



JON LANG

SECOND EDITION

Urban Design

A TYPOLOGY OF PROCEDURES AND PRODUCTS

ROUTLEDGE

Urban Design

Urban Design: A Typology of Procedures and Products, 2nd Edition provides a comprehensive and accessible introduction to urban design, defining the field and addressing its controversies and goals.

Including over 50 updated international case studies, this new edition presents a three-dimensional model with which to categorize the processes and products involved: product type, paradigm type, and procedural type. The case studies not only illuminate the typology but provide information that designers can use as precedents in their own work. Uniquely, these case study projects are framed by the design paradigm employed, and categorized by procedural type instead of instrumental or land use function. These procedural types are Total Urban Design, All-of-a-piece Urban Design, Plug-in Urban Design, and Piece-by-piece Urban Design.

Written for both professionals and those encountering urban design in their day-to-day life, *Urban Design* is an essential introduction to the field and practice, considering the future direction of the field and what can be learned from the past.

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—*Ann Forsyth, Professor of Urban Planning, Harvard University, USA*

Urban Design

A Typology of Procedures
and Products

Illustrated with over 50 case studies

Jon Lang

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For Caroline Nute



A good city is not the result of individual, independent,
selfish decisions

Enrique Peñalosa Londoño, Mayor of Bogota
(1998–2001, 2016–19)



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Preface to the Second Edition

The motivation for writing the second edition of this book is essentially the same as for the first. It has been to clarify what is meant by urban design through the description and categorization of a number of projects presented in a series of case studies. Urban design as an activity goes back to antiquity, but the term *urban design* was only coined in the mid-1950s. Twenty years later it was still largely unused outside a small circle of people concerned with the four-dimensional development of precincts of cities. Now it is in common usage serving a multiplicity of purposes.

The reasons for urban design to have become a central professional design concern are twofold. The first is that cities and their suburbs are undergoing change at an unprecedented rate. The importance of urban design in providing opportunities for the development of, if not determining, the quality of life of people and of the planet is clear. The second is that mainstream architects and city planners have come to understand that it was foolhardy to distance themselves, intellectually and professionally, from urban design activities however politically charged and demanding they may be. The distancing was a response to the criticism that architectural ideologies and the resultant multi-building architectural schemes of the 1950s and 1960s had received. Those works were based on the paradigms of environmental quality that were inherited from the Modernists. Luckily, a relatively small group of, primarily, architects scattered around the world learnt from the criticism and took the emerging field of urban design forward to the point where it can be seriously discussed as a discipline. To bring this discipline to the forefront of discussion where it should be, the domain of urban design needs to be clear.

It is impossible to understand any field without some definition of its concerns. The writing of the first edition of this book was motivated by a need for professionals and students in the design fields: (1) to have a typology of procedures and products that makes some sense of what various people (and fields) are talking about when they refer to urban design; (2) to present them with a number of case studies that illustrate the range of interpretations of urban design; and (3) to provide an incipient set of such studies that can be used as evidence in arguments about how to proceed in specific circumstances. Urban designing, like any creative activity, is an argumentative process. As the United States Supreme Court decreed during the 1990s, arguments need to be based on evidence, not just opinions or claims of professional expertise and international reputation. Case studies constitute one source of evidence.

Cities continue to change; some are in decline but most are being developed and redeveloped. Many of the case studies presented in the first edition have undergone change since the book was published and are updated here. Other case studies in the original volume have been replaced by those that: (1) better illustrate a class of urban design projects, and/or (2) show the development of urban design paradigms better, and/or (3) simply are current projects that demonstrate the problems and issues being addressed today.

Acknowledgements

It must be clear from the most cursory glance at this book that it has drawn heavily on the work of others. Much of the material on the case studies has come from secondary sources. The sources of significance have been noted in the text. They have been supplemented by interviews of the people involved—designers, property developers, sponsoring agencies, residents, and users—and by personal observations conducted over an extensive period of time. Many people have thus been involved in completing this book. I thank them all for without their assistance my contemplating this work, let alone bringing it to fruition, would have been impossible.

Assembling the data and illustrations for a book of this type is costly. The research on which it is based has been supported financially over the years, directly or indirectly, whether they know it or not, by grants from Grosser Family Fund at the University of Pennsylvania, the American Institute of Indian Studies, the Australian Research Council, the Getty Foundation, and the Faculty of the Built Environment at the University of New South Wales.

The Text

Much of the text has been adapted and updated from the first edition. In addition, the case studies of Cours Honoré d'Estienne d'Orves in Marseille and Federation Square in Melbourne are précis versions of case studies published in *Urban Squares as Places, Links and Displays: Successes and Failures* by Nancy Marshall and the author and published by Routledge in 2016. I hope to be forgiven for the use of this previously published work, but the two cases illustrate urban design concerns very well.

I am particularly indebted to a number of people who read the first edition and/or the manuscript of this work at various stages in its development. They are Alexander Cuthbert, Arza Churchman, Scott Hawken, Bruce Judd, Caroline Nute, George Rolfe, Arlene Segal, the late Ahmad (Tata) Soemardi, Alix Verge, and James Weirick. The extremely helpful comments of anonymous reviewers of the proposal for this edition resulted in a reorientation of the argument presented. Special mention must be made of all the designers, critics, and authors with whom I have discussed the cases included in this book over the years and/or have reviewed individual case studies about which they are highly knowledgeable. The list of people includes Emilio Ambasz, Alan Balfour, Christopher Benninger, Vicente del Rio, Balkrishna Doshi, David Gordon, Sir Peter Hall, Arun Jain, Liu Thai Ker, Ngo Liem, Laurie Olin, Bernard Tschumi, the Urban Redevelopment Authority, Singapore, and Mike Watkins. They have helped me enrich the text and to get the story more or less straight. Caroline Nute has made a major

contribution to this work over the whole period of preparing this edition. She has helped make the argument flow and the illustrations illustrate.

Tracking down the sources of information is a demanding and time-consuming affair in which I have been assisted by colleagues and students at the University of Pennsylvania, the University of New South Wales, and CEPT University, the Centre for Environmental Planning and Technology in Ahmedabad. The list of individuals who have helped me is almost endless but special mention must be made of the many students who prepared individual reports in the case studies course offered by the Master in Urban Development and Design Program at the University of New South Wales. Directly and indirectly they have pointed me towards reliable sources of information on which I have built a number of the case studies included in this book.

The Illustrations

Many illustrations are included in this book. With a number of exceptions, the photographs, diagrams, and drawings are all my own work or I hold their copyright. The copyright has lapsed for some of the others while yet others are in the public domain. The source of each illustration for which I do not hold the copyright and/or which I have used due to the courtesy of others is noted with the item. Gabriel Arango Villegas, Mick Aylward, Ardon Bar Hama, Christopher Benninger, By & Havn, Duany Plater-Zyberk's offices in Miami and in Gaithersburg, Karl Fischer, Gensler, David Gordon, Grimshaw, Bu Jinbo, Bruce Judd, Kohn Pedersen Fox, the Urban Redevelopment Authority in Singapore, the office of Moshe Safdie, Skidmore Owings and Merrill in London, Pia Stenevall, Su-Jan Yeo, Bernard Tschumi, the Vastu Shilpa Foundation, and the Universität Bielefeld all provided me with images to illustrate the text.

Omar Sharif, Munir Vahanwati, Susanti Widiastuti, Wang Chao, Yin Yin, Zhi Xian, and, particularly, Thanong Pooneteerakul prepared drawings for me from a variety of sources. The photographs and drawings provided me have enriched my whole work so I owe a great debt to the generosity of many people.

It has been difficult to track down some of the sources of information included in this book. A number of images that form part of my collection were given to me by colleagues and students over the past 30 years. I no longer have a record of their provenance. A few of the drawings prepared for this text are based on more than one source and who holds the original copyright is unclear. Every effort has been made to contact and credit the copyright holders of all this material. In a number of cases it has been in vain. I thus apologize for any copyright infringements that have inadvertently occurred. If copyright proprietorship can be established for any of the work not specifically or erroneously attributed, please contact me at the Faculty of the Built Environment, University of New South Wales, Sydney, Australia 2052 or at jonl@unsw.edu.au

Jon Lang
Canberra
April, 2016



Prologue

The Argument

It is over 60 years since the term “urban design” was first used and four decades since it came into widespread usage. It is now difficult, if not impossible, to identify the actual coiner of the term. A conference on urban design was held at Harvard University in 1956 under the leadership of José Luis Sert, and the first education programs in urban design were initiated before the end of the decade. These programs had antecedents in the study of civic design at the École des Beaux-Arts in Paris and the University of Liverpool. Urban designing as an activity can, however, be traced back to the creation of the first human settlements.

There are many definitions of what urban designing involves. Going back 60 years to the very origins of the use of the term, Clarence Stein defined urban design as “the art of relating STRUCTURES to one another and to their NATURAL SETTING to serve CONTEMPORARY LIVING” (Stein, 1955, 1). This definition, however, includes not only what urban design is but what he believed it strives to achieve. Much confusion arises from this mixing of a definition with a value orientation. To some observers this confusion has some utility.

In his essay “Politics and the English Language” written in 1946, George Orwell observed that words such as *democracy*, *socialism*, *freedom*, *patriotic*, *realistic*, *justice* have several different meanings that “cannot be reconciled with each other.” In the case of *democracy*, he noted, “not only is there no agreed upon definition, but the attempt to make one is resisted from all sides.” The consequence is that “the defenders of every kind of régime claim it is a democracy” (Orwell 1961, 355). The art world also finds high utility in the ambiguity of words.

Words such as “*romantic*, *plastic*, *values*, *human*, *dead*, *sentimental*, *natural*, *vitality*,” Orwell claimed, are meaningless. Moreover, those who use them do not expect them to have a meaning. Consequently, critics can discuss a topic without knowing what each is talking about and can agree or, if they prefer, disagree with each other. Orwell could have made much the same remarks about the field of architecture. The terms *human scale*, *organic*, *vibrant*, *dynamic*, and *context* are so loosely used that they can be regarded as meaningless. It is advantageous in all three worlds—politics, art, and architecture—for the words to be ambiguous or multivalent and thus largely meaningless. It allows the discourse to flow freely, albeit without clarity.

Much the same comments can be made about the use of the rubric “urban design” today. The majority of the design professionals and others involved in what they call urban design strive to avoid having to define the term. The advantage is that each can claim to have expertise as an urban designer and, if Orwell is correct, talk about urban

FIGURE 0.1
Lister Square,
Quartermile,
Edinburgh.

design concerns with others without having a common understanding of the nature of the discussion. This confusion is both unnecessary and unhelpful if architects, landscape architects, and city planners are to make a positive contribution to the development of cities and other human settlements.

Two Definitions of Urban Design

The generally accepted meaning of urban design and the one that was originally intended is concisely stated in the *Urban Design Compendium*:

Urban design is about creating a vision for an area and the deploying of skills and resources to realise that vision.

Llewelyn-Davies, 2000, 12

Urban design is about designing a four-dimensional, socio-physical vision for a city or more likely a precinct within it or a number of blocks within a precinct and designing the incentives and controls to achieve that vision given the financial and political resources available. This meaning is the one assumed in this book. A number of scholars believe it to be too narrow.

Alexander Cuthbert, among others, considers urban design as the political economy of cities (Cuthbert 2011). All cities have an evolving design at any particular moment. It results from many unself-conscious and self-conscious acts made within a socio-political and economic environment that dictate how individuals and institutions make decisions. These decisions are made within the “capital web” of investment processes (Crane 1960) and the “invisible web” of laws (Lai 1988) that shape how the property market functions. Any city at a particular point in time is a collage of bits and pieces (Rowe and Koetter 1976).

Matthew Carmona captures the essence of the continuum of actors and forces that shape the city in Figure 0.2 (Carmona 2014). At any time, the spatial use of a city is defined as on the left in the diagram. This state is redeveloped piece-by-piece through a number of management processes. Individual urban design projects, the concern of this book, are initiated by individuals and institutions, public and private, as shown on the right of the diagram. These projects occur simultaneously and sequentially at varying scales from whole precincts to small gestures.

At the center of this process of the evolution of urban form are the people and groups who hold political and/or economic power. The power elite who make urban development decisions consist of the municipal authorities, wealthy property developers, politicians, and the taste makers among the cognoscenti. Members of this group, although they themselves may not be fully aware of it, assume the power to run the programs of the major political, financial, and communication institutions of a country (Mills 1956). Urban design as project design occurs within this context.

The term “place making” has been used by landscape architects since the 1970s but only came into common usage by other designers and property developers during the last decade. Originally it referred to the creation of streets, squares, and other open spaces in cities and their neighborhoods. Recently the term has been used as an alternative to urban design. It has warm connotations and is popular among property developers who find it, like the term “community,” useful in marketing their projects (Nichols 2016).

Urban design, while focusing on the creation or re-creation of the public realm of cities, their suburbs, and small towns remains a more inclusive term than place-making. It is also less value laden. The goals of any urban design project are multifaceted and

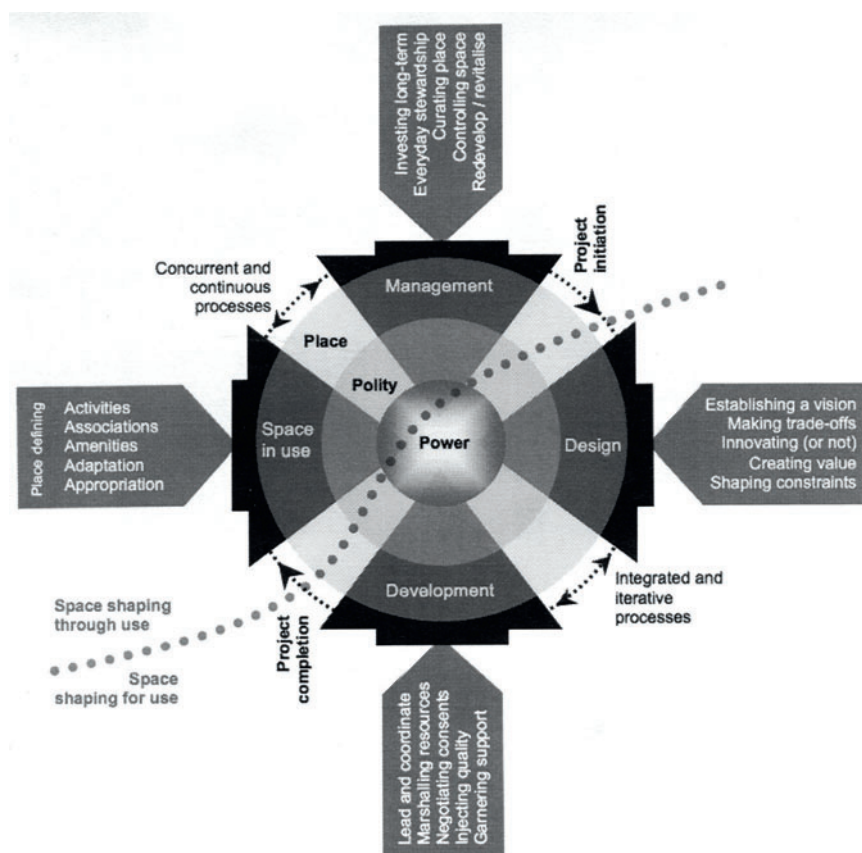


FIGURE 0.2 The urban design process: a place-shaping continuum.

Source: Carmona (2014), courtesy of Matthew Carmona

the focus of concern varies from project to project as will be clear in the case studies included in this book. Their goals and the degree of success in achieving them as seen by different people vary considerably. For these reasons the term urban design will be used throughout this book.

Urban design as project design involves the creation of coordinated and self-conscious projects and policies that shape new cities or reshape existing ones and/or their precincts. It is an argumentative, creative, and often stressful process that represents an act of will in creating changes to the world, physical and social. To be done well, urban design needs to have a sound knowledge base. That base can probably be best coordinated in the form of abstract descriptive and explanatory theory about the functioning of cities, but designers generally do not care to derive solutions from such a knowledge base. They rely heavily on adapting precedents to meet current needs (Sherwood 1978; Symes 1994). They prefer to work from known examples or generic solutions created within contemporary design paradigms. We can certainly learn much from the types of projects created in the past and from case studies of completed developments, provided we understand how they function on a multiplicity of dimensions.

A Typology of Urban Design Procedures and Products

It is possible to create a preliminary typology of urban design activities that provides some order to the domain of the field. The typology also enables architects, landscape

architects, and city planners to draw on the cumulative experience of the design fields in creating and implementing urban design schemes. The study and organization of urban design types through the description and analysis of a series of case studies enables professionals and lay people alike to understand the scope of the field.

The typology presented in Chapter 5 of this book is developed from: (1) theories in the disciplines of architecture, landscape architecture, and planning, and (2) an analysis of a series of projects. The typology is then used to categorize a number of case studies that illustrate specific points in specific cultural and political contexts. The categorization may not be as sharp as purists might like, but the borderlines among urban design processes are often blurred and so are difficult to draw with precision. If this is so, why should we bother? A typology enables design professionals to understand how different approaches to urban design have produced the results they have in different socio-political situations.

The accumulated history of many fields of human endeavor is presented in the form of case studies. The design fields use them extensively although what is meant by “case study” varies. If Orwell had been writing today not only could he have included urban design in his set of dubious terms, but also case studies. What we designers call case studies tend to be descriptive and explanatory statements of the geometric qualities of specific designs. The way the schemes were brought into existence (if they have been), the dynamics of the political forces that shaped them, their cost, and modes of financing, even the way they function, all fall outside the realm of concern of such studies. If done thoroughly however, case studies can provide empirical evidence of processes and methods used to achieve specific design ends.

Good case studies present comprehensive histories of projects from their inception to their conclusion. They distinguish between the pertinent and the peripheral, identify the problems being addressed in context, the constraints acting on the development of solutions, the final solution and how it evolved, and the strategies and implementation devices used to achieve an end product. They can also identify the successes and failures of design projects in place as seen by different stakeholders (Yin 2013).

Most case studies in urban design consider a designed product from the creator’s point of view. They tend to miss describing the dynamics of the design/decision-making process. They focus on the form, the architecture. The emphasis in developing case studies needs to be placed on drawing from the observations, secondary though they may be, of those outside the process looking critically in. The designers’ voices need to be heard but placed into context. A number of case studies of urban design work do this.

Martin Millspaugh (1964) wrote a critical study on Charles Center, Baltimore, Leonard Ruchelman (1977) studied the dynamic political and design processes that brought about the building of the prior World Trade Center in New York, Alan Balfour (1978) described the various machinations involved in building the Rockefeller Center, and David Gordon (1997) has written on the history of the ups and downs in the development of Battery Park City. There are also extensive statements on La Défense and on Canary Wharf, and already volumes on New York’s World Trade Center site development. Scattered references to many aspects of the urban development and design processes appear in the architectural and planning literature. This book draws, unashamedly, on existing commentaries. An attempt has, however, been made to triangulate information by studying diverse, often contradictory, data sources, conducting interviews, and by carrying out field observations.

The Case Studies

The case studies included here are examples of different approaches to, and concerns of, urban design. They are a selected sample of the thousands of projects around the world. In an era of global practices, it is important to understand the similarities and differences in the range of work being done in a variety of locations. The form that urban design products take is very much shaped by the aspirations of the social and political context in which they take place. It is fine to examine the form of products, but if one does not understand the values that brought them about, one learns little from them.

Many of what are called case studies deal with projects that have never been built but are architecturally interesting. These schemes sit in reports on the shelves, some very dusty, or computer files of redevelopment authorities and architectural offices around the world. Other schemes do deal with significant issues—sustainability, contextuality, and scale—but are only at the design stage. Many schemes receiving urban design awards are projects that exist only on paper. The projects included here have been completed or are well on their way to completion.

There is some emphasis in this book on schemes in the United States, the United Kingdom, and other countries whose legal systems have antecedents in English common law rather than the Napoleonic Code. The reason is that if one can understand urban design processes in the societies where individual rights, particularly individual property rights, are held to be paramount and where the role of precedents is important in establishing legal arguments, then one has the background for asking questions about the nature of urban design in the political and legal context of other societies. Some of the examples included here are, however, drawn from countries whose constitutions, legal systems, and the rights of individuals and communities within them are largely unknown to the author. Cases that fall into this category have been covered because they illustrate a specific procedure that is common to all urban design.

While the emphasis in their selection has been on those projects that have been implemented since the term urban design came into use in the 1950s, some early twentieth-century schemes have been included to demonstrate the continuum of thought and the development of urban design paradigms over the past 100 years. They are not necessarily the best known, the most successful, or the most notorious projects. They have been chosen to illuminate particular points in order to enhance our understanding of urban design. Some of the case studies are considered in greater details (and length) than the rest because they explain more about the dynamics of the processes of urban designing.

As urban designs often take a considerable period to evolve from initial idea to built form, a number of the recently completed cases covered have their origins in the 1960s, 1970s, and 1980s. Others, however, were initiated much more recently and have moved ahead rapidly. They were begun and completed during the late 1990s and early 2000s. Examples of work still on the “drawing board” are mentioned in passing to bring the discussion up to date. They are projects to watch as they evolve.

Developing the Argument

The book is divided into four parts. The first part, *The Nature of Urban Design and Urban Designing*, is concerned with defining the nature of urban design as a professional activity. The argument is that urban design deals with the qualities of the public realm of cities and other urban places. Understanding what actually constitutes the public realm and of the role of conflicting public and private interests in shaping it is fundamental to the story presented in this book.

It is important to think of similarities among urban design projects not as usual in terms of the nature of products—new towns, urban renewal, squares, etc.—or in terms of the design paradigms, but rather in terms of the ways of carrying out a project. In particular, a distinction is drawn between *total urban design*, where one organization is in control of a project from inception to completion and *all-of-a-piece urban design* work, which consists of a set of individual projects coordinated to create a unified but diverse whole. Total urban design is close to architecture while all-of-a-piece urban design is really the heart of the field of urban design. The third type of process, *plug-in urban design*, deals with the use of infrastructure elements to either bind precincts of cities together or to provide an armature for new buildings to be plugged into in order to achieve some overall goal. A fourth type, *piece-by-piece urban design*, is, in contrast, close to city planning because the design of individual buildings is based on general zoning and other controls and incentives, but these controls and incentives are created at a precinct level to achieve a design goal specific to that precinct. The typology developed in the first part of the book is based on these similarities and differences.

The second part of the book, *The Design Professions, Their Products, and Urban Design*, argues that the traditional design fields tend to look at urban design in terms of the product types particular to each. City, or town, planning tends to look at urban design as the distribution of land uses in relationship to transportation systems (although this view varies from country to country). In some countries urban design is city planning and to some people within all countries city planning is synonymous with urban design. Landscape architecture tends to look at urban design as the design of the horizontal spaces between buildings—streets, parks, and squares. Architecture, in contrast, tends to consider urban design to be the design of buildings in context and/or the design of building complexes. The argument in this book is that urban design while recognizing these views encompasses much more.

The heart of urban design work is described in the third part of the book titled, unimaginatively, *The Core of Urban Design Work: Procedures, Paradigms and Products*. The four chapters outlining the range of types act as a defense, or a demonstration, of the typology proposed here. The goal is not only to show how the typology frames the field of urban design but also to provide examples of urban design work that can be used as precedents (or should not be used as precedents) for specific urban design projects in the future. Some of the projects chosen have already served as precedents for later urban design schemes.

The *Epilogue* to the book simply addresses the question: How useful is the typology presented in this book? It is a reflection on the typology and on the case studies used to illustrate it and to, simultaneously, test it.

References

- Balfour, Alan (1978) *Rockefeller Center: Architecture as Theater*, New York: McGraw-Hill.
- Carmona, Matthew (2014) The place-making continuum: a theory of urban design process, *Journal of Urban Design* 19 (1), 2–36.
- Crane, David (1960) The city symbolic, *Journal of the American Institute of Planners* 26 (November), 280–92.
- Cuthbert, Alexander (2011) *Understanding Cities: Method in Urban Design*, Abingdon: Routledge.
- Gordon, David L. A. (1997) *Battery Park City: Politics and Planning on the New York Waterfront*, Amsterdam: Gordon & Breach.
- Lai, Richard Tseng-yu (1988) *Law in Urban Design and Planning: The Invisible Web*, New York: Van Nostrand Reinhold.
- Llewelyn-Davies (2000) *Urban Design Compendium*, London: English Partnership and Housing Cooperation.

- Mills, C. Wright (1956) *The Power Elite*, Oxford: Oxford University Press.
- Millsbaugh, Martin (1964) *Baltimore's Charles Center: A Case Study in Downtown Development*, Washington, DC: The Urban Land Institute.
- Nichols, Russell (2016) Placemaking, person, place or thing, *Comstock's* (March 4), www.comstocksmag.com/article/placemaking-person-place-or-thing accessed March 25, 2016.
- Orwell, George (1961) Politics and the English language, in *Collected Essays*, London: Secker and Warburg, 353–67.
- Rowe, Colin and Fred Koetter (1976) *Collage City*, Cambridge, MA: MIT Press.
- Ruchelman, Leonard (1977) *The World Trade Center: Politics and Policies of Skyscraper Development*, Syracuse, NY: Syracuse University Press.
- Sherwood, Roger (1978) *Modern Housing Prototypes*, Cambridge, MA: Harvard University Press.
- Stein, Clarence (1955) Notes on urban design, unpublished paper, University of Pennsylvania (mimeographed).
- Symes, Martin (1994) Typological thinking in architectural practice, in Karen A. Franck and Lynda H. Schneekloth (eds) *Ordering Space: Types in Architecture and Design*, New York: Van Nostrand Reinhold, 15–38.
- Yin, Robert K. (2013) *Case Study Research; Design and Methods* (Fifth edition), Los Angeles, CA: Sage.

Further Reading

- Bentley, Ian (1999) *Urban Transformations: Power, People and Urban Design*, London: Routledge.
- Francis, Mark (2001) A case study method for landscape architecture, *Landscape Journal* 20 (1), 15–28.
- Franck, Karen and Lynda H. Schneekloth (eds) (1994). *Ordering Space: Types in Architecture and Design*, New York: Van Nostrand Reinhold.
- Shane, David G. (2011) *Urban Design Since 1945*, Hoboken, NJ: John Wiley.



THE NATURE OF URBAN DESIGN AND URBAN DESIGNING

PART

1

FIGURE 1.0

Place Goujon,
Villeurbanne, Lyon.



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1

The Public Realm of Cities and Urban Design

Almost all definitions of urban design state that it is concerned with the public realm of cities and the elements that define it. One of the clearest definitions is:

Urban design should be taken to mean the relationship between different buildings; the relationship between buildings and streets, squares, parks and waterways and other spaces that make up the public domain . . . and the patterns of movement and activity that are thereby established.

DoE 1997, paragraph 14

Urban design consists of multi-building projects that vary in size from building complexes to precincts of cities to, occasionally, whole towns. Sometimes urban design includes the design of the buildings themselves, but often it impinges on the architecture of buildings only to the extent that their bulk, uses, particularly on the ground floor, and their façades define the public domain. But what then is the public domain?

What is considered private and what is considered public varies from culture to culture and within cultures over time (Madanipour 1996; Low and Smith 2006). For professionals involved in any of the environmental design fields, the public realm is comprised of two parts. The first deals with the components of the built, or artificial, environment in which behavior occurs, and the second specifies how communal decisions are made by governments and in the marketplace as defined by a country's laws.

The Public Realm of the Built Environment

The built public realm of a city is not necessarily conterminous with publicly owned property. In a society where property rights are sacrosanct and where individuals have the right and freedom to build what they desire, the public realm and public open space—spaces to which the public has right of entry—may refer to the same thing. In an editorial (December 27, 2002), the French newspaper, *Le Monde*, stated that anything visible in situ should be part of the public realm in terms of photography work.

The position taken here is that the public realm consists of those places to which everybody has access, although this access may be controlled at times. It consists of both outdoor and indoor spaces. The outdoor spaces include streets, squares, and parks while the indoor may include arcades, the halls of railway stations and public buildings, and other spaces to which the public has general access such as the interior of shopping malls. This statement is controversial.

The problem is that the nature of many “public” places is ambiguous because although the public has relative freedom of access to them, they are under private



(a)



(b)

FIGURE 1.1

The public realm of cities.
(a) Paternoster Square, London;
(b) Lexington Avenue at 35th Street, New York.

ownership. As the common domain of cities is increasingly privatized (or rather, private interests are providing public spaces), this ambiguity is likely to continue. Paternoster Square in London is privately owned while Lexington Avenue in New York is public property. Both are open for people to enter at all hours, but in the former case the owners can bar entry.

The Elements of the Built Public Realm

The elements that are deemed to constitute the public realm depend on a political stance and help to define that stance. A fruitful way of looking at the public realm is as a set of behavior settings—a term coined by ecological psychologists in the 1960s (Barker 1968) but one that is of increasing importance to designers (Lang and Moleski 2010; Lang and Marshall 2016).

A behavior setting consists of a standing (or recurring) activity pattern, a milieu (pattern of built form), and a time period. The milieu must possess the *affordances* for the behavior to occur, but because the affordances are there it does not mean that a specific behavior will take place in it. Affordance refers to the potential use of an object or environment by an individual or a species because of the object or environment's form, structural qualities, and the materials of which it is constructed, given the competence of that individual or species (Gibson 1979). The activities that actually occur depend on the predispositions, motivations, knowledge, and competencies of the people involved. The same pattern of built form may thus afford different patterns of behavior for different people at different times of the day, week, or year. Some of the patterns may occur

frequently while others may occur only on special occasions (for example, the celebration of national days).

The milieu consists of the floor of the ground, the surfaces of buildings, and other physical elements such as vegetation that both bound it and structure it. The variables are diverse and their attributes even more so. Of particular importance in urban design are such concerns as the sequential experiencing of the environment as one passes through it, the ground floor activities, or lack of them, that are housed in the adjacent buildings, and the attributes of the enclosing elements of spaces. In the urban scenes shown in Figures 1.1a and b, the physical public realm consists of the elements of the artificial environment around a person. In the former illustration, it consists of the surface of the square, the column, the façades of buildings, the ground floor uses, and the entrances on to the open spaces. On a typical street, the elements are essentially the same but take on a different form. If, however, urban design is concerned with the whole nature of human experience, it has to address the nature of the activities and the people who engage in the built environment as well. It is the set of behavior settings and how the milieu affords activities and, simultaneously, acts as an aesthetic display that is important.

As important as the layout of the public realm is the nature of the façades that frame these spaces. What are they made of and how are they fenestrated? What are the uses that face onto the open space? How frequent are entrances along the streets and squares? What is the nature of the pavement, or sidewalk? How tall are the buildings that enclose the spaces? How are the spaces illuminated? What are they like at night? What are the activity patterns that take place in the spaces? Who are the people engaging in them? These are the variables that distinguish one place from another—one city from another, and one of its precincts, or neighborhoods, from another.

The Functions of the Built Public Realm

Designers seldom consciously consider more than a limited set of the potential functions that the built environment can serve in their analyses and designs. The world is too complex for every function of built form to be considered simultaneously. The same patterns of the built form, either as surroundings or as objects, will, almost certainly, serve different functions for different people. One of the major functions of the components of the built environment is as a financial investment. All designers know this, but it is seldom clearly articulated as a function of buildings in architectural theory. Architectural critics seldom write about it.

Many urban development decisions are made on fiscal grounds. For their sponsors, such as banks and other lending institutions, and for their owners, buildings represent an investment on which they hope to make a profit. The public realm, in this case, is only important to property developers to the extent that it affects their investment decisions. They may, however, voluntarily or under public coercion use their own funds to improve those aspects of the public realm that their developments affect. Public agencies use tax income to improve the public realm created by buildings in order to increase the value of properties and thus the inflow of tax revenues. These revenues are then used to support other governmental activities. For architects, landscape architects, and artists their professional work is not only a means of income but also an advertisement of their tastes and skills that, they hope, will yield additional income in the future.

In addition to financial rewards, the milieu provides three basic amenities. It can afford activities, provide shelter, and act as a display that communicates meanings. The design concerns thus range from “(1) instrumental aspects which are the most manifest through (2) how activities are carried out, and (3) how they are associated into systems,

to (4) their meanings, their most latent aspect” (Rapoport 1997, 462). These functions can best be understood within a model of human needs and motivations.

Human Purposes and the Functions of the Built Public Realm

There are a number of models of human needs. None is perfect but that developed by Abraham Maslow is held in the highest esteem because it seems to explain the most (Maslow 1987). Maslow suggested that there is a hierarchy of human needs from the most basic (survival) to the most abstract (aesthetic). These needs trigger motivations to behave in one way or another and inspire people (and communities) to own valued objects and to be in settings that display specific characteristics. These motivations are culturally shaped and often define a culture.

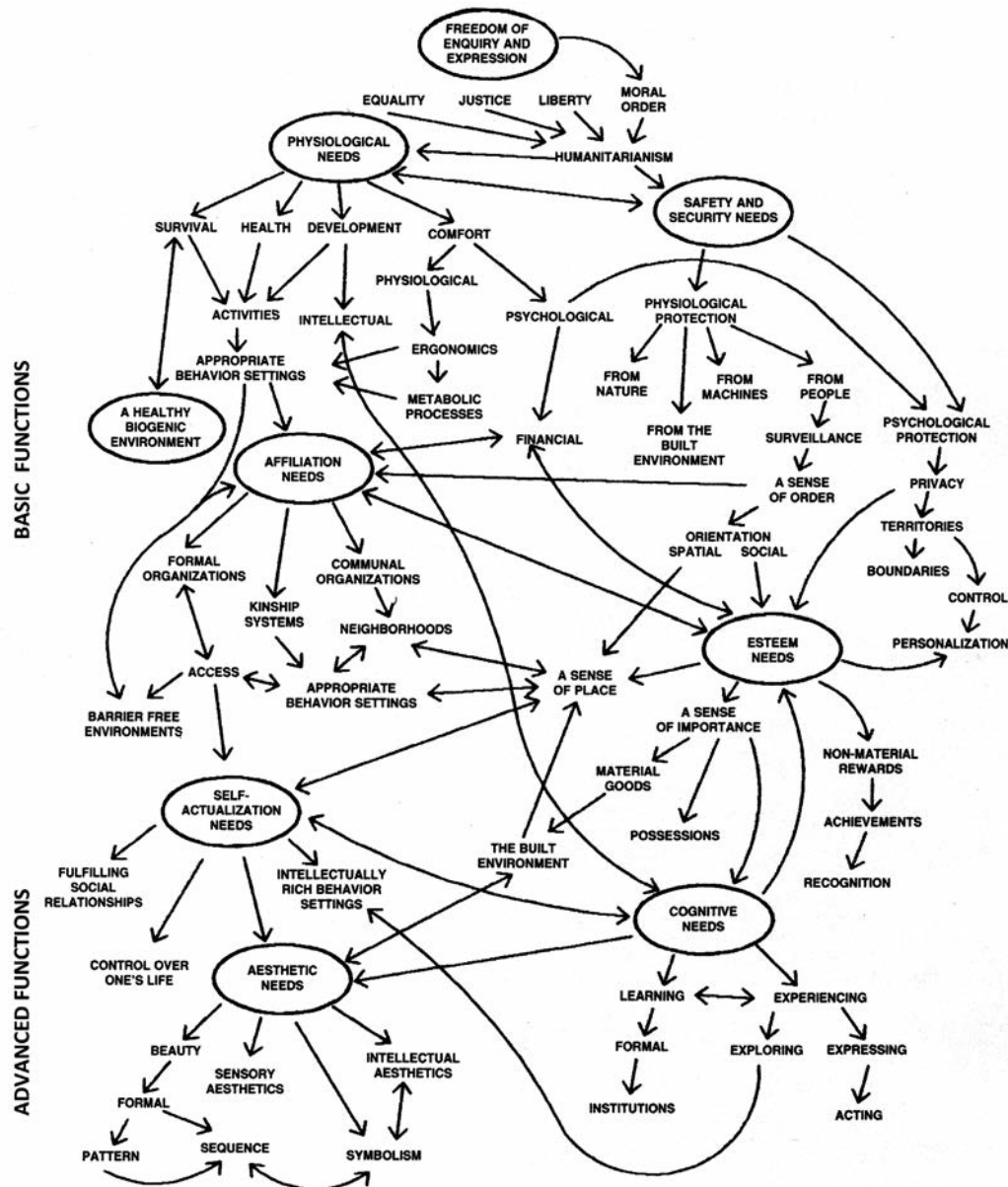
A model relating Maslow’s hierarchy of human needs to the functions of built form is presented in Figure 1.2. The model specifies that both needs and the mechanisms to fulfil them have to be perceived within a social order. In urban design, the polar extremes of social order are represented by autocratic and democratic societies. In the former, decisions are centralized in the hands of an individual or a coterie of people; in the latter, diverse people hold the power to make decisions and, ultimately they are subjected to the opinions of the population concerned.

The diagram shows that the patterns of built form required for achieving many needs are interrelated. The most basic needs, according to Maslow, are physiological. The fundamental need is for survival, which means that the environment has to afford us shelter. It must also protect us from life-threatening events. Some of these events, such as earthquakes, are natural phenomena, but we humans have created others. The perception of the potential occurrences of such events very much shapes what we demand of the public realm of cities. Hurricane Sandy has much affected thinking about the future in New York at both the political and individual level.

Once basic physiological needs are at least partially met, people are motivated to seek a sense of safety and security, physiologically and psychologically. The former motivation is highly related to the need for survival. How best to segregate pedestrian and moving vehicles is a recurrent issue in urban design. Dealing with crime and now terrorism has become a constraint on design. Providing for people’s psychological sense of security involves them having appropriate levels of privacy and their being in control of their social environments. People have an expectation of privacy for almost every activity pattern in which they engage as individuals or groups.

Figure 1.2 also shows that the socio-physical mechanisms used by people to attain a feeling of self-worth are closely related to the achievement of safety and security. The built environment is very much an indicator of people’s social status. One of the debates in current urban design is whether to create images that refer to specific locales or, alternatively, to the international, global images favored by the institutions of the global economy (compare, for instance, the design ideals of Battery Park City and Lujiazui as described in Chapter 10). Within some cultures, the layout of the built environment being in accordance with spiritual beliefs also meets these needs. What is important to recognize is that the built environment, the public as much as the private, is a symbol of who we are and/or whom we aspire to be.

The highest level in Maslow’s hierarchy of needs is that for self-actualization—to be what one can be. The design implications for this level of need are unclear. Cognitive and aesthetic needs, however, have more understandable implications. They are manifest throughout our lives. We need to be able to learn to survive as well as to make advances in life, so the ability to learn is present in achieving all our needs. Aesthetic needs not

**FIGURE 1.2**

Human needs and the functions of the built environment.

Source: Adapted from Lewis (1977), Lang (1994), and Lang and Moleski (2010) by the author

only have to do with the symbolic meanings of the environment as they refer to status and aspirations but also for some people, the cognoscenti, to the understanding of designers' logics. For instance, understanding the nature of deconstruction philosophy and seeing it applied in the creation of architectural and landscape forms (as in the design of the Parc de la Villette; see Chapter 7) is meaningful to informed observers. For most people, however, it is what they perceive before them and not the logic behind its creation that is important.

It is not only we humans that have needs but also the biological world of other animate species as well as, implicitly, the inanimate. Vegetation and animals serve many purposes in defining a healthy world, but machines often rule. Kyoto Izumi, the Canadian architect, distinguished between those settings where questions of meeting human motivations are paramount (anthropophilic environments) and those in which the needs of machines are the most important (anthropozemic environments) (Izumi 1968). Machines, it must be

remembered, serve human lives. This book is primarily concerned with anthropophilic environments in Izumi's terms.

The Cultural Dimension

"All people have the same needs", Le Corbusier observed (Le Corbusier 1960, 82). Assuming that the models for designing the built environment can be reduced to a single universal paradigm has proven to be a costly error in urban design. The ordering of needs, as Maslow perceived them, may be universal but the ways in which we strive to meet them show considerable variability. The activity patterns, from those of everyday life to the most obscure ceremonies, depend on our stage-in-life-cycle, our gender, and our social roles within specific cultural contexts. What we are accustomed to do and the environments we are accustomed to inhabit very much shape what we seek in the future. We are habituated to what we know. Departures from the norm, particularly major departures, can be highly stressful. Yet history is replete with examples of attempts, sometimes successful, often not, to change the face of society through radical architectural and urban interventions.

It is not only the activity patterns that vary from culture to culture, but also concepts of privacy and territoriality and attitudes towards public displays of status and wealth. Patterns of the environment, the materials they are made of, their coloring, and the whole manner in which they are illuminated carry meaning based on learnt associations and, possibly, some that are innate. In a number of societies, the coding of status through design is readily observable and in others it is subtle.

Most importantly for urban design is the attitude towards individualism and cooperation. Much-admired urban places such as the Piazza San Marco in Venice were built piece-by-piece over the centuries, with each new developer and architect being conscious of fitting in with what had already been built. They had what architectural historian Peter Kohane calls a "sense of decorum" (Kohane and Hill 2001). The same attitudes were a hallmark of traditional Islamic societies, where a host of conventions drawn from the Qur'an governed the design of individual components of the environment, ensuring an integrated whole. Such attitudes do persist but they are not a significant characteristic of the societies in which the case studies included in this book exist. Designers today compete for originality in their work. The reason urban design has emerged as a field of professional endeavor has been in order to seek cooperative procedures that will enhance the quality of specific areas of cities.

Cultures evolve; they are not static. In an era of globalization not only of the economy but also of information, various patterns of the public realm are perceived by officials as symbolically desirable because of what advertisers and the international media promote as desirable. The desire for universal images in the public realm of cities often means that the requirements of many local activity patterns are overridden in the search for international designs that enhance the self-image of those people with the power to influence decisions.

Multiplier and Side Effects: The Catalytic Function of Urban Design Projects

Multiplier effects generally refer to the positive impacts of particular investment decisions and patterns of the built environment on their surroundings and side effects to the negative. The urban design concern is often with the catalytic effect that projects have on future developments. Do they start trends in investment policies or not? Do they

establish new aesthetic attitudes? Many of the case studies presented in this book show how specific buildings (for example, the Guggenheim Museum in Bilbao) and landscapes (for example, High Line Park in New York and the Cheonggyecheon stream restoration in Seoul) have been successful in this sense (see Chapters 7 and 11, respectively).

A prime function of many urban designs is to enhance the quality of the urban environment by changing investment patterns. Unfortunately, some generic urban design concepts have been inappropriately applied and have had unanticipated negative impacts. As an example, many shopping streets that were converted to transit-only ways or pedestrian malls have now been “de-malled” to allow vehicular traffic to use them once again (see the case study of State Street in Chicago in Chapter 7). Of great public concern nowadays is the impact of the built environment on the natural environment.

Buildings and other hard surfaces change the patterns of winds and breezes flowing through the environment, the processes by which water tables are created, and heat is reflected and absorbed. They, in particular, create heat islands changing local climatic patterns. We are only just beginning to be conscious of these matters in urban design, and in most localities the political will to energetically deal with them has yet to emerge.

