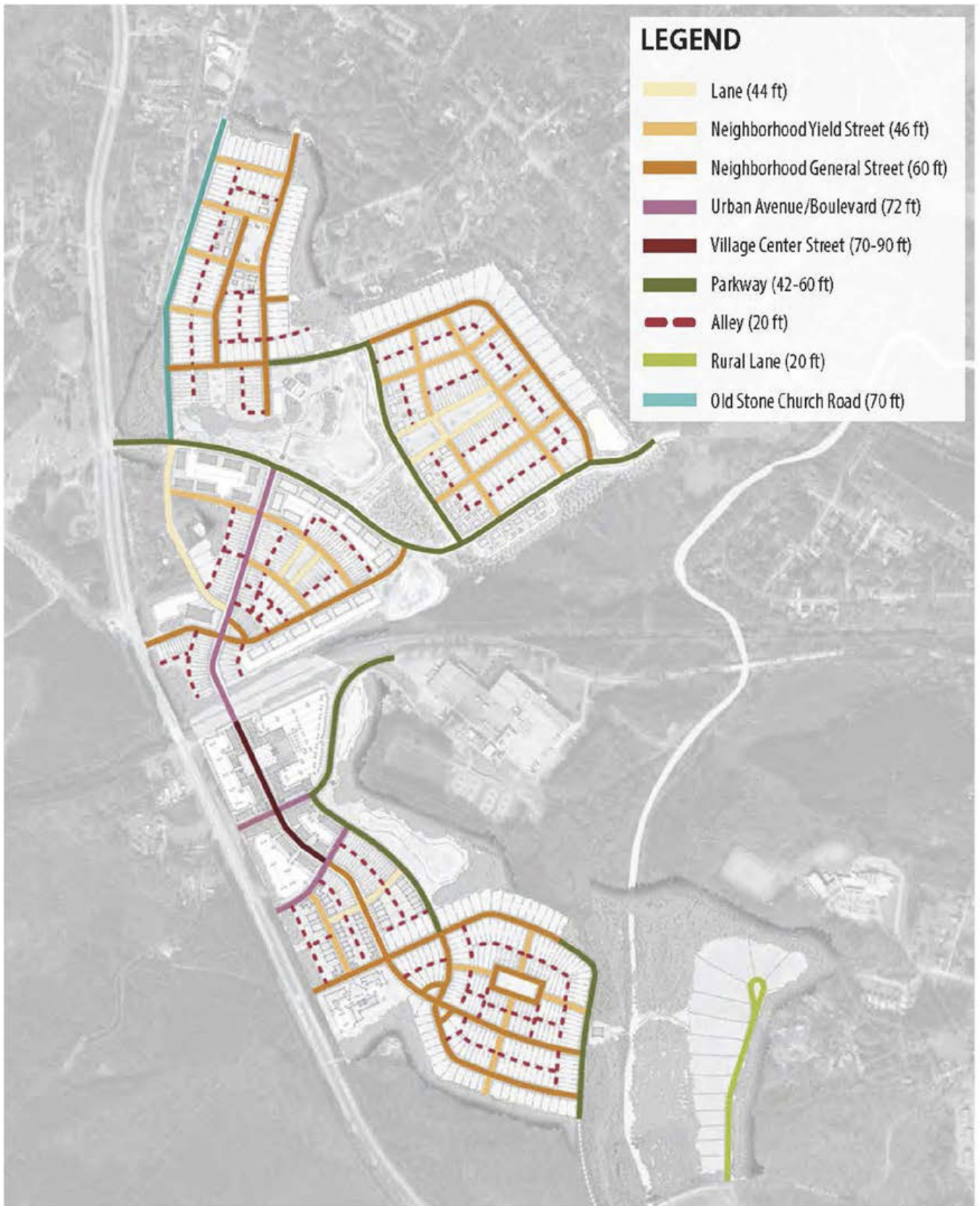
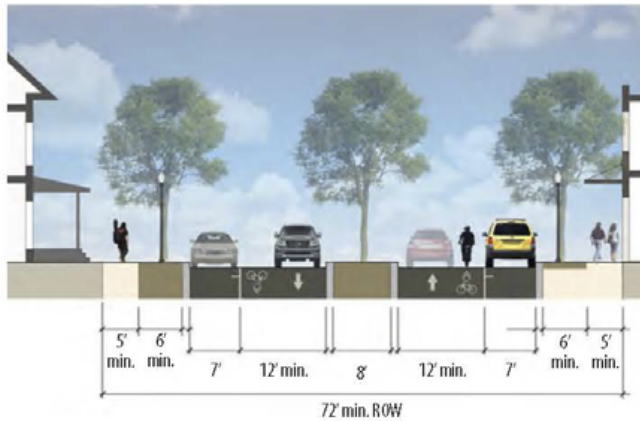
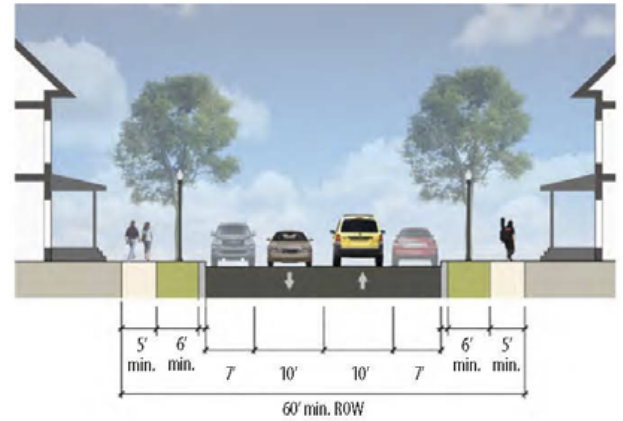


Fig. 4.10. Street Regulating Plan: extract from the Form-based Code for a new “Garden Suburb” at Clemson, S.C. 2015. The Street Regulating Plan is read with the dimensioned street sections (see Figure 4.11 for typical example). Form-based Code by Stantec Urban Places Group. Image courtesy of Stantec and Pacolet Milliken Enterprises Inc.

C. URBAN AVENUE / BOULEVARD



D. NEIGHBORHOOD GENERAL STREET



1. Street Type	Urban Avenue / Boulevard
2. Description	Urban Avenues/Boulevards are urban in character and provide low-speed, pedestrian-friendly access to neighborhoods and mixed-use areas. They serve as a primary neighborhood connector, often terminating at prominent buildings or plazas. On-street parking is provided on both sides of the street.
3. Right-of-Way Width	72 ft minimum
4. Travel Lanes	2 lanes (12 ft each) separated by an 8 ft landscaped median
5. Design Speed	20 - 25 mph
6. Parking Lanes	Parallel on-street, both sides
7. Bicycle Facilities	Shared lanes with sharrows
8. Planting Strip	6 ft on both sides
9. Sidewalk	5 ft on both sides

1. Street Type	Neighborhood General Street
2. Description	Neighborhood General Streets are the most common street type. These versatile streets are typically unmarked in residential neighborhoods to allow for informal parking, but can be striped with bike lanes and/or a lane of on-street parking as necessary in more urban situations.
3. Right-of-Way Width	60 ft minimum
4. Travel Lanes	2 lanes (10 ft each)
5. Design Speed	20 - 25 mph
6. Parking Lanes	Parallel on-street, both sides - 1 side only with inclusion of bike lane(s)
7. Bicycle Facilities	Signed route OR Bicycle lanes
8. Planting Strip	6 ft on both sides
9. Sidewalk	5 ft on both sides

Fig. 4.11. Typical Street Sections: extract from the Form-based Code for a new “Garden Suburb” at Clemson, S.C. 2015. The Street Sections are read in conjunction with the Street Regulating Plan (see Figure 4.10). Street sections are usually drawn from building face to building face. This emphasizes spatial enclosure and the concept of the street as a long, thin “urban room.” Form-based Code by Stantec Urban Places Group. Image courtesy of Stantec and Pacolet Milliken Enterprises Inc.

These excerpts illustrate the graphic language of form-based codes and their relationship to the urban design principles and specifics of the master plan. While the master plan is *illustrative* of the important concepts, it is expected that market and demographic forces may require the plan to be modified over time. To make sure that the quality of urban design is maintained as changes occur, the code embodies the urban design “DNA” and establishes these qualities as

legal requirements; in this way the code continues to regulate the development according to the firm urban design principles of sustainable and walkable urbanism embodied in the original master plan.

Ultimately it is the form-based code that is the most important element in any master planning project. Without it, the master plan, however wonderful, is simply a pretty drawing.

URBAN DESIGN FOR ARCHITECTS

Multiple Choice Chapter Review Questions

Answers to all chapter review multiple choice questions can be found in the following table. Additional explanations for correct/incorrect answers follows the table.

Answer Key for Chapter Review Questions							
Chapter	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7
Chapter 1	c	d	c	a	c	b	n/a
Chapter 2	a	c	d	c	d	b	n/a
Chapter 3	c	c	b	d	b	b	c
Chapter 4	d	c	c	b	b	d	n/a

UNIT 1 CONTENT

- 1.1 Introduction
- 1.2 The Evolution of Urban Design in America (1850 – the Present)
- 1.3 The Shifting Landscape of Urban Design Theory and Practice
- 1.4 The Rise and Fall of Modernist Urban Design
- 1.5 Architectural Theory Meets Zoning Practice
- 1.6 The Revival of “Traditional” Urbanism and the Birth of “New Urbanism”

Correct answers are highlighted in bold red text.

REVIEW QUESTIONS (6)

1. Urban design was first developed as a coherent discipline in the USA at a conference at Harvard in:

- a. *1909 Incorrect.* On this year the University of Liverpool in the UK established its degree program in Civic Design, a precursor to urban design as we know it today. Its early entry (1909) into the field meant that the Department exerted a fundamental influence on the development of planning as a profession and of planning education in particular. At that time what we now call urban design was included in the planning curriculum. The divorce between planning and urban design became evident after the failures of Urban Renewal in the 1960s. At about this same time the nascent discipline of urban design was taken over by the architectural profession.
- b. *1957 Incorrect.* However, this date, one year after the founding conference at Harvard is significant for two reasons -- the creation of the AIA's committee on urban design, and the founding of the program in Civic Design at the University of Pennsylvania.
- c. 1956 Correct.** José Luis Sert, a former pupil of Le Corbusier, was appointed Dean at Harvard's Graduate School of Design, and in 1956 he set up the first urban design conference to bear that name. The eponymous graduate program at Harvard followed shortly after in 1960.
- d. *1960 Incorrect.* As noted above, this date marks the inception of the urban design program at Harvard. This was very significant, but the earlier conference was the key stimulus to the formation of the modern discipline.