The Public Realm of Decision Making

The obligations that members of a society have toward each other establish the respective roles of governments and individuals in the conduct of their lives. The debate over what is private and what is public, and what the rights of individuals are versus the rights of the community (however one defines the term), is central to urban design. The debate is over the rights of individual property owners to build what they want versus the rights of their neighbors and the broader society to impose restrictions on those rights in the interests of a greater public good.

The twentieth century saw the flow and ebb of the welfare state. The late 1980s saw the beginning of the second capitalist revolution and a greater emphasis being placed on the individual and individual rights than earlier in the twentieth century. The belief is that personal freedom of action benefits everybody. In many ways the translation of this ideology into action has been highly successful, especially at the global marketplace level of finance. The processes of change have, however, been a painful experience for many people and laissez-faire approaches to urban development have had many opportunity costs associated with them.

To what extent should the public sector decision-makers intervene in the property development process? Should it be to control development to ensure public health and safety? Or should it be to promote public amenity? In other words: Should the public sector employ sticks or carrots or both in shaping the nature of human settlements and their components? How far can the public sector support, through legislation or subsidies, private profit-making investment actions that are perceived to be in the public interest? In the United States, court cases (for example, *Southwestern Illinois Development Authority versus National City Environmental*, 2002) have limited the power of the governments to use the power of eminent domain—their right to compulsorily purchase land to use for public purposes. They cannot acquire land to be sold on for private uses even though the public amenity of any ensuing development might have highly beneficial public consequences.

The case studies included in this book show a wide variety of roles of the government in property development. In some cases, the development has been part of a national policy to redistribute population. These policies have been implemented through the acquisition of land, the creation of a development program, the hiring of a designer or

set of designers, and the construction of a project. In other cases, the whole development process has been entirely privately funded and subject only to standard zoning controls. Many urban development projects have involved the public and private sectors of an economy in a partnership that has set the requirements for a scheme, organized the process of its development and its funding, and then implemented it (Fosler and Berger 1982; Frieden and Sagalyn 1991; Istrate and Puentes 2011).

Governments intervene in many ways in how cities are developed. Municipal authorities create land use policies, decide where and how the infrastructure necessary for development should be provided, and ensure that what is built is safe and healthy. They have also intervened in determining the aesthetic nature of the environment, from the ambient quality of streets and public spaces to the appearance of buildings. In using their power to do so, they have had, in the United States at least, to demonstrate that the goals they establish are in the public interest and that the mechanisms they use to achieve those goals are constitutional and based on evidence (see *Daubert versus Merrell Dow*, no. 92–102, 1993, and *Dolan versus the City of Taggart*, 1994; Stamps 1994). A United States Supreme Court decision in the case of *City of Los Angeles versus Alameda Book*, 2002 repeated what had been said earlier that a municipality “cannot get away with shoddy data or reasoning” (Stamps 1994, 145). These legal decisions are not universally applicable, but the implied suggestion is that designers must seek evidence before predicting what the outcomes of design decisions will be. Knowing the outcomes of previous urban design efforts is one source of supportive evidence. Well-researched case studies show what the outcomes of specific design decisions are.

The Quasi-public Role of Property Developers

Entrepreneurs creating large-scale property developments play a quasi-public role in the development of cities. This observation is particularly true of the early twenty-first century. Public institutions now rely heavily on private sector investments in developing the public realm of cities. It is frequently the private rather than the public sector that sees opportunities for urban improvements in terms of new buildings, building complexes, and open spaces. They, like the institutions who sponsor their works, want what they do to be a financial success. To be a financial success there must be some public demand for the products they are creating. At the same time, property developers often have to be cajoled with financial incentives into undertaking developments that are perceived to be in the public interest but are not as profitable as other types of development (see the case study of New York’s Theater District in Chapter 12).

Property developers’ attitudes vary considerably. Some are vitally interested in the common good; others are not. They all have to make a profit on their investments. They are not necessarily opposed to governmental controls over their work provided the controls make sense and do not inhibit their work arbitrarily. Developers have a history of supporting design guidelines if the improvements resulting from the guidelines ensure that their own investments are successful. Most developers, nevertheless, like architects, have powerful egos—they want to do things their own way, the way they know how.

The Objectives of Urban Design

Visions differ on what concerns need to be addressed when designing/creating future urban places. Each urban design paradigm has a set of objectives embedded in it. Sometimes these objectives are stated in a manifesto or specific program. Often, however, they are implicit in the generic designs used as the basis for making specific designs.

A number of broad objectives can, nevertheless, be identified in the writings on urban design. The built environment should be efficient in the way it handles the variables described in Figure 1.2. It should be designed to encourage economic growth. It should provide a sense of historic continuity to enhance people's self-image. It should help sustain the moral and social order of a society and should be designed with a sense of justice for all to the extent that this order is a physical design concern (Harvey 2003).

The position taken in this book is that the broad goal of urban design is to provide accessible opportunities, behavioral and aesthetic, for all the citizens of and visitors to a city or one of its precincts. What, however, should the opportunities be and how does one deal with accessibility? Who decides? The marketplace? The public policy question is: How far should the public sector intervene in the marketplace in providing opportunities for what range of people? And then: How accessible should the opportunities be? For whom?

Secondarily, if one accepts Maslow's model, there is a need for people to feel comfortable in engaging in the activities they desire and that a society regards as acceptable. Comfort has both physiological and psychological dimensions. The concern is with the nature of the microclimate and with the provision of feelings of safety and security as people go about their lives. Safety and security requirements are related to feelings of control over one's privacy levels and over the behavior of others towards one. How much privacy are we prepared to give up in order to feel safe because we are under public surveillance? Safety concerns are also related to the segregation of pedestrians from vehicular traffic flows and the construction quality of the environment around us.

Another design concern is to enhance the ambience of links—streets and arcades and sidewalks—and places—squares and parks. Ambience is related to the aesthetic qualities of a place, its layout and illumination, the activities that are taking place there, and to the people engaged in them.

The artificial world does not exist in a vacuum. It exists in terrestrial niches formed by the climate, geology, and flora and fauna of a place. One of the objectives of urban design is certainly to ensure that this niche is not destroyed. The concern is, or should be, with improving its quality so that it functions better as a self-sustaining system that, in return, enriches human experiences.

The Issues

The issues that arise in the creation of any urban design project are embedded in a series of questions: What makes a good city? Who should decide? Once decisions are made, who should be responsible for implementing them? Is a good city the product of a whole set of individual decisions largely uncoordinated, or does one attempt to coordinate them? What are the opportunity costs for working one way or another? Implicit in each case study included in this book are specific answers to these questions.

Secondarily: How far should the controlling authority (public or private) go in defining the specification of ends and means? What are the limits, if any, to the rights of individual developers and their architects to build what they want, where they want, and how they want? What is in the public interest? Indeed, what is the public interest? It has been notoriously difficult to define. Presumably, the goal is to design for the welfare of all concerned but, at best, any design product should represent the interests of particular parties without harming the interests of others.

Thirdly (although in an age of fiscal pragmatism one might argue that it is the primary issue), is the concern for return on capital invested. In capitalist societies, property developers (private or public) take the lead or have to be coerced into building the city

piece-by-piece. One of the objectives of urban design is indeed to ensure fiscal responsibility. Another is to develop carrots and sticks through incentives and penalties for developing cities in particular ways in order to create specific facilities in specific locations.

Fourthly: How is development to be phased? Where does one begin? How disrupted will be the lives of those who inhabit the first phase as the project moves into another phase of construction? Whose responsibility is it to ensure that those people's lives are disturbed as little as possible? This book shows through case studies how architects, landscape architects, and city planners have addressed these issues in varying urban design projects in differing socio-political contexts.

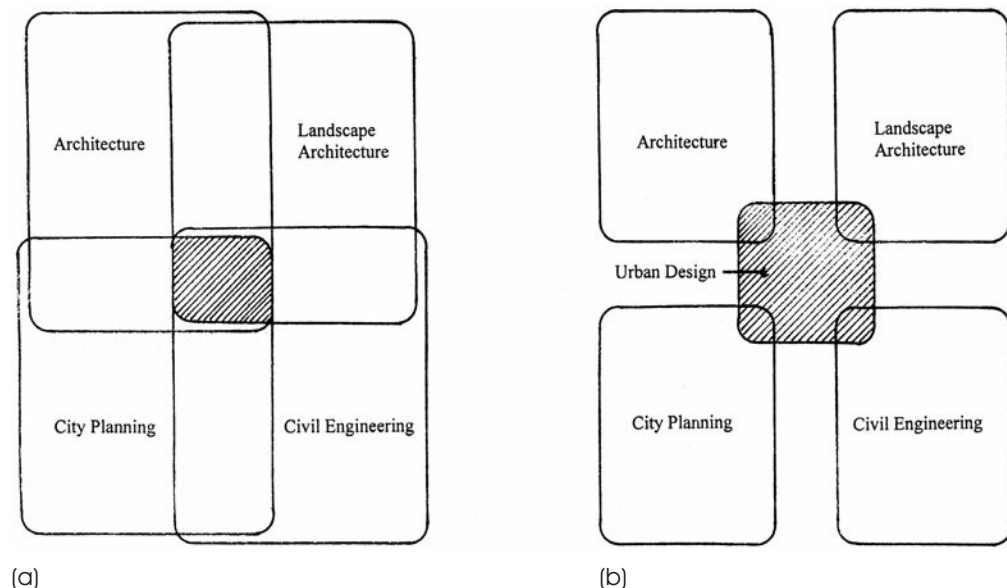
Commentary

Urban design involves *designing*. Urban designing requires collaborative work dealing with planning, landscape architecture, and architectural concerns, as well as that of various types of engineering in a politically volatile context that makes decision making difficult and, often, highly stressful.

Many observers (for example, Schurch 1999) see urban design existing at the intersect of the domain of the three main professions concerned with the layout of the environment—architecture, landscape architecture, and city planning—to which I have added civil engineering as shown in Figure 1.3a. This position is accepted here. All the design professions, however, claim urban design as their own. Urban design while overlapping these fields has developed its own area of expertise. Its relationship to the traditional design fields now looks more like that in Figure 1.3b.

Urban design, as a field of professional endeavor, draws on the expertise of the three traditional design fields but it differs from them in that it has become more development oriented, more socially oriented, and more conscious of the political economy in which it is embedded, as well as of the volatile nature of decision making in the political arena. Professionals with a committed interest in urban design are, because no one else is doing it, slowly developing their own empirical knowledge base, their own organizations, and their own journals. This book focuses on their professional efforts and has sought to outline, for the moment at least, the scope of concern of urban design as one vehicle for improving city life as it evolves.

FIGURE 1.3
The relationship of urban design to the traditional design fields. (a) The traditional view of urban design; (b) urban design today?



References

- Barker, Roger (1968) *Ecological Psychology: Concepts and Methods for Studying Human Behavior*, Stanford: University of Stanford Press.
- DoE [Department of the Environment] (1997) *General Policy and Principles*, London: The authors.
- Fosler, R. Scott and Renee A. Berger (eds) (1982) *Public-Private Partnerships in American Cities: Seven Case Studies*, Lexington: Lexington Books.
- Frieden, Bernard J. and Lynne B. Sagalyn (1991) *Downtown Inc.: How America Rebuilds Cities*, Cambridge, MA: MIT Press.
- Gibson, James J. (1979) *The Ecological Approach to Visual Perception*, Boston: Houghton Mifflin.
- Harvey, David (2003) Social justice, postmodernism and the city, in Alexander Cuthbert (ed.) *Critical Readings on Urban Design*, Oxford: Blackwell, 59–63.
- Istrate, Emilia and Robert Puentes (2011) Moving forward on public private partnerships: US and international experiences with PPP units, *Brookings-Rockefeller Project on State and Metropolitan Innovation* (December), www.brookings.edu/~media/research/files/papers/2011/12/08%20transportation%20istrate%20puentes/1208_transportation_istrate_puentes.pdf, accessed March 2, 2015.
- Izumi, Kiyo (1968) Some psycho-social considerations of environmental design, mimeographed.
- Kohane, Peter and Michael Hill (2001) The eclipse of the commonplace idea: decorum in architectural theory, *Architectural Research Quarterly* 5 (10), 63–77.
- Lang, Jon (1994) *Urban Design: The American Experience*, New York: Van Nostrand Reinhold.
- Lang, Jon and Nancy Marshall (2016) Public, quasi-public and semi-public squares, in *Urban Squares as Places, Links and Displays: Successes and Failures*, New York: Routledge, 51–60.
- Lang, Jon and Walter Moleski (2010) Functionalism updated, in *Functionalism Revisited: Architectural Theory and Practice and the Behavioral Sciences*, Aldershot: Ashgate, 63–72.
- Le Corbusier (1960) *My Work*, translated from the French by James Palmer, London: Architectural Press.
- Lewis, Nigel C. (1977) A procedural framework attempting to express the relationship of human factors to the physical design process, unpublished student paper, Urban Design Program, University of Pennsylvania, Philadelphia.
- Low, Setha and Neil Smith (eds) (2006) *The Politics of Public Space*, New York: Routledge.
- Madanipour, Ali (1996) *Design of Urban Space: An Inquiry into a Socio-spatial Process*, Chichester: John Wiley.
- Maslow, Abraham (1987) *Motivation and Personality* (3rd edn) revised by Robert Fraeger, James Fadiman, Cynthia McReynolds, and Ruth Cox, New York: Harper & Row.
- Rapoport, Amos (1997) Social organization and the built environment, in Tim Ingold (ed.) *Companion Encyclopaedia of Anthropology: Humanity, Culture and Social Life*, Abingdon: Routledge, 460–502.
- Schurch, Thomas W. (1999) Reconsidering urban design: thoughts about its definition and status as a field or profession, *Journal of Urban Design* 4 (1), 5–28.
- Stamps, Arthur E. (1994) Validating contextual urban design principles, in S. J. Neary, M. S. Symes, and F. E. Brown (eds) *The Urban Experience: A People-Environment Perspective*, London: E & F N Spon, 141–53.

Further Reading

- Campbell, Heather and Robert Mitchell (2002) Utilitarianism's bad breath? A re-evaluation of the public interest justification for planning, *Planning Theory* 1 (2), 163–87.
- Carmona, Matthew, Tim Heath, Taner Oc, and Steve Tiesdell (2003) *Public Places, Urban Spaces: The Dimensions of Urban Design*, Oxford: Architectural Press.
- Frieden, Bernard J. (1990) Public-private development: dealing making in the public interest, *Center* 6, 26–35.
- Held, Virginia (1970) *The Public Interest and Individual Interests*, New York: Basic Books.

2

Urban Design Product Types

Design professionals usually think of urban design in terms of product types and much of the literature defining the field focuses on them. Projects have been categorized in many ways. It seems impossible to devise a fine-toothed categorization system that is exhaustive. The categorization used here is simple. Urban design product types can be: (1) new towns, (2) urban precincts of which there are many types, and (3) elements of infrastructure, and, possibly (4) individual items within the city that add luster to it: clock towers, monuments, works of art, and curiosity objects. The focus of attention in this book is on the first three types.

New Towns

A “new town” is a settlement that is self-consciously built from scratch to provide all the amenities of life, including employment opportunities. Many so-called new towns only partially fulfill this definition. There is no census of new towns built since the Second World War but the number is substantial. They range in size and importance from small company towns to the capitals of countries.

A number of countries in Europe and Asia have had the creation of new towns as part of their political agendas. Between 1950 and 1990, the Soviet Union employed new settlements to extend central control over its constituent republics. The reasons elsewhere



FIGURE 2.1
New town design: a
proposal for the
new capital of
Egypt, 2014.

Source: © Skidmore
Owings and Merrill LLP

have been economic or social. During the latter half of the twentieth century, over twenty new towns were built in the United Kingdom in order to keep London's population down to a manageable size and to encourage industry to locate outside the southeast corner of the country. They continue to be built.

In North America private companies have built the genuine new towns and large suburbs. Columbia in Maryland (see Chapter 6) and Reston, Virginia are probably the best-known examples. There are few such new towns in the United States because the land acquisition and infrastructure costs are high and the developing consortium must be capable of considerable investment prior to any return on capital being received. New towns do, however, continue to be built in the country. Celebration in Florida, which was begun in the 1990s, is an example (see Chapter 10).

New towns are being built around the world. Many more are proposed. A number of countries seek new capitals. Egypt is an example. Many new towns result from decentralization policies in the face of a country's increase in population. Modi'in is one now under construction in Israel (see Chapter 10). Many new towns are being built in Asia, particularly in China. Songshan Lake in southern China is an unusual example for that country (Figure 3.1b). It has antecedents in the Garden City idea.

Company towns generally have a mining or other resource base, but a number have been manufacturing or military settlements. Some of the non-military examples are the products of government policy, particularly in socialist countries, but others have been built by private industrial organizations to suit their own purposes. The towns vary considerably in size and longevity. They have been as small as five hundred people while others have over a hundred thousand inhabitants. The GSFC Township in India is an example of a small, industry-based new town (see Chapter 9). It is, perhaps, really a suburb of Vadodara.

Precincts

Most urban design deals not with new towns but with precincts of cities and new, predominantly residential, suburbs. They may be designed on green-field sites or be the subject of urban renewal. A number of new precincts of cities have been called new towns. The use of this term can be a little misleading. The new towns of the city-state of Singapore, although they contain many of the amenities of a city and are also employment centers, have little industry and are really new mixed-use precincts of the city-state.

During the 1970s the term "new-town-in-town" was used to describe large mixed-use urban design projects on cleared brown-field sites. In New York City, for instance, Roosevelt Island (see Figure 2.2a) and Battery Park City (see Chapter 9) were referred to as such. Roosevelt Island, formerly Welfare Island, the home to a number of aging hospitals and other obsolete institutions, has been transformed into a residential precinct and, increasingly, one containing institutional buildings. Surrounded by water, it is a clearly defined new district. So is Battery Park City with the Hudson on the west and the West Side Highway on the east.

Much urban design in cities consists of relatively small enclaves of like-use buildings. The CBD for Beijing is a commercial precinct (see Figure 2.2b). Lincoln Center in New York is an example of a cultural complex. Whether such facilities should indeed be agglomerated into a single precinct or distributed throughout the city is much debated. This question was also raised about the decision to assemble so many of the facilities that were required for the highly successful 2000 Olympic Games in Sydney into a single area. Much of the open space necessary to accommodate the crowds attending the games is now being filled in with housing and commercial developments that will transform



(a)



(b)

FIGURE 2.2 Precinct design. (a) Roosevelt Island, New York; (b) a 2004 model of the proposed Beijing CBD.

the nature of the precinct. Perhaps the most common type of precinct design throughout the world is for housing.

In cities throughout the world the major expansion has taken place at the periphery. Vast tracts of housing and accompanying commercial and retail facilities have been built in the suburbs. In countries such as India, the major developers of such urban designs have been the Public Works Departments of the Central and State governments. In the United States, it has been the private developer who has been responsible for almost all the development although much has been made possible by the federally funded highway system and other government subsidies.



(a)



(b)

FIGURE 2.3 An obsolete shipyard remade as a mixed-use, predominantly residential precinct. (a) Mission Bay shipyards; (b) Mission Bay urban renewal proposal (now implemented).

Source: Courtesy of the Department of City Planning, City of San Francisco

Campuses are a special type of precinct—a unified set of buildings generally located in a park-like environment. The university campus is typical. While some universities merge into the surrounding city many others, especially recent ones, are separate entities. The same urban design idea appears in the layout of office and business parks. The Denver Technological Center on the periphery of that city clearly falls into this category and is, in many ways, a competitor of the city's traditional downtown (see Chapter 10).

Urban Renewal

Urban renewal, as its name suggests, refers to the process of rebuilding areas of cities that have become obsolete or are in a state of considerable decay and/or abandoned. Unless cities become economically stagnant urban renewal projects will continue to be undertaken. Sometimes, urban renewal has involved slum clearance and the total rebuilding of environments. In Europe after the devastation of the Second World War vast segments of cities were rebuilt sometimes replicating the past (for example, in Warsaw), but more frequently they were modernized. In European and the North American cities, major slum clearance and new housing estates projects were built between 1950 and 1980. They have had mixed results because the highly physically deteriorated world they replaced was often socially viable. The new products were unable to provide an environment for the re-creation of that social stability. Many of them have been demolished and rebuilt. Now urban renewal often involves selective demolition and the integration of the old and the new in their design (for example, Quartermile in Edinburgh (see Chapter 9). Much urban renewal occurs, however, building by building in a laissez-faire manner without any overall cooperative intention.

A new type of urban renewal project began to appear during the last two decades of the twentieth century. As the demographic characteristics of suburban areas changed, so the demand for new facilities in their shopping centers occurred. New suburban downtowns providing the services of the traditional cores of cities have been built (Garreau 1991). Generally, two- or three-story high precincts have been replaced by high-rise commercial and residential developments. This process has often taken place willy-nilly but there are many examples where the redevelopment has involved a concerted urban design effort (for example, Glendale, California and Bellevue, Washington (Lang 2005, 276–82, 309–14)). The Rouse Hill Town Centre, built on a green-field site outside Sydney may set a precedent as a new type of suburban center (see Chapter 10).

Infrastructure Design

The nature of a city's infrastructure is what visually distinguishes it from others as much as the nature of its buildings and people. The streets and other transport facilities, the schools and public institutions such as libraries and museums, are all part of the infrastructure of cities. The public concern in designing infrastructure components is not only with the services they supply but also with their catalytic effect.

Many of the issues involved in the design of infrastructure elements fall outside the scope of urban design *per se*, falling into one or other of the realms of city planning and civil engineering. The consequences of such decisions for the design of precincts of cities can, however, be substantial. For instance, highway development made edge cities possible and the building of rail links and new train stations has spurred major developments around them in many cities. In London the Jubilee Line of the underground system has certainly done so. Sometimes land development and station location have followed a coordinated plan before construction begins, as in Singapore (see Chapter 11 for case studies of the Jubilee Line and Singapore's MRT system).

One concern in urban design has been with the separation of pedestrian and vehicular traffic in order to provide a more congenial and safe environment for people. The design of sidewalks is important in most urban design schemes. Another form of separation is to keep vehicular traffic at ground level with pedestrian plazas and walkways above them (for example, at La Défense, Paris, see Chapter 10), the new Naples Central Business District, and the University of Illinois Circle Campus, Chicago while yet another form



(a)



(b)



(c)

FIGURE 2.4 Urban objects. (a) Washington Memorial Arch, New York; (b) Youngster, George Street, Sydney; (c) Cloud Gate, Chicago.

is to provide pedestrian bridges linking interior, quasi-public spaces of buildings in an extended skyway pedestrian system (for example, Minneapolis, Minnesota; see Chapter 11). Many cities have underground networks of passages enabling pedestrians to cross from block to block without interference. They are important parts of urban life.

Miscellaneous: Individual Objects in Urban Space

There are two types of objects apart from buildings that get awards for urban design. The first category is comprised of works of art, usually sculptures but also murals that are often introduced to give some focus and interest to a dull space or to enliven a blank wall, or as an element of civic or corporate boosterism. The second category is primarily comprised of individual elements of the city, such as monuments, fountains, clock towers, and street furniture. The design of such objects falls outside the scope of this book, although when included as part of a larger scheme they are discussed in passing.

Monuments are of particular importance. They have a special significance as preservers of collective memories and as symbols of the identity and the self-worth of nations or smaller groups of people (Johnson 1995). They can sometimes be the foci of the collective life of a people. Clock towers, obelisks, and fountains are used as visual focal points in many urban design schemes, particularly those imbued with City Beautiful, or Baroque, overtones. They act as landmarks, strengthen nodes of urban life, and reinforce the self-identity of people (Lang and Moleski 2010; Vanden-Eynden 2014) (Figure 2.4).

Commentary

The change in nature of urban design products since the beginning of the 1990s is due not only to changes in technology but also to the change in capital markets. Finances for investments are being moved around internationally. Much of the development in the United States is financed by British and Canadian sources. Asian institutions have invested heavily in Australia, Canada, and the United States. The Chinese, in particular, are investing heavily in other Asian nations, Latin America and Africa as well as Europe. Reliance on local sources still exists but financiers look for investment opportunities internationally and architects work internationally. Few architects and investment sources have shown much interest in local sensitivities. This attitude explains why so many projects are now financially pragmatic designs that are architecturally global in nature (for example, Lujiazui, Shanghai; see Chapter 10).

The range of mechanisms available to public officials and urban designers aiming to shape the behavior settings and aesthetic qualities of specific schemes are generally universal but subject to local legal codes and precedents. The willingness of public agencies charged with protecting the public interest varies from place to place, as does the level of corruption and the willingness of government bodies and the courts to enforce laws and design guidelines. The case studies presented in this book range from those in totalitarian societies to laissez-faire ones. Each needs to be seen within its political and social context.

References

- Garreau, Joel (1991) *Edge City: Life on the New Frontier*, New York: John Wiley.
- Johnson, Nuala (1995) Cast in stone: monuments, geography and nationalism, *Environment and Planning D. Society and Space* 13, 51–65, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.457.1212&rep=rep1&type=pdf>, accessed November 20, 2015.

- Lang, Jon (2005) *Urban Design: A Typology of Procedures and Products Illustrated with over 50 Case Studies*, Oxford: Architectural Press.
- Lang, Jon and Walter Moleski (2010) Identity and community, in *Functionalism Revisited: Architecture and the Behavioral Sciences*, Farnham: Ashgate, 170–204.
- Vanden-Eynden, David (2014) Signgeist 7: signature urban objects, *Metropolis* (March 31), www.metropolismag.com/Point-of-View/March-2014/Signature-Urban-Objects-The-Un-Signs/, accessed April 1, 2015.

Further Reading

- Bentley, Ian (1999) *Urban Transformations: Power, People and Urban Design*, London: Routledge.
- Bullivant, Lucy (2012) *Masterplanning Futures*, Abingdon: Routledge.
- Frieden, Bernard J. and Lynne B. Sagalyn (1991) *Downtown Inc: How America Rebuilds Cities*, Cambridge, MA: MIT.
- Robinette, Margaret A. (1976) *Outdoor Sculpture: Object and Environment*, New York: Whitney Library of Design.
- Washburn, Alexandros (2013) *The Nature of Urban Design: A New York Perspective on Resilience*, Washington, DC: Island.

3

Urban Design Paradigms

A popular way in which the design fields categorize projects is by their form, their patterns, and the ideology that produced them. The many visions of what constitutes a good city can be grouped into a set of paradigms representing contemporary models of good practice. In urban design the twentieth century began with the City Beautiful, a Baroque approach to the geometry of cities, as a dominant paradigm (Wilson 1989). Contemporaneously the Empiricist (the realist or regressive utopians) and Rationalist (the idealist or progressive utopians) branches of the modern movement were developing. The Garden City, as a paradigm, exemplifies the former while Tony Garnier's *Cité Industrielle* (ca 1910) and the generic urban design models of Le Corbusier exemplify the latter (Lang and Moleski 2010). Today we have the urban design of commercial pragmatism that has been described as a Hyper-Modernity (Fracker 2007) and, in contrast, the Neo-traditional, or New Urbanism (Tallen 2013), and explorations with radical geometries.

The Empiricists tend to rely on observations of what works and does not work as the basis for design thinking. There are many pasts that one can look back at so there are divergent lines of thinking about the future among Empiricists. The small country town was one past; the medieval city was another. Similarly, there are divergent lines of thinking about the future among Rationalists. Rationalists break away from past ideas (or, at least they claim to do so). Their models are based on various assumptions about imagined ways of how people should live.

All designers appear to begin a project with some vague image of a possible solution in mind. This design gets shaped though a series of approximations as the program develops and designing progresses and new information becomes available. Most, if not all, of the case studies included in this book have precedents or a mixture of precedents. Designers rely heavily on precedents and the paradigms on which they are based.

The City Beautiful

Despite its Baroque antecedents, the City Beautiful Movement can be said to have begun with the design of Chicago's World's Fair of 1893 and Daniel Burnham and Edward H. Bennett's design for the city (1906). During the twentieth century two memorable capital cities were City Beautiful designs in spirit if not fully in execution. Canberra in Australia (1913) and a year later New Delhi in India are well known. In addition, many, if fragmentary, City Beautiful civic center complexes and university campuses (for an example, see Figure 3.1a) were designed. They were schemes with a clear geometry: symmetrical organization with axes meeting at significant points. On a small scale were schemes such as the Postmodern architectural design of the Mississauga (Ontario, Canada) city hall precinct with its bold symmetrical layout. The key axis of the Canary

Wharf design described in Chapter 10 is a current example. For many larger-scale proposals, Haussmann's Paris set a precedent that others have followed.

The City Beautiful ideals remain a way of creating a civic grandeur that instills pride in the minds of a city's citizenry as well as creating more salubrious environments. Dictators know the veracity of this statement full well. The Avenue of the Victory of Socialism in Nicolae Ceausescu's Bucharest is the case study presented in this book (see Chapter 9), but Pyongyang developed under Kim Il-Sung may be a better and more bombastic example. The two dictators were able to demolish large segments of their cities in a manner that was not achievable in North American cities such as Chicago, San Francisco, and Philadelphia that had City Beautiful designs prepared for them. France achieved more in its colonies.

The Modern Movements

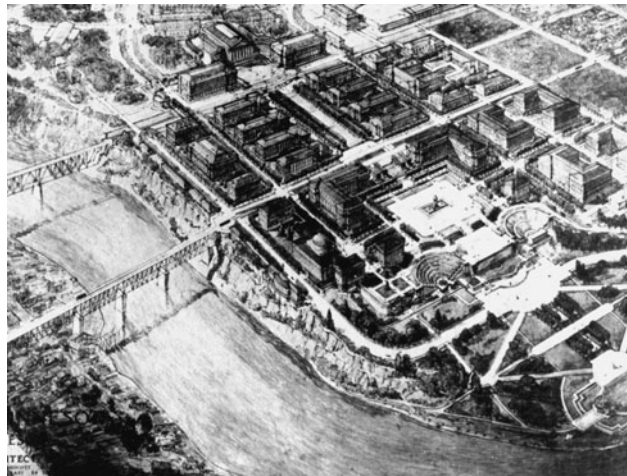
The Modern Movements in architecture and urban design of the early twentieth century and the way they evolved during the century still provide the intellectual basis for most urban design thought at the beginning of the twenty-first. The Modernists were imbued with the spirit of the Enlightenment; cities could be made to be better places for their inhabitants. Through design the social welfare of a city's people could be enhanced.

The Modernists, whether Rationalists or Empiricists, were concerned with the development of social schemata as well as urban and architectural designs in the manner of the social and philanthropic urban design movements of the nineteenth century (Darley 1978). Modernist designs were based on models of human needs, an advocacy also implicit in this book. The shortcomings of much Modernist design resulted, however, from its ideologies being based on over-simplistic models of human needs and ways of life, as well as the belief that positive changes in human behavior could be determined by changes in the form and character of the built environment.

Many Rationalist schemes, generic concepts such as the Radiant City and specific examples such as the 23 de Enero housing in Caracas (Figure 3.1c), were based on the need to create a salubrious environment—one that provides access to open space, light, and air. The focus was single-mindedly on the provision of shelter, and efficiency in circulation and building construction. Little attention was given to the range of concerns of potential users. The Rationalist's slogan of "Form follows function" is fine provided function is broadly, not narrowly, defined.

The Modernists created a set of generic designs that other architects have followed. The set includes the Garden City and the neighborhood unit of the Empiricists (Figure 8.5) and the Radiant City and the Unité d'Habitation of the Rationalists (Figure 8.6). Both were responses to the problems of the nineteenth-century polluted and socially degraded industrial towns of Europe and North America. They differed in their focus. The Rationalists focused on eliminating the problems of the industrial city but neglected what worked well for people. The Empiricists tended to look with nostalgia at places that worked well in their minds. They failed to address the changing technological world. Neither recognized the cultural biases of their proposals. When the generic solutions of the Modernists were applied by architects to specific situations the original ideas often, if not always, got whittled down and the original intentions of the generic proposals were lost (see Marmot 1982 on the mass housing ideas of Le Corbusier).

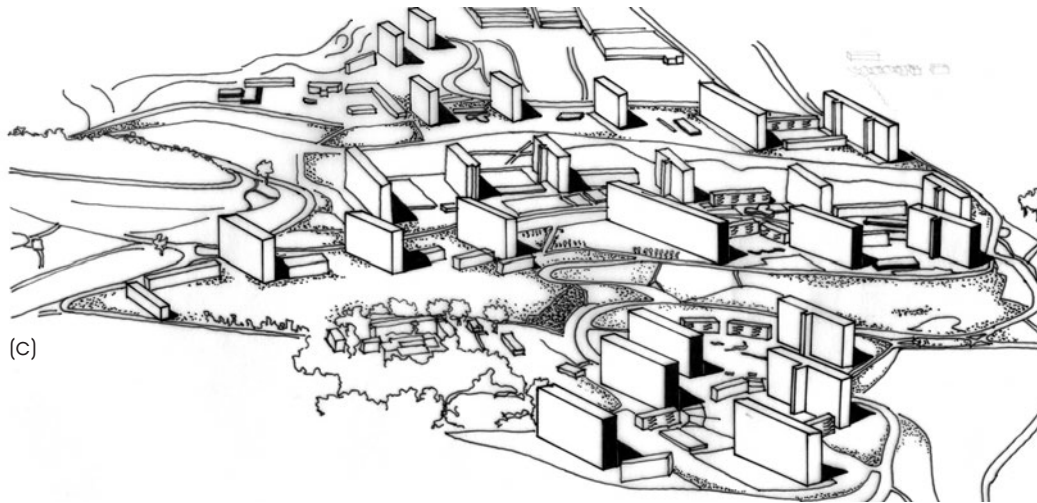
Rationalist schemes can be seen today in unprecedented numbers in East Asia. They are distinguishable by their platonic geometry and architectural unity. The built works reflect, on a much larger scale, earlier Modernist urban designs such as the Illinois Institute of Technology design by Mies van der Rohe and the conceptual schemes of the Bauhaus



(a)



(b)



(c)



(d)



(e)

FIGURE 3.1 A sample of twentieth- and early twenty-first century urban design paradigms. (a) The City Beautiful: a proposal for the University of Minnesota (ca 1910); (b) The Garden City: Songshan Lake, Guangzhou (2004); (c) The Rationalist City: 23 de Enero housing, Libertador Bolivarian Municipality, Caracas (1952–8); (d) the Hyper-Modernist city: Lujiazui (1990s); (e) The sustainable urban environment: Quartier Vauban Freiburg im Breisgau (2000s).

Source: (a) Collection of the author; (c) drawing by Munir Vahanvati

architects and Le Corbusier. Buildings are set as objects in space, as individual art objects rather than being space-making forms. In commercial areas they are blown-up versions of Modernist urban designs executed in a flamboyant architecture.

Urban Design as an Art Form and Deconstruction

Some urban designs focus on representing an aesthetic idea. The responsibility of urban design is seen to be to the eternal Art world and not to the population who, after all, will soon pass on. The concern is for built form as a product of its creator's ideas in the face of empirical findings, social requirements, or utilitarian purposes.

In Deconstructionist designs the intellectual aesthetic idea seems, on the surface at least, to override other considerations. The work appeals to the architectural cognoscenti who can appreciate the beauty of the aesthetic idea behind the geometry of the scheme. From the 1980s until today, the work of Zaha Hadid and Daniel Libeskind as well as Bernard Tschumi has become closely associated with Deconstructionism but almost entirely in the design of individual buildings. The Parc de la Villette designed by Tschumi is an exception (see Chapter 7). Not only does it have a strong intellectual aesthetic idea as a basis but it has also had considerable popular appeal.

The observation behind such designs is that we live in fragmented societies in which different urban systems have their own needs and geometric layout requirements. Urban designs then evolve from taking these systems independently, designing for them, and then imposing the results on top of each other. Conflicts are eliminated only to the extent that a workable design is attained.

Discreet Architecture and Hyper-Modernism

Discreet architecture is well executed but does not shout to be looked at. The attitude is that architecture and urban design have to be part of the city and region in which they are located. The concern is with the specifics of the site and with resolving urban design problems in relationship to their regional context, cultural and architectural. It is most clearly spelt out in the work of the Neo-traditionalists.

Schemes such as Battery Park City in New York are financially pragmatic but they also exhibit a concern for place, for melding into the city rather than being something that stands apart as an independent identity. Battery Park City is both a bounded development and an integral part of Lower Manhattan (see Chapter 10). The architecture and urban design of Hyper-Modernism stands in strong contrast to it.

The attitude in much current urban design seems to reflect a contempt for the lower-income groups, a belief in the entitlements of financial and architectural elites, and a rejection of the spirit of the Enlightenment. Urban designs are treated as consumer products (Schurch 1991). The financial resources required to implement a proposal have always been an issue in urban design. Today, however, a new level of fiscal expediency seems to shape projects. In doing so the concern for the quality of the public realm is lost. The result is an urban design of what Harrison Fracker calls Hyper-Modernist buildings set as objects in space (Fracker 2007). The buildings themselves vary considerably but are variations on standard generic designs with the difference being in the face they present to the world. It is largely an urban design of independent buildings set within the armature provided by the infrastructure. The landscape is used to unify a project and give it a prestigious air. There are few examples of Hyper-Modernist urban design in its extreme form, but much of the current work in East Asia is imbued with a *laissez-faire* spirit.

Commentary

A number of urban design paradigms held sway to a greater or lesser extent during the second half of the twentieth century. These ideas are represented in the work of both the Neo-Rationalists and the Neo-Empiricists today (Broadbent 1990; Lang 1994; Ellin 1999). Understanding these paradigms is important because they illustrate responses to what many urban designers considered and consider to be the contemporary problems of their societies.

Today there is a plethora of advocates for the specific issues that urban designers should address and how to address them (for example: Coyle 2011; Ellin, 2012; Montgomery 2013; Brown, Dixon, and Gilman 2014; King and Wong 2015). Of the currently competing paradigms three hold sway: the Economic Libertarian, or Hyper-Modernist, with its roots in Modernist urban design and Postmodern architecture, the Neo-traditional (Tallen 2013) and, among academics at least, the Landscape Urbanist with its intellectual roots in Ian McHarg's advocacy of designing first with nature in mind (McHarg 1969; Steiner 2011; Thompson 2012).

The primary debate is between those looking at works and repeating it in a new form and those wanting to invent the future. As Pritzker Prize winner Thomas Mayne has said: "The District, township or neighborhood—the idea of this is dead. Kids no longer play stick ball in the street. What is needed is a radical heterogeneity of pluralism" (Green 2016, webpage). New Urbanists such as Elizabeth Plater-Zyberk argue that the Hyper-Modernist vision of the future is antagonistic to the quality of life for many people who, unlike Mayne, are not global people (Green 2016). A close examination of the city shows that precincts and neighborhoods are very much alive still if not as close-knit as they once were.

References

- Broadbent, Geoffrey (1990) *Emerging Concepts of Urban Space Design*, London: Van Nostrand Reinhold (International).
- Brown, Lance J., David Dixon, and Oliver Gilman (2014) *Urban Design for an Urban Century; Shaping more Liveable, Equitable and Resilient Cities*, Hoboken, NJ: John Wiley.
- Coyle, Stephen J. (2011) *Sustainable and Resilient Communities: A Comprehensive Action Plan for Towns, Cities and Regions*, Hoboken, NJ: John Wiley.
- Darley, Gillian (1978) *Villages of Vision*, London: Palladin.
- Ellin, Nan (1999) *Postmodern Urbanism* (revised edn), New York: Princeton University Press.
- Ellin, Nan (2012) *Good Urbanism: Six Steps to Creating Prosperous Places*, Washington, DC: Island.
- Fracker, Harrison (2007) Where is the urban discourse? *Places* 19 (3), 61–3.
- Green, Jared (2016) Which way to Baltimore's future, *The Dirt, ASLA* (March 31), <https://dirt.asla.org/2016/03/31/which-way-to-a-better-future-for-baltimore/>, accessed April 12, 2016.
- King, Kenneth and Kellogg Wong (2015) *Vertical City: A Solution for Sustainable Living*, Beijing: China Social Science.
- Lang, Jon (1994). Basic attitudes in urban design, in *Urban Design the American Experience*, New York: Van Nostrand Reinhold, 105–23.
- Lang, Jon and Walter Moleski (2010) The inheritance: architectural practice and architectural theory today, in *Functionalism Revisited: Architecture and the Behavioral Sciences*, Farnham: Ashgate, 3–26.
- Marmot, Alexi (1982) The legacy of Le Corbusier and high rise housing, *Built Environment* 7 (2), 82–95.
- McHarg, Ian (1969) *Design with Nature*, Garden City, NY: Natural History.
- Montgomery, Charles (2013) *Happy City: Transforming our Lives through Urban Design*, New York: Farrar, Strauss, Giroux.
- Schurch, Thomas W. (1991) Mission Bay: Questions about a work in progress, *Planning*, 57 (10), 22–34.
- Steiner, Fritz R. (2011) Landscape ecological urbanism: origins and trajectories, *Landscape and Urban Planning* 100, 333–7.
- Tallen, Emily (ed.) (2013) *Charter of the New Urbanism*, Ithaca NY: Congress for New Urbanism.

- Thompson, Ian (2012) Ten tenets and six questions for landscape urbanism, *Landscape Research* 37 (1), 7–26,
Wilson, William H. (1989) *The City Beautiful Movement*, Baltimore: Johns Hopkins University.

Further Reading

- Buder, Stanley (1990) *Visionaries and Planners: The Garden City Movement and the Modern Community*, Oxford: Oxford University Press.
Hays, K. Michael (ed.) (1998) *Architectural Theory since 1968*, Cambridge, MA: MIT Press.

4

Urban Design Procedural Types and Processes

Many urban design schemes have been brought from the glimmer of an idea in somebody's head to being a completed development. Thousands of proposals remain unimplemented. Some were simply explorations of possibilities. Many were, in contrast, concrete proposals for specific projects. Some were designed with implementation processes that proved to be unfeasible; some were the victims of political vagaries. Others simply disregarded the rights of individual landowners and/or the implied sources of funding were unavailable.

Many architects and landscape architects regard issues of the financial feasibility of the urban design schemes that they propose as lying outside their concerns. This attitude is surprising because the budget available is a central factor in shaping the design of buildings and landscapes. Often, however, the issue of financing and how to get property developers to build what is desired only becomes a concern after a design proposal has been prepared. In all but a few cases the design is likely to change due to fiscal limitations.

The major difference between urban designing in autocratic states and in democracies is that centralized powers of decision making in autocratic societies are not subject to the control of the citizenry or their representatives (Lane 1986). In urban renewal, projects are ruthlessly driven through existing built-up areas (see the case study of the redevelopment of Bucharest under Nicolae Ceausescu in Chapter 9). Baron Georges-Eugène Haussmann set the example for modern times in the Paris of Napoleon III during the 1850s. In the first half of the twentieth century Hitler, Stalin, and Mussolini all had grandiose projects on the drawing board. Hitler's Germania designed by Albert Speer never broke ground, but Stalin's imprint on the 1935 Moscow Master Plan and the post-Second World War new towns such as Novosibirsk, Kemerovo, and Dzerzhinsk in Siberia was substantial. Benito Mussolini saw part of his urban design ambitions in place. The Via della Conciliazione, lined with new buildings and 28 obelisks, gives a commanding view of St Peter's. Kim Il-Sung did much the same in Pyongyang. Gbadolite in Zaire (now in ruins in what is today the Democratic Republic of the Congo), Astana in Kazakhstan, Naypyidaw in Myanmar, and Oyala in Equatorial Guinea are other examples of major urban designs promoted by dictators.

During the middle third of the twentieth century in both totalitarian and democratic countries many urban design schemes were housing estates (for example, the public housing schemes in the United Kingdom, the United States, and continental Europe and, more spectacularly, the mass housing developments across the former Soviet Union and today in many Asian countries). Few new towns, other than company towns, in democratic countries have turned out to be autocratically developed. They tend to be a collage of work by different designers. In socialist countries with centralized political and administrative power, much was rapidly achieved in quantity if not quality.

Most generic models of the urban design process suggest a rational step-by-step procedure that moves from perceptions of a problem to post-implementation evaluation of a completed work. Urban designing does not, however, take place in such a neat sequential manner. It is a highly argumentative process of conjecturing—of putting out ideas and testing them—iteration after iteration.

The participants in the development of any urban design argue about the variables that should be taken into consideration and what good design entails. Conjectures are tested by individuals using their own logics based on their predictions of the consequences of different design actions. It is easy to be cynical about who wins the arguments (that is, those holding the purse strings) but good information based on empirical knowledge is a powerful tool that designers can employ to persuade those in power. Understanding the process by which a design is implemented is crucial to appreciating the nature of urban design.

Procedural Types

Four generic types of urban design work dominate the field. They vary in the procedure that is followed and/or the degree of control that a designer, or design team, has over the creation and implementation of a project. They are: (1) where the urban designer is part of the development team that carries a scheme through from inception to completion—*total urban design*; (2) where one team devises a master plan and sets the parameters within which a number of developers work on components of the overall project—*all-of-a-piece urban design*; (3) *plug-in urban design* where infrastructure elements are designed so that subsequent developments can “plug into” them or, alternatively, a new element of infrastructure is plugged into the existing urban fabric to enhance a location’s amenity level; and (4) *piece-by-piece, incremental, urban design* in which general policies and procedures are designed to steer the development of a precinct in a specific direction. The borderline between categories is fuzzy, and the argument can be made that plug-in urban design is out of context here.

Total Urban Design

In total urban design the infrastructure, buildings, and landscape of a complex are designed as a unit by one team under the jurisdiction of one auspice. The debate about ends and means takes place within the team. Total urban designs vary in scale from new cities, to precincts of cities, to the design of plazas and other urban open spaces. The Pilot Plan of Brasília, as described in Chapter 9, is perhaps the best known of such city designs (Figure 4.1). Many of the new towns built in the Soviet Union between 1950 and 1980 are similar in character and the myriad of company towns around the world are other examples of total urban designs (see the GSFC Township case study in Chapter 9). Company towns are communities administered by a single authority, although they may evolve into settlements in which controls are in the hands of the inhabitants. They are totalitarian in nature even when located in democratic countries.

Most total urban designs deal with precincts of cities rather than cities as a whole. Over the past fifty years many precincts of cities have been designed and developed by one organization, but the developments are seldom more than three or four traditional city blocks in size. Quartermile in inner Edinburgh is typical (see Chapter 9). In contrast, there are many large developer-initiated suburban developments around the world that are total urban designs.



FIGURE 4.1 A total urban design: the Capitol complex, Brasília.

Caution is needed in thinking of total urban designs as really *totally* under the control of a single auspice. Within the market economy of democratic societies, the development team seldom has a completely free hand to do as it wishes. Almost all projects are embedded within geographic areas whose population imposes some control over what can take place, either through getting elected representatives to act on their behalf or by direct community action.

All-of-a-piece Urban Design

Many urban redevelopment projects and suburban developments are so large and/or capital demanding that developers and their backers are incapable of financing them single-handedly. In other cases, land-holding patterns are so fragmented that having a single developer tackling all the sites in a coordinated manner is legally or administratively impossible. In these situations, a consulting team develops an illustrative three-dimensional concept plan of the whole development. The pieces of the scheme are then sold to different developers and their design professionals to finance and design. The scheme illustrated in Figure 4.2 has over thirty potential sub-developments within it. Difficulties in coordinating and financing so many projects often mean that the construction period can extend into decades. Devised in 1989, by the year 2010 only the projects in Block D had been built. In such projects the major developer, public or private, may build the overall infrastructure, or alternatively all the sub-developers may have to provide those components that relate to their own schemes or contribute to the cost of having them built.

The all-of-a-piece design process follows a set of steps approximating that shown in Figure 4.3. A prime developer, public or private, initiates the project through the acquisition of land and then decides on what to build (or vice versa) given either a local market demand and/or some assumption as to what is in the public interest. Some private



To ensure that the intention of the master plan is not lost, each sub-development has to be built in accordance with a set of guidelines. Sometimes these guidelines are generic to the whole development and sometimes they are applied to each site to be developed. The guidelines need to be based on evidence that they will meet the required ends if they are to withstand legal challenges (Stamps 1994).

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fragmented. The problems in implementation, particularly in financing projects as well as difficulties in meeting the goals of a project as assessed by a review board, often lead to the redesign of the master plan. The end result may be vastly different from that originally envisaged (see the case study of New York's Battery Park City in Chapter 10).

Plug-in Urban Design

Plug-in urban design refers to the design and implementation of an infrastructure project in order to obtain some public benefit. Two types can be identified. One type involves the provision of the infrastructure of, usually, a precinct of a city or suburb, and the selling of sites into which individual developers can plug buildings. In some places the process of building the infrastructure and then the fabric of a city or suburb is heavily controlled as in Singapore, where building uses are specified and design guidelines are created for each developer to follow (see Chapters 6 and 11). In this case, the process is really a variant of all-of-a-piece urban design. In other cases, those property developers plugging their projects into the infrastructure provided are free to respond to the market place, as they will.

The second type of plug-in urban design refers to the situation where elements of infrastructure are plugged into an existing city in the hope of spurring new developments or providing some public amenity. The elements of infrastructure may be links, places such as squares, or buildings providing for special uses that will, it is hoped, have a catalytic effect on surrounding property development (Attoe and Logan 1989). The skyway system in Minneapolis began in this way but, as is described in Chapter 11, it has become an integral part of almost any development in that city's center.

Piece-by-piece (Incremental) Urban Design

While piece-by-piece urban design is precinct based, it does not deal with specific sites within it. The process is one of first developing objectives for an area and then the policies for meeting them. Generally, an advocacy group or a public sector agency instigates the process. The formation of the objectives is highly political, based on a specific perception of the public interest. Once the objectives are legally accepted, the next step is to design incentives and controls to achieve them.

The best-known examples of incremental, piece-by-piece urban design are those from New York in the 1960s and 1970s and Portland, Oregon (see Chapter 12). Developers were given incentives in specific areas to build specific facilities. In New York's Theater District, the objective was to include new theaters around Broadway at a time when their existence was imperiled by opportunities for developers to create more lucrative types of buildings. Many cities have a special type of district—a business improvement district (BID).

Financing

All urban designs are affected by the financing available. Two major aspects to financing projects shape urban designs: (1) their capital costs and (2) the cost of operating them once they have been built. The second is often forgotten in the haste to get buildings erected or public spaces created. The fundamental questions are: Where does the money come from? And: Who pays for what? The cost of money is always a concern. Interest rates affect many design decisions.

The viability of any proposal depends on the availability of capital funds. There are two sources of financing—public sector through tax revenues and the private sector through the money available to be loaned at interest. In socialist countries the funds have come primarily from the government. In capitalist societies the funding of projects comes from borrowed money and/or taxation income. Each group involved in the creation of a project negotiates based on its perceptions of the equity necessary to be raised and the financial guarantees it obtains.

Although many city governments have financial difficulties, it is often easier for them to raise money because their credit is based on their ability to raise revenues from future taxes. Private developers have to raise funds on a project-by-project basis and seek loans with the lowest interest rates, the least amount of equity required, and, ideally from their viewpoint, with government subsidies. Such subsidies take many forms: paying for the infrastructure, mortgage guarantees, the leasing of parts of a project, or structuring a pooled commercial paper program. Conversely, the private sector can subsidize government investments by building parts of the public infrastructure.

The capital needed for major urban design schemes is often considerable and much investment has to be made before any financial return is obtained. These up-front expenses are for the purchasing of land, designing the scheme, developing the infrastructure, mapping out sites for development, writing building design guidelines, negotiating the sale of land, and reviewing individual development proposals. The phasing of developments is thus crucial because premature development of infrastructure can be costly. On the other hand, if a project is delayed because of the lack of the necessary infrastructure a developer incurs real costs and the community foregoes potential tax revenues. A number of the projects described in this book have come to a halt during periods of fiscal difficulty. Only changes in economic conditions and/or injections of public funding or a change in the program or the loosening of design controls have started construction moving again.

Today, public sources of financing have dried up in many capitalist countries and the private sector is being required to subsidize the development of the public realm in return for being allowed to build what it wants to build. The incentive for the private sector to take this role is substantially higher in growing economies than in those that are stagnant or in decline. There are a number of urban design projects around the world, however, that are largely uninhabited because the market was incorrectly identified. China has a disproportionate number of them (Shepard 2015).

Shaping Urban Designs: Controls and Incentives

A number of the legal mechanisms used in city planning shape the built environment (Tallen 2013). Zoning (or land use regulation) is a prime example. Taxation policies are another. Zoning ordinances in many countries demand the segregation of activities on behalf of the public interest in terms of public health and other amenity variables (Hirt 2014). Many such ordinances are now being rewritten to encourage the integration of mutually supportive uses. Zoning is also used to establish the height and size of structures, building uses and parking requirements, the setbacks (or not) required from the street, and, often, building materials as well.

Zoning as a design tool does not deal effectively with the creation of behavior settings and aesthetic displays. Zoning categories generally apply to areas of cities bounded by streets creating what are called “planners’ blocks.” They are not the blocks of life. Urban designers are generally concerned with what happens on both sides of a



street. Streets are the seams of urban life. The use of zoning in conjunction with special districts and incentives can, nevertheless, accomplish much.

An effort to respond to the limitations of zoning as a control tool has led to the promulgation of *form-based codes* (Parolak, Parolak, and Crawford 2008). The use of such codes dates back to the 1980s and was applied to the design of Seaside in Florida (Lang 2005, 210–14). The code was updated in 2014 (Figure 4.4). Rather than simply specifying land uses and such items as building bulks, form-based codes specify the overall configuration of buildings and many details of the public realm.

Incentives and disincentives to property developers have been widely used to shape cities and often form part of piece-by-piece urban design packages used to shape city precincts in specific directions (see Chapter 12). The incentives, carrots, involve financial subsidies in some form or other. The sticks involve measures that are financially punitive, directly or indirectly. Many urban design control packages have both punitive and incentive components operating simultaneously in order to get schemes built in accordance with a conceptual design's objectives (Lasar 1989; Litchfield 2015).

Carrots

Many of the carrots encouraging developers to do what they would otherwise be disinclined to do involve the use of zoning codes. They have been used to encourage property developers to provide specific facilities that are desirable and in the public interest but not as profitable for them as building for other uses.

A number of possible incentives are available for shaping and supporting urban design objectives. Government subsidies have already been mentioned. Floor space incentives usually allow a developer to make a greater profit by building a taller or bulkier building than a zoning ordinance allows, in return for including some non-profit making or not-so-profitable amenity in a proposed development as in New York's Theater District. Such a design incentive involves a trade-off between the provision of the desired facility and the amount of exposure to the sky that pedestrians and vegetation have at ground level.

The transfer of development rights from one site to another has been another tool that has been used to protect specific buildings and districts deemed worthy of being maintained in their present character yet are located where a property developer has the legal right to build something different. The incentive is to provide the developer with above-standard rights in another location while buying out development rights in the original location.

All incentives boil down to assisting property developers with financing in some form or another. Lowering taxes is one. Another mechanism used to meet urban design ends is through *tax increment* financing. It is not a legal technique in many countries. In the United States, however, it is available in a number of states. The amendment allows property developers, when working in a precinct of a municipality that has a plan supported by its citizens, to benefit directly from the increment in property taxes that accrue due to the improvements made by them within that precinct. The taxes raised are spent on public investments within the precinct rather than elsewhere.

Sticks

The use of disincentives to shape developments is often problematic unless supported by evidence that can persuade law courts and/or administrative tribunals that the disincentives are justified. One of the major disincentives to carrying out a project is to

increase its financial cost in comparison to the financial return to be received. Such sticks may take the form of increased taxes, slowing down the approval process for projects not regarded as complying with design guidelines, or the direct payments of fees.

Many city centers are crowded with automobiles. The standard response is to create wider roads, more one-way streets, and more parking facilities and/or to improve mass transit systems. An alternative that involves no physical design, but rather requires the direct payment of fees is in place in Singapore and, more recently, in London. It is to charge people for driving into the central business district. In the City of London, the traffic was moving at 16 kilometers/hour (10 miles/hour). In early 2003, a road levy of £5.00 was imposed in an effort to persuade people to use the metropolitan area's bus services and underground system. The goal was to reduce journey times within the city by 20 percent to 30 percent. It has been at least partially successful.

A different tactic was used in Bellevue near Seattle to encourage workers in the central area of the city to use the bus system. The number of parking spaces required per 1,000 square feet of new development in the area was reduced, thus raising parking costs. At the same time bus services were improved. The increase in ridership has been noticeable but some organizations have chosen not to locate in Bellevue because of parking costs. The trade-off has been thought to be worthwhile by both citizens and officials of the city (Lang 2005, 309–14).

Moratoria to halt development for a period can be used to: (1) create a pause while a coordinating plan is developed; (2) halt development when the consequences of development will be negative; and (3) divert growth from one area to another. The application of moratoria can have a direct impact on urban design, particularly in the development of a building program and the implementation of projects. In Bethesda, Maryland a series of moratoria were used to shift potential development in outlying areas into its downtown core where a station on Washington's Metro system had been built. The legal basis depended on the prediction that dispersed development would swamp the road system of the suburb with traffic beyond its capacity to cope. The moratoria encouraged further development in its downtown, creating a strong downtown core associated with the Metro stop.

A moratorium needs strong evidence on a development's potential negative effects to validate it (Lucero and Soule 2002). Nassau County, New York successfully imposed a moratorium on growth until the problem of the increased salinity of its groundwater supply could be solved. A moratorium on commercial development over 10,000 square feet in size in Walnut Creek, California until the traffic congestion problems could be remedied was, however, struck down in the courts because it was inconsistent with the master plan (*Lesher Communications, Inc. v. City of Walnut Creek, Contra Costa Supreme Court, 1986*). The use of moratoria in the United States received a boost in 2002 when the U.S. Supreme Court supported their use without having to compensate those whose development proposals were delayed (*Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Agency, April 23, 2002*) (Lucero and Soule 2002).

Design Review

To some observers, the truly creative activity in the design process lies neither in the design of the program nor that of the building or complex but rather in the evaluation of possible schemes—in recognizing the merits of a deviant scheme. The evaluation of a design involves: (1) predicting the future context in which the scheme will function; (2) predicting how the scheme will work in that future; and (3) evaluating its performance against other possible schemes. The future is unknown, but reasonable predictions based

NUMERICAL RANKING	NAME OF PROJECT	A. RESIDENTIAL provision of dwellings																TOTAL SCORE		DIFFERENCE
		B. PEDESTRIAN 1. links out from Metro	B. PEDESTRIAN 2. pathways on private land	B. PEDESTRIAN 3. places for public activity	B. PEDESTRIAN 4. street-scape materials	B. PEDESTRIAN 5. magnet uses	B. PEDESTRIAN 6. encourage walking	C. EFFECTIVENESS 1. building massing	C. EFFECTIVENESS 2. efficient interior	C. EFFECTIVENESS 3. orientation	C. EFFECTIVENESS 4. environmental quality	C. EFFECTIVENESS 5. other enhancement	D. MANAGEMENT provision of organization							
1.	Chevy Chase Garden Plaza	8	7	1	1	2	6	2	4	1	2	2	1	2	3	42	12			
2.	Artery Organization Headquarters Building	9	7	7	4	1	4	4	6	2	1	1	2	1	5	54	4			
3.	7475 Wisconsin Avenue	9	1	2	5	6	1	1	5	4	4	4	5	5	6	58	10			
4.	Gateway Building	9	8	7	3	3	2	3	8	3	3	3	4	8	4	68	11			
5.	4600 East-West Highway	9	2	7	7	7	3	6	9	5	5	8	7	3	1	79	4			
6.	Community Motors	6	5	5	7	4	6	7	9	6	7	5	3	6	7	83	3			
7.	Franklin C. Salisbury Building	9	4	3	2	5	8	5	9	7	6	6	6	9	7	86	14			
8.	Air Rights Hotel	5	3	6	6	8	5	7	9	8	9	9	9	9	7	100	4			
9.	Woodmont Air Rights	9	6	4	6	8	7	7	9	9	8	7	8	9	7	104				
	Totals	73	43	42	41	44	42	42	68	45	45	45	45	52	47	674				

FIGURE 4.5 Potential projects evaluation scorecard, Bethesda, Maryland.

Source: Courtesy of the Maryland-National Capital Parks and Planning Commission, Department of Parks and Planning

on sound information about trends in society can be made. Should, however, one “play safe” or “go for broke”?

When there are competing proposals for a development site, the question is: How should each possibility be evaluated? Some variables such as financial return to the city in terms of tax revenue can be assessed with reasonable accuracy. Other dimensions of design, such as “fitness to context” or “urbane character” are not. They can, however, be defined operationally in a set of design guidelines. Whether one agrees with the definition explicated in the guidelines or not, a building design can be objectively assessed by a review panel against the guidelines’ demands. When the criteria are less sharply defined a scorecard such as that used in Bethesda, Maryland for projects forming part of the MetroCenter complex displays the design reviewers’ thinking (see Figure 4.5). The process may be highly transparent but it has come in for considerable criticism because of the subjectivity of the evaluation on each of the dimensions of a design.

The power that design review boards have in enforcing design guidelines and other design controls varies. At one extreme they have absolute veto power; at the other end they can merely make suggestions. In situations where there is a demand for development, the coercive powers of design review boards are potentially more substantial than in places crying out for anybody to develop anything. In capitalist societies where the developer is a private company contracting out work to other property developers, the power of the company’s review panel may well be absolute, as it was originally in the development of the Denver Technological Center (see Chapter 10).

Commentary

Developing urban designs from a thought to an implemented project is a challenging, highly political task. A sound knowledge base derived from strong empirical evidence is necessary to carry it out well and for proposals to withstand legal challenge. This

empirical base for decision making is imbedded in abstract descriptive and explanatory theories of how cities and buildings function and in case studies. Few designers are enthusiastic about keeping in touch with the development of theory in their fields as mapped in Figure 1. 2, but they do stay informed of developments in project types and specific projects. The typology of urban design projects presented in Chapter 5 has been designed to help them.

References

- Attoe, Wayne and Donn Logan (1989) *American Urban Architecture: Catalysts in the Design of Cities*, Berkeley and Los Angeles: University of California Press.
- Hirt, Sonia A. (2014) *Zoned in the USA: The Origins and Implications of American Land-Use Regulations*, Ithaca, NY: Cornell University Press.
- Lane, Barbara M. (1986) Architecture and power: politics and ideology in the work of Ernst May and Albert Speer, *Journal of Interdisciplinary History* 17 (1), 283–310.
- Lang, Jon (2005) *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural.
- Lasar, Terry Jill (1989) *Carrots and Sticks. New Zoning Downtown*, Washington, DC: Urban Land Institute.
- Litchfield, Nathaniel and Associates (2015) *Carrots and Sticks: A Targets and Incentives Approach to Getting More Homes Built in London*, London: The authors.
- Lucero, Laura and Jeffrey Soule (2002) The Supreme Court validates moratoriums in a path breaking decision, *Planning* 68 (6), 4–7.
- Parolak, Daniel G., Karen Parolak, and Paul C. Crawford (2008) *Form Based Codes: A Guide for Planners, Urban Designers, Municipalities and Developers*, Hoboken, NJ: John Wiley.
- Shepard, Wade (2015) *Ghost Cities of China*, London: Zed.
- Stamps, Arthur E. (1994) Validating contextual urban design principles, in S. J. Neary, M. S. Symes, and F. E. Brown (eds) *The Urban Experience: A People-Environment Perspective*, London: E & F N Spon, 141–53.
- Tallen, Emily (ed.) (2013). *Charter of the New Urbanism*, Ithaca NY: Congress for New Urbanism.

Further Reading

- Barnett, Jonathan (2003) Part III: Implementation, in *Redesigning Cities: Principles, Practice, Implementation*, Chicago: Planners, 211–83.
- Cowan, Robert (2003) *Urban Design Guidance: Urban Design Frameworks, Development Briefs and Master Plans*, London: Thomas Telford.
- Garvin, Alexander (1996) Land use regulation, in *The American City: What Works, What Doesn't Work*, New York: McGraw Hill, 355–94.
- Istrate, Emilia and Robert Puentes (2011) Moving forward on public private partnerships: US and International Experiences with PPP units, *Brookings-Rockefeller Project on State and Metropolitan Innovation* (December), www.brookings.edu/~media/research/files/papers/2011/12/08%20transportation%20istrate%20puentes/1208_transportation_istrate_puentes.pdf, accessed March 2, 2015.
- Punter, John (2003) From design advice to peer review: the role of the Urban Design Panel in Vancouver, *Journal of Urban Design* 8 (2), 113–35.
- Scheer, Brenda and Wolfgang Preisner (eds) (1994) *Design Review: Challenging Urban Aesthetic Control*, New York: Chapman and Hall.
- Tallen, Emily (2011) *City Rules: How Regulation Affects Urban Form*, Washington, DC: Island.

5

An Evolving Typology of Urban Design Projects

The word “typology” is ambiguous. Here typology refers to the categorization of specimens into groups whose members are similar to each other (Jacob 2004). “We think, conceive, represent, and talk of places in and through categories, and we fabricate, occupy, and regulate places in categories as well” (Schneekloth and Franck 1994, 5). A type represents the commonalities that a set of products or processes has that distinguishes it from other sets. The categorization of projects in terms of use types has a long history (Pevsner 1976).

An understanding of types is the basis for problem solving in all the design fields. For architecture it is building types. For landscape architecture it is open space types (for an example, squares, see Lang and Marshall 2016), and for planning it is settlement types (for example, “global cities”; Simmonds and Hack 2000). Lucy Bullivant (2012) categorizes urban design schemes based on situational types (for example, city center and waterfront neighborhoods, post-disaster regeneration). Each typology has advantages and poses potential constraints on whoever uses it.

Architects also create generic types to be emulated in solving categories of problems. The Unité d’Habitation was developed by Le Corbusier to be a type to be reproduced across the world (see Lang 2005, 130–3). Megastructures were supposed to solve problems of urban sprawl (Banham 1976). In the 1990s, the pedestrian pocket was promoted as a way to deal with transportation and quality of life issues in residential area design (see Calthorpe et al. 1989). Today, the New Urbanist paradigm proposes an approach to design to be emulated (Tallen 2013). In all-of-a-piece design the buildings required to meet the specifications of a master plan are often identified by their use, mass, and aesthetic character.

Fifty-odd case studies have been categorized in this book. In a diverse field it is inevitable that types of projects overlap and a specific project may not be easy to categorize. For instance, the investment in a park is a work of landscape architecture but the way it functions as a catalyst is an urban design issue, as shown by the Paseo del Rio in San Antonio and the High Line in New York. Is a building such as the Unité d’Habitation (a vertical neighborhood) a work of urban design or a work of architecture? Or both? It was a part of a broader plan for the city of the future (Le Corbusier 1953). As a result, the idea of buildings as catalysts for urban development appears in two chapters in this book: under the rubric of *The Products of Architecture and the Nature of Urban Design* (Chapter 8) and *Plug-in Urban Design* (Chapter 11). There exist ambiguities within typologies that can be disturbing. As the field of urban design develops so, no doubt, will the precision of the categorization of types of projects subsumed under the rubric.

The potential problem in using any typology is that it focuses on the similarities between examples and not their differences. In practice it is easy to see the situation one

is facing as being a particular type because of some superficial similarities and then to use the procedures common to that category in trying to solve current problems (Schneekloth and Franck 1994; Campbell 2003). There are a number of examples in this book where urban design paradigms have been used outside of the contexts in which they were developed. This problem can be avoided if the cases are clearly focused on their essences rather than their superficialities.

As stated in Chapters 2 and 4, a distinction can be made between four major procedural types of urban design: (1) total urban design where one team is in control of the whole project; (2) all-of-a-piece urban design where one team creates a master, or conceptual, design and writes guidelines for the development of individual sites for the project to be implemented by different entrepreneurs and their architects; (3) plug-in urban design in which infrastructure elements are used as catalysts for development; and (4) piece-by-piece urban design where proposals to get specific activities into an area are controlled by zoning codes, incentives, and penalties. These processes are universal in character, although local control mechanisms vary from society to society.

Designers seldom think of design products in terms of the processes that brought them about; they are more comfortable thinking of them in terms of product types. The product type categories used here are: (1) new towns, (2) urban precincts of which there are many sub-types, and (3) elements of infrastructure, and, possibly (4) individual items within the city that add luster to it: clock towers, monuments, works of art, and curiosity objects. Each has many subcategories.

The third way of classifying an urban design scheme is by the major paradigm used as its intellectual basis. Much architectural history involves identifying the paradigms of the major movements in the field and the patterns they promoted in response to what were perceived to be contemporary problems. In urban design the twentieth century began, as already noted with the City Beautiful, as a dominant paradigm. Contemporaneously the Empiricist and Rationalist branches of the modern movement challenged it. Throughout the twentieth century there were tensions between lines of thought that still persist (Tallen 2005). Today the urban design of commercial pragmatism, hyper-modernity, and of Modernism are challenged by the Neo-traditional, or New Urbanist approach and, to a lesser extent, Landscape Urbanism.

The three ways of categorizing urban design project types can be brought together in the three-dimensional model shown in Figure 5.1. All urban design projects can be slotted into one or other of the sections of the matrix. Some of the examples presented in this book sit more comfortably where I have placed them than others. The model, nevertheless, brings attention to the salient qualities of a project.

Commentary

In discussing the nature of urban design, the literature has focused much more heavily on product types and design paradigms than on procedural types. There are many books on new towns and new urban places. They focus on the architecture of the places without attention to the processes of bringing them into existence or on the dimensions where they succeed or fail. In this book, I have classified projects primarily by procedural type and then by product types, but have attempted to point out the intellectual paradigms within which they fall.

The typology presented here should be regarded as a first, but significant, step forward. Its utility will depend on how others can or cannot use it. The basic categorization is, however, sound although the labels given will sound strange to many

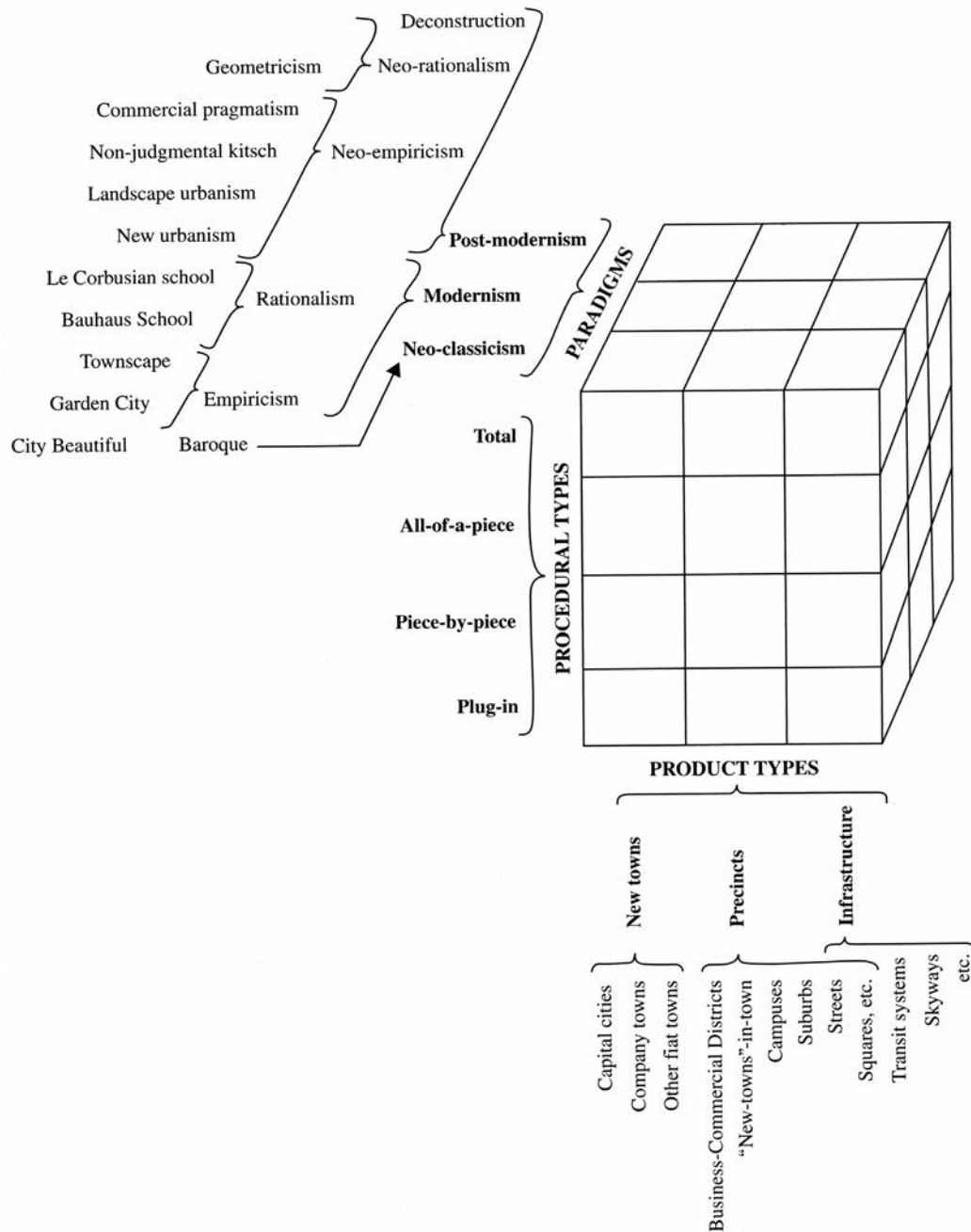


FIGURE 5.1 A typology of urban design projects.

ears. No doubt the typology will evolve as the field of urban design and the range of projects that are subsumed under that title evolve. The goal here is to identify the scope of urban design.

References

- Banham, Reyner (1976) *Megastructure: Urban Structures of the Recent Past*, New York: Harper and Row.
 Bullivant, Lucy (2012) *Masterplanning Futures*, Abingdon: Routledge.

- Calthorpe, Peter and Doug Kelbaugh et al. (eds) (1989) *The Pedestrian Pocket Book: A New Suburban Design Strategy*, Princeton: Princeton Architectural.
- Campbell, Scott (2003) *Case Studies in Planning: Comparative Advantages and Problems of Generalization*, Ann Arbor: University of Michigan Urban and Regional Research Collaborative.
- Jacob, Elin K. (2004) Classification and categorization: a difference that makes a difference, *Library Trends* 52 (3), 515–40.
- Lang, Jon (2005) Neighbourhoods, in *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural Press, 130–3.
- Lang, Jon and Nancy Marshall (2016) *Urban Squares as Places, Links and Displays: Successes and Failures*, New York: Routledge.
- Le Corbusier (1953) *L'Unité d'Habitation de Marseilles [The Marseilles Block]*, translated from the French by Geoffrey Sainsbury, London: Harvill.
- Pevsner, Nikolaus (1976) *A History of Building Types*, London: Thames and Hudson.
- Schneekloth, Lynda and Karen A. Franck (1994) Type: prison or promise?, in Karen A. Franck and Lynda Schneekloth (eds) *Ordering Space: Types in Architecture and Design*, New York: Van Nostrand Reinhold, 15–38.
- Simmonds, Roger and Gary Hack (eds) (2000) *Global City Regions: Their Emerging Power*, London and New York: Phaidon.
- Tallen, Emily (2005) *New Urbanism and American Policy: The Conflict of Cultures*. London and New York: Routledge.
- Tallen, Emily (ed.) (2013) *Charter of the New Urbanism*, Ithaca, NY: Congress for New Urbanism.

Further Reading

- Broadbent, Geoffrey (1990) *Emerging Concepts in Urban Space Design*, London: Van Nostrand Reinhold International.
- Inam, Aseem (2002) Meaningful urban design: teleological/catalytic/relevant, *Journal of Urban Design* 7 (1), 35–58.
- Symes, Martin (1994) Typological thinking in architectural practice, in Karen A. Franck and Lynda Schneekloth (eds) *Ordering Space: Types in Architecture and Design*, New York: Van Nostrand Reinhold, 165–78.



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THE DESIGN PROFESSIONS, THEIR PRODUCTS, AND URBAN DESIGN

PART 2

FIGURE 6.0
Federation Square,
Melbourne,
Australia.



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6

The Products of City Planning and the Nature of Urban Design

Many city planners and architects regard most of what is described as the core of urban design in Part 3 of this book as city planning. To other observers, city planning is land use planning and to yet others it involves the formulation of urban economic and social policies. In continental Europe, planning and architecture are generally closely allied in a single field that focuses heavily on the design of the built environment of cities. As a result, city planning is often urban designing in countries such as Germany.

In the 1960s and 1970s a number of city planning leaders, such as Edmund Bacon, once head of the City Planning Commission in Philadelphia, and Wi Ming Liu, who played a similar role in Dallas, were very much concerned with urban design (Bacon 1974). The state of American cities in that era was, however, so precarious that urban design concerns were often thrust aside in the search for economic survival. The fallacy of having done so has been learnt from the cities that successfully maintained an interest in the quality of their built environments. They have tended to do well in comparison to those cities that strove for development at any price. Now almost all cities are concerned with the quality of their public realms as they strive to enhance their economic and social status in the world's eyes. As a result, the city planning profession in a number of countries is now striving to recapture an area of concern that it abandoned in the 1960s.

A Traditional Planning Product Type: The Comprehensive Plan

The most general city planning policy is represented in the comprehensive plan. The plan has to be accepted as binding by some legislative body—usually a municipal council—if it is to lead to any action. Once accepted, specific programs have to be assigned to specific agencies and a budget has to be established to fund the programs. In many countries the plan is represented in a two-dimensional land use map designating the type of activities (industrial, commercial, residential, etc.) that a precinct should house. Streets in these plans have been regarded as channels of vehicular movement and borders between land uses rather than as the seams of community life.

To implement comprehensive plans, zoning codes are developed specifying the allowable uses for a block, the site coverage, and, in the United States, the FAR (the ratio of total usable floor area to the site size)—known as FSR (Floor Space Ratio) elsewhere. The zoning code may also specify the allowable height of buildings and the number of parking places each requires. The goal has been to avoid conflicts between adjacent activities that take place in a city. The range of concerns shown in Figure 1.2 is largely neglected.

Many land-use and zoning laws intended to make cities safer and more salubrious environments for human life have also had unintended deleterious effects. An early twenty-first-century review of the impact of land-use regulations in Houston, Texas shows their unintended impact on many aspects of the quality of urban places (Lewyn 2003). Decrees about lot size for single-family homes, parking requirements (1.33 cars per bedroom in apartment buildings), street widths, and block sizes (600 feet/185 meters between intersections) make life hard for pedestrians and encourage driving for even the most local of necessities. The density of development that results from such codes makes all kinds of housing developments and public transit systems financially unfeasible. At the same time the codes have not alleviated the problems of traffic congestion that they were legislated to address. What is needed in developing of item-by-item planning and building regulations is to fully understand their three-dimensional and operational implications.

Current zoning regulations throughout the world make it almost impossible to build precincts that have the characteristics of the well-loved areas of existing cities. They would make the design of today's Paris, London, Boston, and San Diego impossible. The codes were designed to avoid obnoxious facilities such as smoke-belching factories being located in residential areas and not much more. The world has changed and much needs to be rethought.

The Design Dimension of Comprehensive Planning

Comprehensive planning attempts to deal simultaneously with economic, social, physical development, and design policies. Sometimes the quality of the built environment is a central concern but at other times, particularly in times or localities of slow economic growth, it is peripheral. What becomes important then is development at any cost provided it brings in jobs and/or increases the tax base of a cash-strapped municipality. In such circumstances even the most basic of environmental concerns—pollution, traffic problems, and the degradation of the natural world—are shelved in the name of progress. Design quality is seen as a minor issue; it is perceived to be concerned only with urban cosmetics and not with life—not with behavior settings.

Urban design concerns within city planning reflect the state of public policies towards planned intervention in the marketplace. At times there are calls for more control over what is being built and how it is built, and at others there are calls for less control and greater freedom for private actions. Economic conservatives see design controls as a deterrent to economic growth while socialist politicians see design quality as an elitist concern. Interestingly enough, many property developers recognize the financial benefits derived from high-quality buildings in the public realm. Purchasers are also increasingly discerning in terms of the choices they make. Sometimes developers form their own private regulations to control the quality of the public realm to be created by sub-developers. They take on the quasi-public role in urban development described in Chapter 1.

Public realm policies within city planning are often closely related to the urban design endeavor. Most such policies do not deal directly with the geometric qualities of built form but they, nevertheless, have a direct impact on the shape, liveliness or quietness, and general ambience of the places and links of a city. They deal with such matters as eliminating anti-social behavior and providing a high amenity level for the inhabitants and users of public spaces. These general policies may be urban-wide or targeted at specific precincts of cities.

In Britain the public realm policies have traditionally dealt with accessibility, the servicing of buildings, and the ways traffic is to be handled and not much more. As the public's fear of crime increases so public policies are being more specific in formulating design principles that deal with the natural surveillance, territorial control, and the lighting of public spaces based on the work of Oscar Newman (Newman 1974) and now formulated into Crime Prevention Through Environmental Design (CPTED) guidelines (Atlas 2008). These concerns are related to the accessibility and safety needs of people as shown in Figure 1.2, and have been central to much urban designing. "Broader considerations of the network of public streets and public spaces, the permeability of blocks and . . . questions of the quality of the public realm are largely neglected" in city planning (Punter and Carmona 1997, 169).

One of the major areas in which hidden urban design occurs is in the design of roads. Streets as formed by the buildings that align them are the most important of the public open spaces in cities and their quality as behavior settings is certainly a primary concern for urban design (Appleyard et al. 1981; Southworth and Ben-Joseph 1997; Engwicht 1999; Moughtin 2003; Mehta 2013). The city planning focus in designing streets has been on public safety and accessibility. The definition of safety is, however, often established only by the size of the equipment—ambulances and fire engines—that have to be able to maneuver through a street. Accessibility is also often narrowly defined in terms of the speed of traffic flow. Streets have other functions and, if traffic movement alone is selected as the basis for their design, their amenity level for pedestrians may well be lost.

Edmund Bacon considered area plans and, particularly, project plans to be urban design because they show the three-dimensional character that is sought for precincts of cities (Bacon 1969). The problem with these area plans has been that they fail to deal with the implementation process beyond the formation of zoning codes. They have not considered the plans to be representing end states to be actively pursued and built. In Singapore they are. Planning and urban design there go hand in hand.

CASE STUDY

Planning and Designing Singapore (1971, 1991, 2001, 2014)

A City-State Where Comprehensive Planning and Urban Design Go Hand in Hand

The goal of planning in the island republic of Singapore is to make the city-state a global "tropical city of excellence." The statutory comprehensive plan for Singapore is based on a two-dimensional concept diagram (originally developed in 1971 but updated in 1991, 2004, and 2014; see Figure 6.1). The plan envisioned a series of new towns strung along mass transportation and highway routes binding Singapore into a single entity. For planning purposes Singapore was divided into fifty precincts, each with its set of design objectives. Each precinct was designed to have its own center and set of land parcels. Each

parcel has its building uses, bulk and design guidelines specifying the location of its entrances, and its general architectural character.

What differentiates Singapore's planning system from many others is that its development has largely been co-designed with precinct/new town development plans every step of the way. The key agency in implementing the concept plan has been the Housing Development Board [HDB], a statutory body established in 1961. It has had the responsibility for designing and building the city-state's new towns. The mass of housing produced since independence led the way in deciding what

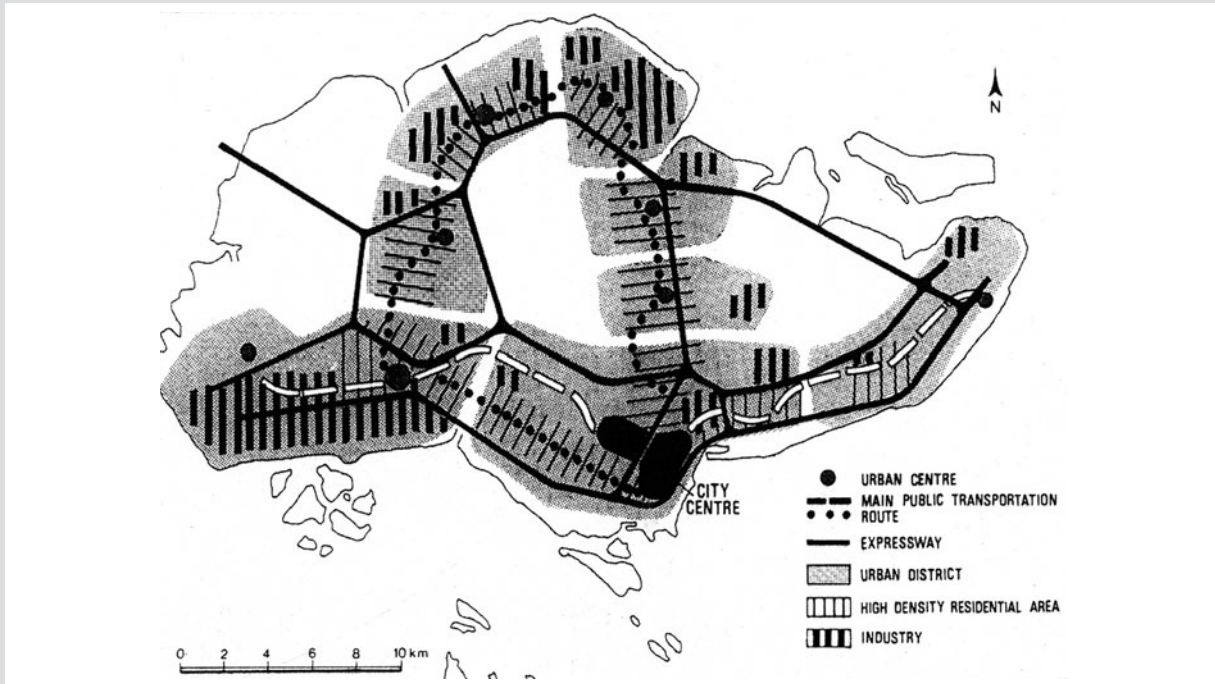


FIGURE 6.1 The ring concept plan of 1971.