2. The Athens Charter is significant because:

- a. *The long urban history of Athens served as the stimulus for the Charter's focus on preserving historic buildings. Incorrect.* The Charter is named after the city of Athens because that was the port of arrival and departure (returning to Marseilles) of the small cruise ship chartered for the 4th Congress of CIAM (Congrès Internationaux d'Architecture Moderne). The conference took place largely at sea to avoid the growing and ominous political tensions across mainland Europe spurred by the rise of fascism, and by harsh reaction to modernism in Communist Russia. (The original location for the conference was to have been in Moscow). Concern for historic buildings features only as an afterthought in the final version of the Charter.

b. *The Charter was best known as a technical manual of practical steps to make modern buildings. Incorrect.* The proceedings of the conference did originally take the form of technical notes, intended to be published in the periodical *Annales Techniques*. However, the focus was on urbanism rather than buildings, and as the deadline for publication approached, the delegates could not agree on distilling their wide range of views on the Congress' theme of "The Functional City" into an agreed content, and thus only fairly anodyne material was published as "Conclusions." The harder decisions on content were postponed. As disagreements between participants continued, and with the emigration of many architects and planners to America, fleeing both Hitler and Stalin, no new publications emerged until the early 1940s, when two independent versions appeared, both free interpretations of the original texts. José Luis Sert produced a large format book entitled *Can Our Cities Survive?* in 1942 that surveyed a range of ideas sympathetic to the theme of The Functional City, while Le Corbusier produced a doctrinaire manifesto of "rational principles" of city design, a document which largely justified his own ideas. Over the years, this manifesto has (mistakenly) become the generally accepted version of the proceedings at the Congress and it laid down what became the rules of modernist urban design for several generations of architects and planners.

c. *It proposed a very flexible agenda for making new cities. Incorrect.* As noted in (b) above, the original wide spectrum of views amongst the original participants might have led to a "flexible" document, but the energy, determination, and arrogance of Le Corbusier ensured that his personal view of the modern, functional city became the generally accepted, and doctrinaire version.

d. **It provided a firmly focused and hard-edged manifesto for cities of the future. Correct.** There were several major reasons why a clear, focused and unambiguous summary of views about the modern city was important to professional audiences. The first stemmed from the needs of the architects. C.I.A.M. was eager to support the notion that its pre-World War 2 deliberations had produced "a crusading document that offered far-sighted solutions appropriate to the challenges of the times." All the necessary elements were apparently there to guide the transformation of existing urban agglomerations into "organized, flawlessly hygienic and structurally transparent urban machines." As such, the Athens Charter served to give powerful ideological support to modern architects' claim for an important stake in postwar city reconstruction. The second source of support for the existence of a monolithic Athens Charter came from historical scholarship. Urban historians needed to account for the dramatic changes that occurred in the skyline, appearance, land-use patterns, and circulation systems that shaped cities throughout the world between the 1950s and 1970s. If it could be shown that these changes were derived from an overarching blueprint laid down earlier by an influential international body, then historians and critics could provide a clear explanation of the changes taking place.*

* These additional notes are taken in part from an essay by Gold, J.R. (2019) "Athens Charter (C.I.A.M.), 1933", in A. M. Orum, ed. *The Wiley Blackwell Encyclopedia of Urban and Regional Studies*, Chichester: Wiley-Blackwell

3. The residential development that embodied all that was wrong with modernist urbanism was:

a. *Radburn. Incorrect.* The development at Radburn, New Jersey, dates from 1929 as part of a planned "new town" designed by Clarence Stein and Henry Wright. The development foundered as the Great Depression took its toll across America in the 1930s. The development was groundbreaking for its time, with the layout focused on the separation of vehicles and pedestrians and the widespread use of cul-de-sacs. The cul-de-sac layout became very popular and formed the basis of several decades of suburban design, but without the interlocking and sophisticated landscaped pedestrian realm that was Radburn's essential counterpoint to the dead-end streets.

b. *The Weissenhof Siedlung. Incorrect.* The Weissenhof Siedlung was an "ideal" model suburb in Stuttgart, Germany, dating from 1927. Built for the Deutscher Werkbund exhibition of that same date, it was conceived as a showcase of modernist housing design in what later became known as the International Style. Its influence was world-wide, especially the designs by Mies van der Rohe and Le Corbusier, and is now part of a UNESCO World Heritage Site.

c. **Pruitt-Igoe. Correct.** Pruitt-Igoe was a large public housing project in St. Louis, Missouri. Built between 1954 and 1956, to the designs of Minoru Yamasaki, it opened to great fanfare, but within a few years fell victim to poor maintenance, a legacy of cost-cutting, poor construction and shoddy materials. The uniform 11-storey slab design was forced upon Yamasaki by the Federal Public Housing Administration who rejected his more sensitive and complex mid-rise site plans as too expensive. The late, great architectural critic Charles Jencks, famously announced the start date and time of the demolition of the buildings, 3.32 p.m. on July 15, 1972, as the "death of modernism."

d. *Towers in the Park. Incorrect.* "Towers in the Park" derives from sketches made by Le Corbusier for his grand theoretical masterplan for the "Radiant City," first presented in 1924 and published in book form in 1933. The widely spaced towers were a central part of his vision for a new city, one where workers and their families were released from having to live in grim

industrial streets, and instead could live off the ground in high-rise buildings surrounded by sunlit parkland. It was a compelling vision and one that influenced modernist city planning and urban design for several decades. As so often happens with ambitious visions, the reality was less compelling. The lush parkland envisaged by Le Corbusier all too often fell victim to "value engineering" and the spaces between buildings became unloved and unlovely locations. "Towers in the Park" all too often became towers in the parking lot.

4. The form of the typical American city in the latter half of the 20th century was a result of:

a. **The collision of European socialist ideas and American planning practice. Correct.** During the 1930s, leading avant-garde European architects and planners fled the rise of fascism and communism in Europe and Russia and landed safely in America, where many, like Gropius and Mies van der Rohe, were invited to teach at prestigious universities. However, the utopian ideas and their socialist agendas that underpinned many European values and concepts of that time did not find a receptive audience in America. In effect, the transatlantic voyage stripped the political trappings from avant-garde European ideas. But what was left was still powerful, perhaps even more so: The Four Function model of separate zones for separate functions, as set out in the Athens Charter, fitted neatly into America's evolving planning practice as a purely technical device. As American industry retooled itself for the new peacetime market in the late 1940s and 1950s the rise of separated, single-function zoning in land development provided the pragmatic, yet ideal setting for the European theories. The American landscape became populated by separated developments zoned for single uses, giving rise to what we now know as "sprawl," with the various negative connotations that attach to that term.

b. *The City Beautiful movement. Incorrect.* The City Beautiful movement, with compositional ideas derived from 19th century French Beaux-Arts teaching, was influential for a period on time around the turn of the 19th and 20th centuries, after the great public success of the 1893 World's Fair, otherwise known as the Columbian Exposition. Daniel Burnham and Edward Bennett's 1909 Plan for Chicago provided the culmination of architectural and urban lessons learned from the Fair, and this compelling statement of a potential future influenced development in several other cities, notably Cleveland, St. Paul, and Washington, D.C. However, the movement began to wane around the end of World War I (1914-18) by which time it had become evident that aesthetics alone could not improve the social conditions in cities. The subsequent collapse of the American economy during the Great Depression (1929-39) put an end to grandiose town planning schemes.

c. *New Urbanism. Incorrect.* New Urbanism does have a considerable effect on the form of American cities, but not in the time frame of this exam question. New Urbanism, and its important companion, Form-based Zoning, both arose as important urban design tools during the 1990s to counteract the negative consequences of "sprawl," where short-term efficiencies in development and construction had come to dominate more sustainable and longer lasting placemaking practices in American communities.

d. *Streetcars. Incorrect.* Just like New Urbanism, above, streetcars did have a great effect on the form of American cities, but not in the time frame of this exam question. The heyday of the streetcar was between the 1890s and the early 1930s. During that time a great number of high-quality urban and suburban developments generated around streetcar routes were built in cities across the nation, and for millions of Americans taking the streetcar to work, play, and shop was a normal and convenient routine. This pattern of development was upended by a rise in the use of personal automobiles during the 1920s and 1930s, after which the form of urban and suburban developments changed drastically to accommodate increasing car usage.