Source: Perry et al. (1997, 196)

and where elements of the transportation and industrialization program should be implemented. The HDB has played the major role in determining what land should be made available for transportation routes, where MRT stations should be located, where expressways should be built and how the entire network of infrastructure—water, sewers, power, and telecommunications—should be developed.

Until recently, all planning and design decisions were made by either the Redevelopment Authority (for central Singapore) or the HDB (for the new towns). The market is now allowed to play a greater role. No other city with a democratically elected, although dictatorial, government has had such clearly delineated lines of authority and such centralized control in setting design directions. In Singapore urban design occurs within an overall city planning framework or, perhaps more accurately, city planning occurs within an urban design framework. The built environment has been created over time within the norms of the contemporary international urban design paradigm.

The earliest of the new towns, Queenstown (1950s+), had three-story apartment buildings and

later rows of taller Modernist slab buildings. Much of the housing has been upgraded since then (Figure 6.2a). Later new towns such as Tampines (1978–89) have Neo-traditional overtones to them. Pongol, now under construction, is to be an eco-city served by a light rail system connected to the MRT line (Figure 6.2b). The predominantly commercial and cultural precincts of Marina East and Marina South, areas built on reclaimed land, are more Hyper-Modern in design. Like many other cities, Singaporean authorities believe that such designs are necessary for the city-state to compete effectively on the international stage.

Although it seems that the planning authorities in Singapore at the time of independence set out to demolish everything that existed, apart from some individual buildings of historic note, the Planning Board has created a number of historic precincts such as Chinatown (built along the lines of the home states of nineteenth-century Chinese immigrants rather than for the tropics), Little India (see Chapter 12), and Boat and Clarke Quays.

Singapore is a case where highly educated politicians, in particular the country's leadership, have been concerned with the quality of the



(a)



(b)

FIGURE 6.2 Shifting urban design and architectural paradigms in the planning of Singapore. (a) Queenstown: 1950s flats in the foreground with recently upgraded 1960s flats in the background; (b) Punggol: the 4.2 kilometer-long My Waterway.

Source: Photography by Su-Jan Yeo

physical environment. Their concern has been with both its efficiency and its aesthetics. The leadership has recognized that the economic benefits of a positive working and living environment with a modern image are vast. It also came to understand that the preservation and rehabilitation of the city's history through its physical fabric has

important economic (in terms of tourism) and social benefits (in terms of identity) for Singaporeans. Many outsiders see the controls imposed to achieve the state's objectives to have been harsh, but nowhere else has a city upgraded itself as much in as short a time period with popular support.

New Town Planning and Urban Design

In the design of new towns, the comprehensive planning objectives are presented in the form of conceptual diagrams and a master plan. Often this master plan allocates land uses to specific areas based on some image of a transportation network. At other, but less frequent, times it is a three-dimensional representation of the future state of a city. In countries such as China and Korea today, the new towns really are large-scale, Hyper-Modernist total urban design schemes but in much of the rest of the world they have been closer to being plug-in urban designs. They were frequently designed along Garden City lines although during the last two decades, especially in the United States, they have been New Urbanist creations.

Seaside in Florida set the tone for New Urbanist projects in the United States and is a clear example of all-of-a-piece urban design (Lang 2005). Many other such property developments have followed the same model. Celebration, also in Florida, is the one that is described later in this volume. Poundbury is a British example. The study of Columbia, Maryland included here is what many city planners regard as urban design, because it pays some attention to the physical layout of a place rather than simply the policies guiding land-use distribution.

Columbia is also an example of the pattern of many mid-twentieth-century new towns in the world based on Garden City design principles. Other American examples are Jonathan, although now simply a neighborhood within Chaska, Minnesota, Irvine in California, Reston in Virginia, and The Woodlands in Texas (Forsyth 2005). The first generation of British new towns built after the Second World War—and even earlier in the century, cities such as Canberra, the capital of Australia—follow the same general organizational pattern. It was the normative model for new towns in the second half of the twentieth century in countries as diverse as Sweden and apartheid South Africa, and is still widely followed. The generic conceptual design of these places, as represented in Figures 6.3a and b, is intuitively appealing.

CASE STUDY

Columbia, Howard County, Maryland, United States of America (1962–2014+)

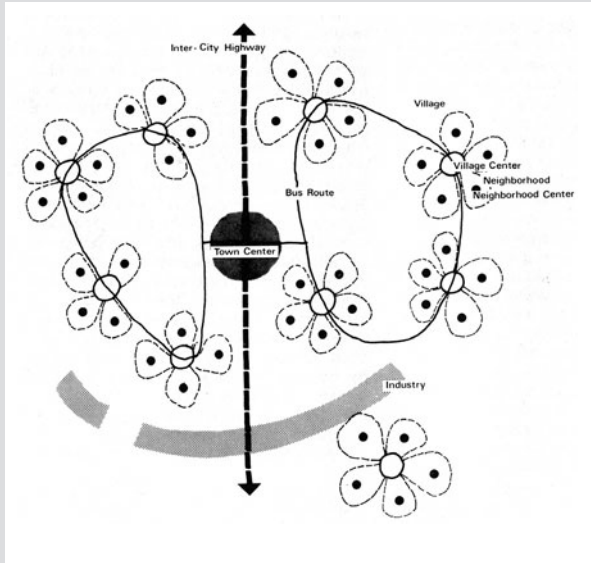
A Privately Developed, Garden City-Type New Town

Columbia was begun in 1962 but continues to be extended and parts redeveloped. The property developer was James W. Rouse, a builder of major shopping centers. He wanted to create a

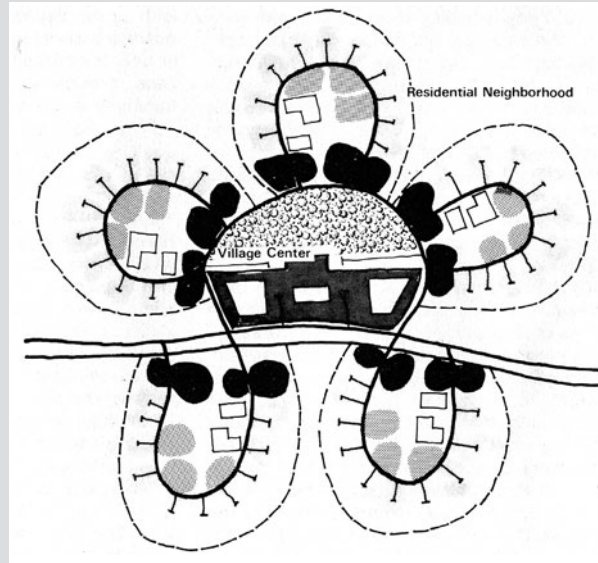
city reminiscent of his childhood home in Easton, Maryland. Rouse, through a set of dummy corporations, agglomerated 14,178 acres (57.38 square kilometers) of farmland strategically located

between Baltimore and Washington on Route 29 from 140 owners. The objective was to keep the land price modest. The purchase was funded by the Connecticut General Life Insurance Company. After much political maneuvering at the local

level, a New Town District Zoning code was enacted to make the new town possible. The plan for Columbia was designed by Morton Hoppens, supported by a panel of social scientists who were called the *Work Group* (Tannenbaum 1996).



(a)



(b)



(c)

FIGURE 6.3 Columbia, Maryland (a) The conceptual city plan; (b) the conceptual village plan; (c) the city center: development around Columbia Mall in 2015.

Source: (a) and (b) Hester (1975, 8–9)

The plan consists of a city center surrounded by districts that are subdivided into neighborhoods (Hester 1975). Each district and each neighborhood has a set of facilities at its core. Such conceptual plans had been abandoned by contemporary British new town planners in favor of denser schemes. The Work Group also took the position that the neighborhoods made little sense when people live mobile lives, but Rouse favored the idea of discrete neighborhoods because he believed it fostered a sense of community among their inhabitants.

The center of Columbia was originally a shopping mall surrounded by car parking lots but, increasingly, commercial buildings have been built around it. They are still surrounded by parking lots. The Downtown Columbia Plan of 2010 proposed a mixed-use center with higher-density, low-income housing, more recreational and commercial space, and a five-star hotel by 2040. Nearby the center is the 110,000 square meters (27 acres) man-made Lake Kittamagundi, one of four in Columbia. It was re-formed when dredged in 2010. It attracts visitors, not always well-behaved, particularly adolescents, from around the region. A path around the lake was built only in 2014.

Columbia has ten villages in all, each with its supermarket, other shops, car service stations, and recreational facilities and, originally, teen centers. Each has a number of neighborhoods within its boundaries. The first of the villages, Wilde Lake, dates back to 1967 while the latest, at the time of

writing, was River Hill which was inaugurated in 1990. The village centers have undergone some dramatic changes since they were built. Oak Mills village center was, for instance, demolished in the late 1990s. At first it consisted of shops located off a central corridor but now it is more a strip-like shopping area. The village centers, nevertheless, thrive; the neighborhood centers struggle but survive. People do not walk much and once in their cars it is easy to by-pass the neighborhood center in favor of the greater diversity of the village centers. Following the pattern promulgated by Clarence Perry's generic neighborhood unit (see Figure 8.5), each neighborhood has a primary school and local shops at its center (Figure 6.3b).

In developing Columbia, Rouse had a socio-political agenda in mind (Mitchell and Stebenne 2008). His aim was to create a diverse community. The population of Columbia in 2010 was about 100,000 of whom 55 percent were Caucasian, 25 percent African-American, and 11 percent Asian. It is, according to the census, the second wealthiest tract in the USA. This figure may be misleading because Columbia is not an incorporated city but forms part of the larger Howard County. Others of Rouse's social goals have not been successfully met. The teen centers, for instance, often became territories disputed by whites and African-Americans so they became segregated. Columbia, nevertheless, represents the effort to create a high-quality built environment that simultaneously achieves social goals.

Commentary: Is City Planning Just Urban Design? Is Urban Design Just City Planning?

The overlap between mainstream urban planning and urban design concerns is clearly substantial, particularly in precinct planning and design (as will be seen in the discussion of plug-in and piece-by-piece urban design later in this book). It is easy but misleading to see the process of urban development as a unidirectional one in which city planning decisions are translated into urban design decisions that are then translated into building and landscape designs. The flow of decision making should go in the other direction as well.

Important decisions at the detailed level have ramifications for larger-scale decisions. Thus the whole process of city planning can be seen as moving from the precinct level to the city level, and then to the regional level in an iterative manner. As decisions and

their effects are so interwoven at each scale, it is possible to see urban design as a sub-specialization within planning, where planning meets architecture and landscape architecture. On the other hand, it is possible to see urban design as the mediator between planning and architecture and neither one nor the other, although it encompasses both. Perhaps planning is a sub-area of urban design!

The whole development process in Singapore can be considered to be a series of all-of-a-piece urban designs. The design of new towns such as Columbia is a type of plug-in urban design where the infrastructure that determines much of the character of places was built first and then the buildings plugged into it.

References

- Appleyard, Donald with Sue Gerson and Mark Lintell (1981) *Livable Streets*, Berkeley and Los Angeles: University of California Press.
- Atlas, Randall (ed.) (2008) *21st Century Security and CPTED: Designing for Critical Infrastructure Protection and Crime Prevention*, Boca Raton: CRC Press.
- Bacon, Edmund (1969) Urban process: planning with and for the community, *Architectural Record* 145 (5), 113–28.
- Bacon, Edmund (1974) *Design of Cities* (Revised edition), New York: Viking.
- Engwicht, David (1999) *Street Reclaiming: Creating Livable Streets and Vibrant Communities*, Gabriol Island, BC: New Society.
- Forsyth, Ann (2005) *The Planned Communities of Irvine, Columbia and The Woodlands*, Berkeley and Los Angeles: University of California Press.
- Hester, Randolph T. Jr (1975) *Neighborhood Space*, Stroudsburg, PA: Dowden, Hutchinson and Ross.
- Lang, Jon (2005) Seaside, Florida, in *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural, 210–14.
- Lewyn, Michael (2003) Zoning without zoning, www.planetizen.com/oped/item.php?id=112, accessed March 23, 2010.
- Mehta, Vikas (2013) *The Street: A Quintessential Social Public Space*, Abingdon: Routledge.
- Mitchell, Joseph R. and David L. Stebenne (2008) *New City upon the Hill: A History of Columbia Maryland*, Stroud: The History Press.
- Moughtin, Cliff (2003) *Urban Design: Street and Square* (3rd edn), London: Butterworth Architecture.
- Newman, Oscar (1974) *Defensible Space: Crime Prevention through Urban Design*, New York: MacMillan.
- Perry, Martin, Lily Kong, and Brenda Yoh (1997) *Singapore: A Development City State*, New York: John Wiley.
- Punter, John and Matthew Carmona (1997) *The Design Dimension of City Planning: Theory, Content, and Best Practice for Design Policies*, London: E & FN Spon.
- Southworth, Michael and Eran Ben-Joseph (1997) *Streets and the Shaping of Towns and Cities*, New York: McGraw-Hill.
- Tannenbaum, Robert (1996) *Creating a New Town: Columbia, Maryland*, Chicago: Partners in Community Building and Perry.

Further Reading

- A High Quality Living Environment for all Singaporeans: Land Use Plan to Support Singapore's Future Population* (Jan 2013), www.mnd.gov.sg/landuseplan/e-book/, accessed March 15, 2015.
- Dale, Ole J. (1999) *Urban Planning in Singapore: The Transformation of a City*, New York: Oxford University Press.
- Gunder, Michael (2011) Commentary: is urban design still urban planning? *Journal of Planning Education and Research* 31 (2), 184–95.
- Hoppenfeld, Morton (1961) The role of design in city planning, *American Institute of Architects Journal*, 35 (5), 41–44.
- Tan Puay Yok (2013) *A Vertical Garden City, Singapore*, Singapore: Straits Times.
- Yuen, Belinda (1998) *Planning Singapore: From Plan to Implementation*, Singapore: Singapore Institute of Planners.

7

The Products of Landscape Architecture and the Nature of Urban Design

The border between landscape architecture in cities and urban design is often blurred. The quality of open spaces is crucial to the experiencing of cities and establishing their brand. It is difficult to consider Paris without its boulevards, New York without Fifth Avenue, or London without its garden squares, streets, and parks. The character of all these places is, however, defined not only by their landscape qualities but also by the buildings that face the open space and the activities they generate. It is dealing with this world as experienced in time—as a set of interlocking and nested behavior settings—that is the essence of urban design. Much landscape architecture in the city is, in contrast, concerned only with the space between buildings: the horizontal surface. It does not have to be so.

The Products of Urban Landscape Architecture: Streets, Pedestrian Malls, Squares, and Parks

The design of the public and quasi-public open spaces in a city is often regarded as urban design by landscape architects simply because it is urban. Many of such spaces are actually designed by architects rather than landscape architects perhaps because of their “hard” rather than their “green” qualities. Some schemes have resulted from a collaboration between architects and landscape architects, as in Denver’s 16th Street Mall and Pershing Square in Los Angeles.

City administrations increasingly recognize the importance of high-quality streetscapes and squares in establishing a positive image for their cities. This necessity is also clear to private property developers as can be seen at Canary Wharf (see Chapter 10). Portland, Oregon with its variety of squares in its downtown and attention to the design of streetscapes, has been particularly successful in the design of its central area. We have learnt much about the qualities of good design from examining those that are loved and are well used, as well as those that disappoint us (Billingham and Cole 2002; Gehl 2010; Lang and Marshall 2016a).

Deeply embedded in most architectural and landscape design paradigms is the belief that open spaces in cities are always a good thing and more of them are needed. In the Anglo-American world many people are convinced that trees and plants are automatically desirable elements of the cityscape. One of the lessons of the late twentieth century is that this belief needs to be tempered. Often they are desirable but the world is replete with examples of much-loved treeless squares such as the Piazza San Marco in Venice and streets such as Regent Street in London. In arid climates trees may be detrimental in establishing environmental quality. What is important is that the ecology of sites is respected in design as the Landscape Urbanists advocate (Almy 2007; Steiner 2011).

Street Landscapes

Streets, as Jane Jacobs noted, are “what comes to mind when you think of cities” (J. Jacobs 1961, 29). A street’s character comes from its physical features and the activities that take place along it as well as the nature of its buildings. Many cities have streets that are world famous: Fifth Avenue in New York, Champs-Élysées in Paris, and Oxford Street in London are among them. A street consists of: (1) a carriageway for vehicles; (2) a sidewalk for pedestrians; (3) the adjacent buildings and the way they meet the sidewalk; (4) the nature of the activities that the buildings house, particularly on the ground floor; and thus (5) the nature of their ground floors in terms of openings and fenestration.

The movement of vehicular traffic and people along a street is a major factor in establishing its nature. If the traffic volume and speed are substantial, this divides one side of a street from the other. The street becomes an edge and the two sidewalks along its sides become separate territories. If the traffic volume is low, the speed of its movement slow, and the street is narrow it becomes a seam joining its two sides together into a unit (Appleyard and Lintell) 1972; Appleyard et al. 1981; A. Jacobs 1993; Mehta 2009, 2013). The carriageway of a street serves as a link for vehicles although some streets also serve as occasional settings for public displays such as parades and other performances. Few streets are designed specifically for these additional functions.

Many streets in the hearts of cities throughout the world have been redesigned by architects and landscape architects in recent years. The goal has been to make them more pedestrian friendly and aesthetically attractive; 16th Street in Denver is a transit way that has been successful over the past thirty years. In other cases, streets have undergone a number of changes seeking to make them “vibrant places” befitting great cities. Both State Street in Chicago and George Street in Sydney have been designed and redesigned to meet this end. The inclusion of three case studies of street design/redesign in this chapter stresses the importance of the quality of streets in any urban design project.

CASE STUDY

16th Street Mall, Denver, Colorado, United States of America (1982, 2001, 2013–14)

A successful pedestrian and transit way; a dumbbell design

Despite many pedestrian malls that were created during the second half of the twentieth century being returned to vehicular traffic, some have survived and continue to thrive (Houston 1990). Denver’s 16th Street Mall is one of them (Figure 7.1). The mall was designed by I. M. Pei and Partners with Hanna/Olin as landscape architects. It was opened in 1982.

The mall originally stretched from Market Street to Broadway but was extended in 2001 to Union Station and in 2002 to meet up with the Central Valley Light Rail spur. The mall now extends for about 2 kilometers (1.25 miles) from Union Station to Civic Center Station at the intersection of

Broadway; the Colorado State Capitol building ends the vista. The mall traverses a number of precincts, each of which has a character that meets the demands of a segment of Denver’s population. The central area, for instance, caters to the lower end of the market.

Seven goals shaped the 1982 design. They were: to stimulate growth; to increase activity on 16th Street and adjacent areas; to create a civic identity; to provide improved access to the CBD with improved transportation systems; to reduce the polluting effects of automobiles; and to stimulate a sense of civic pride in Denver’s residents and visitors. These goals have been largely achieved.



FIGURE 7.1
16th Street Mall, Denver
in 2015.

Great attention was paid to the paving patterns, street furniture, and tree plantings. Important though these features are, the success of the mall as a lively pedestrian passage is as much due to contextual factors.

The mall has a dumbbell design: it has attractions at both ends. At its eastern end are the Denver Pavilions (a retail, dining, and entertainment node) and, on the west, the Writers Square/Larimer Square/London (Lower Downtown) and Union Station node. Another of the factors is that a free MallRide bus service runs up the mall. The buses currently on the mall are a second generation of right-hand-drive vehicles (in order for the drivers to see passengers entering the buses and to keep an eye on wandering pedestrians). Pedicab and horse-drawn carriages provide alternative transportation means. Over 300 shops and 50 restaurants make the mall a destination in its own right. People attract people so buskers find the mall a good place to “strut their stuff” and they in turn enliven the mall.

By 2008 the mall was beginning to show its age. The freeze–thaw cycles of Denver’s winters led to cracked tiles in the paving and the light fixtures were showing signs of wear and tear. The maintenance of the mall in an ad hoc manner was costing the Downtown Denver Business Improvement District taxpayers \$1 million each year. A study conducted by the Urban Land Institute

brought attention to some of the problems and opportunities worth addressing (Advisory Service 2008).

The cost of upgrading sixteen blocks of the mall based on the 16th Street Mall Technical Assessment and Rehabilitation Study (2009) and the 16th Street Urban Design Plan (2010) were estimated to be \$65 million. In July 2012 the Regional Transportation District (RTD) received a grant of \$10.0 million (\$8.0 million in federal funds matched by \$2.0 million in local funds, split between RTD, the City and County of Denver, and DDP/BID). During 2013 and 2014 this funding paid for the upgrading of three and a half of the most degraded blocks of the mall. Some effort was made to giving a greater sense of arrival at the ends of the mall and better linkages from it to adjacent precincts/neighborhoods.

The Downtown Denver Partnership, which manages the Downtown Denver Improvement District, is now working on plans to make use of the sixteen alleys that terminate or cross the mall (Downtown Denver Partnership, Inc. 2014; Vacecatrelli 2014). A pilot effort—the holding of the Brewer’s Alley Festival on one of the alleys—was followed by the painting of four murals on the walls. Similarly, efforts are being made by private enterprises to enhance the offerings of the cross streets. In doing so much can be learnt from Melbourne’s laneways programs (see Chapter 12).

CASE STUDY

State Street, Chicago, Illinois, United States of America (1979, 1993–6, 2008)***Street to transit mall and back to street again; a Modernist to a Revivalist transformation***

State Street runs north–south within Chicago’s Loop—the city’s central area of commercial, retail, educational, and entertainment facilities. The street has undergone two major renovations, each seeking to make it a “vibrant and pedestrian friendly”

shopping street. The case study shows that intuitively obvious design ideas are not always correct. The street was converted from a heavily trafficked one with parallel parking on both sides to a car- and bicycle-free transit mall in 1979. The parking



(a)



(b)



(c)

FIGURE 7.2 State Street, Chicago. (a) An artist’s rendering of the 1979 transit mall proposal; (b) a view in 1993 showing the wide sidewalks; (c) State Street in 2015.

Source: (a) Collection of the author

spaces were converted into wide sidewalks as can be seen in Figures 7.2a and b. The goal was to give new life to a decaying main street affected by the flight of the white middle-class to the suburbs.

The 1979 proposal was typical of the plans made for over 200 city cores in the United States based on the precedent set by Kalamazoo Mall designed by Victor Gruen in 1959. Under the leadership of Mayor Jane Byrne, State Street was revamped at a cost of \$17million (Kalamazoo's was \$60,000 in 1959 dollars). It featured wide sidewalks with "bumpouts" to make it easier for people to get on and off buses; shelters at bus stops were also provided. Food vendors were encouraged and abstract public art was placed at strategic locations. Sadly, the Modernist design of the mall soon looked dated and "tacky." The diesel fumes of frequently lined-up buses were thoroughly unpleasant. The widened sidewalks made the street look deserted with none of the hustle associated with downtowns (Maloolley 2014).

While State Street was closed to traffic, North Michigan Avenue became the home to Chicago's upscale stores. State Street lost Goldblatt's, Montgomery Ward, Wieboldt's, Bonds, and Baskins, the stores that gave it much of its character. They were replaced by a mix of discount stores, adult bookshops, and strip clubs. Located in a haphazard fashion, they changed the character of the street adversely in middle-class eyes.

In 1993 the city under Mayor Richard M. Daley initiated the State Street Development Plan and Urban Design Guidelines project. Its goal was to capture the purchasing power of the growing number of workers and residents in the downtown area by diversifying the offerings of State Street and its surrounding precinct. The objective was to create a mixed-use corridor consisting of three components: an entertainment district to the north, an educational cultural area to the south, and a strong retail area in between them.

The Central Loop Tax Increment Financing District that existed from 1985 to 2008 enabled new developments to be subsidized by the predicted increase in revenue from future property taxes. The improvements included the State/Roosevelt subway station, the Chicago Theater, belatedly Block 37, which lies between State, Randolph, Dearborn and Washington Streets, and the Dearborn Center. In 2014 plans were afoot to add a residential component to Block 37, a failed shopping mall.

The design of the street by Adrian Smith and Peter van Vechten of Skidmore, Owings & Merrill, LLP involved dismantling the transit mall, re-opening it to vehicular traffic, and refurbishing the street furniture. The sidewalks and subway entrances were narrowed and the existing street lights, traffic lights, and signage were replaced. Narrowing the sidewalks means that pedestrians walk closer to the shopfronts. It creates a sense of bustle and vitality to the street. The Modernist design gave way to a historical revival one. The steel and cast-iron street lampposts replicate the 1920 designs created by the followers of Daniel Burnham. They symbolize the confluence of the two branches of the Chicago River. The subway entrances are in a Neo-Deco-Moderne style giving, along with such items as tree grids and air-vents, a unified character to the street (Figure 7.2c). The design received a National Honor Award for Urban Design in 1998.

The design itself represents no forward thinking but matches its surroundings. Its impact has been substantial (Berner 2008). The retail recovery has been led by stores such as Macy's, Sears, Old Navy, and GAP. The refurbishment of the Washington Library in 1991 may well have been the catalyst for attracting DePaul University to the precinct in 1993, Robert Morris College in 1997, Columbia College in 2004, and John Marshall Law School in 2012 (van der Waa 2008).

CASE STUDY

George Street, Sydney, New South Wales, Australia (1997–9, 2010–17)*Evolving designs for a city's major street seeking to be a great street; a light rail corridor*

George Street runs north–south through Sydney's Central Business District for 2.6 kilometers (1.8 miles). Heading south from The Rocks, a tourist area and home of the Museum of Contemporary

Art, the street first passes through Wynyard, a precinct of commercial office buildings, major hotels, and retail shops. Martin Place, a pedestrian mall with a cenotaph, butts into it here. The central



(a)



(b)

FIGURE 7.3 George Street, Sydney. (a) George Street today; (b) an image of the future George Street.

Source: (b) Courtesy of Grimshaw, on behalf of ALTRAC Light Rail

section of the street is dominated by Town Hall and St Andrew's Cathedral, while immediately to its south is an entertainment district of cinemas, video-arcades, and fast food outlets. George Street then passes through Chinatown before ending at Railway Square, a bus terminal linked to the city's Central Station.

The responsibility for planning and managing changes for George Street lies with the City of Sydney, although the state government of New South Wales retains veto power over planning decisions in the city. The street was upgraded between 1997 and 1999 and is now going through a redesign as visions for what it can be have become more ambitious.

George Street hardly befits an elite metropolis. A Statement of Environmental Effects of George Street Urban Design and Transportation Study (1993) noted that the street afforded little pedestrian amenity and possessed no unified aesthetic quality. In the mid-1990s a decision was made to upgrade the street. The city council was the client but the Public Work Department (PWD) had the ultimate responsibility for its design. Margaret Petrykowski of the PWD assembled a team that included a number of prominent architects, with Tract Consultants as landscape architects. The civil engineering and quantity surveying work was contracted out to private firms. The budget for the project was AU\$75 million (US\$50 million in 2000).

The median strips were removed where they existed and the sidewalks were paved in bluestone with granite gutters. A coordinated set of furniture was installed and pollution-resistant plane trees planted along the length of the street. Although the trees have not fared particularly well, they do give some visual unity to the street. The scheme was carried out in a series of stages. During construc-

tion much opposition arose to the changes as both vehicular and pedestrian traffic flows were hindered. Some design changes had to be made but the project received continued political support. The result of all this work was a tidier street unified by consistent paving materials and street furniture.

Perceptions of what makes a great street change. Following a study of Sydney's CBD by Jan Gehl and his colleagues, a number of changes to George Street were proposed (McNeill 2011). The proposal had precedents in cities, such as New York, to make it more up-to-date and pedestrian friendly, and Portland, Oregon, where light rail has contributed to the development of its CBD.

The introduction of light rail along George Street from Bridge Street to Liverpool Street and the creation of a number of city squares along its route are significant proposals (McKenny 2013). The one opposite Town Hall, if implemented, could become the heart of the city. The state has budgeted AU\$1.6 billion for the whole project, with the Sydney City Council contributing AU\$220 million as its share. If the refurbishing of George Street caused problems in the 1990s, the re-transformation of the street into a pedestrian boulevard for much of its length will cause many complaints until its completion in 2019, when it is predicted to be a lively destination with a coordinated design of street surfaces, wider sidewalks, trees, much public seating, and outdoor dining areas.

The catalytic effect of the original refurbishment was noticeable especially in the Railway Square area. The present proposal coincides with and creates further opportunities for many large-scale development projects along its route. In combination with a development control plan, the work on George Street is certainly a plug-in urban design.

Squares

Squares take on an extraordinary range of configurations. Their character depends on the enclosing buildings, their height, and what happens on their ground floors as much as on the design of the square itself. The design of squares can be regarded as plug-in urban designs when they are purposefully designed to have a multiplier effect on their neighborhoods. The two examples of squares—Cours Honoré d'Estienne d'Orves in Marseille and Pershing Square in Los Angeles—are what many landscape architects would

regard as urban design. Their physical frame was, however, given and was not part of either commission. The former square has had a major effect on its surroundings; the latter not, at least not yet.

Car parking in cities is a worry everywhere; parking spaces, whether in the form of surface lots or structures, both above and below ground, have been created wherever space can be found. Many city squares have been turned into surface parking areas. Although fulfilling the demand for parking, the change has often been accompanied by the deterioration of the surrounding precinct. A number of such parking lots have been returned to public open space and pedestrian traffic. What sets the Cours Honoré d'Estienne d'Orves in Marseille apart from others is that it had been a substantial parking structure rather than a surface lot.

CASE STUDY

Cours Honoré d'Estienne d'Orves, Marseille, Bouches-du-Rhône, France (1980–5)

A redevelopment initiated by a community group to enhance the quality of its neighborhood

The Cours Honoré d'Estienne d'Orves (Figure 7.4), named in honor of a French naval hero of the Second World War and a martyr of the Resistance, was once the Canal de l'Arsenal des Galeries connected to the Vieux-Port of Marseille. The

arsenal became redundant in the late eighteenth century and the link to the Vieux-Port became a customs canal. It was filled in during the 1920s when the Vieux-Port ceased being a commercial harbor. The site became a rather grim open space.



(a)



(b)

FIGURE 7.4 The Cours Honoré d'Estienne d'Orves, Marseille. (a) The parking structure in the late 1980s; (b) the square looking east on a late spring day.

Source: (a) Collection of the author

In 1965, the municipal government erected a three-level parking structure on the site. This description of the square has been previously published in Lang and Marshall (2016b). It is a good example of urban landscape architecture as urban design, so it is included here.

During the 1980s Les Arcenauix, a residents' association, sought to upgrade their neighborhood. The mayor supporting the group, Robert Vigoroux, was a strong advocate for the demolition of the car park and the creation of a square of 12,300 square meters (about 3 acres). Marseille's municipal government demolished the parking garage and replaced it with underground parking for 650 cars. The cost of €2,674,500 (in 1985 terms) for the development was justified as being a catalyst for the regeneration of the surrounding precinct (Aspuche *ca* 2012).

The ratio of width to the height of surrounding buildings gives the square a fine sense of enclosure, of being an outdoor room. Marseille's latitude of 43°N and the square's east–west orientation enables the sun to bathe the square's northern side in light while the southern side is in shade, as can be seen in Figure 7.4b. The northern is the preferred side in spring and autumn but on hot days shade is sought. The 1.50 meter (5 foot)-thick ceiling of the parking garage makes it possible to include services and carry the weight of fountains and, if it had been so desired, planting.

The square is a simple, rectangular closed type. It was designed to host a variety of events such as markets and concerts, so its surface is largely a flat paved area. Only one of the original

arsenal buildings remains, but older buildings facing the square have been refurbished; new ones were designed with decorum, thus maintaining the square's historic character. The ground floors of the adjacent buildings open directly on to the square, in many cases without a single step up. Passers-by can thus look directly into the windows of the shops, galleries, and restaurants that line the edges of the square.

The square's context is vital to its success. It is located on the daily paths of movement of workers and residents and is a link between the underground parking garage and the surrounding precinct. The parking garage makes the square a destination for drivers. From the parking garage pedestrians access the square via steps and lifts located in the square itself. Access from the core of the city, from the heart of the tourist destination of the Vieux-Port, and from surrounding residential areas, is easy. The terrain is flat and few streets have to be crossed. Nearby streets are narrow.

The ground floors of the buildings that line the square are located directly on the square and no cars pass between them and the open area. The windows overlooking the square provide opportunities for natural surveillance, although not too much should be expected of the consequences. The large number of restaurants on the square is a major drawback as are the bookshops and galleries located on it. The people who frequent the restaurants are of all ages but clearly middle-class or wealthy. Children can be seen running around playing on the hard surfaces of the square.

CASE STUDY

Pershing Square, Los Angeles, California, United States of America (1994–9, 2014+)

A square in search of an identity and place in the city

Pershing Square is central Los Angeles' major public open space. It was founded in 1866 as the Plaza Abaja but was renamed after the First World War in honor of General Pershing, Commander-

in-Chief of the American Expeditionary Force. The square has been redesigned several times over the years. It was, for example, renovated for the 1984 Olympic Games that were held in the city.

The most recent redesign was a US\$14.5 million makeover designed by Ricardo Legoretta and Laurie Olin in 1994. The square they inherited lay above an underground parking garage and consisted of a lawn with trees and diagonal paths that met at a central point where it contained two reflecting pools. The pools were donated by a Hungarian immigrant, Kelly Roth, in honor of his wife (Lang and Marshall 2016c).

The square is a full Los Angeles city block—5 acres (2.2 hectares) in size. It is circumscribed on all sides by streets carrying vehicular traffic and it is raised (about 3 feet/1 meter) above the street level so that the parking garage built under it in 1952 could be retained. Its entrances, paralleling the traffic flow on the adjacent streets, somewhat hamper access to the square for pedestrians.

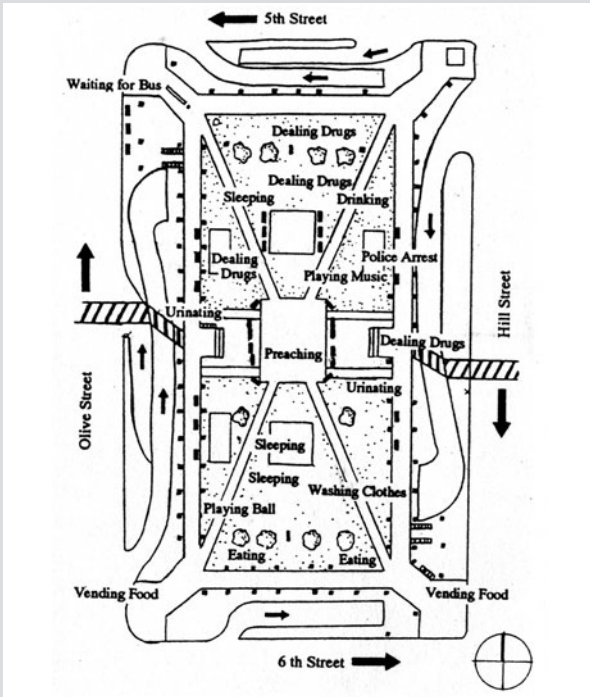
One of the objectives of the design competition held in 1994 was to eliminate the unsavory character of the square and for it to symbolically represent both the Latino and Anglo populations of the city (Loukaitou-Sideris and Banerjee 1988, 153–60; Douglas-James 2015). Legoretta and Olin's winning design was never fully implemented but its major components can be seen in place today. Legoretta strove to create a *zócolo*, the square at the heart of many Mexican cities. In the center of the square is an orange grove that is a reminder of the importance of orange farming in the history of Los Angeles County. A court with a fountain lies at the southern end of the square and the fault line that runs through Los Angeles is represented by a jagged line designed by Barbara McCarren that cuts across it. A starred paving pattern resembles the stellar constellations visible in the city during the winter. The square also contains a ten-story purple bell tower, a "Mayan style" amphitheater, benches in which images of Los Angeles are imprinted, planter boxes with ledges at seat height, and works of art and mementos of the past. The bell tower, aqueduct, and orange spheres represent the flow of water from the Sierra Nevada to the east of Los Angeles down to the orange groves. The square also houses a statue of Eugene A. Obregon, a Mexican-American hero of the Korean War.

Pershing Square no longer has the reputation of its past, but it is still regarded as an unattractive

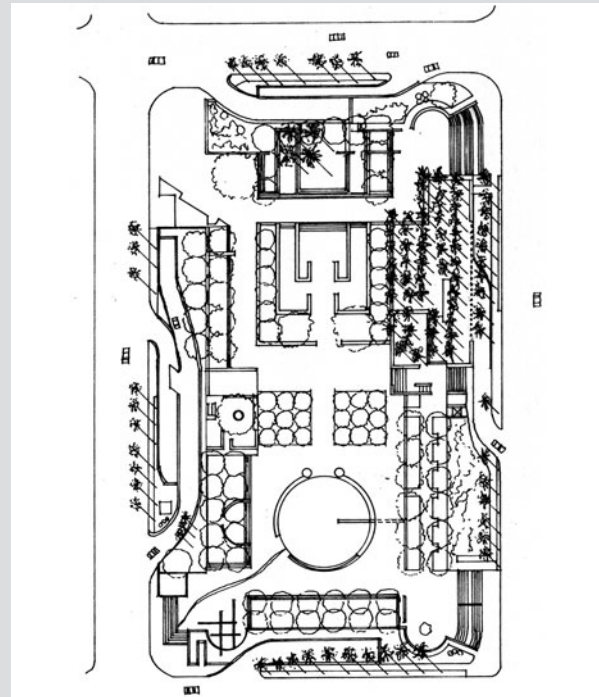
place. The former habitués have been moved on by the police but the benches continue to provide places for some homeless people to gather. Regular formal events in the form of rallies, celebrations, and programs for children are successful in attracting people and temporarily activating the square. In winter an ice rink proves to be popular but on a typical pleasant mid-day only a handful of workers in the surrounding buildings eat their lunches in the square. The presence of panhandlers begging for money makes middle-class people feel uneasy.

The reason that the square is seldom lively lies not with the square itself but with its surroundings; they do not contain the critical mass of people other than the homeless who could potentially use the square. Being a popular spot for homeless men, there is often a lingering smell of urine in some parts of the square. The sonic ambient quality of the square with the cars and trucks driving by, although not overwhelming, deters middle-class people from enjoying the square. There are many elements in the square to clamber on that would make it a fine playground for children if it were an attractive place for their parents to visit. The 1994 redesign shows that changing a design does not necessarily change the communal use of a square; a design can, however, afford formal gatherings well (Hinkle 1999).

The Friends of Pershing Square, a public interest group, believes that a number of changes should be made to the square: (1) the surrounding walls should be demolished so that people can see into it; (2) the long driveway entrances to the parking garage should be replaced with perpendicular ones; (3) the sidewalks around the square should be widened; (4) parallel to these sidewalks should be tables with inlaid chessboards and other similar amenities; (5) the square should be de-cluttered to make it possible to use it as a diagonal link; and (6) the square should have a café or restaurant. The organization believes that the square should be more like New York's Bryant Park (designed by Pershing Square's landscape architect, Laurie Olin) or San Francisco's Union Square (Yen 2013). In the meantime, a US\$700,000 renovation paid for by local business interests is underway. It is another effort to make Pershing Square a meaningful place.



(a)



(b)



(c)

FIGURE 7.5 Pershing Square, Los Angeles. (a) Before revitalization; (b) the Legoretta and Olin scheme; (c) the square in 2014.

Source: (a) Loukaitou-Sideris and Banerjee (1988); (b) courtesy of Olin Partnership; (c) photograph by Bruce Judd

The nature of central Los Angeles is changing; it is becoming reinhabited as many people, including families, discover the benefits of central city apartment living. In late 2014, a \$2 million proposal to revamp the square was announced. Two children's playgrounds, each catering to a

specific age group, were included in the proposal (Evans 2014). It will be interesting to see whether the square achieves the goals originally set for it in the 1990s. It remains a square in waiting relying on formal gatherings to enliven it.

Parks

Park design is an aspect of the work of landscape architects that often merges with urban design. Parks are designed and redesigned as the accepted contemporary paradigm changes within a culture. Some follow Classical design principles; others are in the English Landscape tradition. Cities seeking green credentials and to be seen as prestigious places create parks wherever they can as land becomes available. Parks created on the sites of abandoned quarries, brickworks, and industrial sites can be considered to be a type of plug-in urban design because of their potential catalytic effects, but they remain products of landscape architecture. Parc de la Villette and High Line Park are located on abandoned sites in Paris and New York, respectively.

To be an urban design, a park needs to be integrated with buildings in a single design approach. Bernard Tschumi achieved this end in the design of Parc de la Villette, although its integration with its surroundings is not well developed. High Line Park is very much a longitudinal object in space. It has had a major catalytic effect on its surroundings but its design and the design of its surroundings took place largely independently. The two case studies have in common being brown-field development sites. They also exemplify cutting edge design paradigms.

CASE STUDY

Parc de la Villette, Paris, France (1979–87, 2010, 2015)

A deconstructed, mixed-use landscape and architectural design. A total urban design project?

Parc de la Villette has a complex development history. In 1979, the Établissement Public du Parc de la Villette (EPPV) initiated its development. The site consisted of 55 hectares (136 acres) of semi-abandoned industrial land in the northeast corner of Paris. It included a major slaughterhouse and a cattle hall/sales yard. The now disused industrial Canal de l'Ourcq cuts the site into two and another canal borders much of the site on the west. The creation of the park was part of the effort to make Paris once again the art center of the world. The specific objectives of the proposal were: (1) to create a product of international note, (2) to build

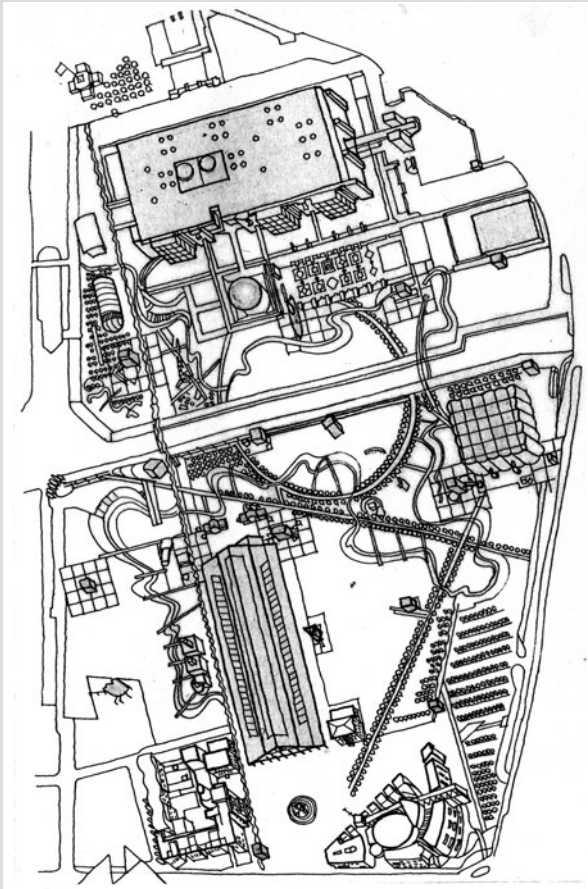
a national museum of science and technology, and (3) to create an urban "cultural" park.