5. The forms of the traditional American city were made illegal by:

a. *New Urbanism. Incorrect.* Modernist urbanism had effectively destroyed the traditional American city by legislating almost exclusively for the automobile and by the blanket imposition of single-use zoning that effectively made traditional mixed-use urbanism illegal. New Urbanism was officially created in 1996 in the city of Charleston, S.C., with the proclamation of the *Charter of the New Urbanism* at the 4th Congress of the New Urbanism. This charter was specifically engineered to overwrite and displace the modernist *Charter of Athens* produced at the 4th Congress of CIAM (Congrès Internationaux d'Architecture Moderne) in 1933. New Urbanism was designed to be a bold alternative to the doctrines of modernist urbanism, but initially it relied on polemic projects and a few built examples. Over recent years however, New Urbanism's efforts to supplant conventional zoning with new form-based zoning laws have achieved considerable success in providing a new legal basis for America's traditional way of building communities.

b. *Modernist architecture. Incorrect.* Modernist architecture did not make the traditional American City illegal. Architecture has no such legal force. However, the theories and practice of modernist urbanism did make the compact, mixed-use patterns of the traditional American towns and cities effectively illegal through the mandates of single-use and segregated zoning, and by the demands for vastly increased spaces given over solely to the motor vehicle.

c. Zoning. Correct. Changes in the way American towns were built and developed were initiated during the 1920s by the "Standard State Zoning Enabling Act" of 1924, whereby the U.S. Department of Commerce promulgated new zoning codes across the country that strictly separated different uses into different parts of a town or city. This radical break with the traditional and more "mixed up" arrangement of American urban areas was based on the presumption that the supposed clarity and efficiency gained from such separation were good for business. These new zoning laws could have required new developments to follow traditional pattern of older historic American towns. But they didn't. In effect the new zoning laws made the traditional urbanism of Main Street illegal. No longer could uses be mixed together and public spaces tightly defined. The pedestrian-scaled spaces between buildings were progressively dismantled and redesigned for the cars that were increasingly necessary to reach the newly scattered developments. As these ideas spread to other communities in subsequent decades, with each separate use partitioned into a separate city zone, the urban fabric of traditional American towns unraveled. No longer could everything be mixed together as was the traditional norm. Now everything had to be sorted out into separate land areas for separate uses.

d. Urban Renewal. Incorrect. Without doubt urban renewal in America during the 1950s and 1960s had devastating effects on American cities across the nation. However, the original policies were well intentioned (although America was still a strictly racist society at that time). The intention of the 1949 Housing Act was to give cities money to improve poor areas and to invest in new affordable housing and infrastructure projects. But the reality was a fairly brutal program of community clearance targeted mainly at African American neighborhoods. Replacement housing was late in arriving or non-existent with whole communities being displaced and effectively destroyed. Effective lobbying by the development industry in concert with local governments seeking greater tax revenues resulted in the social aims of the program being sacrificed to the simplified commercial logic of economic development; the more complex process of community redevelopment was simply abandoned. Urban renewal was in fact a process of community destruction, with decreasingly few federal controls on what was redeveloped on those blitzed sites. Redevelopment could, theoretically, have taken place using the forms of American cities that were ubiquitous up through the 1930s. However, as noted above, it was the zoning parameters of single-use zoning spread apart in separated parts of the city that made America's traditional urbanism illegal, and increasingly ghetto-like housing projects blighted American cities from coast to coast.

6. The revival of "traditional urbanism" in America can be most clearly traced to:

a. Jane Jacobs' book "The Death and Life of Great American Cities". Incorrect. Progressive and reformist designers found a clear polemic underpinning for their ideas about the form that urban places should take, within Jacobs' impassioned and merciless demolition of modernist urban theory and practice. Jacobs' book was adopted by the New Urbanist movement as a sort of unofficial "bible" in the 1990s, and Jacobs herself was held in high esteem, but this all happened after the seeds of traditional urbanism were sown and harvested in American academia a decade earlier, at Cornell and Yale especially, in the work of teacher practitioners such as Michael Dennis and Steven Patterson, and academic stars such as Colin Rowe and Vincent Scully.

b. Urban design teaching at Ivy League schools of architecture. Correct. During the late 1970s and 1980s, radical rethinking about urban design emerged from academia, initially from progressive teachers in schools of architecture, including Cornell and Yale. At Cornell, a new kind of urbanism was taught by the revered Anglo-American urbanist Colin Rowe, in conjunction with visiting professionals such as Michael Dennis and Steven Peterson. This approach to urban design focused much more on the context of cities and their history, seeking a deeper understanding of the relationship between existing urban places and new architectural projects. And, marking a major break from modernist dogma and its fetish with single, separated uses, this new approach welcomed a return to a "mixed-up" and layered urbanism.

Meanwhile at Yale, the renowned architectural historian Vincent Scully taught courses on the urban form and building types of American traditional towns and cities. Two of Scully's graduate students in the early 1970s, Andres Duany and Elizabeth Plater-Zyberk, found this material particularly fascinating. A few years after graduating, these two pioneers founded their groundbreaking urban design firm DPZ in 1980 and assumed leadership roles in the development of what became known as Neo-Traditional Development (TND). Duany and Plater-Zyberk's particular contribution at this time was the rediscovery of the urban design concept of the neighborhood, catalyzed by their graduate analysis of the neighborhoods in New Haven for Scully's class. Stimulated by this new awareness, they were able to understand many things that were wrong with modernist city planning; this critique mirrored many observations by Jane Jacobs, but it was now articulated with an extra edge of practicality that presaged radical design action. This critique also led Duany and Plater-Zyberk to explore a new approach to zoning -- writing and diagramming new rules for development that captured the spirit and essence of the rediscovered traditional urbanism. These new zoning regulations, known today as "Form-based Codes" encapsulated many qualities of American urbanism that had been effectively outlawed by the draconian use-based zoning techniques.

c. *The discovery of the British "Townscape" school of urban design. Incorrect.* This is the great Transatlantic connection of ideas and precedents that never happened! Whereas the decades either side of 1900 saw fertile cross-pollinations of urban design ideas between the USA and the UK (for example, Frederick Law Olmsted's visit to Birkenhead Park in Liverpool, England, in 1850 and his incorporation of lessons learned there in his design for Riverside, outside Chicago [with Calvert Vaux]) the second half of the 20th century saw little such cross-referential enrichment. Perhaps the most poignant example of this missed opportunity was the work of Gordon Cullen, whose book, *Townscape* was published the same years as Jane Jacobs' *Death and Life of Great American Cities* (1961). Cullen's work placed the pedestrian at the epicenter of urban design, and his sympathetic analysis of England's traditional urbanism as a source for new development and infill urbanism formed an insightful corrective (brilliantly illustrated with his distinctive drawings) to the increasingly generic modernism that was rebuilding Britain's towns and cities in the 1960s and 70s. But this work is almost unknown in the USA. Similarly, the *Essex Design Guide* (1973) espoused urban design principles and layouts for new development in the county of Essex, north east of London. Once again, this work relied closely on the analysis of traditional building and urban forms, this time of the regional towns and villages of Essex and surrounding areas. This work is also unknown in the USA. Both these examples share a lot in common with Vincent Scully's urban analysis courses taught at Yale to graduate students such as Liz Plater-Zyberk and Andres Duany. But almost nobody ever made these connections, other than a few lone British urbanists teaching at American schools of architecture.

d. *The influence of Prince Charles. Incorrect.* Prince Charles tends to be a polarizing figure the Great Britain, disliked for his mistreatment of his wife, Princess Diana, but often admired for his public support for traditional forms of architecture and urban design. The new town (actually a town extension) of Poundbury, in Dorset, a county in southwest England, owes its existence to his regal largesse. Leon Krier, the well-known advocate of traditional urbanism, is the Prince's favorite urban designer and Krier is largely responsible for Poundbury's masterplan and traditional architectural character. Krier is also closely aligned with Andres Duany and certain professionals within the New Urbanist movement -- providing the luster of European scholarship, perhaps - and thus Krier's work reaches a limited American audience. But the influence of Charles Windsor on American urbanism is negligible.

UNIT 2 CONTENT

- 2.1 Introduction
- 2.2 Principles and Operation Defined: The Charter of The New Urbanism
- 2.3 Market Reactions to New Urbanism: Antagonism–Acceptance-Adoption
- 2.4 Urban Form and Architecture: Contextual Analysis and the Architecture of Restraint
- 2.5 Academic Reactions: The Invention of Landscape Urbanism
- 2.6 Basic Principles of Landscape Urbanism

REVIEW QUESTIONS (6)

1. Teaching New Urbanism in Schools of Architecture:

a. **Was initially rejected because it was perceived as too conservative. Correct.** It is evident to urban designers working in American architecture schools that even today in only a minority of studio professors in fully embrace the twin lessons embodied in the theory and practice of progressive urban design, namely that architectural design gains in complexity and richness when it accepts contextual design as a partner in creativity, and that hardnosed socio-economic issues are sometimes more important than aesthetics. Instead of accepting these twin urban imperatives, many faculty in American schools of architecture still consider New Urbanism's agenda of traditional urbanism too conservative, and, moreover, one that was corrupted by its relationship with developers and market priorities. Teaching urban design principles, social concerns, and environmental ethics in American architecture schools tended to be limited to smaller, specialist graduate programs in urban design.

b. *Became standard practice. Incorrect.* Detailed and rigorous teaching about urban design has been the exception rather than the rule in many architectural schools. While particular groups of faculty in most schools care deeply about urbanism, these concerns are generally not central to undergraduate and graduate architecture curricula. Indeed, as noted in the answer (a) above, teaching urban design is often focused on specialist urban design graduate programs. Such programs are very valuable, but whole cohorts of architects can complete their education without engaging urban design theory and practice in any meaningful way.

c. *Was limited to "starchitects". Incorrect.* It is observable from studying the output of celebrity architects who may be regarded in the media and elsewhere as "starchitects" that respect for and engagement with the urban context has not been high on their list of priorities. The New Urbanist goal of making urban spaces for people does not sit easily with the makers of deluxe architectural objects, whose primary role is to proclaim their allegedly unique specialness. Only rarely do these conflicting

agendas make a form of common cause, but it is occasionally possible. For example, Frank Gehry's Ray and Maria Stata center for MIT in Cambridge, MA, engages the streetscape of Vassar Street with its provocative crinkly façade while respecting the pedestrian environment. This frontality is appropriately contrasted with the totally fragmented composition of forms and surfaces that enlivens the rear courtyard. This oppositional play between front and back is one of New Urbanism's most key urban design principles.

d. Was identified as valuable in professional accreditation standards. Incorrect. The *NCARB Education Standard* is the approximation of the requirements of a professional degree from a NAAB-accredited degree program. It includes general studies, professional studies, and electives, which together comprise a professional liberal education. Urban design is absent from any of the 22 subject areas listed in the stated requirements. In the National Architectural Accrediting Board's 30-page 2014 Conditions for Accreditation the term "urban design" occurs only once, as a supplementary "add on" to architectural design skills about using precedent. Nowhere else is this discipline mentioned.

2. Landscape Urbanism evolved

a. *From a resurgence of Ian McHarg's advocacy in Design with Nature. Incorrect.* In the two decades since its inception, Landscape Urbanism has proved to be hard to define in any succinct manner. Reference has usually been made in some fashion back to the works of Olmsted and McHarg's seminal work, but neither of these important and profound sources can lay claim to being the primary genesis of this new landscape sensibility. The most provocative justifications for Landscape Urbanism have been made by Charles Waldheim who chaired Harvard's Department of Landscape Architecture from 2009-2015, when he claimed that landscape urbanism "replaces architecture as the basic building block of contemporary urbanism."

b. *From working in the tradition of Frederick Law Olmsted. Incorrect.* Olmsted was such a giant figure in the history of landscape design in America that his shadow can be said to cast over many, or even most landscape initiatives in America since his death in 1903. But there is no direct line of influence from his work to the origin of Landscape Urbanism. Indeed, the first recorded use of the term was in the work of an Australian graduate student by the name of Peter Connolly, who coined the term "Landscape Urbanism" in his urban design project at RMIT University in Melbourne, Australia, in 1994.

c. **As an academic alternative to New Urbanism. Correct.** The New Urbanist proclivity for more restrained, space-making background buildings held little attraction for ambitious faculty and their students in American schools of architecture. Yet these same architecture schools and faculty could not be seen by their peers and the public as ignoring important urban issues regarding the design of cities. From an academic perspective, New Urbanism was fatally compromised by its incorporation into capitalist development practice, so a new, "untainted" theory of urbanism was required, one that could be promoted and promulgated as a valid alternative to New Urbanism. One such innovation in particular presented itself for theoretical and practical development within academia. A new critique of New Urbanism was developed in the 1990s that argued, with some justification, that the movement was dominated by architects and their concerns for the *built* environment. If a more radical design movement was going to oppose or complement New Urbanism it seemed appropriate for landscape architecture and its emphasis on the natural environment to provide the theoretical and practical basis for such enquiry. Thus, Landscape Urbanism was born. From the original inception of the term by Peter Connolly in Australia, the concept was amplified eagerly by academics at Harvard and the University of Pennsylvania in the USA and the Architectural Association in the UK. From academia, the new discipline edged its way into practice, with the best-known example still being the wonderful High Line in New York City, by James Corner Field Operations and Diller Scofidio + Renfro, with Piet Oudolf.

d. *As a means of subjugating landscape to the dictates of architecture-driven urban design. Incorrect.* This incorrect answer is in fact the exact opposite of one of the main objectives within the Landscape Urbanism movement. Over and above a genuine and valid desire to raise critical questions about ecology, natural systems and processes, and to embed these issues at the forefront of thinking about cities there was one further ambition for this new movement: to redefine the practice and status of landscape architecture. It has to be said that in the minds of some architects and others in the design and development industries landscape architecture had been regarded (very unfairly) as a profession secondary to architecture. By incorporating the term "landscape" with the more weighty and holistic enterprise of "urbanism," this new title conferred more critical substance on this emerging discipline and enhanced the profile of the landscape architecture profession in general. A quote from the landscape architect Sarah Kathleen Peck, speaks to these ambitions very clearly: "Landscape urbanism" she writes "is a mode of thinking about the design and functioning of cities that places landscape as one of the first steps in urban development, rather than the last."

3. The effects of New Urbanism were felt first in:

a. *Center cities. Incorrect.* The Charter of the New Urbanism specifically covers the wide range of scales from metropolis (and region) down through city, town, block, street and building. So, in theory, New Urbanism can become evident in any and all locations. However, as is so often the case, market forces combined with geography dictated where it made its initial impact. While it is evident that center cities have undergone extensive transformations, this can be understood best as a combination of demographic and lifestyle changes, as the physical infrastructure of city centers remained largely unchanged. However, the effects of New Urbanism were first felt away from the center in suburban towns around the edges of metropolitan areas. Here, as noted below, communities felt most pressure from rampant suburbanization and were most concerned about retaining their identity. New Urbanism, and its focus on the lexicon of traditional urban arrangements, provided the best vehicle for the physical transformations demanded by citizens of these communities.

b. *Far flung suburbs. Incorrect.* Far flung suburbs are often the desired location for people looking to "escape" from the city and its urban qualities. Therefore, the residents of such locations are not the appropriate demographic or target consumers for the denser, walkable environments typical of New Urbanism.

c. *In random locations. Incorrect.* In theory, developments based on New Urbanist principles could occur in many different locations, as suggested clearly by the provisions of the Charter of the New Urbanism. However, development practice follows fairly clear pragmatic trends in economic geography and demographic profiling. These sources of information prioritize certain types of locations over others, and thus there are rarely any "random" factors in developers' decision making.

d. **Small towns around the periphery of large cities. Correct.** A new level of stinging public critiques about the downsides of "business as usual" suburban development emerged in the mid-1990s. For example, headlining essays such as "Bye-Bye Suburban Dream: 15 Ways to Fix the Suburbs" in *Newsweek* (1995) by J. Adler and "Home from Nowhere," by James Howard Kunstler in *The Atlantic* (1996) specifically promoted the design concepts and visions of New Urbanism. Publications like these signaled to the development community that "New Urbanism" could no longer be dismissed as a fad promoted by radical designers with a disruptive agenda. They also signaled to the public at large that better ways of development were available, but that municipalities had to mandate them. New zoning and development initiatives were evident first in smaller suburban towns that ringed larger cities – towns that were in danger of being submerged by placeless sprawl, but which could change their zoning rules more quickly than larger cities. In the mid-1990s several towns in this situation demanded new visions and new development rules that focused instead on the unique qualities and history of their towns, and the emerging practices of New Urbanism tied to Form-based Zoning provided way to effectively fight off the placelessness of sprawling development. Some of the first historical examples of new form-based zoning predicated on New Urbanist design principles can be found in the towns of Davidson, NC (1995), and Huntersville, NC (1996).

4. The condition of "sprawl" around American towns and cities is caused mainly by:

a. *Uncontrolled expansion of low-density development. Incorrect.* It is a complete misnomer to call the low-density, land-consuming development that surrounds American towns and cities as "uncontrolled." In fact, this much-maligned development isn't "uncontrolled" at all. From the public side, it was all mandated by detailed zoning regulations that all followed the same templates from coast to coast: from the private side it was predicated on uniform development practices that were tailored to financial models that were based almost entirely at looking back at what was profitable yesterday and then repeating it endlessly into the future. It was a rare developer who could find a lender willing to finance an "untested" development concept. Hence the typical "cookie-cutter" condition of endless sameness.

b. *Wise fiscal policy by municipalities. Incorrect.* Unfortunately, this is not true. The urban critic Charles Marohn has shown in his online blog *Strong Towns* that the revenue collected by municipalities from each wave of new suburban development does not come near to covering the costs of maintaining the original and that newly expanded infrastructure. In America, we have a ticking time bomb of unfunded liability for infrastructure maintenance. The American Society of Civil Engineers (ASCE) estimates the cost at \$5 trillion, and that's just for *major* infrastructure, not the minor streets, curbs, walks, and pipes that serve our homes. The reason we have this gap is because the public yield from the suburban development pattern — the amount of tax revenue obtained per increment of liability assumed — is ridiculously low. Over a life cycle, a city frequently receives just a dime or two of revenue for each dollar of liability. Marohn argues we've done this because, as with any "Ponzi scheme," new growth provides the illusion of prosperity. In the near term, revenue grows, while the corresponding maintenance obligations — which are not counted on the public balance sheet — are a generation away. With each increment of new growth, the city assumes the long-term liability of maintaining all improvements deemed "public." This typically includes sewer and water systems as well as roads and streets, but will also include treatment systems, pumps, water towers, meters and even storm water ponds. All of this stuff ages, degrades, breaks and ultimately needs to be replaced. Cities routinely trade near-term cash

advantages associated with new growth for much greater long-term financial obligations associated with maintenance of infrastructure.

c. The mandates of zoning regulations. Correct. As noted in Unit 1 of this course, local zoning laws became standardized across the USA from the 1930s onwards. By the time the post-war wave of massive suburban growth materialized in the period from the late 1940s through the 1980s, what is now referred to as "conventional zoning" - that is, the rigid demarcation of separate uses into separate buildings on separated plots of land - was commonplace in every town and city. These local laws, very similar from coast to coast, mandated the urban pattern we now refer to as "sprawl."

d. Coordinated land use and transportation policy. Incorrect. While this sensible connection exists in some American cities, it is still, regrettably, the exception. Even in sophisticated cities it is easy to find examples of approved development that lack adequate transportation infrastructure, or built in places not well served by transit options. This is particularly evident in many suburban locations, where nodes of high-density, mixed-use "walkable development" have been approved and constructed along arterial highways where the only means of transportation is the private automobile. While the goal of "densifying the suburbs" is a necessary one in pursuit of a more sustainable urban future, without upgrading personal transportation options such development can simply overload inadequate infrastructure to the detriment of all concerned. Denser urbanism, if it's to succeed, needs a wide variety of ways to move around, and all too often those transportation choices are not put in place in coordination with the new development that changes the suburban landscape.

5. By the end of the first decade of the 21st century, the development industry eagerly embraced the design principles of New Urbanism because:

a. Compelling new architecture turned people's heads. Incorrect. There is absolutely nothing against compelling new architecture, but the analysis of any attractive urban location demonstrates that the large majority of buildings are what we would best call "background" architecture, that is, modest, well-designed buildings that provide the necessary urban texture to successful places. Within this broadly harmonious context, a singular important building such as a church, city hall, library, or other civic building worthy of some degree of monumentality can stand out in counterpoint. But for this strategy to be effective, any urban environment must contain a preponderance of polite, background architecture that creates good urban spaces. That's how great cities operate. New Urbanism focuses primarily on creating the urban texture that enables the occasional landmark building to stand out. A city composed of unrelated "compelling" landmark buildings that bear no relationship to each other or to their context is a city lacking in essential human dimensions. The modernist period of urban development (1950 through the 1980s) has plenty of examples of this sorry condition.

b. Developers started to follow the advice of their architects. Incorrect. The examiner admits this is a joke answer. (Sorry!) All architects have far too many frustrating stories of their good advice and push for better design being frustrated by "value engineering" and cost-cutting developers with an eye only to the single bottom line and disregarding the expertise of their design professionals.

c. A shift to thinking in terms of contextual design. Incorrect. This is much more serious. Many architects remain unaware of the constraints and opportunities of working creatively within an urban context. During the 21st century in particular, the avant-garde sensibility in architectural practice and education has been increasingly dominated by "starchitecture" and by buildings conceived as increasingly idiosyncratic objects, with their computer-generated forms divorced from their physical and societal context. The New Urbanist proclivity for more restrained, space and place-making background buildings has held little attraction for ambitious designers out to make their name in glossy magazines.

d. Consumers, renters, and homebuyers demanded a different lifestyle from standard suburbia. Correct. The catalysts were the changes in market preferences espoused by two huge cohorts of consumers who burst on the scene demanding a more active urban lifestyle than the suburbs could provide. Millions of retiring Baby Boomers (born between 1946 and 1964) seized on the idea of walkable, mixed-use communities as supportive settings for their "active ageing" process of retirement and downsizing. At the same time, the so-called "Millennials" (or "Generation Y" or "Echo-Boomers") born between the early 1980s to late 1990s demanded the same kind of walkable urbanity that offered many more lifestyle options than the mono-functional suburbs where they grew up. While conventional low-density suburban development continues to be popular for some market sectors, the consumer preferences of these two cohorts changed the thinking of the real estate and development industry. Center city locations, shunned for decades, became desirable and cool. Close-in suburbs, especially those that were, or could be served by public transit followed suit. These were areas of cities that embodied the principles of traditional "streetcar" urbanism from their inception in the early 1900s, and thus were amenable to retrofitting and infill development. To the ironic observation of many urban designers and planners, the real estate and development industries responded to the market by feverishly adopting the urban design concepts they vehemently opposed only a decade earlier.