An international design competition was held in 1982. Its program was an act of will on the part of the French government (much influenced by President Giscard d'Estaing's wishes). It included a large museum of science and industry, a *cité* of music, a major hall for exhibitions, and a rock concert hall as well as the park. It required two existing structures on the site to be reused. The competition specified that the park had to reflect "urbanism, pleasure and experimentation" and achieve a unity in its architecture and landscape

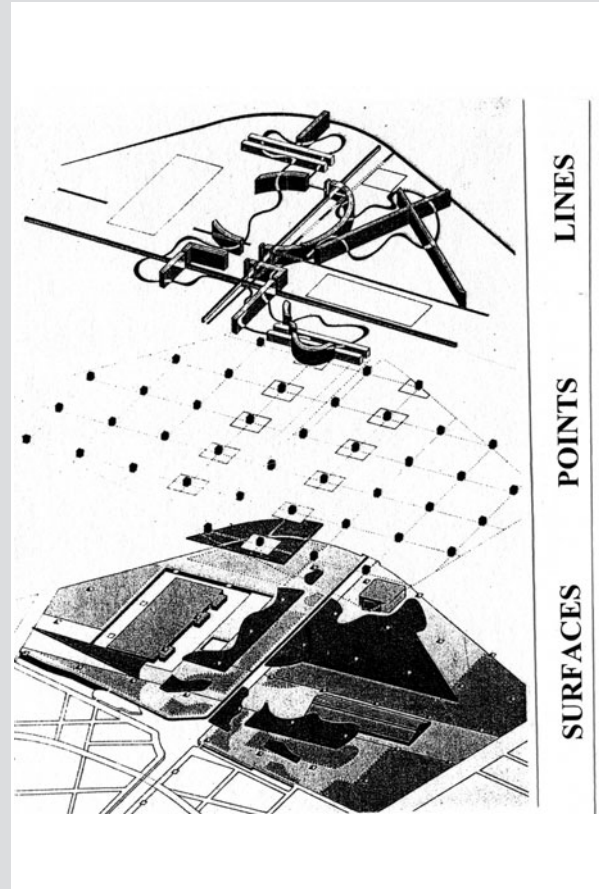
(Souza 2011). A given was the choice of Adrein Fainsilber from a selection of 27 architects to design a science museum.

A team headed by Bernard Tschumi and Colin Fournier won the design competition, which attracted over 470 entries from 41 countries.

Tschumi was then appointed head of the project team to turn the winning design into a pragmatic solution. The construction began in 1985 and was completed by 1997, although changes continue to be made to it. Its state in 2005 is shown in Figure 7.6a.



(a)



(b)



(c)



(d)

FIGURE 7.6 The Parc de la Villette, Paris. (a) The park design; (b) the design deconstructed; (c) a view towards the Canal de l'Ourcq; (d) Le Géode seen from the Cité des Sciences.

Source: (a) Drawing by Yin Yin; (b) courtesy of Bernard Tschumi

The design continues to attract attention because it is associated with a design ideology derived from the contemporary deconstructivist literary analysis of Jacques Derrida (Benjamin 1988). The pattern underlying the design consists of three largely independent systems superimposed on each other (see Figure 7.6b). The first is a series of points at the intersections of a 120-meter (390-foot) grid, eight squares to the north and south and five squares east to west. At the intersections are follies, their structural envelope covered by bright red-enameled steel sheets. The second system consists of a set of lines. They are the paths of pedestrian movement organized in two interconnected maps. One consists of cross axes of covered galleries and the second a meandering "Cinematic" promenade presenting a sequential experience of vistas for the pedestrian. The third system consists of the surfaces of the park. In addition, alleys of trees link the major activity sites of the park. The surface materials of grass and paving were chosen to best afford the activities that were expected to take place in different locations.

The follies are 10.78-meter (36-foot) cubes "divided three dimensionally into 12 foot cubes forming 'cases'." These cases "can be decomposed into fragments . . . or extended through the addition of other elements" (Tschumi 1987: 48). They were all designed by Tschumi. Certain of the 10 themed gardens on the cinematic promenade were designed by other architects within the framework established by Tschumi (Tschumi 1987; Souza 2011).

The park today contains a mixture of facilities. The Cité des Sciences is a major feature. It is 40 meters (133 feet) high and stretches over 3 hectares (7 acres). Fainsilber (with Peter Rice and Martin Francis) had three major concerns in creating its design: water should surround the building, vegetation should penetrate its greenhouses, and light should flood the cupola. The park also contains La Géode, a giant entertainment sphere with an IMAX theater inside; the Grande Halle (an historic cast-iron cattle shed converted into exhibition space); the Cité de la Musique (the Philharmonie de Paris, designed by Jean Nouvelle, a symphonic concert hall seating 2,400 that was opened in January 2015); a 1950s submarine, *l'Argonaute*, on display outside the museum; the Espace Chapiteaux, a 4,200-square meter permanent space under a tent where resident and touring companies can perform; and the Zenith Theatre designed for audiences of 6,300 attending smaller-scale concerts of popular music. The theater is housed in a polyester tent.

Parc de la Villette is visited by over 10 million people each year. It is internationally acclaimed because of its intellectual aesthetic foundation and is regarded by the cognoscenti as a design for the twenty-first century. It has been embraced by the architectural cognoscenti, giving them much food for thought. Visitors simply enjoy the experience of being there and enjoying themselves. In many ways Parc de la Villette is a total urban design project. It was produced by one team and it combines landscape architectural and architectural elements into a unified whole.

CASE STUDY

High Line Park, New York, New York, United States of America (1999–2015+)

A landscape architecture project with a strong but not coordinated catalytic effect

What are the affordances of abandoned railroad lines? In Britain thousands of miles of rail lines have been turned into cycling and hiking roads or bridlepaths, mostly in the countryside. The Promenade Plantée (or Coulée Verte) is a partially

elevated 4.7-kilometer (2.9-mile) linear park in Paris (Figure 7.7a) and the similar 1.9-kilometer (1.2-mile) long Hofbogen in Rotterdam is a financially hamstrung project under development. Minneapolis has its Midtown Greenway, primarily

a bicycle route. High Line Park in New York is the project that has captured most attention.

Constructed in 1934 as part of the Westside Improvement Project to enhance public safety at the ground level, the High Line is an elevated structure once carrying freight railroad tracks. It was owned by CSX Transportation. For much of its length it is 9 meters (30 feet) above street level. Today the structure runs through three New York precincts for 2.3 kilometers (1.45 miles) from the Gansevoort Meat Packing district in the south northwards through Far West Chelsea to the Hudson Yards urban renewal development. The far southern section between Bank and Clarkson Street was demolished between 1960 and 1980. The last train ran down the remainder in 1980 leaving the tracks and surrounding neighborhoods to decay. Artists started to move from SOHO into disused loft buildings in the area between 20th and 29th Street creating a character that remains to this day.

Nobody was happy with the dilapidated High Line. Chelsea Property Owners, a group of landowners who possessed land below the tracks, lobbied to have the line torn down. Receiving support from Mayor Giuliani, the process of creating a demolition order was begun (LaFarge 2014). In 1999, a photographic essay by Joel Sternfeld depicting the beauty of the self-seeded “wildscape” appeared in the *New Yorker* (Gopnik 2001; Sternfeld 2012). It brought attention to the possibility of using the High Line as a park. In the same year, Joshua David and Robert Hammond formed the Friends of the High Line (FHL), a non-profit organization whose goal was to turn the High Line into a park as had been done with the Promenade Plantée in Paris (Gastil 2013). The importance of a precedent in making an argument for a project is clear in this case. Both technical and economic feasibilities of making something attractive of the High Line had to be made clear to the landholders through whose neighborhoods the line ran. At about the same time CSX Transportation commissioned the Regional Plan Association to study the reuse of the tracks as part of the Federal Government’s Rails to Trails Program. It resulted in CSX donating the structure to the City of New York (LaFarge 2014).

In 2002, the FHL with the Design Trust for Public Space, a non-profit organization founded by Andrea Woodner in 1995, published a feasibility study, *Reclaiming the High Line*, which influenced New York City’s Department of Parks and Recreation’s decision to transform the abandoned railway into a public amenity. The study described the High Line’s history, structural conditions, local land uses and zoning ordinance, and community needs. When Michael Bloomberg was elected Mayor of New York he appointed Amanda Burden, a Friend of the High Line, as chairperson of the city’s Planning Commission. She enabled the rezoning of the West Chelsea District that led to the Chelsea Property Owners realizing that the High Line as a park would increase the value of their landholdings, so they changed their minds about having it demolished (David and Hammond 2011).

A design ideas competition was held in 2003 drawing 720 entries from 36 countries. A year later, Friends of the High Line and New York City’s Economic Development Corporation selected James Corner Field Operations (as lead consultant) and Diller Scofidio+Renfro along with Piet Oudolf as the design team for creating the park. In April of the following year their preliminary design idea was displayed at the Museum of Modern Art. It led to the Surface Transportation Board issuing an interim certificate for trail use of the High Line. Ground was broken for the implementation of the design in 2006 and construction began on the southernmost section of the project. It was opened to the public in mid-2009. Section Two opened two years later while part of the third section in the north was opened in 2014. The final segment that ties into the Hudson Yards development is due to open in 2018.

The design falls within the purview of the Landscape Urbanism paradigm. The design team took an “agri-tecture” approach to the design task, integrating diverse plantings and hard materials to accommodate sitting, lying, walking, and jogging. Fine views of the streets below, the Hudson, and the city are part of the sequential experiences provided by walking along the High Line. The pedestrian passes through a variety of landscapes described as Pit, Plains, Bridge, Mound, Ramp, and



(a)



(b)



(c)



(d)

FIGURE 7.7 Abandoned elevated rail lines turned into linear parks, Paris and New York. (a) Promenade Plantée, Paris, 1980–1993; (b) High Line and High Line Park, New York, 2003+.

Flyer, each with its own ratio of hard to soft surfaces and types of planting. The furniture was designed for its expected use, its up-to-date design quality, its symbolic associations with the line's past surroundings, and its sustainability. Seating was arranged to encourage social contact. Light fittings were installed below eye level to illuminate the pathway. Temporary art installations add to the attractiveness of High Line Park as a destination. As important as the design of High Line Park has been the establishment of the means of getting access to it during its open hours (7.00 am to 7.00 pm in winter, 10.00 pm in spring and 11.00

pm in summer). Nodes of hard landscape exist where stairways and, in some cases, elevators from the sidewalks below meet the park. Eleven access points are placed at easy walking distance from each other and at places that link into transport systems at street level. The entrance at 34th Street is by ramp, making it easy for people in wheelchairs to access the park as well as by the elevators.

The climate of New York is a harsh continental type with extreme heat in the summer and cold in the winter. As a consequence, High Line Park's planting selection was based on the rich variety

of self-seeded vegetation that grew there during the years of the line's abandonment. The perennials and grasses were chosen for their hardiness and sustainability as much as their color; they are largely local species.

The estimated cost of building the High Line was \$65 million; the actual cost of Sections One and Two was \$152.3 million, with \$132.2 million coming from the city's coffers along with \$20.3 million from the Federal Government and \$400,000 from the State of New York. The total design and construction cost of all three sections has been estimated to be about \$274 million. By the end of 2014 The Friends of the High Line and other private and corporate entities had contributed \$44 million to the construction price. A further \$6.9million was paid by Caledonia Developers in exchange for the right to add extra stories to an adjacent luxury apartment building that it was constructing. On the revenue side, it was estimated that the city would obtain an extra \$250 million in property tax revenues over twenty years but this figure appears to be an underestimation.

High Line Park could be regarded as a plug-in urban design. It is an important public benefit and a developers' amenity (Gopnik 2015). Its catalytic effect on adjacent property values has been substantial. The impact has been aided by the rezoning of the newly-created Special Chelsea District allowing the transfer of development rights. Negative side effects have, however, also been incurred. The gentrification of the area and the number of tourists that visit the High Line have resulted in many businesses that catered to the local population failing financially. The surrounding population seems, however, to have accommodated itself to the influx of visitors to High Line Park. In 2012 there were 4.4 million of them. The project's success has been noted internationally. The Goods Line in Sydney that opened in 2015 and the proposed 24-kilometer Kertepi Tanah Melayu Railway project in Singapore are descendants.

Commentary: Are These Landscape Architectural Projects Plug-in Urban Designs?

Can all the examples described here—or any of them—be regarded as urban design? Certainly the effect of the 1996 design of State Street in Chicago can be regarded as a “plug-in urban design” project because it was accompanied by urban design guidelines and because of its purposefully sought catalytic effect. Achieving this effect was one of the goals of the project.

Where landscape designs, whether they are for streets, squares, or parks, include the elements that frame open spaces they are surely urban design. If they do not, they remain landscape architectural works. Professional landscape architecture societies would, however, claim this distinction is pedantic nonsense and that any landscape design in a city is urban design. The distinction is certainly often blurred. State Street in Chicago is, for instance, included in this chapter but River Walk in San Antonio is regarded in this book as an example of plugged-in urban design (see Chapter 11). It could be argued that the latter's design was really dealing with only the space between buildings and so it is simply a fine landscape architecture project. One of its goals was, however, to change the nature of central San Antonio and it has. High Line Park has changed the precincts through which it passes but its doing so was not part of its charter. The Hofbogen in Rotterdam is, in contrast, a key element of a concerted urban regeneration effort.

Some important topics that concern landscape architecture's contribution to urban design have not been addressed in this chapter. One of these concerns is the designing

of the public realm of cities in arid climates. “Greening cities” is a catchy but unfortunate slogan for improving the biogenic quality of cities. Greening cities in arid zones such as Phoenix, Arizona or Tehran, or the small semi-desert towns of outback Australia or Jaisalmer in India’s Thar Desert, needs to be considered very carefully. Such cities need to be “brownd” as much as “greened.” Much can be learnt from the plantings in traditional settlement patterns in different climatic zones where towns and villages have been built with limited resources.

References

- Advisory Service, Urban Land Institute (2008) *16th Street Mall, Denver Colorado: Building on Success*, Washington, DC: The Urban Land Institute, <http://uli.org/wp-content/uploads/ULI-Documents/2008DenverReport.pdf> accessed March 23, 2015.
- Almy, Dean (2007) *Center 14: On Landscape Urbanism*, The Center for American Architecture and Design, University of Texas at Austin Press.
- Appleyard, Donald and Mark Lintell (1972) The environmental quality of streets, *Journal of the American Institute of Planners* 38 (2), 84–101.
- Appleyard, Donald with Sue Gerson and Mark Lintell (1981) *Livable Streets*, Berkeley and Los Angeles: University of California Press.
- Aspuche, Albert G. (ca 2012) Cours d’Estienne d’Orves, Marseille, www.publicspace.org/en/works/z012-cours-d-estienne-d-orves, accessed June 15, 2014.
- Benjamin, Andrew (1988) Deconstruction and art/the art of deconstruction, in Christopher Norris and Andrew Benjamin (eds) *What is Deconstruction?* New York: St Martin’s Press, 33–56.
- Berner, Robert (2008) With the pedestrian mall gone, the crowds are coming back, *The Wall Street Journal*, www.wsj.com/articles/SB905302835123163000, accessed March 22, 2015.
- Billingham, John and Richard Cole (2002) *The Good Place Guide: Urban Design in Britain and Ireland*, London: T. Batsford.
- David, Joshua and Robert Hammond (2011) *High Line: The Inside Story of New York City’s Park in the Sky*, New York: Farrar, Straus and Giroux.
- Department of Public Works and Services and the Council of the City of Sydney (1993) *A Statement of Environmental Effects of George Street Urban Design and Transportation Study*, Sydney: the authors.
- Douglas-James, David (2015) AD classics: Pershing Square/Ricardo Legoretta + Laurie Olin, *ArchDaily* (November 30), www.archdaily.com/776828/ad-classics-pershing-square-ricardo-legoretta-plus-laurie-olin, accessed March 20, 2016.
- Downtown Denver Partnership, Inc. (2014) *16th Street Plan*, www.downtowndenver.com/initiatives-planning/16th-street-plan, accessed March 24, 2015.
- Evans, Donna (2014) Two playgrounds, other improvements coming to Pershing Square, www.ladown townnews.com/news/two-playgrounds-other-improvements-coming-to-pershing-square/article_2c68d9f2-3eca-11e4-aeb4-bb3b8c2dd0dc.html, accessed July 23, 2014.
- Gastil, Ray (2013) Prospect parks: walking the Promenade Planteé and the High Line, *Studies in the History of Gardens and Designed Landscapes* 33 (4), 280–9.
- Gehl, Jan (2010) *Cities for People*, Washington, DC: Island Press.
- Gopnik, Adam (2001) A walk on the High Line, *The New Yorker* (May 21), 44–7.
- Gopnik, Adam (2015) Naked cities: the death and life of urban America, *The New Yorker* (October 5), 80–5.
- Hinkle, Ricardo (1999) Planning Pershing (the flaws and shortcomings of Pershing Square), *Landscape Architecture* 89 (6), 9.
- Houston, Lawrence O. (1990) From street to mall and back again, *Planning* 56 (6), 4–10.
- Jacobs, Allan B. (1993) *Great Streets*, Cambridge, MA: MIT Press.
- Jacobs, Jane (1961) *The Death and Life of Great American Cities*, New York: Random House.
- LaFarge, Annik (2014) *On the High Line: Exploring America’s Most Original Park* (Revised edition), New York: Thames and Hudson.
- Lang, Jon and Nancy Marshall (2016a) Pershing Square, in *Urban Squares as Places, Links and Displays: Successes and Failures*, New York: Routledge, 195–8.
- Lang, Jon and Nancy Marshall (2016b) Cours d’Estienne d’Orves, Marseille, in *Urban Squares as Places, Links and Displays: Successes and Failures*, New York: Routledge, 165–8.

- Lang, Jon and Nancy Marshall (2016c) *Urban Squares as Places, Links and Displays: Successes and Failures*, New York: Routledge.
- Loukaitou-Sideris, Anastasia and Tridib Banerjee (1998) *Urban Design Downtown: Poetics and Politics of Form*, Berkeley and Los Angeles: University of California Press.
- Malooley, Jake (2014) Push for car-free spaces still haunted by failed State Street pedestrian mall, *Chicago TimeOut* (February 11), www.timeout.com/chicago/things-to-do/push-for-car-free-spaces-still-haunted-by-failed-state-street-pedestrian-mall, accessed March 22, 2015.
- McKenny, Leesha (2013) Driven out: how much of George Street should be closed to cars? *The Sydney Morning Herald* (April 4), www.smh.com.au/nsw/driven-out-how-much-of-george-street-should-be-closed-to-cars-20130404-2h8j9.html, accessed 23rd March, 2015.
- McNeill, David (2011) Fine grain, global city: Jan Gehl, public space and commercial culture in central Sydney, *Journal of Urban Design* 16 (2), 161–78.
- Mehta, Vikas (2009) Look closely and you will see, listen carefully and you will hear: urban design and social interaction on streets, *Journal of Urban Design* 4 (1), 29–64.
- Mehta, Vikas (2013) *The Street: A Quintessential Social Public Space*, Abingdon: Routledge.
- Souza, Eduardo (2011) AD Classics: Parc de la Villette/Bernard Tschumi, *ArchDaily* (January 9), www.archdaily.com/92321/ad-classics-parc-de-la-villette-bernard-tschumi/, accessed March 26, 2015.
- Steiner, Fritz. R. (2011) Landscape ecological urbanism: origins and trajectories, *Landscape and Urban Planning* 100, 333–7.
- Sternfeld, Joel (2012) *Walking the High Line*, Göttingen: Steidl.
- Tschumi, Bernard (1987) *Cinéma Folie: le Parc de la Villette*, Princeton, NY: Princeton Architectural.
- Vacecatrelli, Joe (2014) Denver working on plans to improve alleys near 16th Street Mall, *Denver Post*, www.denverpost.com/denver/ci_26762614/denver-working-plan-improve-alleys-near-16th-street, accessed March 23, 2015.
- van der Waa, J. (2008) State Street Renovation Project, *Congress for the New Urbanism Salons*, www.cnu.org/resources/projects/state-street-renovation-project-2008, accessed March 22, 2015.
- Yen, Brigham (2013) Friends of Pershing Park reimagine downtown LA's faded historic park, *DTLA Rising*, <http://brighamyen.com/2013/02/04/friends-of-pershing-square-reimagines-downtown-la-greatest-faded-public-space/>, accessed May 15, 2014.

8

The Products of Architecture and the Nature of Urban Design

Architects wear many hats. They are centrally involved in urban design and often city planning. Some focus on the design of programs and specifications for buildings, others are primarily concerned with translating designs into working drawings or public relations efforts. The primary concern of architects, as architects, is, however, with the design of individual buildings. They all claim to be urban designers.

The Products of Architecture: Buildings

When a building is seen as a work of high art its relationship to the city is seen to be irrelevant. The focus is on the expression of an abstract intellectual aesthetic theory rather than on life as it is lived. A new norm is appearing in the architecture and urban design of the global commercial marketplace. It is based on producing building forms that are a departure from geometric norms using expensive materials. The results should not be dismissed out of hand as “glitzy” or “kitsch” even though much new Asian architecture has been referred to as “non-judgmental kitsch.” Hyper-Modernism is a more inclusive term.

Many recent buildings designed by architectural luminaries have paid little heed to the public spaces they are creating or how their designs help to make good streets. The buildings do not relate to their surroundings other than to use the contexts as backdrops. They are seen as foreground buildings. Many, if not almost all, architectural critics consider buildings and open spaces as works of art and many young architects strive to express something new in built form.

Architectural Record regards civic design not in the way that it was understood in the Civic Design Program at the University of Liverpool but as the design of individual public buildings. Fine though many of those buildings may be, many show a disdain for comfortable public spaces and turn their backs on the city. The spaces do not encourage people to hang around and participate in urban life. The plaza facing the Guggenheim Museum is not a hospitable space. It is a good place to view and take photographs of the building. The museum is certainly an exciting building. Is this the new urban design as leading architects and their patrons see it?

The urban design awards of the journal *Progressive Architecture*, from its inception in the early 1970s to the demise of the journal in the mid-1990s, more often than not went to individual buildings. No awards went to completed urban design schemes. The design of individual buildings or individual building complexes seems to be regarded by mainstream architects and architectural critics as urban design in four situations. The first is when buildings pay some respect to their built contexts. The second is when a building acts as a catalyst for urban development. The third is when the facilities that

are traditionally in a neighborhood or city are incorporated into a single multi-use building, and the fourth is when there are a number of buildings in a complex—large-scale architectural projects.

Contextual Design

The Royal Australian Institute of Architects gives urban design awards to individual buildings. Sometimes it is to a building that complies with urban design guidelines. In a field where architects try to find a niche for themselves in the marketplace for services by being different, the willingness to pay attention to the public realm is indeed something to be rewarded.

The issue of how an individual building adds to or makes its context is a fundamental concern in urban design. If it is to be in context, then “context” has to be defined with precision. The variables of concern are varied. They include the way buildings meet the street, their height (especially on their streets, façades), their ground floor uses, and the distribution of entrances, their materials and fenestration, cornice lines, and roof patterns. The activities that they house are also important. Designing in context can be highly innovative but it does require thought (Stamps 1994).

Pioneer Place in Portland can be regarded as an example of a work of architecture and as a small total urban design. After several iterations in its design, the final product while unique matches the physical qualities of central Portland. The scheme fits the small, walkable block nature of the city. The buildings that form the three-block complex meeting the property line are outward looking despite housing an internal shopping mall, and the massing of its podium matches the nature of the surrounding buildings (Attoe and Logan 1989; Lang 2005b; Culverwell 2015).

Buildings as Catalysts for Urban Development: As Plug-in Urban Designs?

One concern in considering buildings as urban designs lies in their catalytic effect on their neighborhoods. This concern was certainly a motivating factor behind John D. Rockefeller’s plans for Radio City in New York. It was also that of Robert Moses, head of the City Planning Commission of New York in the 1950s in promoting the proposal for Lincoln Center. His goal was to eliminate the slums north of Columbus Circle and build a “glittering new cultural center” in order to change the character of the whole west side of the city. He succeeded but 7,000 people were displaced by the project (Caro 1974). The Grands Travaux of French president François Mitterand in the 1980s and the 2000–3 development of the Walt Disney Concert Hall in Los Angeles had similar aspirations. It is hoped that the latter designed by Frank Gehry has the same catalytic effect on Grand Avenue as the Guggenheim Museum that he designed has had and is having on Bilbao.

Planned or not, all new buildings affect the environment around them. They shape the flows of people and of winds; they add to or detract from the streetscape. They form part of the skyline. They can result in an improvement of the cityscape in a way that it makes it attractive for further development. Museums, libraries, and new, well-located retail space can all spur urban development. The Canary Wharf scheme was the lead project in the continuing development of the Docklands in London (see Chapter 10). The building of parking garages was a purposeful effort to act as a catalyst for development in Glendale, a suburb of Los Angeles (Lang 2005a). That mundane investment served the same purpose as the Guggenheim Museum in Bilbao.

CASE STUDY

The Guggenheim Museum (1987–97) and Abandoibarra, Bilbao, Spain

An “iconic” building as a catalyst for urban renewal and development

Bilbao was a declining, gritty port city in the Basque region of northern Spain, and largely unknown to the world. Today it is very different. A number of major projects were developed by the Basque government to regenerate and modernize the city—the Metro, the Euskalduna Conference Center and Concert Hall, the Tramway, the Port of Abra, the Airport, and, most important of all in bringing Bilbao to the eyes of the world, the Guggenheim Museum. These projects have, according to the city’s former mayor, Iñaki Azkuna, elevated the self-esteem of the city and given it confidence to participate economically in the globalizing world.

A flood in August 1983 that wrought physical and economic havoc on Bilbao resulted in the development of the 1987 metropolitan strategic plan. The plan proposed policies for enhancing Bilbao’s connections to the external world, for increasing mobility within the city, for improving its environmental and urban quality, for investing in human resources and technology, and for building a range of cultural facilities. Part of the cultural effort was to create an internationally prestigious museum of modern art. Contemporaneously, the Solomon R. Guggenheim Foundation was looking for a second European site (after the Peggy Guggenheim Museum in Venice) where it could display parts of its collection. An agreement was reached whereby the Basque administration would donate \$20million to the Guggenheim Foundation, pay \$100million to construct the building, and subsidize its annual running costs. The Foundation would manage the museum and provide a permanent collection and temporary exhibits.

After some debate over whether a refurbished building in the city could suitably house the collection, a decision was made to have a limited competition for the design of a museum to be located on the banks of the Nervión River. Such competitions had already been held in Bilbao. The Bilbao Metro design competition was won

by Norman Foster (the other entrants were Santiago Calatrava, Architektengruppe U-bahn, and Gregotti Associates). The architects involved in the museum design competition were Arata Isozaki (representing Asia), Coop Himmelblau (Europe), and Frank Gehry (America). Gehry’s design was chosen because it featured an “iconic” building that would help the Basque people communicate a clear modern identity to the world. It is a much-admired sculpture of curved volumes, made of stone and glass and covered in titanium. On one side is the river and on the other side a large forecourt that sets the building as a sculpture in space (Lang and Marshall 2016a).

The impact of the museum on the city of 354,000 has surpassed all expectations as a catalyst for development of the adjacent Abandoibarra area. The museum drew 962,358 visitors in 2011 (62 percent from “overseas”). They spent money on accommodation and restaurants that, in turn, has had an impact on the commercial sector of the city’s economy. It is estimated that the museum adds an additional €660 million to the Gross Domestic Product and €117 million to the annual tax base of the city. Over 4,000 new jobs have been directly attributed to the development of the museum (Vidarte 2002). It has spawned new centers of contemporary art in the city—Artium and BilbaoArte (which provides work space for young artists)—and other galleries exhibiting current art. More than anything it has changed the image of the city in the world’s eyes. It is not only the Guggenheim Museum that has resulted in this change but also the other major public investments (Bilbao Ría 2000 2003; Mas 2002).

The Abandoibarra plan designed by César Pelli Associates links the Guggenheim Museum, the Fine Arts Museum, and Euskalduna (Abandoibarra 2015). Pelli was selected to do the master plan because of his experience at Battery Park City, although he was not the master planner for that scheme (see Chapter 10). His Abandoibarra master plan depicts a more fragmented Modernist design

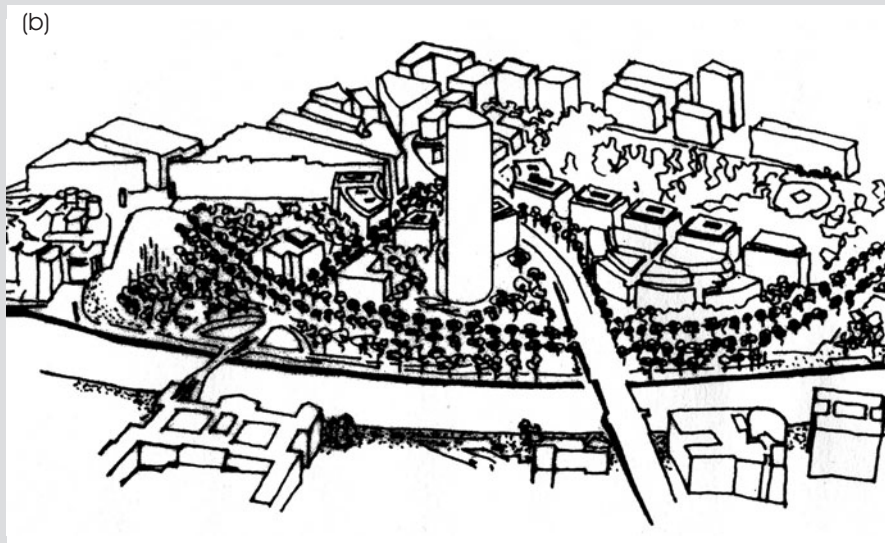


FIGURE 8.1 The Abandoibarra development, Bilbao. (a) The Guggenheim Museum; (b) the proposed Plaza Euskadi, Abandoibarra with the Iberdrola Tower at the center.

Source: (b) Drawing by Munir Vahanvati corrected by Cesar Pelli Associates

in which streets are dividers rather than seams of life. The exception is in the design for the Plaza Euskadi in which the proposed buildings frame the square. At the head of the plaza on the axis of Elcano Street to San José Square in the existing Central Business District of Bilbao is the 165-meter, 40 story-tall Iberdrola Tower designed by Pelli himself. The plaza was designed by Diana Belmori.

The investment by the Basque government has reversed the economic decline of Bilbao (Lee 2007). The city has been transformed from a decaying industrial and port city into a prestigious center for the arts. It has, however, focused on

buildings and not on the quality of the public spaces among them despite the new buildings, including the Guggenheim, being designed to integrate seamlessly into the city's urban structure. The spaces lack any detail and contain no activities that attract people to them. The space in front of the Guggenheim houses Jeff Koon's mammoth Puppy that reduces the forecourt's visual size. What we do have is a "cutting-edge" building that many critics see as being a precedent for signature buildings of the twenty-first century. As a catalyst it has been very successful. Other cities now seek the "Bilbao-effect."

Megastructures as Total Urban Designs?

As cities have expanded into the countryside so the energy- and time-consuming commute to work has increased for many people. One of the solutions being proposed is to condense cities into single three-dimensional forms. The purpose is to eliminate the space taken up by cars in the typical suburb. These structures have been regarded as urban design because they incorporate the mix of elements that are the components of cities. Some individual high-rise buildings contain such elements as a hotel, apartments, shops, and a religious facility within them. They are considered to be vertical precincts. If they are large enough such buildings are called "megastructures."

During the 1960s and 1970s a number of megastructures housing various types of facilities were built. Even more were proposed (see Dahinden 1972). Paolo Soleri's Arcosanti is painstakingly being constructed in Arizona. Today such large single-structure projects tend to be confined to major suburban shopping centers surrounded by parking for cars. Many are in demise.

The City of the Future proposed by Hugh Ferriss during the 1920s was one precedent for this line of thinking; and Le Corbusier's scheme for Algiers was another model. Their deviations from the norms of urban development and design have attracted considerable attention. The schemes include a series of explorations by Buckminster Fuller but also earlier proposals in the 1920s and 1930s by Modernists, especially Expressionists such as Sant'Elia. The 1969 City/State plan for Battery Park City (see Figure 10.14b) is very much in this mold. An example of a precinct in a building is that of Bielefeld University, built when designing megastructures was in vogue. As Rayner Banham suggested almost thirty years ago, megastructures are a design idea of the past (Banham 1976). In spite of this observation, proposals for vertical cities still attract much attention. Whether or not they should be thought of as urban designs is open to question.

CASE STUDY

Universität Bielefeld, Bielefeld, Germany (1969–76, 2012–25)

A university campus precinct in a single building; a total urban design?

A number of large, multi-faculty universities qualify as megastructures; they are contained in a single structure. Universität Bielefeld is one. The idea of a new university in Ostwestfalen in northern Germany was initiated in early 1962 and planning began later in that year. In June 1966, it was announced that the university would be located in Bielefeld. The academic structure of the university is the evolving work of many hands. The campus design, however, like almost all buildings, was very much in the hands of one team.

The university, located on the periphery of the city, was the subject of a design competition won by a team comprised of Klaus Köpke, Peter Kulka, Wolf Siepmann, and Katte Töpfer, with Michael von Tardy. That design team in conjunction with university officials and the Quickborner Team

then developed the complete space program for the university. Ground was broken for construction in April of 1971, and the building for a student body of 14,000 was completed in 1976 at a cost of DM623 million (Trott 1985).

The building is 380 meters long and 230 meters wide (1,247 by 754 feet), and altogether 140,000 square meters (over 1.5 million square feet) in floor area. It is a commuter college with surface parking around it in much the same manner as a suburban shopping center. Like a shopping center it has a glass-covered central mall with anchors at the ends and small shops and cafés along its sides. At one end of the mall is a swimming pool and at the other end the main auditorium. The various faculties and schools are located in rectangular blocks perpendicular to the axis of the mall. The layout is said to foster close links between disciplines.

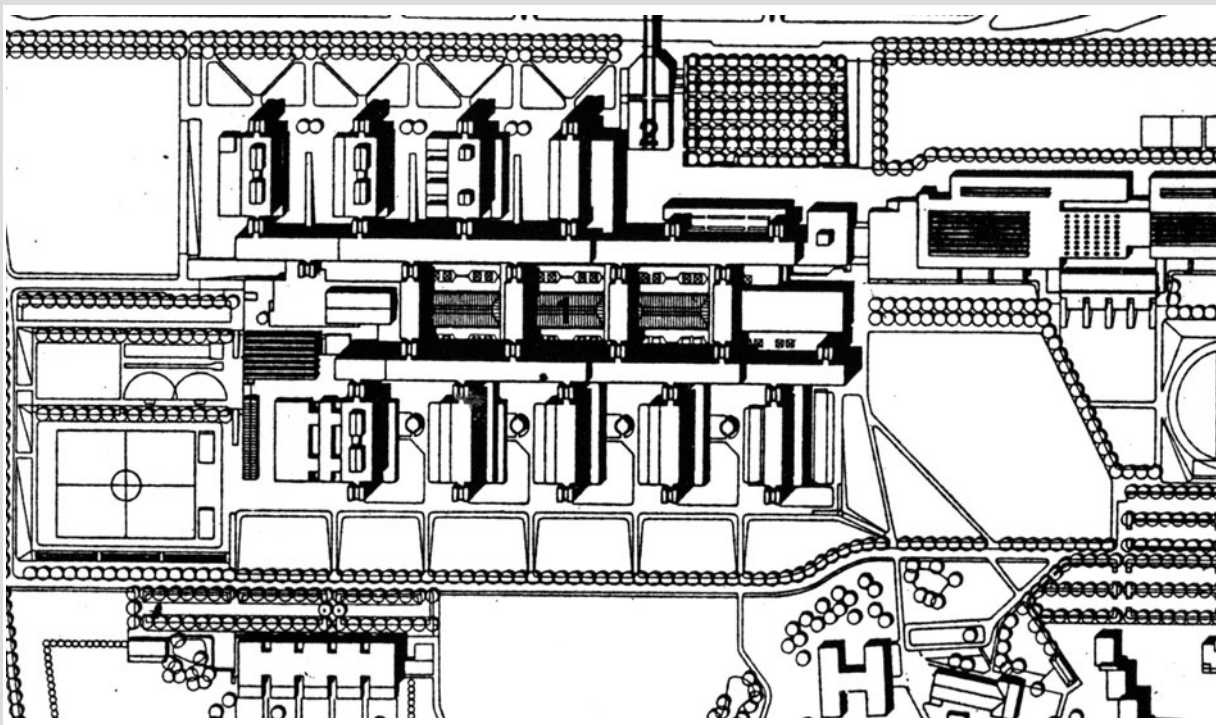


FIGURE 8.2 Bielefeld University.

Source: Courtesy of Universität Bielefeld

One aspiration was to help tie research and teaching together (Trott 1985).

The mall is described as a vibrant meeting place for students. In the rainy Bielefeld climate, perhaps the greatest asset of the design is that one can walk from place to place without getting wet. In its publicity material the university administration notes that people accustomed to traditional universities “will appreciate the efficiency” of moving from refectory to classes to the library all under one roof (Universität Bielefeld 2015). A small allotment of student housing is on the periphery of the campus.

Universities seldom stand still. Bielefeld University is undergoing a major reworking although its essential structure remains the same: €1 billion

is being spent on new buildings to the northeast and south east and a whole new complex to the north. The original building will undergo a six-phase process of modernization to be completed in 2025 (Universität Bielefeld 2015).

Publicly funded, the structure of Bielefeld University is, indeed, very much a single design having been guided step by step by one set of planners, designers, and university officials working as a team. Whether or not one regards the campus as an urban design rather than a single building sitting in open space depends on one’s attitude towards megastructures. Certainly the attitude displayed in the design of the contemporaneous university town of Louvain-la-Neuve is very different (see Chapter 10).

CASE STUDY

Arcosanti, Scottsdale, Arizona, United States of America (1970–2030)

A building design or a total, new town urban design?

Arcosanti, near Scottsdale north of Phoenix, Arizona is the brainchild of one person, Paolo Soleri. It represents Soleri’s effort to realize one of his many explorations for an energy- and resource-efficient city in a single structure. It has been designed to house about 5,000 people at a density of 530 to 1,000 people per hectare (215 to 400 people per acre). Located on the edge of a semi-arid valley, today the “city” consists of half-completed buildings: apartments, businesses, production units, and education facilities; agricultural fields lie nearby. In contrast to Arcosanti, which is modest in size, many of Soleri’s proposals are double the height of the Empire State Building in New York and designed to house 500,000 people.

Three principles form the basis of Soleri’s concept of arcology (architecture+ecology). The first is *complexity*. Soleri believed that the behavior settings that constitute daily life should be clustered together. The second principle, *miniaturization*, refers to the efficient integration of resources by reducing the sizes of spaces and the time to travel

between them. The third principle he labeled *duration*. Duration has to do with the time consumed in carrying out the activities of life and the goal of “living outside time”—the capacity to renew oneself and one’s surroundings (Soleri 1969).

Arcosanti had its beginnings in 1956 when Soleri and his wife, Colly, bought 4,000 acres (1,690 hectares) of land to become the home base of the Cosanti Foundation (a non-profit 50 (c) 3 organization) that they founded to conduct research and raise funds to build Arcosanti. He established his first office on the site in 1959 and developed an apprentice program for architects and students. Construction began in 1970 with the exploration of building earth-cast apses that became a feature in the design. The housing frame was begun in 1973 and step by step, apse by apse, room by room, from year to year, progress is being made. It is slow going. By 2015 the project was 10 percent built. Its completion date is predicted to be 2030. Paolo Soleri retired in 2011 and died in 2013. The project is now directed by Joel Stein,

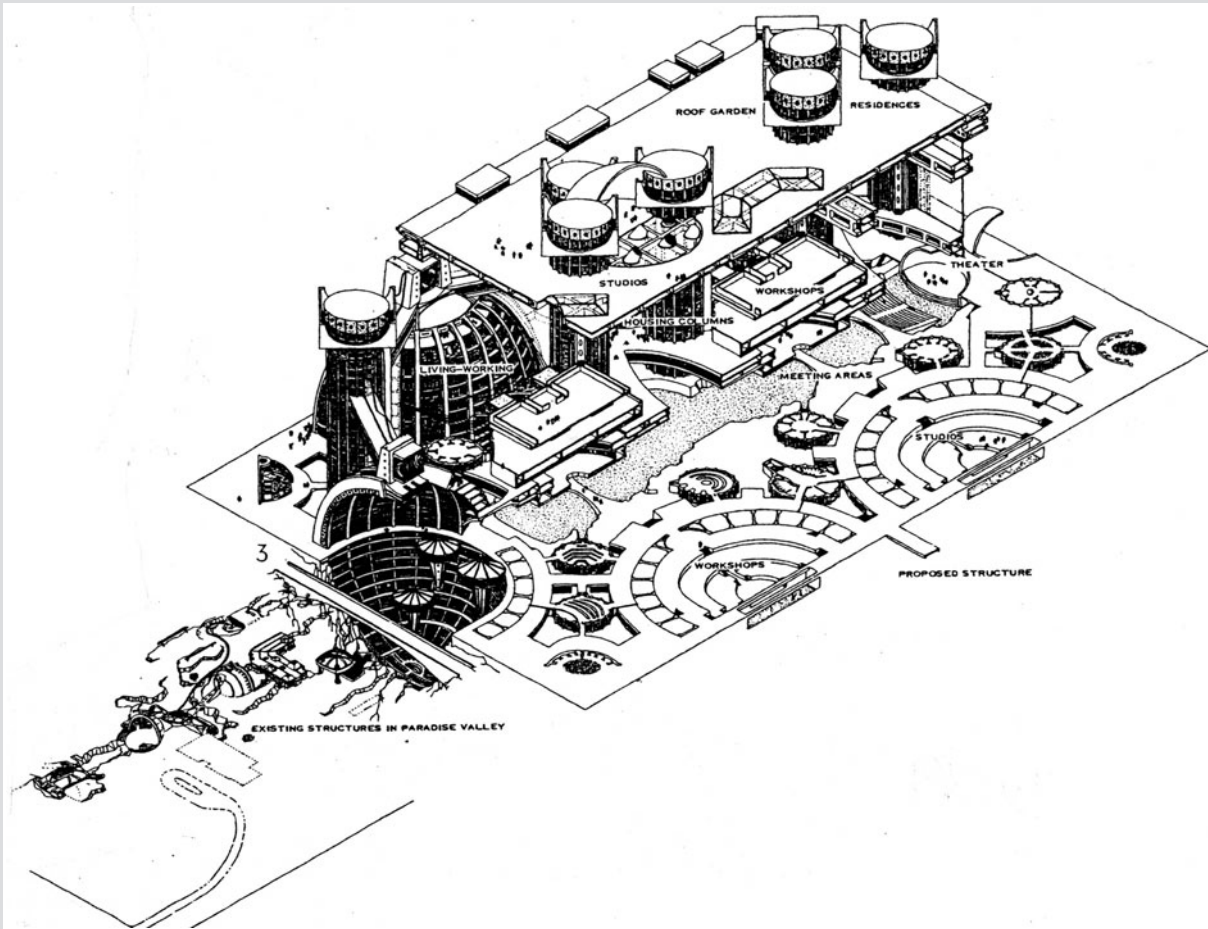


FIGURE 8.3 The original Arcosanti proposal.