6. The opportunities of contextual design were clearly *rejected* in the writings of:

a. *Robert Venturi. Incorrect.* The famous American architect Robert Venturi discussed the dialectic between object and context in his seminal book *Complexity and Contradiction in Architecture* (1966). To paraphrase his discussion in a search for an architecture more complex than the simple reductive doctrines of modernism, he indicated that (in this author's words): *Architecture occurs at the wall, where the pressures of the program meet the constraints and opportunities of the context.* What Venturi meant by this was that the modernist focus (even fetish) on program as the defining genesis of architectural form in the modernist era after World War II was too limiting. In fact, this more singular focus on program was a radical reversal of most architectural practice through previous periods of history. More traditionally, architectural form in city building had resulted from a dynamic exchange between program and context, and Venturi was arguing for a more complex architecture that allowed for creative compromise between these divergent forces. He sought architectonic resolution by embracing contradiction, and showed how the architecture of earlier periods orchestrated an interplay between multiple discordant elements rather than discarding those that interfered with an architect's preferred singular expression. Moreover, Venturi suggested architects focus once more on the design of architectural façades, the vertical planes that mediate the biggest contradiction of all, that between indoor private space and outdoor public space. For urban designers this opportunity is crucial: While for the architect the building façade may be the expression of her building, for the urban designer, that same façade is a wall to the urban room beyond the building, be it a street, a square, a plaza, park, or alley. Basically, that wall has to do two things at once, not just one.

b. **Antonio Sant'Elia. Correct.** The visionary Italian Futurist architect Antonio Sant'Elia created his heroic visions of *La Citta Nuova* (The New City) in 1912, as a polemic vision of Milan in the year 2000. His beautiful drawings formed a companion piece to his *Manifesto of Futurist Architecture* and his detailed depictions of a looming, impersonal and mechanistic urbanism, where the destruction of older, existing buildings was celebrated, have inspired the cityscapes of the classic movies *Metropolis* (1927) and, more recently, the dystopic *Blade Runner* (1982). Sant'Elia's uncompromising *Manifesto of Futurist Architecture* (1914) states: "Let us blow up monuments, pavements (sidewalks), porticos, stairways and sink the streets and piazzas, elevating the level of cities." The context of existing cities had no place in Sant'Elia's visions. But an orgy of demolition combined with sunken and elevated freeways became one of the hallmarks of mid-20th century modernism.

c. *Simon Unwin. Incorrect.* The English architectural educator Simon Unwin has stated the importance of contextual analysis and design very clearly in his book *Analysing Architecture* (2014). He writes: *Architecture in context is neither a cursory attention nor a radical innovation. Rather it is a strong and eloquent visual relationship to the surroundings. Individual buildings are always seen first as a part of the whole. Creating places and spaces that enrich the lives of the people who use them is the foundation of architects' work . . . Identification of place lies as a generative core of architecture. Place is to architecture as meaning is to language. Recognition, memory, choice, sharing with others, the acquisition of significance; all these contribute to the process of architecture.* To which this author says "Amen!"

d. *Urban Design Associates. Incorrect.* Urban Design Associates are one of America's leading urban design firms, and they make a point to reinforce the importance of context in their work. In their *Urban Design Handbook* (2003) they write: Architecture is the physical language of city - and community -building. The city is a living organism- with a unique culture and a past called a "contextual history" and a future in which new buildings act as the threads that weave the city's living traditions into new and whole fabric. Architecture projects need to be perceived as part of implementing an urban design project that entails gathering insights into urban fabric and how people use urban spaces. The role of an urban designer is to work on many scales, thoughtfully designing public places and spaces, to build on the unique local character and the best qualities of the forms inherent in that geographic region.

UNIT 3 CONTENT

- 3.1 Introduction
- 3.2 The Relevance of Urban Design in a Virtual World
- 3.3 Objectives of Good Urban Design
- 3.4 Strategies and Tactics of Good Urban Design

REVIEW QUESTIONS (7)

1. "Public space design" means:

a. *The design of all exterior space. Incorrect.* One of the failings of modernist urbanism during the decades of the mid-twentieth century was the seductive trap of "universal space," a medium that was supposed to flow seamlessly around and between

buildings as water flows around rocks in a stream. This concept completely discounts fundamental spatial concepts of human and group territoriality and essential spatial hierarchies within cities. Not all open, visible space is public. It is composed of important hierarchies that can be quite subtle. We project certain values upon spaces based on their location, and interpret them on a scale from completely public to completely private. Ownership and control of space varies along this scale to include semi-public and semi-private spaces. Semi-public spaces are ones that are accessible to members of the public under certain conditions, for example and areas for restaurant dining clearly delineated along an otherwise public sidewalk. An example of a semi-private space is the front garden and raised porch of a typical single-family home along a neighborhood street. Both the garden and the porch are clearly visible from the public space of the sidewalk and the street, and can be visually appreciated as contributing to the public realm. However, there is no doubt about the private ownership of the yard and porch: Their open contiguity with public space gives rise to a rich spatial hybrid that can enrich the sense of neighborhood and community. The loss of this rich mixture of perception and territory was a major and debilitating problem for modernist urbanism, one which it never solved.

b. *The design of pedestrian spaces. Incorrect.* Public space is inclusive of streets, alleys and lanes as well as purely pedestrian areas such as plazas. Street typologies including boulevards, avenues, main streets, residential streets, alleys, and lanes should always be designed as multi-modal spaces, for private and commercial vehicles, public transit, bicycles, and emerging forms of micro-transit such as motorized scooters. Spaces used only by pedestrians are vitally important in cities, but they do not comprise the extent of public space.

c. **Creating an infrastructure of spaces that are functional, safe, aesthetically pleasing, and universally accessible. Correct.** Public spaces should be all the above, and more. Their highest priority is walkability, closely followed by actively supporting a wide variety of options for personal mobility, including cars, transit, bicycles, micro-transit, and, of course, walking. Designing for safety is a given, as is the requirement for commercial spaces to be economically successful. All public spaces should be well-connected and accessible to diverse populations. The design strategy to achieve successful public spaces relies heavily on the following three sub-strategies for success: Designing buildings as the walls to "urban rooms"; creating a particular sense of "place" from otherwise generic urban space; and creating a high-quality environment scaled to pedestrians. This last item is best achieved through the use of architectural details on the lowest stories of the building; by the interior spaces on these lower floors of being easily perceived from eye level by sufficient façade transparency; and by using landscape to provide shade and shelter.

d. *Following the rules set down in CPTED manuals (Crime Prevention Through Environmental Design). Incorrect.* CPTED is promoted as a means of manipulating the physical environment to increase safety in neighborhoods. It was developed in the 1960s by a criminologist C. Ray Jeffrey who based his method on the concept of "defensible space" articulated by architect Oscar Newman. The strategy and tactics promoted in the CPTED methodology rely extensively on the concepts of clearly defined territorial zones, easy public surveillance, and ways of limiting access to more private areas through landscaping gates and fences. There are many points of similarity with good urban design practice, but the methodology of a "checklist" tends to weaken the holistic design process of community design. CPTED is however a vast improvement on the urban wastelands produced by modernist urbanism.

2. A universal rule of urban design that should rarely, if ever, be broken is:

a. *Streets should be organized as a dendritic system. Incorrect.* A dendritic system is one where all streets branch out from the main "trunk," which in U.S. cities is usually a freeway or major state highway. Attached to this main trunk are the major "branches," which are the suburban multi-lane arterial streets or thoroughfares. These large branches then give access to the next category of the "tree," the "minor branches," which are the collector streets. Collector streets then connect to the "twigs and branch tips" of the system, the residential streets and dead-end cul-de-sacs. While seemingly efficient, a dendritic street layout has major disadvantages: almost all trips are made longer than they would be if the system were interconnected and it is prone to extensive congestion problems since the system provides few or no alternative routes. All traffic has to funnel into a few main intersections, which, due to very high traffic volumes are often slow to clear and always dangerous to pedestrians and cyclists. Most importantly in today's environment where pollution and climate change are major issues, studies show that dendritic configurations force residents to drive over 40% more than residents in older, traditionally connected neighborhoods. This results in a 40% increase in greenhouse gas emissions per car, and because these street systems are hostile to cyclists and pedestrians, households are likely to own two or more cars to cater to trips generated by all family members.. Therefore the greenhouse gas emissions per household in a dendritic subdivision are easily double that of residents of older, connected districts. Urban designers go out of their way to avoid such regressive systems of public space, and where they exist (all across America) a primary task for urbanists is to retrofit them with alternative opportunities for personal mobility.

b. *Cars should be grade separated from pedestrians in urban areas. Incorrect.* This traffic engineering and urban design concept was very influential in the 1960s and 1970s. It still resonated today in some areas, but has deservedly fallen out of favor. On the face of it, such separation seems like a common-sense way to reduce pedestrian accidents, injuries, and deaths. But this worthy, humanistic impulse was based on several false assumptions about car use in cities. One primary error stems from the belief that "accessibility" could, even should be interpreted as the freedom to use private motor vehicles from the origin of any journey to its destination without restriction - essentially requiring that all public spaces be primarily subject to the dimensions and velocities of vehicles. Virtually no attention was paid during those decades to the concept of accessibility *without* a car, that is, by walking, cycling and public transport. As we have witnessed in recent years, the most successful urban areas today incorporate several different modes of transit, with the overriding concept of "walkable communities" well to the fore.

c. **Fronts face fronts and backs face backs. Correct.** This is a cardinal rule for successful public space design and conforms to the simplest hierarchy of urban space design. Fronts relate to more formal public space and, usually, higher intensity uses, and the architecture should reflect that importance. Backs frame more private spaces. Uses there are more relaxed and informal, and the architecture can follow suit. This illustrates the principle of context-responsive architectural design. The nature of public space varies from front to back, and the architecture should reflect, embrace and support this difference

d. *To create a flow of "universal space" around and between buildings. Incorrect.* As we read in Unit 1 of this course, modernist concepts of urbanism from the 1920s through the 1980s prioritized the idea of buildings set apart in "flows" of open spaces for pedestrians, with vehicles segregated into a separate, functional system of access roads. These open spaces between buildings were prescribed by modernist doctrine to allow access to sunlight and greenery, but in practice this space was neither truly public nor private, and its consequent lack of spatial definition blurred boundaries and territories, raising issues of ownership, control, and management. This confusion led to the public dislike and disparagement of such spaces, which often became vandalized and subject to criminal activities. Today we have actively returned to the forms and spaces of the pre-modern city, formed by shared and connected public spaces enclosed and defined by building façades.

3. In a connected, globalized economy, memorable and successful locations are created by:

a. *Virtual media. Incorrect.* Virtual media are vital elements for places to be successful but they themselves are no respecters of location. Left to their own devices, one tele-serviced spot is as good as another, with convenience perhaps the only moderator.

b. **"Territorial insertions". Correct.** As noted in the text, the term "territorial insertions" is academic jargon for well-designed urban places that exist within a globally fluid virtual realm. In the hyper-connected global economy, and a society that enables us to live and work anywhere we like, the places we choose to inhabit become all the more precious and important. It's apparent that as the viability of some older locations decline, i.e. those that have failed to adapt to new conditions, we will gravitate to new settings that offer a richer palette of cultural, scenic, and climatic attractions. These new, successful locations will combine global connectivity with those unique (placemaking) qualities that cannot be pumped through a wire, i.e. the ability to enjoy the kind of face-to-face interactions we care most about. In this context, attractive and sustainable physical locations are penetrated by information and communication technologies to provide a collaborative meshing of physical and virtual environments, with both local and global dimensions. In this way the centrifugal forces of technology are balanced by centripetal ones of human interaction in physical space.

c. *Global linkage. Incorrect.* This is not sufficient on its own. When we can live and work anywhere we choose, we select places that please, support and nurture us on several levels. Virtual media are vital elements for places to be successful but they themselves are no respecters of location. Left to their own devices, one tele-serviced spot is as good as another, with convenience perhaps the only moderator. For locations to become economically and socially successful places in the more meaningful sense, and to hold some special status in our cultural hierarchy, they have to combine the convenience of global linkage in the virtual realm with characterful physical presence, and that comes chiefly through the quality of urban design

d. *Defensive insularity. Incorrect.* Many of us may feel some irritation and defensiveness when bombarded with change from beyond our immediate and familiar surroundings. Some may feel that the quality of special places needs to be defended against external forces of change. This is understandable, but ultimately such resistance can cause urban places to lose their economic and social vitality. On the contrary, it is noticeable that successful urban places today have both retained large parts of their historic substance while embracing economic and social changes. Newbury Street in Boston, discussed in Unit 2 of this course, is a prime example. Built in the late 19th century as land was filled from the tidal basin of Back Bay, the long rows of masonry town homes started life as a prestigious residential address. But residential tastes changed, and empty homes were filled with and adaptively re-used by a wide variety of businesses, making it today one of the premier shopping streets in America.

4. Vertical proportions of buildings that line urban streets are important because:

a. *This is a trick question. There should be no design controls on urban buildings. Incorrect.* The design of the pedestrian environment is the most important task an urban designer can undertake. It is not a matter to be taken lightly, nor is unfettered individual form-making appropriate for venues that are shared by all.

b. *They make the building look taller. Incorrect.* Whether vertical proportions make the building look taller are immaterial in this context. The design focus in urban streets is on the attractiveness and safety of the pedestrian environment. In visual terms this cuts off at about 15 feet above a typical person's eye level. This means that the first 20 feet of the vertical façade are the primary location for design detail.

c. *They allow the eye to move quickly across the façade of the building. Incorrect.* Horizontal lines encourage the eye to skim quickly along the surfaces of the buildings, and this is the exact opposite of the desired effect in a pedestrian environment. Moving at walking pace allows the viewer to see much more detail in her urban environment. Allowing the eye to skip and skim quickly along façades is a lost opportunity in the context of "walkable urbanism," and is counterproductive to the process of creating "place identity."

d. Vertical features and proportions establish a clear rhythm in perspective that holds the eye. Correct. This repetition of verticals in façade composition slows down the act of viewing and allows our minds to linger, process, and retain information. This aids memorability and thus the creation of places that linger in our minds and stick in our memory. On a commercial street, the visual contrast between vertical design elements on the façades and the large, flat areas of shop window glazing also facilitates economic activity through the opportunity to look into shop windows. The use of stoops in residential architecture at street level also adds visual interest and identity in that context, both of which help create memorable places.

5. The main purpose of on-street parking is:

a. *To maintain high-speed through lanes. Incorrect.* High-speed traffic lanes should be limited to roadways classified as arterials and which do not generally penetrate neighborhoods. Within neighborhoods and mixed-use districts street design should always emphasize slower travel speeds for pedestrian safety. In those instances, on-street parking is proven to be a clear signifier of being in an urban neighborhood with pedestrian traffic, and this on-street parking is major factor in *slowing down* travel speeds.

b. To protect pedestrians from moving vehicles. Correct. This is the primary purpose of on-street parking. This is especially true along retail streets, but it applies to every street type with the exception of major arterials. Nothing provides for pedestrian safety as well as a row of heavy street boxes, i.e. parked vehicles, each weighing between 1.5 tons for a compact car to 2.7 tons for a large SUV. (Hummers weigh in at 3.7 tons). Pedestrian activity of any type along streets is best served by this layer of protection.

c. *To serve street level retail. Incorrect.* Many factors support street level retail, and on-street parking is certainly one of the most important, but it's far from the only reason. The sidewalk width and design, the positioning of landscape features, the shading of tree canopies, the location and level of lighting and signage, the provision of seating, and the location of transit stops, for example, are all other contributing factors to successful retail environments. But unless the pedestrian is safely protected from moving vehicles, productive street life becomes very hard to maintain.

d. *To protect bike lanes. Incorrect.* The relationship between bike lanes and on-street parking is fraught with problems relative to the respective locations of these two facilities. Cyclist injuries from drivers and passengers opening car doors across bike lanes are all too common. A study from the Harvard T.C. Chan School of Public Health found that the best liked and most successful relationship between all the various design elements (moving from pedestrian sidewalk outwards) was as follows: pedestrian sidewalk, bike lane, planting strip with trees, curb and gutter, on-street parking, and finally lanes for moving traffic.

6. British urban designer Gordon Cullen is best known for his book *Townscape*, where he sets out a simple yet profound theory of urban design and placemaking. His main concept is:

a. *"Universal" space. Incorrect.* The term "universal space" has cropped up several times in the text of the course units and in the question and answers section. One of the first uses of the term was by Mies van der Rohe to describe a kind of single-volume flexible enclosure within which one could position free standing planes and volumes to represent walls and rooms that could be moved to suit changing programmatic requirements. This "flowing," or "universal" space was a founding concept of modernist architecture but when it was scaled up to urban dimensions, the same qualities that were considered attractive at

the scale of a building became a serious liability at the scale of a whole community. Thinking about "universal" space at the scale of neighborhoods and towns gave rise to undefined open areas, devoid of community character and territorial identity. Spaces of this type became the settings for many social problems during the latter decades of the 20th century, and it was precisely this desolate, "place-less" character that Cullen's work sought to overcome.

b. Serial Vision. Correct. In the same way that being in a room in a building is enhanced by being able to see out, beyond the confines of that particular space, having views to other spaces, other "urban rooms" in an urban setting is a valuable element of placemaking. Seeing beyond one's present location in an urban space, being able to look from "here" into another location, a "there," provides a context for the experience of any particular urban place. This urban design concept of a "here," a "there," and the movement sequence between them is called "serial vision," and Gordon Cullen elaborated this simple concept into many layers of sophistication in his beautiful drawings, contained in his book "Townscape," published in 1961. This premise is very simple, but of great value to the urban designer. Cullen defines these simple concepts of "here," where one occupies urban space -- on a street, in a square, at a sidewalk café, for instance -- and "there," a glimpsed urban vignette that offers other possibilities of human activities. This allows the urban designer to set up a framework of urban experience through spatial sequences of stillness, movement and progression. This pictorial sequencing of urban views and locations reinforces the observer's memories of that location and thus establishes a sense of place.

c. The English tradition of picturesque landscape. Incorrect. Cullen titled his book "Townscape" so as to increase the scale of architectural thinking from an individual building to groups of buildings and spaces, all linked by shared experience in a pictorial sequence. To the extent that any English urbanist cannot fail in one way or another to be aware of that country's landscape design heritage from the 18th century onwards, it is possible to find some connections between, say, Capability Brown's ideas about moving through a landscape and Cullen's sequencing of an urban setting. However, Cullen's work in *Townscape* is exclusively urban.

d. Urban Collage. Incorrect. Urban Collage is a complex and fascinating approach to urban design, but we must look to other authors for the explication of that complicated theory, namely Colin Rowe and Fred Koetter. Their book, *Collage City*, published in 1978, set out the intellectual rationale for this approach along with several historical and contemporary examples. Their main argument was developed and refined in their 1980 essay *The Crisis of the Object: The Predicament of Texture*. In this lengthy essay the authors explained that there are two different types of city in our contemporary world: the city of modernist objects, separated from each other and surrounded by open space, and the traditional city of texture, that is, a city of spaces defined by connected groups of buildings. In the former, buildings are most important, to the detriment of urban space. In the latter, spaces are most important, but buildings have a vital role to play in spatial definition. While the authors clearly feel that the traditional city is a better fit for human habitation, they acknowledge that the modernist city cannot simply be erased, and so they suggest, albeit in rather obscure language, that the problematic modernist city can be "recolonized" by elements from the lexicon of traditional cities that can be collaged over and into the wide open spaces of the modernist city.