Source: Drawing by Tomaki Tamura, courtesy of the Cosanti Foundation

who hopes to turn the bits and pieces that have been constructed into a viable town.

The slow construction of the projects and the emphasis on obtaining funds means that those elements that generate resources are built rather than what is needed to build a residential community (Tortello 2008). Few people live there but 50,000 people visit the site each year. Interestingly enough many of Soleri's concerns are those that

"smart growth" advocates are raising now. The design patterns they are promoting are, however, very different. Arcosanti has yet to show that it is a viable, sustainable alternative to any present-day urban form. Sensible a design or not, it is a type of architectural and urban design product. It is a new town in a single structure. This type is even more obvious in proposed vertical cities.

Vertical Cities: Total Urban Designs or Simply Mixed-use Buildings?

In 1956 Frank Lloyd Wright proposed the mile-high Illinois Tower of 548 stories to house 100,000 people. The concept is today being promoted by a number of architects. The goal is the same: to preserve open land for agriculture and maintain the bio-diversity of the natural world. The argument is that by building tall mixed-use towns, urban sprawl is eliminated, the amount of roads required for ground-hugging, horizontal cities reduced,

and a much more efficient, community-fostering, sustainable world is created. At the time of writing a mile-high tower was being proposed for Tokyo Bay.

Each Vertical City would possess all the facilities provided by a town (Alter 2014; King and Wong 2015). It would have core areas, shops, places to work and to recreate, as well as gardens and lawns. Some early twenty-first century buildings in China are close to the megastructure idea in concept. They strive to be vertical precincts. Shanghai Tower is an example.

CASE STUDY

Shanghai Tower, Shanghai, People's Republic of China (2012–15)

A mega-tall, multi-use building or a total urban design?

The Shanghai Tower is a 632 meter (2,073 foot)-tall building of 121 stories. It has a total floor area of 380,000 square meters (4,090,000 square feet) located in the Lujiazui area of Shanghai. It is the newest and tallest of a cluster of three towers

proposed in the master plan for Lujiazui in 1993 (see Chapter 10). The developer and owner of the tower is the Shanghai Tower Construction and Development Company, a state-owned corporation. It was designed by Gensler but the architect



FIGURE 8.4 Shanghai Tower. (a) The context; (b) the tower.

Source: Courtesy of Gensler

of record is the Architectural Design and Research Institute of Tongji University. Construction costs amounted to US\$2.4 billion.

The tower sits on a piled raft foundation because the water table is high. It has a tuned mass damper at the top to limit its swaying. The building consists of nine cylindrical components stacked one on top of the other. They are separated by independent structural floors (Zhang et al. 2015). Each cylinder is a “neighborhood” with its own verdant, multi-story atrium, or sky lobby, intended to evoke the landscaped courtyards of Shanghai’s historic homes. The floors are enclosed by inner and outer layers of glass; the latter twist as they rise. The façade also tapers towards the top of the building. The taper along with the texture and asymmetry of the building helps to reduce the wind load so that the building can withstand typhoons (Pearson

2015). The building’s parapet collects rainwater that is used for heating and air conditioning; wind turbines generate on-site power. The structure was designed to satisfy the US Green Building Council’s LEED (Leadership in Energy and Environmental Design) gold standard (Waldmeir 2013).

The tower accommodates 16,000 people. On the ground floor retail shops, meeting spaces, and multiple entrances link the building to its surroundings. The nine indoor landscaped atria create places for people to relax and meet; the planting helps to improve air quality. Between the 84th and 110th levels is a 258-room hotel. The tower will also house a museum and has a 1,800-vehicle parking garage in its sub-levels. Despite its having a variety of uses and it being said to be a mini-city, it is, in itself not an urban design scheme; it is a highly technical work of architecture.

Residential Neighborhoods in Single Buildings

The planning of residential neighborhoods is a major preoccupation of city planners. Clarence Perry, a sociologist, proposed that all the facilities of daily life other than employment be located within walking distance of a set of households. At the core of the unit would be an elementary school, shopping facilities, and a community center (see Figure 8.5a). It was a pattern used in the layout of Columbia, Maryland (Figures 6.3a and b) and is central to New Urbanist thinking today (Figure 8.5b). The utility of designing bounded neighborhoods is much questioned today, but the idea persists (Madanipour 2001; Lang and Moleski 2010).

Le Corbusier produced a number of conceptual designs for cities and apartment blocks during the 1920s and 1930s. One was for a vertical neighborhood, the Unité d’Habitation (Figure 8.6a). It was based on his Calvinistic view of how people should live. The Unité in Marseille, located well out from the center of the city, was the first to be built. Others followed: Nantes-Rezé (1952–3), Berlin (1956–8), Briey en Forêt (1956–8), Meaux (1956–8), and Firminy (1961–8). They all departed in some respect from the basic model.

The Unité is not a megastructure in a conventional sense, but rather a neighborhood of what was supposed to be a city of like neighborhood units (Lang 2005c, 130–2). If Shanghai Tower has its “neighborhoods” one on top of the other, Le Corbusier’s Unité is one of a number of neighborhoods that would form a city or, at least, three or four would form an identifiable cluster set in a park-like environment. The Unités that were built are, however, all individual stand-alone structures.

The Unité’s footprint is 110 by 20 meters (360 by 65 feet). The building is set on *pilotis* (the columns on which a building stands leaving the ground floor open). It was designed to consist of 337 residential units housing 1,000 to 1,200 people, a small hotel, retail establishments, and communal facilities. The shopping is located on a central floor and areas for a nursery school, jogging track (long before such an activity became

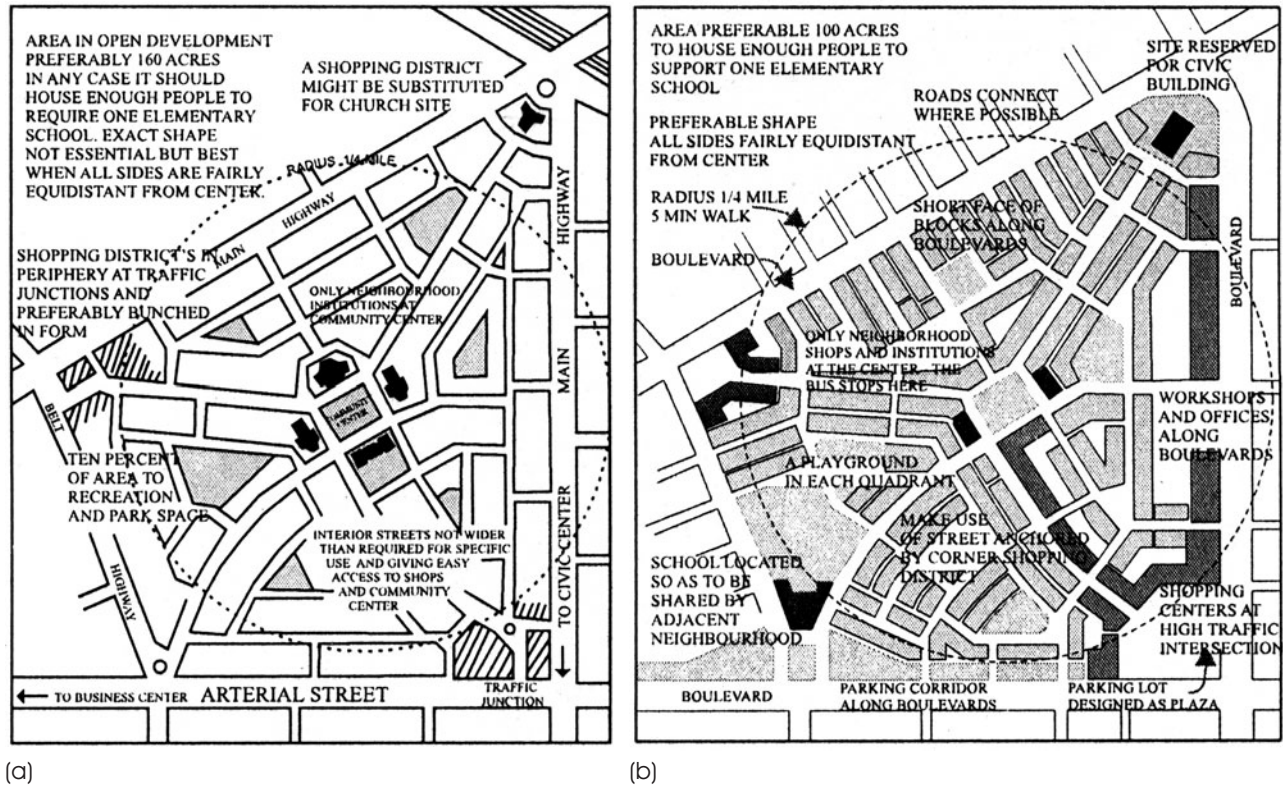


FIGURE 8.5 Generic neighborhood unit plans. (a) The neighborhood unit of Clarence Perry; (b) the neighborhood unit of Duany Plater-Zyberk.

Source: (a) Perry (1929); (b) drawing adapted from various sources by Omar Sharif

popular), and other communal facilities are on the roof. The apartments are each two floors high with a balcony to provide fresh air and sunlight, primary concerns of Le Corbusier. The arrangement of apartments allows for a skip-stop elevator system with stops on each third floor. The ground floor was for the parking of cars in dedicated places, for circulation, and for recreation (Le Corbusier 1953; Jencks 1993; Lang 2005c).

While the scheme affords many of the potential functions of built form shown in Figure 1.2, the Unité is simply not populous enough to sustain much in the way of retail activities. The development in Marseille is, nevertheless, much loved by those who live in it. It fits their way of life well; they have chosen to live there. The others have been less successful.

During the mid-twentieth century, public housing agencies and architects around the world from the United Kingdom to Venezuela regarded the Unité as a prototype to be replicated as Le Corbusier intended. The result of doing so has been disappointing. In the first place the buildings are pale copies of the precedent set by the Unité d'Habitation in Marseille (Marmot 1982). In the second, the ways of life of their inhabitants and what the buildings afford are at odds. Bedok Court in Singapore has been more successful (Bay and Ong 2006).

Bedok Court's architect, Cheng Jiang Fenn of Architects Associated Group, recognized that privacy and community go hand in hand. The paths of movement in the building cross and it is possible to see into the open spaces associated with other units. The residents feel that they have a high degree of security, a sense of belonging, and of ownership. There is a loss of privacy. A small group welcomes it and the others do not

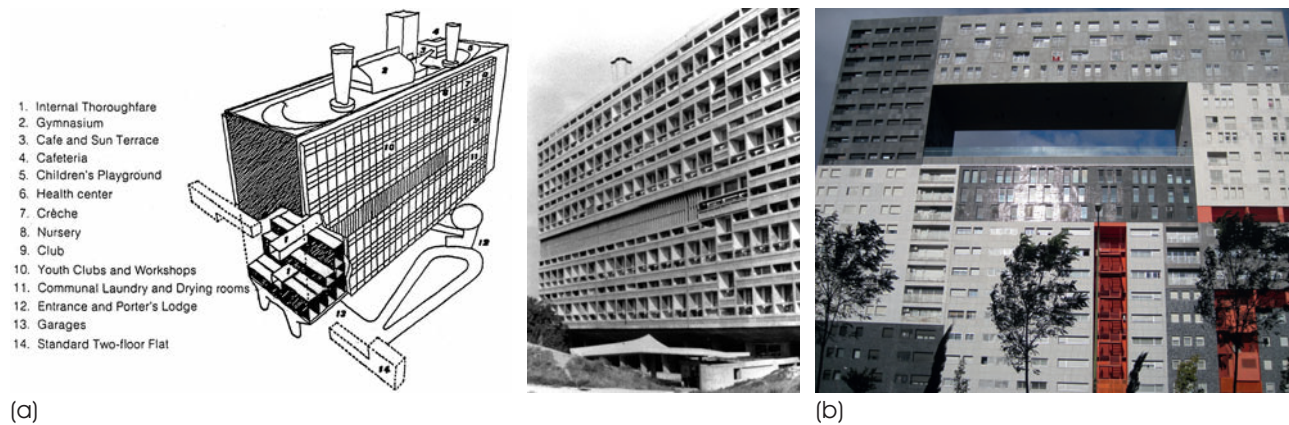


FIGURE 8.6 Residential neighborhoods in a building. (a: left, center) The Unité d'Habitation, Marseille; (b; right) Mirador, Sanchinarro, Madrid.

Source: (a) Richards (1962) © Yale University Press; (b) photograph by Bu Jinbo

mind. Bedok Court is not a neighborhood as it has neither shops nor other communal facilities apart from a swimming pool. The search for a vertical neighborhood prototype continues. The Mirador in Madrid has its sub-areas shown on its façade and a communal plaza exists in the sky, but there are few other attributes that would contribute to community formation (Lang and Moleski 2010).

Building Complexes as Urban Designs

The categorization system used in this book is at its fuzziest in dealing with complexes of buildings. Albany's Nelson A. Rockefeller Empire State Plaza and Federation Square have been categorized here as primarily architectural works. The logic for locating them as an example outside the mainstream of urban design activity is that they are self-contained, single professional projects. That is not a strong argument.

The two cases are similar in that they consist of buildings around a square, but they represent very different design goals and represent two very different architectural design paradigms. The Empire State Plaza is a grand space analogous to Le Corbusier's capitol complex in Chandigarh; it was not designed to be a gathering place. Federation Square was and is.

CASE STUDY

Nelson A. Rockefeller Empire State Plaza, Albany, New York, United States of America (1959–76, 2001)

A Modernist governmental office and institutional complex. A total urban design?

The Empire State Plaza is a complex of ten buildings that house 11,000 employees of the New York State government and also cultural facilities. The buildings bound a deep, rectangular, amorphous, elevated square with the 1899 New York State

capitol building at one end of the axis and a building containing the Cultural Education Center, the New York State Museum, and Library and archives terminating the other. It was the brainchild of the erstwhile governor of New York, Nelson A.



(a)



(b)

FIGURE 8.7

Empire State Plaza, Albany.
(a) An aerial view; (b) the
plaza in winter 1993.

Source: (a) Courtesy of Albany CVB

Rockefeller and is now named after him. It was designed by his favorite architect, Wallace Harrison of Harrison & Abramowitz. The cost calculated in 2009 was said to be \$2 billion; the original estimate was \$250 million (Churchill 2009). Rockefeller wanted something grand on the scale of the capitol plaza in Chandigarh and the Praça dos Tres Poderes in Brasília. He is reputed to have sketched what he had in mind; the design was then refined and developed by Harrison (Roseberry 2014).

The 98.5-acre (39-hectare) complex is located on the site of what was a somewhat dilapidated

inner-city, working-class residential neighborhood of 9,000 people. Its run-down character had embarrassed Rockefeller when he was escorting Princess Beatrix of the Netherlands through the city in 1959. The demolition of the neighborhood not only displaced people but led to the closure of the shops and restaurants that they supported.

The site was acquired through the use of the power of eminent domain in a manner that is probably not replicable today. By-passing the state legislature, Rockefeller worked with the mayor of Albany, Erastus Corning, to use Albany county bonds rather than state bonds to finance the project

but the state guaranteed repayments. Ownership was then passed to the state, which pays what is essentially a rent to the city in lieu of forgone property taxes.

The plaza runs from the south west to the State Capitol building in the north east. The platform on which the buildings sit is supported by 25,000 pilings driven 70 feet (21 meters) into the glacial clay soil. The buildings themselves are either steel or reinforced concrete structures clad in stone. The exception is the egg-shaped building housing the Center for the Performing Arts. It is an exposed concrete structure. The stone used was primarily marble from quarries in Vermont, Alabama, and Greece. In 2001, 150,000 marble panels had to be replaced because of their deterioration.

The plaza has three reflecting pools. The concourse below links all the buildings and contains shops, restaurants, and a post office. Some of the state's art collection is displayed in it while other works are displayed in the buildings (Anderson and Lowry 2002). War memorials and memorials to various civic groups adorn the plaza. The size of the plaza and the sculptures it contains

make it more of a place for contemplation than an active square. It is seldom a busy place.

On the opening of the plaza, Governor Rockefeller noted:

What has arisen here is more than buildings to house the services of the government. Empire State Plaza is a unique concentration of great architecture, great art, and of New York's place in American history. What we are recognizing in these buildings is that we have an aesthetic nature, that we have cultural values, and these values are what lifts us above the scurrying ant-heap of those absorbed only in survival and makes us a society touched by divine grace.

Harms 1980

The complex has been dismissed as a spectacular outdated work of architecture but some architects stoutly defend it (for an example, see Selldorf 2015). The plaza has been described as windswept with no amenities that encourage a person to linger. Federation Square in Melbourne is very different.

CASE STUDY

Federation Square, Melbourne, Victoria, Australia (1995–2002)

A multipurpose square, a deconstructivist building complex. A total urban design?

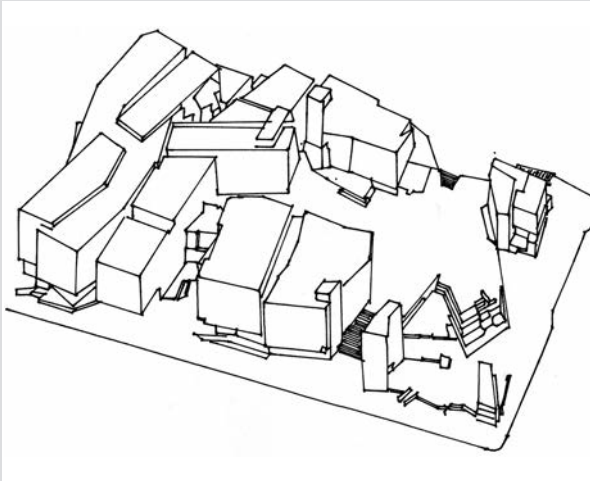
Completed at a cost of over AU\$460 million (almost four times the predicted budget), Federation Square is an air-rights development located over railyards. The site had been dominated on one side by the twin towers of the Gas and Fuel Corporation that were generally regarded as eyesores. They were demolished. The state government organized a design competition for the site that attracted 177 entries. A jury selected that of Lab Architecture Studio of London and Bates Smart of Melbourne as the winner. The landscape architects were Karres and Brand. The winning design was a controversial selection because of its architectural qualities and because part of the design was deemed to be obstructing the vista towards

St Paul's Cathedral. This square and its history is described more fully in Brown-May and Day (2003) and O'Hanlon (2012) and analyzed in Lang and Marshall (2016b).

The square is a collection of open spaces and buildings operated by Fed Square Pty, Ltd, a company wholly owned by the state Government of Victoria. It was purposefully planned to be Melbourne's prime urban square. The buildings are mainly cultural institutions such as the Australian Centre for the Moving Image, the Ian Potter Centre of the Art Gallery of Victoria, and the Special Broadcasting Service (Australia's multicultural and multilingual broadcaster). The buildings are irregular in appearance. They are covered with a

complex geometric pattern of triangular tiles. Some of the tiles are made of perforated zinc and sandstone while those of the Atrium facing the square are glazed. The hue is made up of chromatic green-greys. The buildings have unique surface geometries but their identical height and general fractal nature give a unity to the overall design.

The floor of the square is gently sloping and slightly undulating; it affords many activities: primarily formal but also, on its periphery, communal. The surface is partially of bluestone paving but the floor of the main square is of ochre colored sandstone. It forms a huge artwork of textural pieces, *Nearamnew*, the creation of Paul



(a)



(b)



(c)

FIGURE 8.8 Federation Square, Melbourne. (a) Generalized massing diagram; (b) a view of the context; (c) view into the square.

Carter (Rutherford 2005). Symbolically the square commemorates the 1901 unification of the states of Australia into a federated nation.

The success of the square lies in its qualities as a place reinforced by the movement of people through it. As a place it provides for large gatherings and frequent formal events such as protest meetings, celebrations, and performances. Federation Square is also a place for communal gatherings; informal performances occur around its periphery where steps leading up into the square provide seating for onlookers. People wait at

various locations where steps and edges are used as seating for eating snacks, meeting friends, while waiting for trains, or watching street performances.

The success of the square has had a catalytic effect on its surroundings. Steps lead down from the square to the river's edge where old vaulted arches were converted into cafés in 2006. This type of extension suggests that the square will spur further air rights commercial development to the northeast over the rail tracks and along the Yarra River. Such a development would enhance the square's geographic centrality in Melbourne.

Commentary: Are These Architectural Products Simply Total Urban Designs?

Individual buildings are important. Many current buildings may be well-fitting designs for a city but they are not urban design projects *per se*. It is the purposeful design of some individual buildings to have a catalytic effect, such the Guggenheim Museum in Bilbao, that many regard as urban design. Other schemes are considered to be urban designs because they house mixed uses that incorporate part of the traditional city in a single unit. As interesting and as important as they may be, most are simply architectural works.

Arcosanti, a megastructure, can clearly be regarded as a total urban design project. It is proposed to be a new town. Empire State Plaza and Federation Square can also be regarded as total urban design schemes. Both are large-scale architectural projects incorporating a square. Arcosanti owes much to continued philanthropic gestures. Empire State Plaza, Federation Square, the Unité d'Habitation, and Bielefeld University are among those projects that were publicly funded. What they have in common is that they are architectural works completed by single teams. They are also hard architectural ventures that will be difficult to change without destroying their intellectual basis.

Robust buildings and open spaces survive in new guises, adding a sense of place and continuity of spirit to locations. All new buildings change the urban scene when they are built—some radically, some not. Individual buildings are, nevertheless, not urban designs as envisaged in this book, but complexes of buildings are.

References

- Abandoibarra (2015) *Bilbao International*, www.bilbaointernational.com/en/abandoibarra/, accessed March 28, 2015.
- Alter, Lloyd (2014) Is the Vertical City a viable solution for sustainable living? *UrbanDesign*, www.treehugger.com/urban-design/vertical-city-viable-solution-sustainable-living.html, accessed March 15, 2015.
- Anderson, Dennis and Glenn Lowry (2002) *The Governor Nelson A. Rockefeller Empire State Plaza Art Collection and Plaza Memorials*, New York: Rizzoli.
- Attoe, Wayne and Donn Logan (1989) *American Urban Architecture: Catalysts in the Design of Cities*, Berkeley and Los Angeles: University of California Press.
- Banham, Reyner (1976) *Megastructure: Urban Structures of the Recent Past*, New York: Harper and Row.
- Bay, Joo Hwa and Boon Lay Ong (eds) (2006) *Tropical Sustainable Architecture: Social and Environmental Dimensions*, London: Elsevier.

- Bilbao Ría 2000* (2003), whole issues (December).
- Brown-May, Andrew and Norman Day (2003) *Federation Square*, South Yarra: Hardie Grant.
- Caro, Robert (1974) *The Power Broker: Robert Moses and the Fall of New York*, New York: Knopf.
- Churchill, Chris (2009) Empire State Plaza price tag \$2 Billion, *Times Union* (November 17), <http://blog.timesunion.com/realestate/empire-state-plaza-price-tag-2-billion/565/>, accessed April 25, 2015.
- Culverwell, Wendy (2012) Changes afoot for Pioneer Place, *Portland Business Journal* (January 19), www.bizjournals.com/portland/news/2012/01/19/changes-afoot-for-pioneer-place.html, accessed September 25, 2012.
- Dahinden, Justus (1972) *Urban Structure for the Future*, translated from the German by Gerald Onn, New York: Praeger.
- Harms, Hans (1980) Comments, in *VLA: Culture and the Social Vision*, Cambridge: MIT, 167–8.
- Jencks, Charles A. (1993) *Unité d'Habitation*, London: Phaidon.
- King, Kenneth and Kellogg Wong (2015) *Vertical City: A Solution for Sustainable Living*, Beijing: China Social Science.
- Lang, Jon (2005a) Central Glendale, in *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural, 276–82.
- Lang, Jon (2005b) Pioneer Place, in *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural, 117–9.
- Lang, Jon (2005c) *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural.
- Lang, Jon and Nancy Marshall (2016a) The Guggenheim Museum forecourt, Bilbao, in *Urban Squares as Places, Links and Displays: Successes and Failures*, New York: Routledge, 202–5.
- Lang, Jon and Nancy Marshall (2016b) Federation Square, in *Urban Squares as Places, Links and Displays, Successes and Failures*, New York: Routledge, 171–4.
- Lang, Jon and Walter Moleski (2010) Identity and community, in *Functionalism Revisited: Architectural Theory and the Behavioral Sciences*, Farnham: Ashgate, 173–204.
- Le Corbusier (1953) *L'Unité d'Habitation de Marseilles (The Marseilles Block)* translated from the French by Geoffrey Sainsbury, London: Harvill.
- Lee, Denny (2007) Bilbao 10 Years later, *The New York Times* (September 23), www.nytimes.com/2007/09/23/travel/23bilbao.html, accessed March 28, 2015.
- Madanipour, Ali (2001) How relevant is “planning by neighbourhoods” today? *Town Planning Review* 72 (2), 171–91.
- Marmot, Alexi (1982) The Legacy of Le Corbusier and high-rise housing, *Built Environment* 7 (2), 82–95.
- Mas, Elías (2002) The Ensanche of Bilbao, in *Euskal Hiria*, Victoria-Gasteiz: Central Publishing Services of the Basque Government, 134–41.
- O'Hanlon, Seamus (2012) *Federation Square, Melbourne: The First Ten Years*, Melbourne: Monash University.
- Pearson, Clifford A. (2015) Shanghai Tower, *Architectural Record*, <http://archrecord.construction.com/features/2015-shanghai-tower-gersler.asp>, accessed October 15, 2015.
- Perry, Clarence (1929) *The Neighborhood Unit*, in *The Regional Survey of New York and Its Environs, Monograph One, Vol 7*, New York: The New York Regional Plan.
- Richards, James M. (1962) *An Introduction to Modern Architecture*, Harmondsworth: Penguin.
- Roseberry, Cecil R. (2014) The Empire State Plaza, in *Capitol Story* (Third edition), Albany, NY: Albany Institute of History and Art, 125–41.
- Rutherford, Jennifer (2005) Writing the square. Paul Carter's Nearamnew, *Portal* 2 (2), <http://epress.lib.uts.edu.au/journals/index.php/portal/article/view/94/61>, accessed May 3, 2014.
- Selldorf, Anabelle (2015) On the Empire State Plaza, Albany, in Alexandra Large, Seven architects defend the world's most hated buildings, *The New York Times Magazine* (June 5), www.nytimes.com/interactive/2015/06/05/t-magazine/10000000374193.app.html/?_r=0, accessed June 7, 2015.
- Soleri, Paolo (1969) *The City in the Image of Man*, Cambridge, MA: MIT Press.
- Stamps, Arthur E. (1994) Validating contextual urban design principles, in S. J. Neary, M. S. Symes, and F. E. Brown (eds) *The Urban Experience: A People-Environment Perspective*, London: E & F N Spon, 141–53.
- Tortello, Michael (2012) An early eco-city faces the future, *The New York Times* (February 15), www.nytimes.com/2012/02/16/garden/an-early-eco-city-faces-the-future.html, accessed November 20, 2015.
- Trott, Gerhard (1985) *Universität Bielefeld*, Bielefeld: Kramer-Druck.

- Universität Bielefeld (2015) www.uni-bielefeld.de, accessed March 23, 2015.
- Vidarte, Juan Ignacio (2002) The Bilbao Guggenheim Museum, in *Euskal Hiria*. Victoria-Gasteiz: Central Publishing Services of the Basque Government, 153–8.
- Waldmeir, Patti (2013) Is China's Shanghai Tower the world's greenest skyscraper? *House and Home* (November 22), www.ft.com/cms/s/2/2b681036-4d17-11e3-bf32-00144feabdc0.html, accessed March 30, 2015.
- Zhang, Qilin, Bin Yang, Tao Liu, Han Li and Jia Lu (2015) Structural health monitoring of Shanghai Tower considering time-dependent effects, *International Journal of High Rise Buildings* 4 (1), 39–46.



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THE CORE OF URBAN DESIGN WORK

Procedures, Paradigms,
and Products

PART

3

FIGURE 9.0

La Défense,
Paris.



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Total Urban Design

Total urban design occurs when an entire project is completed under one auspice by one design team. It is carried out as a single work, from property development, to design, and to implementation. The concern ranges from the broadest program issues, to the architecture, to the landscape, and to the details of street furniture. Such urban designs include numerous product types: new towns, urban precincts of various descriptions, new suburbs, housing developments, campuses, and historical revitalizations.

The strengths of total urban designs lie in their unity of appearance and, often, boldness of form. Some, particularly Modernist designs, are, however, dull and boring, if sanitary, places. Attitudes towards specific total urban designs have changed over time. Designs that were originally praised for the strength of their ideas are seen to be lacking the diversity, individualism, and complexity that the traditional city offers. The reverse has also been true; once derided designs are now held in high esteem.

The case studies presented in this chapter include new towns and precincts of cities. New towns are supposed to include all the aspects of a city so that they can exist as semi-independent units within a regional context. Except when they are located in highly remote regions they are never really self-contained.

A diverse set of precincts is considered in this chapter. Some of the examples are located on what were green-field sites (land formerly unused or used for agriculture); others were built on brown-field sites (those previously built upon). Within the category of precincts, a number of distinctions have been made here. Some of the schemes are mixed-use developments; in others a single use dominates. Housing complexes tend to be primarily single-use areas, campuses have clearly bounded limits, and streets are elements of urban infrastructure. Bucharest's Avenue of the Victory of Socialism is categorized in this chapter as an urban design because it includes the buildings that line it and frame it. As such it is a very different project to the designing and redesigning of State Street in Chicago and George Street in Sydney described in Chapter 7. The Avenue is also an example of autocratic urban design and in many critics' eyes an urban design disaster. It is, nevertheless, a grand gesture.

New Towns

There is no census of the new towns built in the world during the second half of the twentieth century. The proportion designed totally by one hand for one public authority or for one private developer is relatively small, but still substantial. Some developments that started out as total urban designs have become piece-by-piece urban designs; all have evolved since they were nominally completed. Chandigarh in India, for instance, is seen by many as the work of one man, Le Corbusier, but it has been the work of many people and is becoming more so as time passes. It started out as a total urban design on

the drawing board, but apart from two precincts it has evolved into a city planning scheme with a number of urban design projects within it. Much the same can be said of the experience with company towns.

Capital Cities

Many new capital cities have resulted from the breaking up of empires during the twentieth century. The Ottoman and Hapsburg Empires were destroyed by the First World War resulting in the emergence of new nation states in Europe (Makas and Conley 2015). Around the world the demise of European colonial empires saw a host of capital cities being built *de novo*.

Custom-built capital cities are much shaped by the motivation to make them symbols of their country or state (Rapoport 1993). This necessity is particularly strongly felt and displayed in the design of their governmental precincts, as is clear in the design of Washington, Canberra, New Delhi, Brasília (1950s), Chandigarh (1950s), Islamabad (1960s), Belmopan (1967), Dodoma (1980s), and Abuja (1980s). More recently, there are the examples of Yamoussoukro in the Ivory Coast (1983), Astana in Kazakhstan (1997), and Putra Jaya in Malaysia, initiated in 1999. Naypidaw in Myanmar (Burma) was inaugurated in 2005. Oyala in Equatorial Africa is underway.

Major architects and architectural organizations have been involved in designing master plans for capital cities. Le Corbusier was the lead architect of Chandigarh, Luis Costa and Oscar Niemeyer were responsible for Brasília, and Astana is the work of Kisho Kurokawa. The master plan for Oyala was designed by Portugal's FAT (Future Architectural Thinking) while the capital complex has been designed by Ehud Gefen of Israel. Skidmore Owings and Merrill are designing the proposed new capital of Egypt that is planned to have a population of 44 million by 2050 if it goes ahead (Figure 2.1).

The relocation of national and state capitals is still talked about in some countries with varying degrees of seriousness. In 2004 the establishment of a new capital for South Korea was blocked by that country's constitutional court. There are continuing low-key discussions of new capital cities for Argentina and Japan and a state capital more centrally located than Juneau for Alaska. A continued balkanization of regions of the world may result in new capital cities. Presumably if Chandigarh (at present serving as the capital of two Indian states: Punjab and Haryana) becomes solely the capital of Punjab, Haryana will require its own. Much depends on the drive of individual leaders to celebrate their own states and themselves (Capital Cities 1989; Rapoport 1993).

CASE STUDY

The Pilot Plan, Brasília, Brazil (1946–70+)

The exemplar of a modernist design for a national capital

On September 18, 1946 the Brazilian Chamber of Deputies voted to move the nation's capital from Rio de Janeiro to state-owned land in the interior of Brazil. The decision was a bold act designed to open up the center of the country to development. The aerial photographic and interpretation

company of Cornell University Professor Donald Belcher recommended a site based on its topography, soil qualities, rainfall, and winds. It has porous soil, summer rainfall, and is located at an altitude of a little over 1,000 meters. In 1956 the Brazilian Congress authorized the formation of a



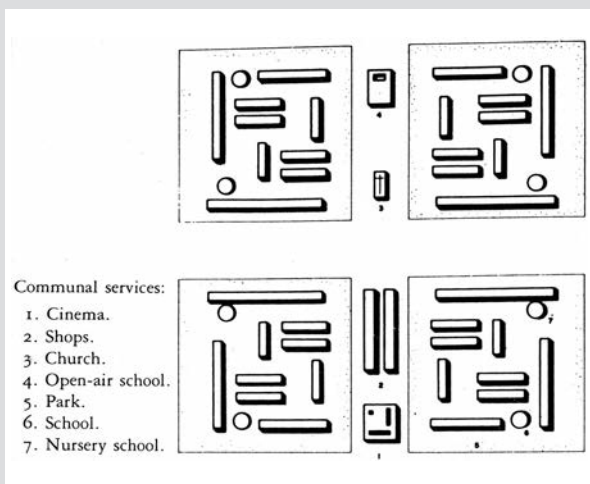
(a)



(b)



(c)



(d)



(e)

FIGURE 9.1

Brasília. (a) The Pilot Plan with satellite townships in 1967; (b) the capitol complex seen from the Praça dos Três Poderes; (c) the monumental axis lined by administration buildings; (d) the generic plan of a residential superquadra; (e) ground level view in 2012.

Source: (a) Evenson (1973); (c) Yale University Press; (d) collection of the author

100 percent government-owned company NOVACAP (Nova Capital) to proceed with the development of Brasília.

The project was driven ahead by President (1956–61) Juscelino Kubitschek. In September 1956, NOVACAP announced a competition open to all Brazilian architects, planners, and urbanists for the general plan of Brasília. The entries had to show the proposed structure of the city, the location of its precincts, centers, and lines of communication at a scale of 1:25,000, and provide a supporting report. An international jury (including Brazilian architect Oscar Niemeyer) selected the scheme by Lucio Costa although it did not meet the criteria established for the competition. His concept captivated the jury and, it seems, President Kubitschek. Oscar Niemeyer became the principal architect.

Costa's plan featured two great axes. One axis, the monumental, would contain the capital complex; the other, in the form of an arc tied to the drainage pattern of the site, would house the residential and associated sectors. Conceptually the plan had four parts: (1) the government buildings, (2) the residential *superquadras* (superblocks), (3) the vehicular circulation pattern, and (4) the city center. Costa said the lakefront should be reserved for recreation, but the northeastern side was divided into private housing lots.

Brasília's plan has antecedents in two generic modernist city designs of Le Corbusier: the City for 3 Million (1922) and the Radiant City (1930). The dwelling units are of uniform height and appearance and are grouped into superblocks with communal facilities and gardens. The administration, business, and finance towers are located at the central crossing of axes. Brasília was built from the center outwards. The first phase involved the design of the monumental axis and southern part of the Pilot Plan. The northern part was later designed and built by many hands following zoning codes and loose guidelines. It lacks the visual unity of its southern neighbor.

When Brasília was inaugurated in 1960, the main buildings on the monumental axis, the congress and ministries, the bulk of the highway system, and several of the southern superblocks had been completed. The majority of the citizens of the metropolitan area, however, resided in towns and *favelas* (shantytowns) that had sprung up around the construction site (Epstein 1973; Evenson 1973; Holston 1989). The core of Brasília—the capitol complex and the southern portion of the Pilot Plan—is a city for the middle class.

Despite the tremendous growth of Brasília, the residential population of the Pilot Plan never reached its target of 300,000 and has steadily declined as the population has aged in place. The result is that the schools originally intended for the children resident in the Pilot Plan area are now attended by the children of the maids and other people who work there.

As a symbol for the country, Brasília has been a great architectural success (Gautherot and Frampton 2010). The sculptural quality of the government precinct as a demonstration of Modernist ideals has no peer. Many people enjoy living there. The city, however, lacks the liveliness and the quality of institutions possessed by Rio de Janeiro or São Paulo. Its streets are not seams for life, but, rather, edges to superblocks and designed for the free flow of traffic. The city design represents the complete break from tradition, behaviorally and symbolically, that the Modernists sought.

The Pilot Plan of Brasília was a total urban design with NOVACAP as the developer, Lucio Costa as planner, and Oscar Niemeyer as architect. The team was responsible for the design and implementation of a single unified product. Beyond the "Plano Piloto," the city is a piece-by-piece largely laissez-faire design. Satellite towns have grown up somewhat haphazardly plugging into whatever pieces of infrastructure were available. They are now connected by a rail system.

Company Towns

A company town is a planned settlement for workers of a single industrial organization. Such towns are characterized by company-built community facilities and housing. The housing is very much all the same, with the senior staff having larger abodes. The manager's house is often distinctive.

Many company towns have been resource-oriented. Wells, British Columbia (1937–67), for example, served the Gold Quartz Mine and had a population of 4,500 at its peak. It was sold off when the mine closed in 1967. It now has a population of 250 people. Nhulunbuy (1966+) in northern Australia is a town that had 4,000 people in 2010. It was developed to exploit bauxite deposits. The closure of the alumina refinery there in 2014 has had a substantial impact on it. Such towns will continue to be built where the earth's resources are located in remote areas. Their longevity depends on their ability to adapt to change.

Most manufacturing industry-based company towns were located in the suburban areas of cities. Those built in Western Europe and the Americas during the nineteenth century were predominantly private enterprise developments and every aspect of the physical town, and often life within it, was under company control (Darley 1978). Le Creusot (1836) and Mulhouse (1826) in France, Bourneville in England (1879+), Pullman, Illinois (1880–4), and the Krupp industry towns in Germany among many others had both physical and social objectives in mind and were both autocratic and paternalistic (Crawford 1995; Dinius and Vergara 2011; Borges and Torres 2012). With the improvement of individual and mass transportation and the provision of government-funded housing programs during the twentieth century, fewer private enterprise company towns were built. Those that were constructed were primarily part of national policies for redistributing employment opportunities and population.

Many company towns were built in a hurried fashion, because they were expected to be short-lived. More than any other type of new town they tend to be total urban designs. Some follow the Garden City paradigm; others are Rationalist. A few (for example, Yorkshipp Village—now Fairview—in Camden, New Jersey, 1918) are domestic-scale City Beautiful schemes. Fairview has survived the demise of its parent company; other company towns have wasted away.

CASE STUDY

GSFC Township, Vadodara, Gujarat, India (1964–70)

An administered industrial township and a garden suburb with a superblock plan

The first company town in India, other than cantonments of the Bengal and Indian Armies of the British Raj, is Jamshedpur begun in 1908. Its location was dictated by resource and economic considerations. A privately built iron, steel, and manufacturing city, its design follows the concepts of American and European company towns that had a social and physical design agenda. Its founder, Jamsetji Nusserwanji Tata, wanted to

make it a good place to live and work. Now a city of 750,000 in a metropolitan area of 1,500,000, the city still has no elected municipal government. It remains a company town.

Successive post-Independence Indian governments have had a policy of decentralizing industries in the public interest. To attract workers to locations outside their home states, townships have to be built to house them at subsidized rates

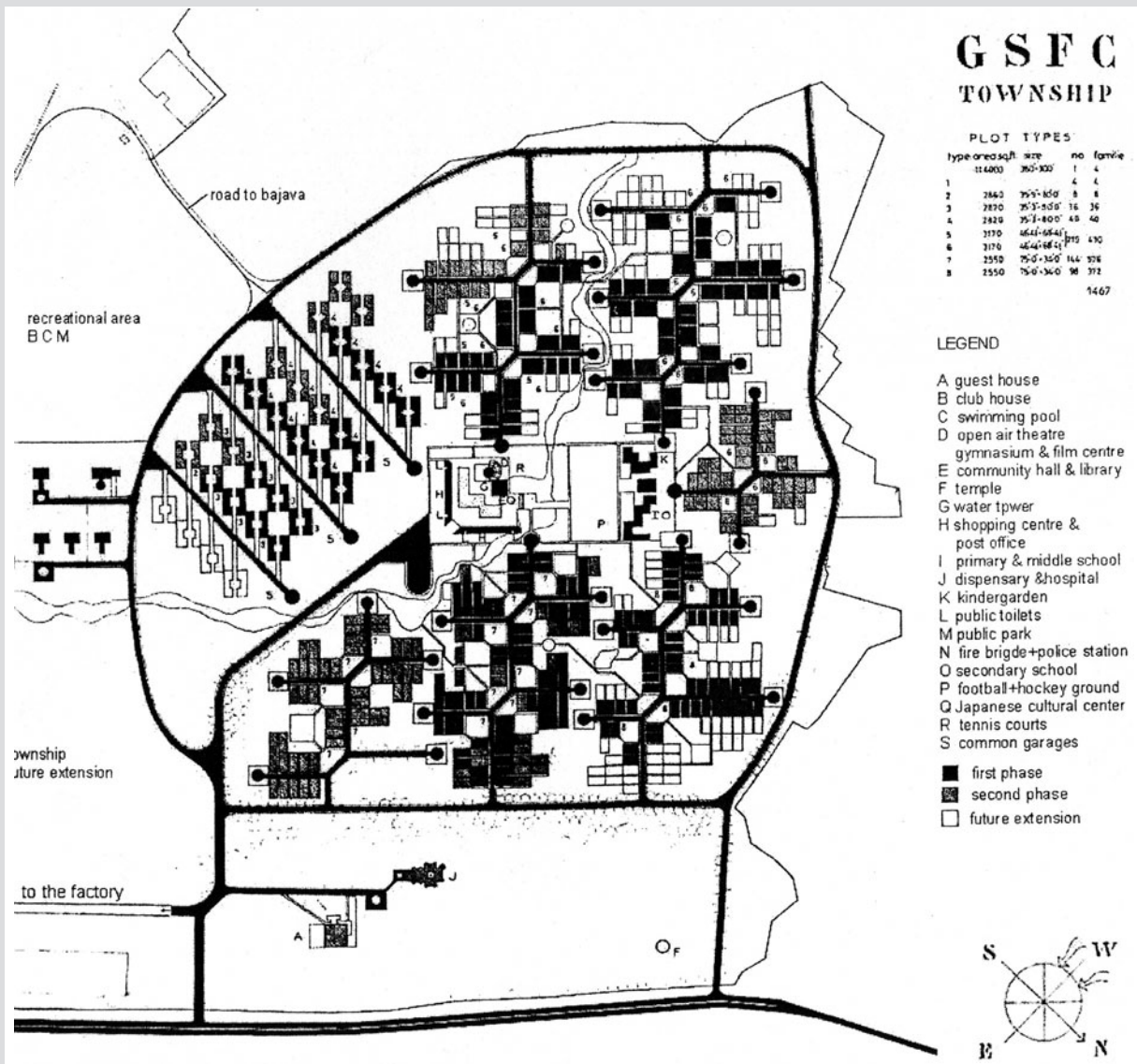


FIGURE 9.2 The Gujarat State Fertilizer Corporation (GSFC) Township, Vadodara.