7. In a successful urban design project, the general principles of walkability, mixed-use development, and ecological sensitivity are always complemented by:

a. Adaptive reuse. Incorrect. Adaptive reuse is an excellent approach to achieving more sustainable architectural design, and the concept has relevance in the urban realm, particularly when masterplanning an area with existing building stock. However, many masterplanning projects may have no or few existing buildings on site, and in those instances this valuable technique has little relevance.

b. The adoption of existing street standards. Incorrect. Sadly, many municipalities are still using outdated design manuals for roadways that are focused almost universally around the "needs" of vehicles. Such standards inevitably shortchange the interests of other road users, notably cyclists and pedestrians. Masterplanning and urban design projects provide excellent opportunities to update this outdated approach by developing new multi-modal street designs that embrace transit, walkability, and new technologies of micro-transit.

c. Local analysis. Correct. In successful urban design projects, all these more generally applicable factors are customized to suit site and community-specific objectives developed through locally based analyses. These local data sets comprise the analyses of site and social contexts, local and regional cultures, local environmental and wildlife imperatives, market trends, development programs and priorities, stakeholder personalities, public sentiments, and (inevitably) local politics. Through the analysis process, this mix of factors gives rise to particular local objectives, and the design team can fine-tune their approach to embrace both general and specific objectives

d. *Focusing on. "the bottom line". Incorrect.* When we say "the bottom line" we usually mean the profit motive, narrowly defined, probably in the singular interests of the client or the controlling interest on the project. However, this is now broadly recognized as outdated thinking, and progressive companies and organizations now embrace "the triple bottom line" of "People, Planet, Profit." This brings the vital arenas of social and environmental concerns into the equation because the triple bottom line (TBL) is a framework that recommends that companies commit to focus on social and environmental concerns just as they do on monetary profits. A TBL seeks to gauge a corporation's level of commitment to corporate social responsibility and its impact on the environment over time. The phrase "triple bottom line" was first coined in 1994 by John Elkington, the famed British management consultant, as his way of measuring performance in corporate America. The idea was that a company can be managed in a way that not only earns financial profits, but which also improves people's lives and the holistic environment of the planet. This is an important and sensible idea, but one that has not made many inroads into America's corporate thinking.

UNIT 4 CONTENT

- 4.1 Introduction
- 4.2 Strategies for Masterplanning: Charrettes, Masterplans and Form-based Codes
- 4.3 The Transect: What it is and How to use it
- 4.4 Form-based Codes: What they are and how they operate
- 4.5 Masterplanning Case Study: New Garden Suburb at Clemson, S.C.

REVIEW QUESTIONS (6)

1. In form-based coding work, the urban designer's most important tool is:

a. *The municipal zoning ordinance. Incorrect.* In any form-based coding work, the existing municipal zoning ordinance is always the starting point, but its importance lies in defining what needs to be changed. Older, used-based zoning ordinances are usually the problem and not the solution. The main objective in most masterplanning and form-based code writing practice is the creation of a new zoning ordinance and the retirement of the outdated one. Often this work focuses on critical sections of an existing document that need to be reconceptualized and rewritten around urban design principles rather than tabulations of uses within buildings. An example of such partial rewrites of municipal ordinances might be the creation of new zoning provisions crafted specifically for the areas around new light rail or streetcar stations, where walkability, compact urban scale, mixed-use development, and alternative options for personal mobility would be key issues.

b. *A strong individual vision. Incorrect.* Most architects possess high levels of ability to create and project visionary ideas. It is a necessary professional skill. But in community masterplanning work, this individual vision needs to be tempered by a genuine interest in and respect for the opinions of others. Community planning and design is not the venue for devotees of Ayn Rand's *Fountainhead*, the fictional tale of Howard Roark, an egotistic architect whose heroic visions are, in his opinion, betrayed by the conflicting ideas and compromises of other, inferior, participants. All masterplanning work is predicated on high-functioning teams of individuals from different disciplines, where creative fusion is the desired outcome and the negative connotations of compromise are replaced by the positive trajectories that come from collaboration.

c. *The community's Comprehensive Plan. Incorrect.* We wish this was a correct answer! But the fact is, that in many communities, this document often becomes obsolete as a result of not being updated regularly, and as such it can be a very unreliable tool for new, detailed zoning work. Ideally, a good Comprehensive Plan spells out the detailed policies and priorities for any given community. This is a visionary document, not a regulatory one. This prioritized policy framework then needs to be accompanied by sets of legally binding zoning regulations in the form of a Unified Development Ordinance (UDO) that functions as the implementation tool for those policies. It is important that both documents - Plan and UDO - represent the same community approach to future growth, conservation, and development. This goal of interlocking policies and rules is the holy grail for many communities, and when achieved the results on the ground can be very good. But each document needs continual monitoring and updating to keep abreast of changing circumstances. Not all communities, however, have the resources to devote to this time-consuming and detailed process, and this can easily lead to the Comprehensive Plan becoming the aforementioned unreliable guide for new form-based coding work.

d. **The Transect. Correct.** The Transect is an environmental ordering system conceptualized as a long section through a hypothetical landscape from rural edge to city center. The Transect methodology is customizable to specific projects and becomes the essential framework for creating, clarifying and regulating all matters of urban character and content within the masterplan. The urban categories established by the Transect then become the basic organizing framework for the form-based code constructed from the basis of the masterplan.

2. The urban design charrette is a vital element of the process of masterplanning and subsequent form-based code writing because:

a. *It protects the designers from the interference of the public. Incorrect.* The process of masterplanning during much of the 20th century was indeed considered to be the realm of the detached specialist expert, one who "knew what was best" for a community based on his or her professional expertise. As a result, most masterplans dating from the modernist era during the 1950s, 60s and 70s were created out of the public eye by experts, and then released to the public "for consultation," a process more akin to a public relations exercise rather than genuine public participation. However, the hostile public reaction to the failures of many modernist planning projects, combined with the growing understanding -- particularly amongst younger architects and planners -- that the residents of neighborhoods and districts were the true "clients" of our work, forced professionals to rethink the whole practice of masterplanning in terms of a much more inclusive process of concurrent public involvement in tandem with professional expertise.

b. *It provides cover for local politicians to pursue their own agendas. Incorrect.* In fact, the opposite is true. A well-designed public design charrette brings all viewpoints and relevant stakeholders to the table in the light of local publicity from mainstream and social media. Each charrette should have its own media strategy to maximize public involvement and to share interim solutions for immediate feedback. This process makes it very hard for developers and elected officials to do backroom deals that are not in the public interest.

c. **It involves communities and stakeholders in the planning process from the outset. Correct.** The charrette process has been shown to be a very effective tool to assist public education about planning, urban design, and participation in the planning process. Most importantly it is a way that public input can inform and enrich urban design proposals for community development -- to produce a feasible yet visionary plan that nourishes agreement between citizens, politicians and developers. The event is an open forum that includes all interested parties in a collaborative process involving a wide range of disciplines. It adopts a holistic approach to solving the problems under discussion and sets out to produce a plan that is, above all else, practicable. Charettes increase the likelihood of getting projects built by gaining broad support from citizens, professionals, staff, and elected officials: By fostering a shared community vision, charrettes can turn initial opposition into support.

d. *It focuses on "broad brush" ideas to enable the process to be quick and efficient. Incorrect.* One of the most important points about public design charrettes is *working in detail* to illustrate and test ideas. Many years' experience has shown this to be the most efficient process. A multi-disciplinary charrette team can work in short feedback loops to test design ideas graphically, and to stimulate public understanding and participation. It is particularly important to work in design detail to test the feasibility of alternative concepts, and to show real alternative future scenarios to the public. Working in detail has many advantages. Opportunities can be revealed, and flaws quickly reduced or eliminated by designing to a level of detail that includes building types, urban blocks, and public spaces as well as the big picture issues such as circulation, transportation, land use, and landscape preservation.

3. The masterplan produced by this charrette process provides:

a. *Loose "vision" statements and illustrations to facilitate changes as conditions evolve. Incorrect.* This question and its answers are designed to illustrate some of the differences between urban planning and urban design, and the charrette throws these differences into high relief. On larger scale projects, some conventional planning wisdom would suggest the need to keep concepts loose to provide flexibility for future changes. The urban design approach is the opposite. Urban designers go out of their way to imagine and design real places rather than the more usual and simplistic land-use diagrams typical of planner-led workshops. Designing in detail allows for planning and design concepts to be *tested spatially and visually*, and for projected development yields to be tabulated accurately. This allows for masterplans to be numerically assessed against market criteria and anticipated future trends. By taking two-dimensional plan thinking into the third dimension of real places, the plans become specific, detailed, and thorough enough in their depiction of urban qualities to stimulate market interest and to create agreement about the architectural, urban and environmental character of an area. At the same time, they are robust enough to accommodate change over time, particularly when their implementation is managed by form-based zoning codes. These codes hold the "DNA" of good urbanism embodied in the masterplan, and these core urban design principles provide the armature of placemaking around which market, technological, and demographic conditions can change.

b. *A detailed and prescriptive menu of approved uses. Incorrect.* This fixation with the minutiae of uses within buildings is an outdated product of old-fashioned zoning practice, whereby most attention is placed on uses that are permitted or not permitted, and little weight given to the design factors involved in making good places for people. Any examination of an older, pleasant, walkable and mixed-use neighbourhood in a typical American town or city reveals a simple yet profound fact from history: The buildings and urban spaces that generate the place's character last much longer than uses inside those buildings.