Source: Courtesy of the Vastu Shilpa Foundation

in attractive surroundings. State governments have followed suit. The Gujarat State Fertilizer Corporation (GSFC) is one such organization. Its township lies on the outskirts of Vadodara. It was designed by Balkrishna V. Doshi, the site architect for Le Corbusier in Chandigarh (Curtis 1988). Doshi noted:

In large township projects where the government controls finance, there is a definite pattern of rules and conditions to be followed in spite of local needs or changes in the cost of

materials. The projects usually emphasize the size and area of rooms rather than living concepts.

Steele 1998, 50

In the design of the GSFC Township, Doshi strove to meet local requirements within the constraints of governmental dictates.

The total area of the township is 56 hectares (140 acres). The plan takes the form of a superblock with all vehicular traffic entering the interior of the block from a single circumferential

road (see Figure 9.2). It is a modified Radburn plan (Figure 9.5b). Pedestrian paths link the residential areas to the heart of the site. At the car-free core of the site are the public facilities: a dispensary and hospital, a post office, a kindergarten, primary and middle schools, a secondary school, and sporting facilities. A water tower is a strong design feature giving a point of reference to the township's core area.

The housing types owe much to contemporary modern architecture in India, Doshi's experiences in working with Le Corbusier, and the antecedents of Le Corbusier's work in that of Tony Garnier. The nature of the types and their location reflects the status and income level of their residents within the company hierarchy. At the upper end of the scale families have houses with private gardens located in quiet enclaves. At the lower end of the

hierarchy are flats and row-houses. Their designs respond to the spilling out of daily activities into open areas in a manner typical of Indian life. Balconies and verandahs provide opportunities for diverse behaviors: sleeping out on *charpoy*s, parking motor scooters, chatting, and doing light industrial work. In particular, the territorial hierarchy of transitions from private space to public—from steps to ledges, to the small street, and to the *chowk* (square) is respected. The township is given a visual unity through the use of concrete combined with thick brick walls.

Doshi's later townships (for example, the Life Insurance Corporation of India [LIC] Township at Hyderabad, 1968–71 and the Indian Farmers Fertilizer Cooperative [IFFCO] at Kalol (1970–3 and 1976) are more sophisticated but follow the ideas implemented in Vadodara (Doshi 1982).

Precincts

Most urban design schemes deal with precincts of cities. Completed total urban designs include capitol complexes, cultural districts, commercial centers, campuses of many types, and thousands of housing developments. All are powerful architectural expressions. As noted earlier the borderline between architectural and urban design is often blurred.

Mixed-use Developments

Many total urban designs at the precinct level are dominated by a single land use and often building type. They have their advantages and disadvantages but today the trend is to build mixed-use developments because they are seen as being more efficient in terms of infrastructure deployment; they also provide a richer backdrop for everyday life. The history of such designs is lengthy.

CASE STUDY

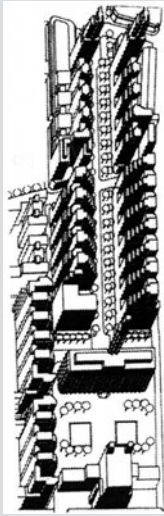
Le Quartier de Gratte-ciel, Villeurbanne, Lyon, France (1924–34)

An early Art Deco, Modernist, mixed-use, street-oriented precinct

Villeurbanne's population expanded dramatically from 30,000 to 82,000 people between 1928 and 1931 as the result of the growth of its textile, automobile, and chemical industries. The Quartier de Gratte-ciel (the District of Skyscrapers) was designed at the behest of the socialist mayor of

Villeurbanne, Dr. Lazare Goujon, in order to provide housing for the low-income immigrant population drawn from around France and from Italy. The whole project is the child of the mayor and two architects.

Goujon, a doctor, was particularly worried



(a)



(b)



(c)



(d)

FIGURE 9.3 Le Quartier de Gratte-ciel, Villeurbanne, Lyon in 2015. (a) The layout; (b) Avenue Henri Barbusse with the two tower blocks in the background; (c) L'Hotel de Ville de Villeurbanne; (d) Avenue Henri Barbusse.

Source: (a) Collection of the author

about the health of the working class and the prevalence of communicable diseases, particularly tuberculosis, among its members. Goujon wished to create more than a salubrious housing complex but a symbolic center for Villeurbanne. The precinct was to be comprised of a Palais du Travail (Labor Institute), the Hotel de Ville (City Hall), and a central square, as well as an extensive housing estate to consist of about 1,500 units. The Palais du Travail was created to house a

health clinic, meeting rooms, a swimming pool, a restaurant, and a theater. Goujon's goal was to have a city center that provided the facilities for the well-being and moral and artistic enhancement of the working classes (Mulazzani 2012).

An architectural competition was held for the design, with Tony Garnier as its most eminent juror. The winner was Môrce Leroux, a largely self-taught architect, but a more celebrated architect, Robert Giroux, a Prix de Rome winner in 1922

was selected to design the town hall. The Leroux design has strong antecedents in the work of Frédéric-Henri Sauvage at the Maison à Gradins. Sauvage, unlike his contemporary, Le Corbusier, who wanted to abandon traditional urban street forms, was concerned with creating fine streets with light obtained at ground level by stepping back the upper stories of the buildings that line them. In addition, the project did not have the separation of uses advocated contemporaneously by CIAM (Congrès Internationaux d'Architecture Moderne).

The design is centered on the Avenue Henri Barbusse. The sidewalks were as generous as the vehicular traffic lanes. The project is anchored at one end by two residential towers of 19 stories. The buildings that line the avenue are of 11 stories with the top three floors set back in the form of terraces. The architecture is more Art Deco than Modernist, with the two towers now being regarded as exemplars of the Art Deco in France. The vista terminates in the Hotel de Ville at one end while it connects to the city at the other. The units were up-to-date in contemporary design and provided with central heating obtained from a garbage burning plant. Ceiling heights were supposed to be high but national legislation reduced them to the norm. Waste chutes delivered trash and garbage to the ground floor.

The project was financed by the Villeurbaniste Company, a joint public-private venture organization that lent the city 110 million francs to get construction under way. The loan was to be repaid from the rents paid by the residents of the project. The source of finance was aided by a lottery (winning prize, ironically, a villa) and the sale of stamps. The slow take up of the units led to the company being threatened with bankruptcy. Potential residents considered the apartments to be "rabbit cages" and they were unaccustomed to living at a "dizzying height" (Gallo undated).

The development came to life after the Second World War. The migration of many of its low-income residents to the suburbs elevated the image of the development (Meade 1997). To attract families many of the small flats were amalgamated into larger units. Another impetus for change was the relocation of the Théâtre National Populaire from Paris to the Palais du Travail building in 1970. To add to the prestige of the area, the town hall was added to France's Inventory of Historical Monuments and in 1993 the whole district came under the protection of the country's Heritage Act. The streetscape of the Avenue Barbusse was completely upgraded to what is today. The challenge has been to keep the original goal of the district while piecemeal gentrification takes place.

CASE STUDY

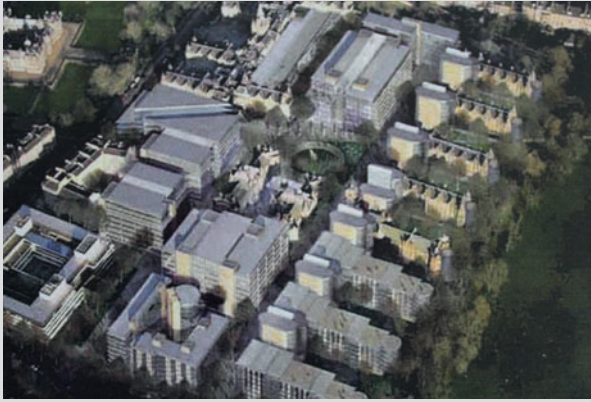
Quartermile, Edinburgh, Scotland, United Kingdom (2001–17)

An integration of old and new buildings in an urban renewal scheme

Quartermile is an 8-hectare (19-acre) mixed-use development on the former site of the Edinburgh Royal Infirmary. It lies a quarter mile from Edinburgh Castle and the site is a quarter mile in diagonal size. The site lies between the heart of the city and the parkland of the Meadows. It falls within a UNESCO World Heritage area containing nine listed buildings designed by major architects such as William Adam, David Bryce, and Sidney Mitchell. The site is under single ownership and

the project has one lead developer and one team of architects and landscape architects. It is the type of project that straddles the line between total and all-of-a-piece urban design.

Lothian National Health Service Trust sold the entire site on the open market. A number of provisos established by the City of Edinburgh council were attached to the sale. A key criterion was the desire for the Trust to maximize eventual financial returns through Overage Agreements



(a)



(b)



(c)

FIGURE 9.4 Quatermille, Edinburgh. (a) Site layout with the Meadows on the right; (b) Lister Square; (c) a view along Simpson Loan.

Source: (a) Collection of the author

(ones that allow for a return to the site's vendors of any future increment in land value over the sale price). The Trust selected Southside Capital—a consortium of the Bank of Scotland, Kilmartin Property, and others—to be the developers. The project was later taken over by Gladedale Properties with the Bank of Scotland. The master plan was created and the design carried out by a

single team consisting of Foster + Partners in the lead with Richard Murphy architects, Hurd Rolland architects, and CDA-Architects with EDAA as landscape architects (Foster and Partners undated). Despite the range of architects, the project remained a single entity.

Some of the original structures of the hospital were reused but others were demolished to allow

for new buildings. The master plan was adapted after it received planning consent in 2004 as the result of the financial crisis of 2007–8. The five-star hotel that was proposed for the main hospital building was replaced by housing and a 70-bed boutique hotel has been built in its stead at another location. A focal space, Lister Square, was added to the scheme.

The development blocks were sold to a range of owners; each had to sign a Deed of Condition committing each to contribute to the running costs of a management agency, Quartermile Estates. Quartermile houses about 1,600 residents in 900 apartments (18 percent affordable, which is below the city's normal requirement of 25 percent) with 30,000 square meters (330,000 square feet) of Grade A commercial space, 10,000 square meters

(110,000 square feet) of retail and leisure space, and 2.8 hectares (7 acres) of open landscaped areas. The new apartment buildings are located on the periphery because it is quieter while the commercial buildings are clustered around Lister Square at the center (Scottish Government 2009).

The design has won numerous awards but has been controversial because the historic Red Home designed by Sidney Mitchell originally planned for conversion to bars and restaurants was demolished to make for an L-shaped office block and Lister Square. ICOMOS (International Council of Monuments and Sites) threatened withdrawal of recognition for the site because of the changes the new buildings would make to the Victorian skyline of Edinburgh. The actual effect is marginal.

Housing Complexes

Housing projects follow a surprisingly limited range of forms. The Rationalist schemes generally follow models developed at the Bauhaus in Germany and advocated by architects such as Ludwig Hilbersheimer (1944; Figure 9.5a), and by Le Corbusier in his proposals for ideal cities that culminated in the building of the Unité d'Habitation (Sherwood 1978). The Empiricist proposals have either followed Garden City and neighborhood unit principles or been pragmatic, financially driven schemes led by property developers. Private ownership was stressed. Lately many such residential area designs have been driven by New Urbanist ideas.

The most important Empiricist model for a residential precinct in the twentieth century was Radburn, New Jersey (1928+ but never fully completed), a much-loved total suburban design (Stein 1957). The development company failed financially during the recession that followed the Wall Street financial collapse, but Radburn has been an influential design idea, as can be seen in the design of the GSFC Township in Vadodara.

Rationalist housing schemes were built everywhere. Sometimes they have been successful in the eyes of their residents (for example, in the new towns of Singapore and in Korea and China), but at other times they have been notorious failures. The experience in the so-called Anglo-Saxon world has been very mixed. The designs have had shortcomings in both social and physical environmental terms in the United States, the United Kingdom, and Australia, where they failed to provide a suitable milieu for the lives of people with low incomes. Pruitt-Igoe has become a name synonymous with this failure (Newman 1974; Lang 2005). Some of the suburbs of Paris are equally notorious.

Val-Fourré, a *banlieue*, the largest of 1,100 such housing estates in France, accommodates well over 30,000 people (28,000 officially) in tower blocks. Located 85 kilometers (about 50 miles) from Paris, the project's goal was to provide ultra-modern housing for lower-middle-class French residents (*cadres moyens*) but by 2010 the residents were drawn from almost thirty different ethnic groups, mainly recent immigrants. Today, Val-Fourré is called a *banlieue sensible* (sink estate) or, pejoratively, a *cit  *. Philadelphia had a dozen

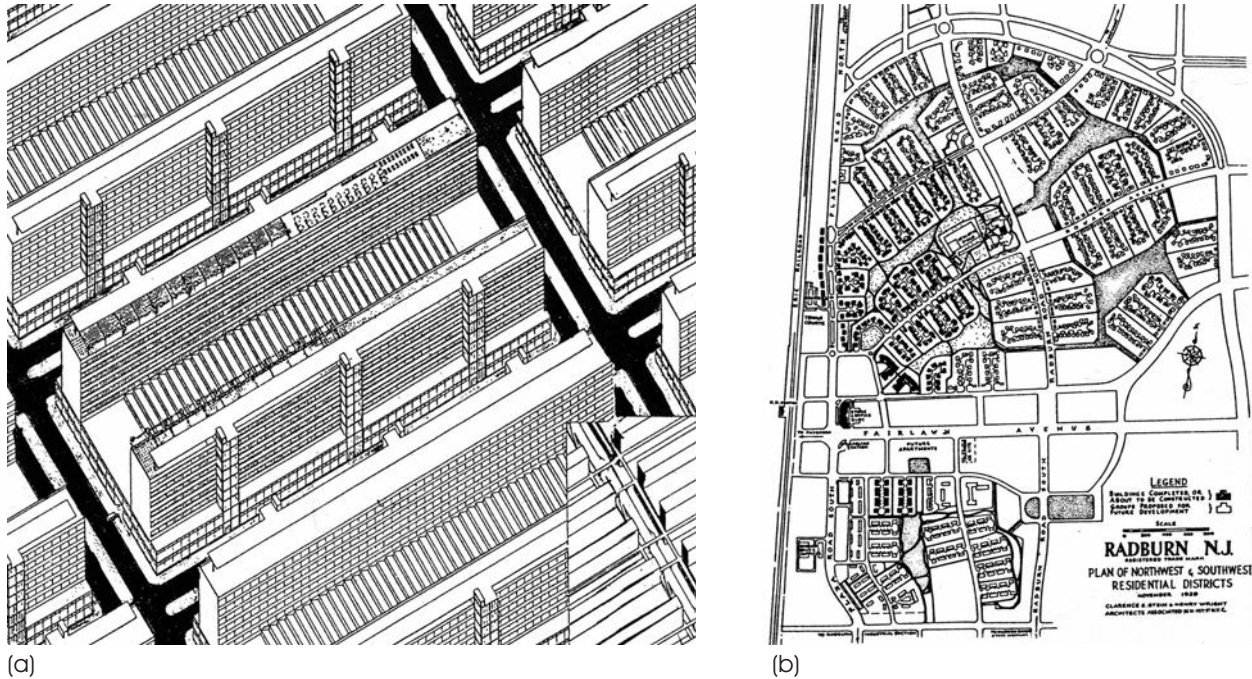


FIGURE 9.5 Rationalist and Empiricist approaches to housing design. (a) A generic international Modernist housing design; (b) the Radburn plan.

Source: (a) Adapted from Hilbersheimer (1940); (b) Stein (1957)

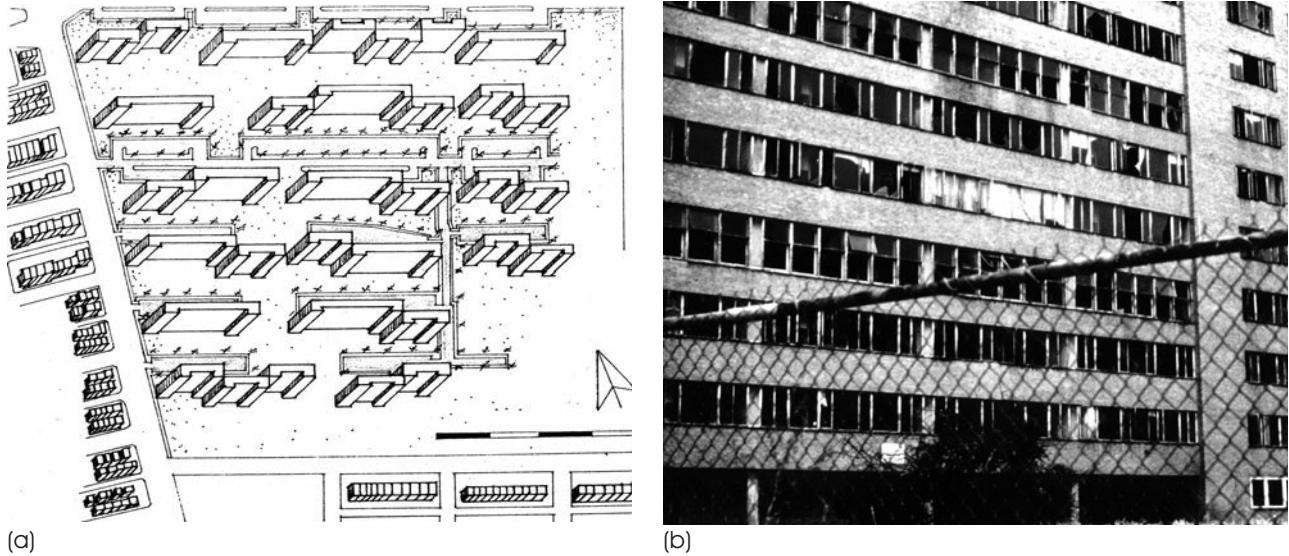


FIGURE 9.6 Pruitt-Igoe, East St. Louis. (a) An isometric view of the site; (b) a view prior to demolition.

Source: (a) Drawing by Thanong Poonterakul

such large-scale housing projects. The last of them, the Martin Luther King, Jr. Housing, was demolished late in 1999. Estates designed along these patterns may work well in China for middle-income people and are being built on a vast scale, but they do not do well for socially and psychologically dislocated people with many children who have little to occupy themselves.

The housing estates of the twentieth century came in a range of product types. Some are traditional suburban developments; others include gated “communities” and

retirement villages. The former is a highly contentious type designed to protect those who live within them from crime and the presence of unsavory characters (Low 2003; Baqueen and Uduku 2012). The type is generally associated with wealthy enclaves in the United States, but it is a highly prevalent type for new, middle-income housing in cities such as Istanbul, Johannesburg, Seoul, and Shanghai. In retirement communities, age restrictions preclude the residence of people under a specific age (usually 55).

Cooperative housing precincts are multi-unit developments in which residents have the right to occupy their units by purchasing stock in the corporation formed to develop and own the project. The houses are located around a common open space and a community building. The more radical housing precinct types include cohousing developments. Cohousing involves the design of a number of houses, usually 20 or 30, to form a community whose members may share household activities such as cooking and child minding (Franck and Ahrentzen 1989). Cohousing complexes may or may not be cooperatives.

The three case studies presented here illustrate social ideas expressed in architectural form. They represent very different design attitudes and were designed for very different populations. The first, Le Quartier de Frugès, completed in 1926, followed the design principles of Le Corbusier and the second, Raleigh Park, is a more recent suburban-type development. The third case study, Trudelslund, is an example of a cohousing project.

CASE STUDY

Le Quartier Moderne de Frugès, Pessac, Bordeaux, France (1924–6, 1990+)

A much-adapted pioneering Modernist, suburban, housing project

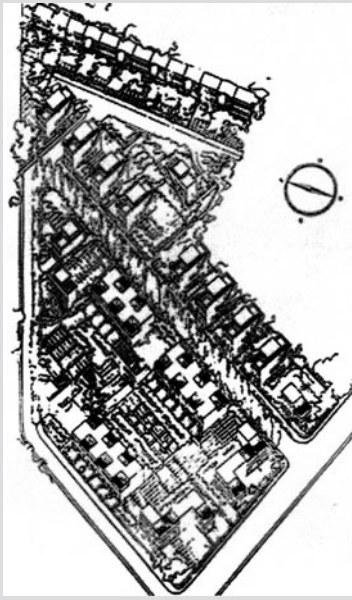
The Quartier Moderne de Frugès was commissioned by Henry Frugès, owner of a sugar refinery in Bordeaux. Frugès bought a plot of land in Pessac and hired Le Corbusier (still known as Charles-Edouard Jeanneret-Gris) working in partnership with his cousin Pierre Jeanneret to design housing for the workers of the refinery. Frugès gave Le Corbusier free rein to create a housing development that was economic, mass-produced, geometrically sparse, minimalist, and functional (in the narrowest sense of the term).

Begun in 1924 with the goal of providing 135 houses, the program was cut back to 50 units that were built by 1926. The complex consists of six types of flat-roofed houses (a seventh was originally envisioned but dropped). They were called *Arcade*, *Gratte-ciel* (skyscraper although it was just three-stories high), *Isolée*, *Jumelie* (twin), *Quinconce*, and *Zig-zag* (Hsu and Shih 2006). All were based on an identically sized module which, in turn was based on the golden rectangle. The

module made it possible to build the houses with a single formwork. All the houses had an entrance hall, kitchen, living room, and bathroom with shower on the ground floor with two or three rooms above. They varied in size from 75 to 90 square meters (807 to 970 square feet) and were grouped in clusters.

Le Corbusier applied his five basic housing design principles when creating the Pessac development. These patterns were: high-ceilinged ground floors, narrow elongated windows, roof terraces, and open façades and plans. The thin, structurally sound concrete walls were an innovation and have contributed to the longevity of the project. The whole spatial quality was a creative departure from the norm. It was not, however, what the workers at Frugès' refinery wanted.

The modern design and the distance from their workplace made the houses unattractive to the intended residents. Le Corbusier and the workers had very different aspirations and tastes. The



(a)



(b)



(c)



(d)

FIGURE 9.7 Le Quartier Moderne de Frugès, Pessac. (a) Site plan; (b) a *Gratte-ciel*-type house; (c) a street scene; (d) *Quinconces*.

Source: (a) Collection of the author

houses were sold one-by-one to private owners at below cost price; the deficit was borne by Frugès. The new owners transformed the houses' interiors, punched new windows into their exteriors and changed elements of the external appearance as well as the interior décor (Boudon 1972). The individual changes meant that many of the hallmarks of Le Corbusier's work were lost.

These included the open plan floors, the repetition of open and closed geometries, and the carefully selected external colors. The houses no longer possessed pure geometric forms. Over time, they fell into disrepair.

A turning point in the life of the precinct occurred in 1973. One owner restored his *Arcade*-type house and successfully applied to have it

declared an historic monument. The City of Pessac then bought a house, restored it and turned it into a museum that attracts many visitors. Other owners and new investors restored their houses sufficiently to turn the neighborhood into a highly desirable one designed by one of the twentieth century's greatest architects (Huxtable 1981; Invisible

Bordeaux 2013). The Pessac housing survives because the houses were structurally solid with their exteriors providing the strength. This firmness gave the possibility of making many changes without totally destroying the original architectural intent. Now on the open market, the people who choose them like them.

CASE STUDY

Raleigh Park, Randwick, New South Wales, Australia (1989–2005)

A market-oriented, garden suburb-type, semi-gated precinct

The creation of total urban designs is seldom straightforward in democratic countries. Raleigh Park's history shows that. It is a 12.34-hectare (30-acre) development on a triangular site in the south-central Sydney metropolitan area. The precinct is a total urban design based on Garden City imagery. It was a brown-field site having been the location of the W. D. & H. O. Wills' cigarette factory and workers' recreational facilities.

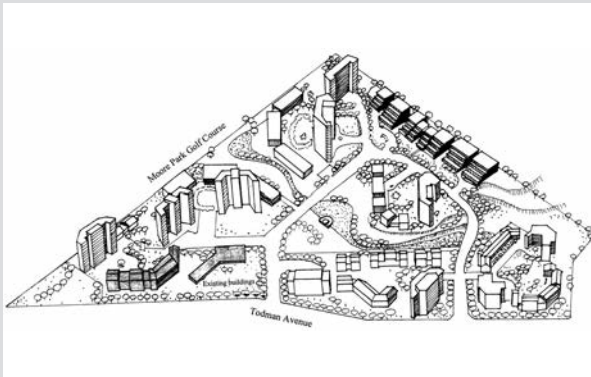
The development was a joint venture of two property development companies: Mirvac Ltd and Westfield Holdings Pty Ltd, designed in-house by Mirvac's HPA Associates (Henry Pollack Architects). It was named after Sir Walter Raleigh, who introduced tobacco to Europe from North America. It consists of six residential towers of between eight and thirteen stories in height, three-story walk-up housing units, and 150 houses (well below the number of units permitted by zoning ordinances). The administrative buildings of the cigarette company in the corner of the site were preserved as communal facilities and commercial rental space.

The Labor government in power in New South Wales State initiated the project in 1982, catching the local jurisdiction, the City of Randwick, by surprise. The state government announced that the site of the cigarette factory would be converted into a housing development as part of its effort to secure its majority in Labor-held seats at the next state election. Local residents and merchants,

however, took the proposal to the State Land and Environment Court challenging it on procedural grounds. The case became moot when the government passed a bill validating any invalidity in the planning process. Consequently, an approach was made to the Randwick City Council in 1984 by Westfield Holdings in a joint venture with Amatil (the parent company of W. D. & H. O. Wills) to develop the site. The architects were Jackson, Teece, Chesterman & Partners. The scheme, which seems to have no central idea behind it (Figure 9.8a) did not proceed.

In 1986 Westfield obtained an extension of the development approval deadline and also bought out Amatil's share of the project. Shortly before the new date expired, and after considerable negotiation, the State Government bought the land from Westfield for AU\$30 million and sought tenders for the development of 1,200 to 1,400 town house units on the site (excluding a portion where Westfield had already begun constructing 155 units of housing).

In December 1988, the National Trust for Historic Preservation listed the cigarette factory's administration buildings designed in 1930 by Joseland and Gilling because of their Georgian-revival architecture. The buildings were at that time leased to Virgo Productions, a film production company, who wanted to establish a permanent location for the making of films and television programs. Its proposal to do so failed.



(a)



(b)



(c)

FIGURE 9.8 Raleigh Park, Randwick. (a) The Jackson, Teece, Chesterman and Partners proposal; (b) a model of the scheme as built; (c) a general view of the landscape with the apartment buildings in the left background in 2015.

Source: (a) Drawing by Thanong Poonteerakul

Westfield Holdings won the tender for the whole project, reputedly for \$A43 million, with Mirvac as an interested party (Mircac Westfield 1997). The design that has emerged consists of a simple loop road with a connecting road in its middle. The single vehicular entrance to the site lies on Todman Avenue. Minor entrances (often locked) allow pedestrian entry to the estate. Apartment blocks, named after prominent British golf courses, line the northern edge of the site facing the Moore Park golf course. The remainder of the site is devoted to single-family homes, two stories in height in a zipper-lot formation. The architecture is in a 1990s postmodern historicism style designed to appeal to the Asian market; much of the housing was directly sold to investors in Hong Kong. It is the landscaping that gives the site

its character. Mature trees were preserved and much planting was added to give Raleigh Park a high-quality image. The central park acts as a flood control device. The cigarette factory's administration building provides a sense of historic continuity to the site.

The scheme, after some early problems due to the economic recession of the 1990s, has been a marketing success. Worries do exist in many minds about the concept of gated communities although at Raleigh Park there is no real gate and seldom anyone manning the entrance. The scheme is, nevertheless marketed as a "security estate." The design of Raleigh Park received a planning award (from the Royal Australian Institute of Planners) in 1996 and a design award in 1998 (from the Urban Development Institute of Australia).

CASE STUDY

Trudeslund, Birkerød, Denmark (1978–81)

A cohousing development

Trudeslund, a small residential community, is situated in the town of Birkerød north of Copenhagen. As in cohousing communities the design brief was based on a social ideal that is manifested in its physical design (Jarvis 2015). In 1978 twenty families came together to form a community in which a number of household activities of daily life would be shared. They sought both a sense of individuality and a sense of community. The families' immediate objective was to get permission to build a cohousing development on land that was zoned for detached houses. The speed required to process the group's application for a zoning change illuminated a lack of clarity in its goals, resulting in half of the families withdrawing from the scheme. The group restructured itself and formed a clear statement of its intentions.

Planning and design decisions were made democratically with all members of the cohousing group participating. As with most interactive, open-ended decision-making processes it was truncated only by some external circumstance. In this case

it was the fear of interest rates escalating (in 1980–81 they rose to 21 percent). The group asked four architectural firms to submit designs for their consideration, choosing one prepared by Van-kustein Architects. Interestingly the architects strove for a greater degree of integration and communal activities than the community members themselves wanted. The members were conscious of their individual identities and of houses as financial investments. If the community collapsed, they wanted the houses to be easy to sell on the open market.

Trudeslund is comprised of 33 residences and a common house. The community is laid out on two pedestrian streets lined with row houses in an L-shaped plan (see Figure 9.9a). An L-shaped Common House with a small square in front of it is located at their intersection. Two children's playgrounds—one halfway down each street—and the wooded areas outside the community act as playing areas for children. Each house has a small front garden abutting the street. The parking

space for cars is on the periphery of the complex (Franck 1989; McCamant and Durrett 2011).

Programming conflict arose over the design of the kitchens. Should the house designs be standardized for economic reasons? As each family had its own ideas, each kitchen is unique. The houses range in size from 90 to 140 square meters (970 to 1,500 square feet) and cost from 77,000 to 1 million Danish Kroner (\$US91,400 to

\$US117,600 in 1980 dollars). The price included a financial share in the Common House.

The streets act as communal areas especially for children, but it is in the Common House that the communal life of Trudeslund takes place. It contains kitchens and dining rooms; communal meal-preparation and dining takes place there. Cooking is done on a rotational basis. Some members eat together frequently in the common dining room, others less so. The Common House also has facilities for housing visitors, for children and teenagers, and a library, workshops, laundry, and a store. It is the heart of the community.

Trudeslund has operated in a remarkably similar manner over the thirty years of its life. In 2010 the composition of the population was approximately the same as in the 1980s. Potential purchasers of houses, when they become available, are required to attend two common meetings, dinners, and workdays to make sure that they understand the nature of the community life that Trudeslund offers/requires.

Many total urban designs have resulted from autocratic top-down decisions, but Trudeslund is an example of a highly participatory programming and design process. There were many hands making the broth but it was one project carried to conclusion by one architectural firm under one auspice.



(a)



(b)

FIGURE 9.9
Trudeslund, Birkerød.
(a) Site plan; (b) a
view from the
Common House.
Source: Courtesy of
McCamant & Durrett
Architects

Campuses

The term campus was first applied to the layouts of universities (Turner 1984). Since the 1980s, the label “campus” has been extended to cover a variety of types of development other than universities: medical facilities, office complexes (see the case study of The Denver Technological Center in Chapter 10), and even industrial sites. The number of university campuses that were total urban designs is substantial. Often, however, the word “total” can only be applied to the first stage of their development. Thereafter they tend to become more haphazard affairs (Dober 1992; Coulson et al. 2014). At the University of Virginia, Thomas Jefferson’s 1817 design remains the unified centerpiece of the campus but the buildings added in the two centuries since the original design are located in what seems to be a whimsical pattern.

Many of the first set of post-Second World War universities were strongly influenced by modernist design principles (for example, Bruno Taut’s design for Karadeniz Teknik Üniversitesi in Trabzon, Turkey, Punjab University in Chandigarh, designed by Pierre Jeanneret and B. P. Mathur, the Universidad Central de Venezuela designed by Raul Villanueva, and the State University of New York at Albany (now Albany University) designed by Edward Durrell Stone. A number of more recent campuses deviate from this model. The Mahindra World College in India designed by Christopher Benninger is based on the Mandala, which is important in Indian spiritual circles. Stockton State University is in one building.



(a)



(b)

FIGURE 9.10 Educational campuses. (a) Stockton State University, New Jersey; (b) the Mahindra World College, Pune, India.

Source: (a) Collection of the author; (b) courtesy of Christopher Benninger, architect

CASE STUDY

Jubilee Campus, University of Nottingham, United Kingdom (1995–2002)

The first phase of an energy-conserving “green” university campus

The year 1998 was the golden jubilee of the University of Nottingham becoming an institution independent of the University of London. The Jubilee Campus was opened the following year by



FIGURE 9.11 The Jubilee Campus, University of Nottingham.

Source: Photograph by Mick Aylward

Queen Elizabeth II. The design of the campus and the competition-winning first-phase buildings designed by Michael Hopkins and Partners (now Hopkins Architects) represent a total urban design. Reflecting contemporary concerns, sustainability of the design was a key consideration.

The campus is built on a brown-field site, the former location of the Raleigh bicycle factory. The suburban housing adjacent to the factory remains much the same as it was and the trees lining the western edge of the Raleigh site were retained. The adjacent stream was transformed into a serpentine lake edged by the trees. In combination, the lake and trees cool and filter the prevailing breezes that provide ventilation for the university buildings that line the lakeside. The water with its reeds not only serves to cleanse the water that runs off the roofs of the buildings and the parking lots but, with the landscaping, provides a habitat for wildlife. The design represents a collaboration between Hopkins and Battle McCarthy, landscape architects. Arup Associates were an important part of the team.

The buildings are brick-clad student residences and timber-faced academic units. An arcade linking them runs the length of the site. The focus of the campus is the inverted spiral, cone-shaped library and auditoria building that juts into the lake. The academic buildings are generic in form recognizing that they, as is common in university buildings, may well serve different instrumental functions in the future. Each consists of a central full-height sloping glass atrium on laminated timber beams that links with the arcade; the wings of rooms open on either side. The atria are the places where students meet and socialize. The campus cafeteria is located in the largest of the atria (Buchanan 2006).

The green credentials of the combination of exterior spaces and buildings have attracted most attention and awards, such as the Millennium Marque award for Environmental Excellence. The landscaping extends to the low-growing alpine plants on the roofs of the buildings. These plants provide insulation and help maintain constant

temperatures within the buildings. The combination of mechanical and wind-driven ventilation is most evident in the cowls atop the plant rooms. Air is sucked in below the cowls and blown down ducts on each side of the stair wells. From there under-floor plenums provide the interior ventilation of the buildings. Low-powered fans assist in the process.

For most of the year openable windows provide the academic areas with natural ventilation. The wind-driven mechanical systems function during hot and cold periods. Photovoltaic cells integrated into and shading the roofs of the atria feed into the

national grid. On hot, still days, power is drawn from the grid to drive extractor fans. The materials of the cladding of the buildings—cedar and galvanized rather than stainless steel—were selected because of their low embodied energy and because their manufacture requires less pollution than other material available. Some simple details add to the complex's green credentials. Wooden louvres that exclude sun from the interiors of the buildings have white tops to reflect light into them. Another feature is that the same light source provides up and down lighting from high-efficiency fixtures.

Streets

The world has many fine streets (Jacobs 1993). The principal streets in the center of cities around the world have been and are being improved. They have generally been landscape architectural projects that have not dealt with the enclosing elements that make a street a street. Baron Haussmann's redesign of Paris under Napoleon III's patronage was very much a three-dimensional design, with guidelines shaping the buildings that line the boulevards. New streets in the center of cities are rarer. Their qualities depend on many dimensions of experience (Moudon 1987; Mehta 2013).

Albert Speer's design under another dictator, Hitler, never came to fruition but it was a boulevard-based total urban design on a large scale for Berlin. It was very much concerned with the three-dimensional qualities of the street. Monumental in nature, it was designed to impress. Le Quartier de Gratte-ciel in Villeurbanne described above is very much an urban design based on a street, but the street itself was not the focus of the design. In the Avenue of the Victory of Socialism in Bucharest it was.

CASE STUDY

The Avenue of the Victory of Socialism, Bucharest, Romania (1977–89+)

A grand City Beautiful boulevard; the dream of a dictator

After World War II a communist dictatorship was established in Romania under President Nicolae Ceausescu. He initiated a number of large-scale urban design projects as part of his program to turn Romania into his image of a modern country. In rebuilding Bucharest, Ceausescu seized the opportunity to demolish many structurally sound areas to enable him to build a new government complex. It was also an opportunity to get rid of a quarter of the city that was full of single-family houses

belonging to the old power and intellectual elite. As Ceausescu proclaimed:

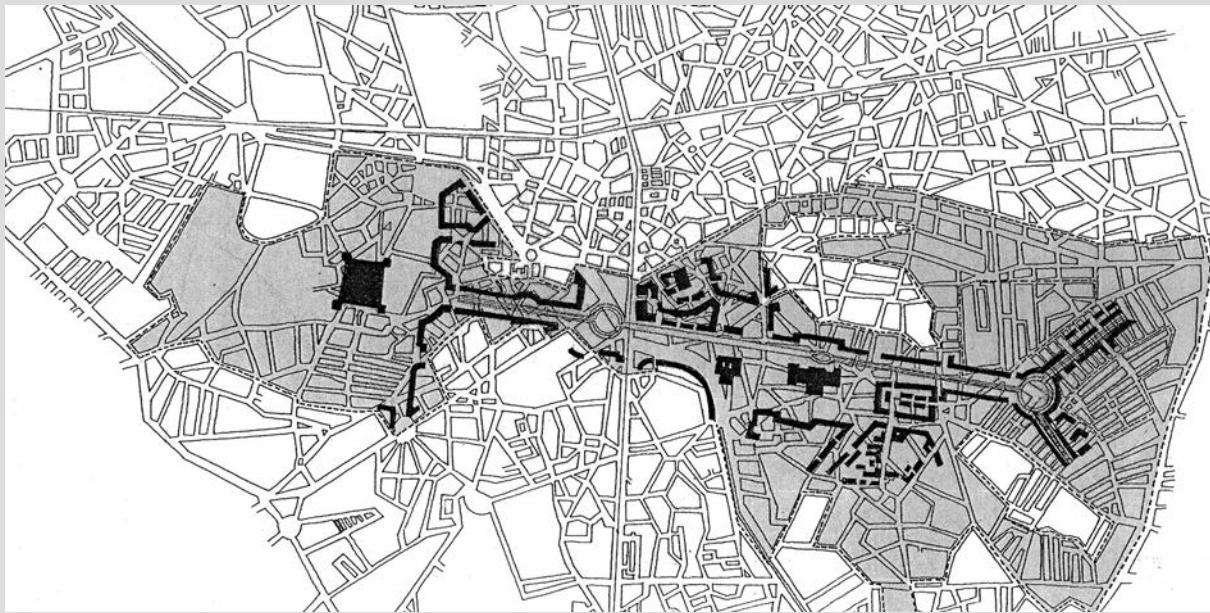
I am looking for a symbolic representation of the two decades of enlightenment we have lived through; I need something grand, something very grand, which reflects what we have already achieved.

Cited in Cavalcanti 1997

Ceausescu's chief architect, Dr Alexandru Budisteanu, believed that the development of monumental boulevards was the way to create a beautiful, and grand, city. He had Haussmann's Paris in mind. One of Ceausescu's desires was to build a Victoria Socialismului (Victory of Socialism) civic center in Bucharest. To suit his purposes, Ceausescu established a new law and building regulations governing the reconstruction of cities in the country. His aim was to demolish villages and urban precincts and replace them with his

view of modern urban design and modern architecture. Architects whose opinions differed from his lost their jobs.

The site chosen for the civic center project was in the Uranus district of the city because of its historic importance and elevated location. A competition for the design of the civic center was held in 1978 in order to give the appearance of democratic decision making. The program was announced verbally and Ceausescu chose the winner, Anca Petrescu, despite the presence of jury



(a)



(b)



(c)

FIGURE 9.12 The Avenue of the Victory of Socialism, Bucharest. (a) The area demolished and the footprints of the new buildings; (b) view towards the Casa Republica (now Palatul Parlamentului); (c) view from the Casa Republica with the Pietă Semicirculară in the foreground.

Source: (a) Adapted from Cavalcanti (1979) by Chao Wang; (b, c) photographs by Fiona Verge

members drawn from the nation's architectural elite. Demolition of the site began in 1978, with many of the inhabitants being given only twenty-four hours' notice to vacate their houses. A total of 40,000 people were displaced and relocated on the outskirts of the city. Their departure impoverished the social and intellectual life of central Bucharest because the displaced included artists, professors, writers, and many craftspeople (Cavalcanti 1997).

The Bulevardul Victoria Socialismului (Avenue of the Victory of Socialism, but now Bulevardul Unirii, Union Boulevard), 3.5 kilometers (2.1 miles) long (purposefully longer than the Champs Élysées in Paris) and 92 meters (300 feet) wide, was driven through parts of the historic core of the city and lined with "socialist" buildings. Thousands of dwelling units were demolished to make way for it. Many historic buildings including 26 churches, three monasteries, and two synagogues were destroyed in the process.

The program for the buildings lining the avenue was never clearly articulated. They were built to give the street its frame. They are of uniform height, being about ten stories high and neoclassical in appearance. At the head of the street is the Casa Republicii, or House of the People, 86 meters tall and, reputedly, the same below ground and 276 meters long. Designed to be the government center it is now the Palatul Parlamentului (Palace of Parliament). It houses the Romanian Parliament. It contains 700 offices, meeting rooms, restaurants, libraries, and assembly halls for 1,200 people (the 66- by 30-meter Romanian Hall, the 55- by 42-meter Banquet Hall, and the 64-meter in diameter cylindrically domed Congress Hall).

In front of the building is a semicircular plaza, the Piața Semicirculară, capable of holding a crowd of 500,000 people. Monumental buildings frame it (Otoiu 2007).

The center of the boulevard is lined with fountains, commemorative arches, columns, and sculptures. They stand in an 8-meter (25-foot) wide green strip that they share with a variety of tree species. The buildings lining the boulevard (long-empty) now house international capitalist organizations—banks and insurance companies. The western end of the boulevard was for a period largely deserted and dilapidated. Parts of the development continue to be built; the National Library originally planned for completion in 1988 was completed in 2011. The architect of record for the Casa Republicii is Anca Petrescu. She designed a simple, modern building for the site but it was superseded by one reflecting Ceausescu's own "New Romanian Architecture." He inspected its construction on a weekly basis and made many on-site design decisions. Models were made for him so he could understand proposals (Petcu 1999).

Although the actual total cost is unknown, the boulevard required so great a capital investment that it bankrupted the state. The boulevard remains a major axis with lengthy vistas. It celebrates President Ceausescu. He had the political and financial control to develop his idea, hire architects, and supervise the construction of the project. Unlike Paris or even the work of Mussolini in Rome, the overwhelming consideration in the design of the Avenue of the Victory of Socialism was Ceausescu's own aesthetic ideal.

Commentary

These case studies show that considerable power, financial and/or political, is required to build total urban designs on any large scale. Although such designs are easier to implement in totalitarian societies, they have been carried out under vastly different legislative, legal, and administration regimes. The time taken to implement them varies but each was conceived to be completed quickly. When the decision-making power is centralized, actions can be taken rapidly. The Pilot Plan in Brasília took only five years to build.

The degree of singular control over the property development and design process varies considerably from case study to case study. On one hand, there are schemes such

as Brasília and the Avenue of the Victory of Socialism in which much was designated by a central authority—quasi-democratic in the first case, autocratic in the latter—without much outside interference. On the other hand, Raleigh Park, although the product of one organization, was very much battered by city politics and the conflicting views of adjacent community groups.

In Quartermile the various architects worked as a team so it is regarded here as a total urban design. The design of other building complexes such as Rockefeller Center and Lincoln Center in New York, Solidiere in Beirut, and downtown Burj Dubai follow the definition of all-of-a-piece urban designs. They were implemented by a number of architects based on a guiding conceptual design. They were so tightly controlled, however, that they could easily be regarded as collaborative designs.

The quality of the schemes described in the case studies varies considerably. Some of them are regarded as powerful architectural statements, others less so. Many total urban designs are admired by architects for their geometric qualities. The buildings at Brasília are much photographed as abstract sculptures. Such environments, however, are often devoid of the urban elements that support life generously.

References

- Baqueen, Samir and Ola Uduku (2012) *Gated Communities: Social Sustainability in Contemporary and Historical Gated Communities*, London: Taylor and Francis.
- Borges, Marcelo J. and Susana Torres (2012) *Company Towns: Labor, Space, and Power Relations across Time and Continents*, Basingstoke: Palgrave MacMillan.
- Boudon, Philippe (1972) *Lived-In Architecture: Le Corbusier's Pessac Revisited*, translated from the French by G. Onn, Cambridge, MA: MIT Press.
- Buchanan, Peter (2006) Nottingham Hopkins, in *Ten Shades of Green*, New York: The Architectural League of New York, www.architectureweek.com/2006/1018/environment_1-1.html, accessed April 22, 2015.
- Capital Cities (1989) *Ekistics* 50 (299), special issue.
- Cavalcanti, Maria de Betânia Uchôa (1997) Urban reconstruction and autocratic regimes: Ceausescu's Bucharest in its historic context, *Planning Perspectives* 12, 71–109.
- Coulson, Jonathan, Paul Roberts, and Isabelle Taylor (2014) *University Trends: Contemporary Campus Design*, Abingdon: Routledge.
- Crawford, Margaret (1995) *Building the Workingman's Paradise: The Design of American Company Towns*, New York: Verso.
- Curtis, William J. R. (1988) *Balkrishna Doshi: An Architect for India*, New York: Rizzoli International.
- Darley, Gillian (1978) *Villages of Vision*, London: Paladin.
- Dinius, Oliver J. and Angela Vergara (2011) *Company Towns in the Americas: Landscape, Power, and Working-Class Communities*, Athens, GA: University of Georgia Press.
- Dober, Richard P. (1992) *Campus Planning*, New York: John Wiley.
- Doshi, Balkrishna V. (1982) *Housing*, Ahmedabad: Stein, Doshi, Bhalla.
- Epstein, David (1973) *Brasília, Plan and Reality: A Study of Planned and Spontaneous Urban Development*, Berkeley and Los Angeles: University of California Press.
- Evenson, Norma (1973) *Two Brazilian Capitals: Architecture and Urbanism in Rio de Janeiro and Brasília*, Berkeley and Los Angeles: University of California Press.
- Foster + Partners (undated) *Quartermile Master Plan*, www.fosterandpartners.com/projects/quartermile-masterplan/, accessed April 20, 2015.
- Franck, Karen (1989) Overview of collective and shared housing, in Karen Franck and Sherry Ahrentzen (eds) *New Households, New Housing*, New York: Van Nostrand Reinhold, 3–19.
- Franck, Karen and Sherry Ahrentzen (1989) *New Households, New Housing*, New York: Van Nostrand Reinhold.
- Gallo, Emmanuelle (undated) Reception and the high-rise district, Villeurbanne Centre, or why skyscrapers in 1932, www.emmanuellegallo.net/pdf/EG149-52.pdf, accessed April 19, 2015.
- Gautherot, Marcel and Kenneth Frampton (2010) *Building Brasília*, London: Thames and Hudson.
- Hilbersheimer, Ludwig (1940) *The New City*, Chicago: Paul Theobald.

- Holston, James (1989) *The Modernist City: An Anthropological Critique of Brasília*, Chicago: University of Chicago Press.
- Hsu Chia-Chang and Shih Chih-Ming (2006) A typological housing design: the case study of Quartier Frugès in Pessac by Le Corbusier, *Journal of Asian Architecture and Building Engineering* 82 (May), 75–82.
- Huxtable, Ada Louise (1981) Architecture view: Le Corbusier's housing project—flexible enough to endure, *The New York Times* (March 15), www.nytimes.com/1981/03/15/arts/architecture-view-le-corbusier-s-housing-project-flexible-enough-endure-ada.html 15, accessed March 18, 2015.
- Invisible Bordeaux (2013) Le Corbusier's Cité Frugès: timelessly modern and back in fashion, <http://invisiblebordeaux.blogspot.com.au/2013/08/le-corbusiers-cite-fruges-timelessly.html>, accessed April 20, 2015.
- Jacobs, Allan (1993) *Great Streets*, Cambridge, MA: MIT Press.
- Jarvis, Helen (2015) Towards a deeper understanding of the social architecture of co-housing: evidence from the UK, USA and Australia, *Journal of Urban Research and Practice* 8 (1), 93–105.
- Lang, Jon (2005) Pruitt-Igoe, in *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural, 181–3.
- Low, Setha M. (2003) *Behind the Gates: Life, Security and the Pursuit of Happiness in Fortress America*, London: Routledge.
- Maka, Emily G. and Tanja D. Conley (2015) *Capital Cities in the Aftermath of Empires: Planning Central and Southeastern Europe*, London: Routledge.
- McCamant, Kathryn and Charles Durett (2011) Trudslund: the definition of cohousing, in *Creating Cohousing: Building Sustainable Housing*, Gabriola Island BC: New Society, 51–8.
- Meade, Martin (1997) Lyon's renewal + planning and development agencies have embarked on a series of townscape and architectural improvements that seek to restore the character of the city, *Architectural Review* 202 (1207), 73–7.
- Mehta, Vikas (2013) *The Street: A Quintessential Public Space*, Abingdon: Routledge.
- Mirvac/Westfield (1997). *Raleigh Park. A report prepared for the Urban Development Institute of Australia*, Sydney: The authors.
- Moudon, Anne Vernez (ed.) (1987) *Public Streets for Public Use*, New York: Van Nostrand Reinhold.
- Mulazzani, Marco (2012) I “gratte-ciel” di Villeurbanne. Nascita di una città, *Casabella* 820, 74–87.
- Newman, Oscar (1974) *Defensible Space: Crime Prevention through Urban Design*, New York: MacMillan.
- Otoiu, Damiana (2007) National(ist) ideology and urban planning: building the *Victory of Socialism* in Bucharest, Romania, in Dr Linara Dovydaityt (ed.) *Art and Politics: Case Studies from Eastern Europe*, Kaunas: Vytautas Magnus University, 119.
- Petcu, Constantin (1999) Totalitarian City: Bucharest, 1980–9, semio-clinical files, in Nigel Leach (ed.) *Architecture and Revolution: Contemporary Perspectives on Central and Eastern Europe*, London and New York: Routledge, 177–84.
- Rapoport, Amos (1993) On the nature of capital cities and their physical expression, in J. J. Taylor and C. Andrew (eds) *Capital Cities: International Perspectives*, Ottawa: Carleton University, 31–64.
- Sherwood, Roger (1978) *Modern Housing Prototypes*, Cambridge, MA: MIT Press.
- Steele, James (1998) *The Complete Architecture of Balkrishna Doshi: Rethinking Modernism for the Developing World*, London: Thames and Hudson.
- Stein, Clarence (1957) *Toward New Towns for America*, New York: Reinhold.
- The Scottish Government (2009) Appendix 5: Case Study profiles. Project 1: Quartermile Edinburgh, in *Barriers to Mixed-use Development: Final Report*, www.gov.scot/Publications/2009/09/03094938/14, accessed April 21, 2015.
- Turner, Paul V. (1984) *Campus: An American Planning Tradition*, Cambridge, MA: MIT Press.

10

**All-of-a-piece
Urban Design**

Organizing urban design projects to be implemented street-by-street, building-by-building, and landscape-by-landscape by a number of developers according to an overall conceptual precinct design is the very heart of urban design work. Many urbanists believe that it is only through all-of-a-piece urban design that both a unity and variety can be captured in large-scale project design today.

Procedurally, every all-of-a-piece design follows the structure shown in Figure 4.3; the products run the gamut of types: new towns, urban renewal schemes, and suburban developments. In creating and implementing these, many questions arise. Are some buildings to be regarded as foreground buildings and others as background? What should be the extent of design control over the work of an individual developer or architect and/or landscape architect? Devising the design guidelines used to shape a multi-building urban design scheme is central to all-of-a-piece urban design work.

A special set of funding issues arises with all-of-a-piece urban design in capitalist countries. How are the pieces of the overall design going to be implemented? Is the infrastructure to be built by the public sector? Or by the developer of the overall project? Or bit-by-bit by the developers of individual sites? Is the public sector to subsidize the work? Who is to oversee the development? A public authority or a private developer? All-of-a-piece urban designs vary considerably in how they have dealt with these issues. They also vary in the functions they serve. Each of the schemes described in this chapter focuses on some of the functions of the built environment identified in Figure 1.2 more than others.

Conceptual Designs and Design Guidelines

The creation of a conceptual design or a set of competing conceptual designs is a major step in the urban designing process. Conceptual designs are representations of the three-dimensional qualities of a potential development. They show, in general terms, the intended character of a design—its elements and composition.

Design guidelines are the link between a conceptual design and the finished product. They are project-specific statements that specify the goals and the design patterns for achieving them. They are directives that ensure that the intent of the conceptual design is met. They need to be specified with clarity because they are used as the basis for legally establishing the incentives and controls required to implement a scheme.

The nature of design guidelines has changed little over the centuries. Façade guidelines prescribing the nature of fenestration to be incorporated on new buildings can, for instance, be traced back at least to fourteenth-century Italy. Those for the Rue

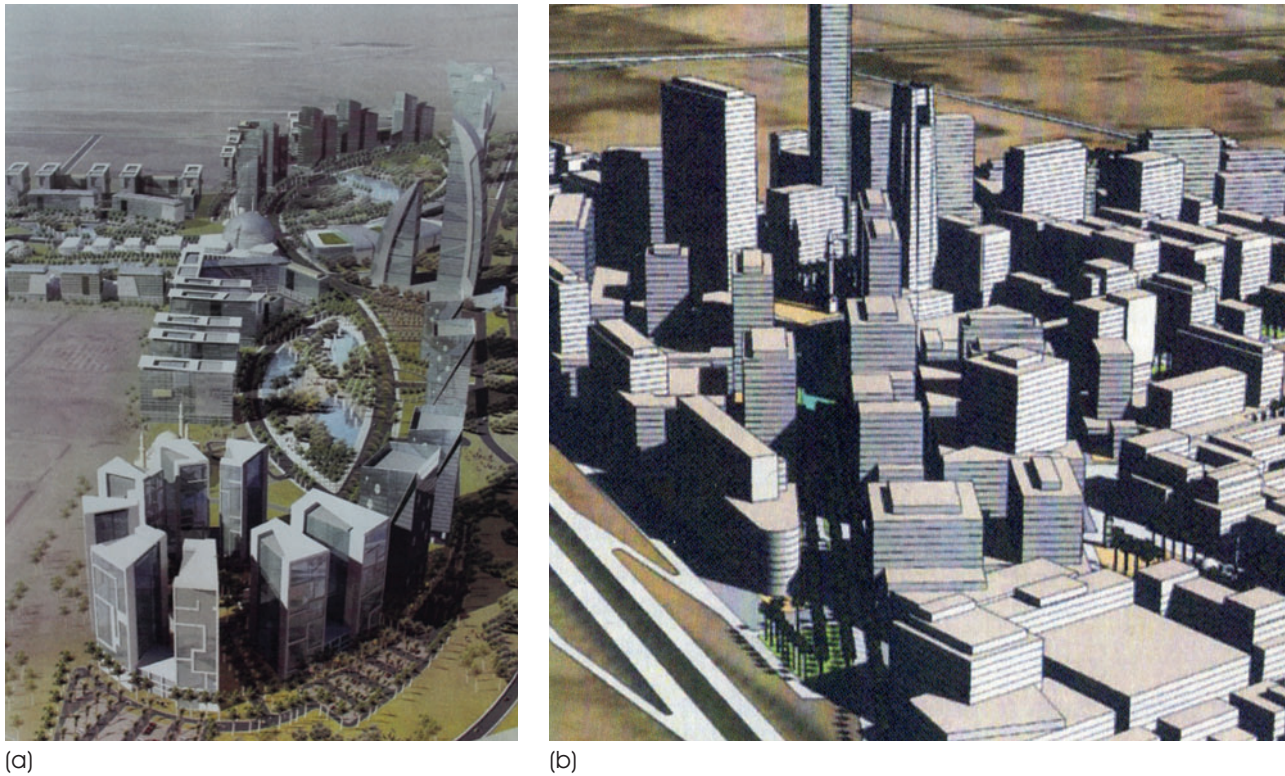


FIGURE 10.1 Competing conceptual designs for the new Dammam, Saudi Arabia CBD. (a) A Hyper-Modern proposal; (b) a Neo-traditional proposal.

Source: (a) Collection of the author; (b) courtesy of Marina Khoury, DPZ Partners

de Rivoli in Paris developed by Charles Percier and Pierre Léonard Fontaine in 1801 set the standard for the whole street and for much of Baron Haussmann's Paris half a century later (Barnett 1987).

Three types of design guidelines—prescriptive, performance, and advisory—are used to achieve urban design ends (Watson 2001; Cowan 2003). Prescriptive guidelines describe the pattern that a building complex, building, or building component must take (for example, all buildings must have purple stringcourses of brickwork at every 5 meters of height). Performance guidelines specify how a building should work (for example, no shadows can be cast on a particular open space during the hours 11.00am to 2.00pm at the winter solstice). Property developers prefer the first because they state the design forms required without any ambiguity. Advisory guidelines are suggestive in nature, whereas prescriptive and performance are mandatory if they are adopted into law for specific constitutionally acceptable purposes. There is no legal requirement to comply with advisory guidelines. It is easier to create enforceable guidelines when a public authority has a legal stake in the development (for example, when it is a landholder contributing to the project's financing), or by creating covenants or other requirements when giving property developers the permission to build (Punter 1999).

The three types of guidelines are often used together. The case of the Dallas Arts District is outlined in Figure 10.3. The conceptual diagram is illustrated in 10.3a. The guidelines in 10.3b are of the three types: prescriptive (the building envelope), performance (the setback for two rows of trees), and advisory ("suggested two levels of retail") (Shirvani 1985). Guidelines that can be defended in court contain three parts: the objective, the pattern required to achieve it, and the argument for the pattern based on

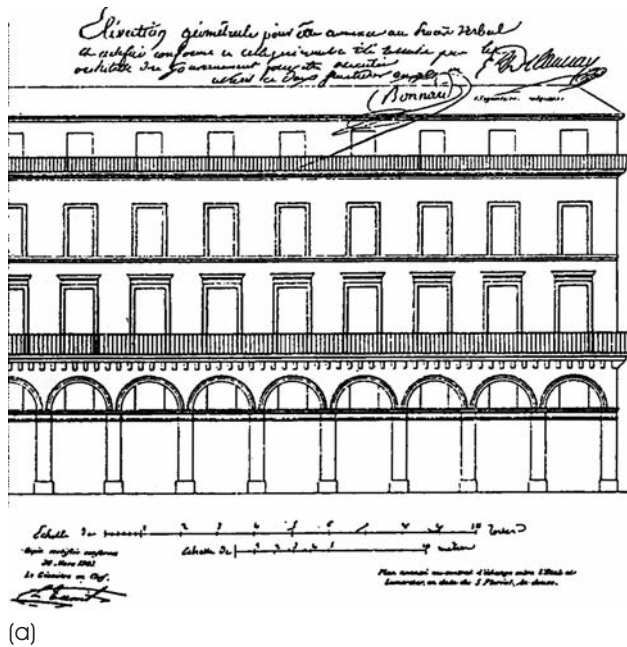


FIGURE 10.2 Rue de Rivoli, Paris. (a) The design guidelines; (b) the street in 2015.

Source: (a) Barnett 1987

empirical evidence. If they do not, they are easy to challenge and to be dismissed in the courts and administrative tribunals of democratic societies.

The degree to which building designs should be controlled is open to debate. The urban design objective is to define the character of the public realm—streets, squares, and other open spaces—and to obtain a sense of unity and/or diversity in the final design of a project. Schemes such as Rector Place in New York's Battery Park City described later in this chapter had detailed design guidelines. Other of the case studies included in this chapter less so.

The Case Studies

The case studies include three new towns. They were selected to show the effort to design with a locale in mind. The precinct designs cover a wide variety of product types and have been organized in approximately chronological sequence. Projects on green-field and brown-field sites in a number of countries have been included to show the scope of urban designers' concerns. Developed at various times during the past century and early this century they reveal a wide array of attitudes towards what are regarded as appropriate ways of life and appropriate aesthetic qualities.

The three new towns and the precincts included here date from the 1960s to the present. The new business districts for Paris and London offer many lessons. They are fine examples of their type. A business campus, Denver Technology Center, illustrates a very different aesthetic philosophy while the first housing case study—Stad villen an der Rauchstrasse—stands in strong contrast to Raleigh Park described in the previous chapter. The final case study included is an example of urban renewal but is categorized here as an example of a festival market development. As such it is a descendant of Baltimore Inner Harbor. The chapter ends with a commentary on the likelihood that all-of-a-piece urban designs will be implemented according to the design guidelines established to shape them.

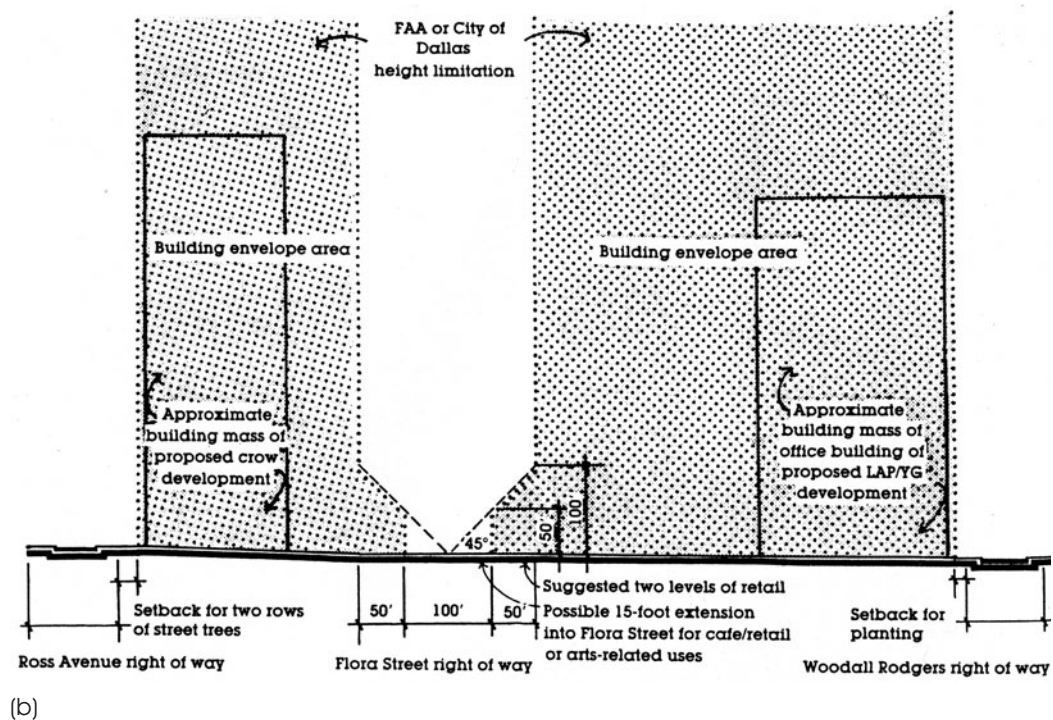
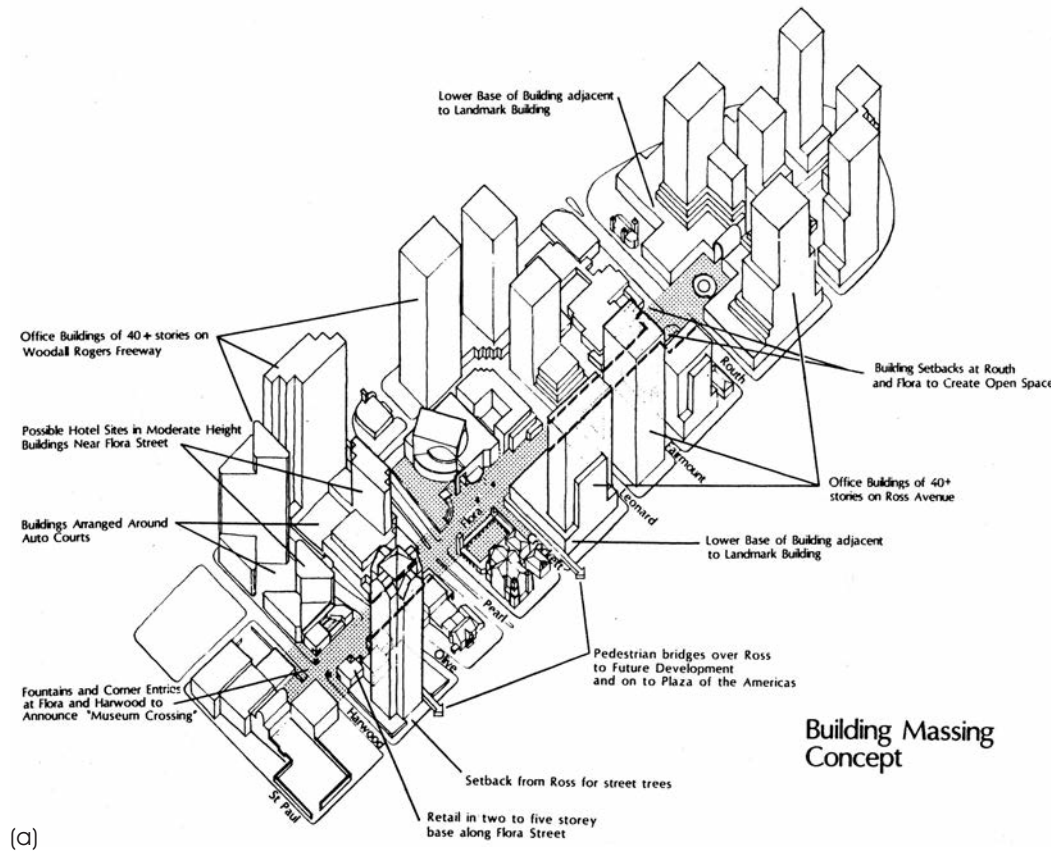


FIGURE 10.3 The Dallas Arts District conceptual design and design guidelines. (a) The conceptual design; (b) the building design guidelines.

Source: Shirvani (1985), courtesy of Sasakai Associates, Boston

New Towns

Detailed case studies of all-of-a-piece new town design are difficult to construct after implementation. The developments tend to be long, drawn-out affairs involving many stakeholders. Each participant remembers the process in a unique way, often highlighting his or her contributions to it. What might appear to be an all-of-a-piece design may turn out to be either a total urban design as in the centrally controlled Soviet new towns of the 1960s, 1970s, and 1980s, or much more fragmented efforts focusing on the design of the infrastructure as an armature for development.

Louvain La Neuve is an early example of the rejection of the Modernist image of what constitutes a good city and a good university. The second case study, Celebration in Florida, is an American New Urbanist descendent of Seaside, Florida while the third case, Modi'in, is less regressive in its architecture. A passing note on Anting New Town in China shows what can go wrong if the paradigm applied is inappropriate for its context. The note also asks whether the recent design of Meixi Lake is a suitable model for China.

CASE STUDY

Louvain-la-Neuve, Ottignies-Louvain-la-Neuve, Belgium (1969–90+)

A neo-traditional, new university town

Louvain-la-Neuve is situated thirty kilometers southeast of Brussels in the French-speaking southern part of Belgium. During the 1960s amidst Flemish claims that they were being discriminated against and Walloon counterclaims, the University of Louvain divided into the Dutch language Katholieke Universiteit Leuven, which remained in Louvain/Leuven, and the Université Catholique de Louvain, which moved south of Belgium's linguistic border to a site near the town of Ottignies chosen by Michel Woitrin, a professor at the university, after discussion with the mayors of the adjacent towns. The site was a 9 square kilometer (2,224 acre) plot of predominantly farmland in a somewhat windswept valley that students now refer to as "Little Siberia."

The design for Louvain-la-Neuve was created rapidly under the direction of Raymond Lemaire, Jean-Pierre Blondel, and Pierre Laconte. It is, perhaps, the first new town based on neo-traditional principles. The goal, apparently set by Woitrin, was to create a "real city" rather than just a university campus. It was to be the antithesis of the "American ghetto" campus (Laconte 2009). The design won the 1978 Abercrombie award of the International Union of Architects (UIA).

The upper level of the town center sits on a massive concrete slab. The world above is for pedestrians; that below is for the railroad, roads, and car parking. The precedent for the layout of the central part of the town and the university was the historic, if not medieval, city with its winding ways—the ways of the donkey as Le Corbusier put it. The university is divided into three main districts separated by the center of the town. Students and staff thus have to cross through the center of the town along a pedestrian spine in moving from one part of the university to another. The spine follows the contour so it twists and turns, opening up a sequence of vistas for the pedestrian. Small squares open off it at irregular intervals; those spaces facing south afford the location of outdoor restaurants and markets. The center is where town and gown meet.

Louvain-la-Neuve consists of five districts/neighborhoods. Biéreau, Lauszelle, L'Hocaillee, and Bruyères were built to strict design guidelines while Baraque, the most recent, is a standard suburban subdivision. The height, materials, and the location with relationship to open spaces were all specified for the first four districts. Few buildings in them are located as objects in open space; they



(a)



(b)



(c)

FIGURE 10.4 Louvain-la-Neuve. (a) A model of the town; the university buildings are in a dark shade; (b) a south-facing café; (c) the pedestrian spine through the town.

are space-makers. A park with a lake lies to the north of the Quartier de Bruyères.

The population of Louvain-la-Neuve is approaching 45,000 people of whom 15,000 are students. While some students commute into the town from Brussels, a 40-minute train ride away, a larger number live in university dormitories. The station is located under the deck at the very heart of the town. The students tend to abandon Louvain-la-Neuve during the weekends and vacations leaving the life of the town somewhat depleted. They, nevertheless, frequent the coffee shops and pubs; during fine weather they dominate the life of the center. As one might expect of a university town, Louvain-la-Neuve has the attrib-

utes of much large places. The Atelier Théâtre lies close to the center and other such places are distributed in the town particularly near student residences.

The importance of having a “value-added” building designed by an internationally recognized architect in a city to give it some international reputation and attract tourists has led to the Musée Hergé designed by Christian de Portzanparc, the French Pritzker prize-winning architect, being located in the center of the town. (Georges Prosper Remi, known by his pen name Hergé, was the Belgian graphic designer and creator of the comic strip Tintin). It opened in 2009.

With the arrival of neoliberal economic and political attitudes, the original design ideals behind Louvain-la-Neuve are becoming diluted. In 2005 a shopping center and cinemas were

developed on the periphery of the town outside the area controlled by the university. At the same time the pedestrian area of the city has been extended.

CASE STUDY

Celebration, Florida, United States of America (1990–2020+)

A second-generation, small, American new urbanist new town

The design of Celebration learnt much from the successes and limitations of the pioneering development of Seaside elsewhere in Florida. The decision to build Celebration was taken by the Disney Company after it had built a theme park, hotels, and an office park in the Orlando area and when it became clear that an interchange would be built on the I-4 highway giving easy access to the selected land.

The design evolved from a competition among Robert A. M. Stern & Associates, Duany Plater-Zyberk & Company, Gwathmey/Siegel, and Edward D. Stone, Jr. All but Stone produced Neo-traditional designs. After a casual conversation Duany, Stern, and Siegel decided to pool their ideas. They held a charrette to do so. The plan that resulted owed much to the Garden City design paradigm. It consisted of a curved grid adapted to the wetland nature of the site.

The final design was a collaborative effort of Stern and Jaquelyn Robertson of Cooper, Robertson & Partners with EDAW of San Francisco as the landscape architects. The team, with Ray Gindroz, developed the design controls for the community layout and building forms embodied in *The Celebration Pattern Book* (Urban Design Associates 1997). They correspond with the principles of the Charter of New Urbanism. Individual developers have been responsible for getting the town built.

The mixed-use town center is located along a main street adjacent to a lake that forms part of Celebration's drainage system. The phasing of the town's development has been problematic as the center was developed prior to there being

a critical mass of residents in the town. As a result, some of the first retail shops failed. The center consists of apartments above shops, commercial space, banks, a cinema adjacent to a late-night bar, and individually owned restaurants. Community facilities located in the center include a church, a school, and a branch of Stetson University that opened in 2004. Two hundred town houses located close to the center were sold out immediately; the demand for this type of housing within walking distance of the center was underestimated.

The residential area of Celebration is divided into a number of villages much as in Columbia, Maryland. Celebration Village, West Village, and Lake Evealyn, which opened in 1996, were the first. Now there are also North Village, South Village, East Village, and Aquila. Outside the center the layout and housing is reminiscent of Riverside, Illinois designed by Calvert Vaux and Frederick Law Olmsted in 1869. The gross density is about 30 to 40 people per hectare (10 to 15 people/acre).

Celebration will be a town of 20,000 people. In 2010 it had about 7,400 residents of whom 90 percent were non-Hispanic white. Although both the Florida law and the goal of the new urbanists is to provide affordable housing for low-income people, the Disney Corporation made payments to the state housings agency in lieu of building such housing. The agency also prefers this outcome as it can then build houses in clusters that can be easily administered.

The application of *The Pattern Book* has resulted in a general high-quality design (Urban Design



(a)



(b)



(c)

FIGURE 10.5 Celebration, Florida. (a) A view across the lake; (b) a residential street; (c) Downtown.

Associates 1997). Key buildings were designed by internationally known architects. César Pelli designed the Preview Center, Venturi and Scott Brown the Sun Trust Bank, Philip Johnson the Welcome Center, and Michael Graves the Post Office. Other important buildings were designed by architectural luminaries such as Robert A. M. Stern, Charles Moore, and Graham Gund. Aldo Rossi designed four office buildings. These architects work with very different paradigms: Modernism, Postmodernism, and Neo-traditionalism. Their works are foreground buildings standing out from a background of Neo-traditional buildings. They were given freedom to deviate from *The Pattern Book* requirements by the Disney Corporation.

The design of Celebration has been much lauded and much derided (Ross 1999; Frantz and Collins 2000; Duany 2004). Architects designing the housing do not like to have to design within the codes. Some critics dislike its unity and say that it lacks authenticity. The town, nevertheless, received a New Community of the Year Award from the Urban Land Institute. What the town affords, both in terms of its character as a community and as an environment, is much sought after. The escalation in the value of property in Celebration is a mark of its success, but it also means that it is difficult for schoolteachers and service workers to find affordable accommodation in the town.

CASE STUDY

Modi'in Maccabim-Re'ut, Israel (1990–2025+)

A controlled new town design being built by numerous developers

Modi'in is located on 5,000 hectares (12,535 acres) of state land just off Highway 443 midway between Tel Aviv and Jerusalem. The land had been declared no-man's land in the 1947 armistice with Jordan but was incorporated into the West Bank in 1967. Israel claimed it to be state land under an interpretation of Ottoman Law. The country is confident that it will remain an Israeli city when a settlement is reached with Palestine. Its corner stone was laid by the then Prime Minister Yitzhak Rabin in 1993 and the first settlers moved into Modi'in in 1996; by 2013 it had a population of about 75,000 inhabitants. It is expected to reach 250,000; its strategic location with half the population of Israel being within an hour's drive suggests that it may ultimately exceed this number. It will be a city whereas Celebration is a small suburban town.

Modi'in's locale is replete with archeological sites, including in the heart of the settlement. They form part of a program of preservation and then development as tourist destinations. The master plan and design guidelines for Modi'in were prepared by Moshe Safdie Architects in 1989. The design goal was to create a quiet but lively city with good supporting facilities and easy access to nature for its residents. The layout consists of a commercial hub with roads leading off it. The hub is where the Central Railway Station (opened in 2008) is located. At present the line is linked only to Tel Aviv (17 minutes away); the link to Jerusalem is in the offing. In the future the city hall and public institutions will also be located in the center of the city. The goal is for the precinct to be a lively night-life area. The industrial district lies in the northwest of the site, segregated from the city. In response to market demands it also houses a suburban shopping center. The cemetery lies in the northeast of the city near the Ben Shemen Forest. The city is surrounded by a narrow greenbelt (Rybczynski 2010).

The plan takes advantage of the terrain dissected by valleys and the light north-westerly breezes. The

valleys have been developed as linear parks, with the built-up areas going up the hillsides from their base. The valleys also accommodate roadways lined with ornamental and fruit trees. High-rise apartment buildings, acting as landmarks, are located at the tops of the hills (Segal 2010). The seven, at present, residential neighborhoods, each with its own commercial center, schools, and synagogues, are located around the core. In 2015 Modi'in had over thirty elementary schools, twenty high schools, and a host of synagogues (Modi'in Maccabim-Re'ut (undated)).

While Modi'in looks like a total urban design, Safdie Architects designed only one building, the Azrieli Modi'in Mall in the city's commercial core. The mall was not an intended part of the new town design but was a response to market demands. The daily development of the city is being supervised by the chief architects of the Ministries of Building and of Civil Engineering. The infrastructure is being built by a development authority established by the central government. After parcelization of the site, the city is being built by individual property developers and their architects according to a set of design guidelines that result in the unity of form and texture that can be seen in the photographs of the city. The controls cover building configuration, materials, and setbacks. All buildings facing the valley have to be clad in stone, as do public buildings and apartment blocks. The way heating and cooling is handled and the location and space required for rubbish and trash bins are also mandated. The built form is reminiscent of the Bauhaus-influenced buildings of Tel Aviv designed by architects fleeing from Nazi Germany, but it is also typically Mediterranean.

The population of the city is drawn primarily from Israeli cities. Only 10 percent are new immigrants. In 2014 the median age of the population was 32 years; 38 percent of the population was under 17. The workforce is very well educated, with over 75 percent having at least a high school diploma and many residents have tertiary qualifi-



(a)



(b)



(c)

FIGURE 10.6 Modi'in. (a) A view looking towards the hilltops; (b) a view from a valley; (c) a pedestrian stairway.

Source: (a) and (c) Photograph by Ardon Bar-Hama, courtesy of Safdie Architects; (b) photograph by Baruch Gian, courtesy of Safdie Architects

cations. They work in education, engineering, medicine, and information technology as well as business finance. American companies outsource work to Modi'in because of the high proportion of the population that can speak English fluently. It is thus a highly educated, young population that, according to casual surveys, enjoys living in the city and is proud of it.

A Note: Two Chinese New Towns—Anting and Meixi Lake

Two hundred and forty new cities/towns are being planned in China. Most follow a standard urban design and architectural paradigm. Buildings are aligned east–west to face south. Street space and faceless, residential buildings sit as objects in space separated by green open space and/or parking lots. Two that depart from this model are briefly considered here: Anting New Town (really more of a precinct than a new town) and Meixi Lake Eco-city. Anting New Town is almost a total-urban design and Meixi Lake may end up being a plug-in urban design. Anting New Town (2001+) is, in the short run at least, an example of what not to do while Meixi Lake Eco-City (2014+) may set a yardstick for future urban designs in China.

In the late twentieth century the Shanghai government proposed a “one city nine towns” solution to the growth of the Shanghai metropolitan area. Each new town would have a theme based on some European city. Anting, the center of China’s automobile industry, is one of them. Anting New Town on its periphery was designed to be a German city, Anting German Town (Xifan 2015). There are, however, different images of what a German city is. Its architects, Frankfurt-based Albert Speer & Partners, persuaded the authorities to build a modern, environmentally friendly, double-glazed window, centrally-heated town. The firm also wanted to design a place that did not have the endless monotony of much that is being built in China today. Anting New Town’s layout is based on a perimeter block (Huang, Liu, and Xu 2005; Figure 10.7b).

In taking the project forward, local developers and architects are expected to follow the design principles/guidelines set by the first phase of Anting New Town. At the time of writing, however, the second phase had not begun. What is there now is one of China’s many ghost towns and will remain so until the country’s central government provides an additional incentive for more businesses to locate nearby (Shepard 2015). At present, workers prefer to commute from Shanghai proper than to live in Anting New Town. The reasons given are diverse. The windows face east and west in some buildings making for bad Feng Shui is one, although this orientation does not seem to have been a problem in other housing developments. Another reason is that the development is isolated with few connections to the center of Anting, which is much more active, or Shanghai. Meixi Lake is very different.

In 2009 Gale International, a global real estate and property development firm, entered an agreement with the Changsha People’s government to be the developer for Meixi Lake Eco-City. The city is one of eighty cities being planned in China that the Ministry of Housing and Urban Rural Development regards as trendsetters. By Chinese standards it is small, being designed to accommodate a population of 180,000 in an area of 650 hectares (3,670 acres).

Meixi Lake, as designed by New York’s Kohn Pedersen Fox, is centered on a 40-hectare (almost 100-acre) man-made lake. The CBD is a mixed-use area replete with parklands. Roads and canals radiate from the center in an effort to develop an efficient, low-polluting transportation system. Eight neighborhood clusters are more standard in layout although there is a provision for pedestrian and cycle routes. The proposed design incorporates grey water recovery and water runoff filtration systems to reduce the impact on the nearby Xiang River.

These two new towns represent two attitudes to sustainable development. In common they are explorations of ways of thinking about the future energy-efficient city. One draws on the past and the other invents the future. The lesson drawn from the first case is that designers and their clients have to be very careful about the precedent on which they draw; it has to be appropriate for its proposed location. In the second the outcome



FIGURE 10.7 Anting New Town and Meixi Lake Eco-City. (a) The figure-ground pattern of Anting; (b) the figure-ground pattern of Anting New Town; (c) Meixi Lake Eco-City conceptual design.

Source: (b) Sketches based on various sources; (c) courtesy of Kohn Pedersen Fox architects

will depend on the quality of empirical information on which the design relies. Much also depends on the quality of the urban design and architectural guidelines that individual property developers have to follow in building parts of the city, as well as that of the administrative framework created for implementing the guidelines.

Precincts

Cities around the world have precincts that have been largely abandoned and yet-to-be-built-on areas that lie on their periphery. The former sites are primarily the results of changes in the technology of manufacturing and transportation, but the desire to upgrade

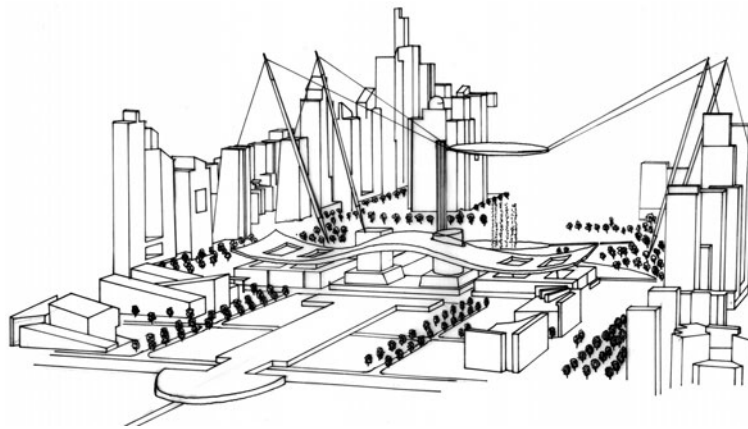
areas has also been a motivating factor in their renewal. Port areas with their finger wharfs and/or small docks have been abandoned in cities across the world: Baltimore, Cape Town, London, New York, Rotterdam, San Francisco (see Figure 2.3), and Sydney among them. The same cities and many others have abandoned railyards, often extensive in size, close to their cores. Similarly, military establishments such as naval yards and barrack areas have become redundant and their sites made available for redevelopment. Peripheral sites offer endless development opportunities.

Ten schemes are presented here. They represent five types of urban design product. The first are the new Central Business Districts, the second are major mixed-use developments, the third are suburban business campuses, the fourth are housing developments, and the fifth so-called festival market precincts.

Business Districts

The centers of major cities around the world tend to be their commercial, retail, entertainment, and institutional hearts. Recently a number of cities have built new business districts which are located outside their traditional core areas. They tend to be primarily commercial centers although over time they are becoming diversified either as the result of public policy decisions because they were seen as dull places or because property entrepreneurs have identified marketing opportunities for other building types.

Most of these new business districts are on brown-field sites where obsolete precincts were available for redevelopment. They include the three case studies included here: La Défense in Paris, Canary Wharf in London, and Lujiazui in Shanghai. A few are located on fully green-field sites. They are the CBDs of new cities, particularly the rapidly developing new towns of Asia. The Civic Center of Shenzhen in China is an example (see Lang 2005d).



(a)



(b)

FIGURE 10.8 The Citizen Center complex, Shenzhen. (a) The conceptual design; (b) the Citizen Center.

Source: (a) Drawing by Munir Vahanvati

CASE STUDY

La Défense, Hauts-de-Seine, France (1958–90, 2010+)

A new “central” business district for Paris

La Défense, Paris’s new business district is located just outside the city’s jurisdiction but for prestige reasons the precinct does retain “Paris” as its mailing address. Its name comes from the statue