Masterplans that set out the components of urban form and space needed to create and develop this “sense of place” provide a much more reliable framework for a community’s evolution than do abstract maps of transitory uses. One of the governing precepts of form-based codes that are derived from charrette led masterplans is that controls on building and urban form are more rigorous, while regulations on uses within buildings are more relaxed and permissive to allow for market flexibility.

c. A detailed “build-out” plan of the project area. Correct. The masterplan produced by the charrette process described in the case study (and which is typical of progressive practice) is more detailed in its urban and architectural content than many examples encountered within normative American planning practice. It comprises a detailed “build-out” plan of the project area, with public rights-of-way (for streets, squares, parks and greenways), lot lines for private development sites, and the configuration of major buildings and parking areas with appropriate, scaled footprints. Potential development yields are accurately calculated from the plan drawings. Major and minor streets are tabulated as dimensioned street sections, and major public spaces illustrated in birds-eye and eye level perspectives and photo-simulations. Design team members have at their pencil tips well-authenticated typologies of block sizes plus building types and layouts (e.g. apartments, shopping centers, energy-efficient office floorplates, townhome lots and single-family plats). They have a similar dimensioned vocabulary of good public spaces (e.g. squares, parks, and street types – boulevards, “Main Streets,” neighborhood streets, alleys, etc.) and together with efficient parking layouts, all of these “ready-made” sets of information can be quickly adapted to suit site and market conditions. This speed of graphic representation enables the design team to test ideas quickly in site-specific detail.

d. An abstracted two-dimensional map of building uses and site connections. Incorrect. As the answers to this and other questions have indicated, masterplans do indeed provide detailed information in two dimensions. But crucially, these masterplans are more than that. As befits three-dimensional urban design thinking, these plans are then profusely illustrated in three dimensions by axonometric drawings, street level and aerial perspectives, and by photoshop simulations of “before and after” conditions based from photographs of key locations. By taking two-dimensional plan thinking into the third dimension of real places, the plans become specific, detailed, and thorough enough in their depiction of urban qualities to create agreement about the architectural, urban and environmental character of an area. The third dimension in masterplan representation is therefore crucial in this regard, enabling much more effective communication with the public and elected officials.

4. At the heart of any properly construed and administered form-based code is a clear bargain:

a. The developer will agree to detailed aesthetic controls for quick approval of the project. Incorrect. The codes do *not* regulate aesthetic styles. At the pedestrian level of buildings, codes *will* require appropriate *design* features, such as plentiful windows and doors, and codes will ban long blank walls along sidewalks, but this is done for reasons of pedestrian safety and to protect the design quality of the public realm. Regulating the aesthetic styles of a building is a grey area legalistically, and is generally a topic that is studiously avoided by most form-based zoning documents. (There are some exceptions for historic districts, etc. where consistency with historic styles may be important). Form-based codes do impose relatively strict *urban design controls* on the external form and scale of buildings, and how these building address public space. That is the intention of the codes -- to define the spatial quality and spatial infrastructure of a neighborhood or district, and thus create the appropriate urban character. That is a very different matter from the aesthetics of a building.

b. If the developer abides by the detailed code provisions of the ordinance, he or she should be able to rely on speedy administrative approval. Correct. This is absolutely key to the premise of enacting more rigorous design codes. If the developer adheres to the code and passes a detailed review by planning staff, then approval is automatically granted. The project does not go before the elected officials for discussion. Once elected officials approve and adopt the detailed form-based code -- after an extensive public debate where all shades of opinion are represented -- the bargain must hold that these same council members should not intervene and haggle over individual projects that meet their stated criteria. Nor should community groups who participated during the code writing and adoption process be allowed to derail the approval process for individual projects that meet the code. As many projects as possible should receive a “by-right” categorization, leading to a predictable, quick and economic approval process for developers as the reward for meeting the higher standards of urban design.

c. If elected officials find no fault the scheme will be approved. Incorrect. If the project meets all conditions of the form-based code, the plans are approved at staff level, without involving elected officials. As noted above, the detailed involvement of neighborhood groups and elected officials occurs at the “front end” of the process, where complex public discussions on the precise stipulations of the code may take place, often over many months. The rules that are codified as a result of this process thus become detailed local zoning law. Only when a property owner seeks major changes from the particulars of the ordinance are elected officials involved.

d. The developer agrees to strict limits on land use in exchange for expedited approvals. Incorrect. One major feature of form-based codes is their focus on providing broad flexibility in allowable land uses and by-right entitlements to developers willing to

construct projects in conformance with a community's articulated vision. The general principle here is that mixing compatible uses is good physical, social, and economic policy. This represents a sharp departure from outdated zoning ordinances that previously discouraged or even outlawed mixed-use development and subjected developers to time-consuming and costly project entitlement processes. Within the framework of the Transect, by-right uses become more permissive as the density and walkability of urban areas increases.

5. The most critical elements of successful masterplans are:

a. *Beautiful perspectives and digital simulations. Incorrect.* While there has been an unstated "rule" of urban design practice for many years to the effect of "give the client a big colored drawing," such presentation aids (updated for the digital age), are only one of several critical aspects, and today, not the most important one. Digital simulations are now routine, and their very ubiquity has led, in some ways, to their being devalued as "game changing" elements in urban design presentations.

b. **Documents to guide implementation. Correct.** Many masterplanning projects have a time scale of ten to twenty years for realization, and no set of drawings can "fix" the future. Instead, the detailed masterplan acts both as *a signpost and a map*, pointing in a clear direction and providing plentiful information about how to reach the chosen destination. It is detailed and specific because signposts and maps are useless if they are vague and ambiguous. The best masterplans are always accompanied by implementation documents, particularly including form-based zoning codes that establish the desired urban character of each part of the masterplan. These detailed and graphically structured zoning codes, along with itemized and prioritized programs of public works improvements, public and private sector investments, and relevant administrative actions are all prioritized and timetabled in the project report. This holistic set of documents, all derived from the urban design concepts of the masterplan, provides the tools municipalities need to manage development over time, keeping it on track and handling variations that may arise.

c. *"Deep pockets". Incorrect.* Clearly all plans need money to come to fruition, but the most successful masterplanning efforts are ones where actions and needs are carefully evaluated within a prioritized framework for maximum effectiveness. Most clients and municipalities have learned the dangers of simply throwing money at projects or urban areas. (However, the recent fiasco of the "Garden Bridge" across the River Thames in London, England, illustrates that even large sophisticated capital cities still don't quite understand! In this instance, £53.5 million, or \$71.33 million, was spent with no construction either started or completed. <https://www.theguardian.com/uk-news/2019/feb/13/garden-bridge-charity-spent-535m-with-no-construction-tfl-finds>)

d. *Sympathetic elected officials. Incorrect.* It is self-evident that the political makeup of city councils, town boards, and county commissions change over time, sometimes quite radically, so to tailor a masterplan to a particular group of elected officials is not a sustainable tactic in any time frame longer than a single election cycle. Masterplans are usually geared to a 10, 20, even a 30-year horizon, and as such must strike a balance between adherence to durable principles of urban design and adaptability to changing political and/or socio-economic factors. The key to the success of such masterplanning projects lies with the form-based code that is written subsequent to the creation of the plan. Essentially, the masterplan comprises one carefully crafted illustration of a desired future outcome, while the code captures and communicates in legal form the underlying urban design and placemaking principles necessary for successful urban places. In the most successful masterplanning projects, there is a symbiotic relationship between these two essential components.

6. The most important elements in form-based codes are:

a. *Building Design Standards. Incorrect.* These standards establish detailed provisions of building form and placement, infill conditions, the number and location of entrances on major façades that line of enclose urban space, and façade transparency, etc. These standards usually work in tandem with Frontage diagrams to create any particular set of urban conditions and enclosures established by the masterplan. All these controls take place within the hierarchy of the District Provisions. In turn, these spatial and functional provisions capture the hierarchy and character of each District within the overall order established by the Regulating Plan.

b. *District Provisions. Incorrect.* Through the use of annotated diagrams, District Provisions establish permitted building heights, setbacks, building dispositions on site, "build-to" lines, frontages to public space etc. The locations, size, and key relationships of each District are set out in the Regulating Plan, which functions as the master document in any form-based code. The controlling standards for each District are delineated in a 1-page graphic format; they establish specific dimensions for building placement and massing, and set out the range of permitted Frontage Conditions in each District. These Frontage Conditions regulate how the buildings face onto public space, and define the type and extent of private space between the building and street.

c. *Frontage diagrams. Incorrect.* Frontage Types are important elements of any form-based code, but as with all other code components, they are subservient to the controlling logic of the Regulating Plan that establishes all the areas of different urban character. Frontage Types determine the relationships of buildings to public space, that is, how buildings front onto the public space of a street, a square, a park, etc. This means there are conditions attached to the front façade of a building so that it plays its appropriate part in the creation of the particular "urban room" within the neighborhood or district. In this way, the code can make sure that the spatial integrity of these "external rooms" of streets or squares is not compromised. The particular frontage conditions required in each urban district are specified in the District Provisions, which are in turn delineated on the Regulating Plan, which functions as the master document of any code. There are often special conditions for active building frontages, especially Shopfront and Gallery/Arcade in key areas of pedestrian activity. These are generally required in areas covered by an active frontage overlay and noted as such on the Regulating Plan.

d. **Regulating Plans. Correct.** A Form-based Code includes a "Regulating Plan" as a more sophisticated successor to a typical traditional zoning map, plus a series of graphically focused regulations whose primary task is to *orchestrate the relationship of buildings to public space*. The Regulating Plan designates the different "Districts" of urban character in the masterplan, usually in accordance with the Transect methodology. The Transect is the defining armature that enables the design concepts of the masterplan to be turned into comprehensible regulations to guide the development of a project or a community over a period of many years. The Regulating Plan defines the general character of each district, and it maps these areas of different urban character. It thus establishes the zoning districts based on Transect categories. In this way the code establishes the "community character" of each urban area: it describes and makes manifest the urban "DNA" of the masterplan so that this guiding structure is clear, comprehensible, and enforceable. Detailed regulations within each transect-based zoning district are then organized as "District Provisions," "Frontage Conditions," and so forth.

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How could these courses be improved?

What other topics would be of interest?

Additional Comments:
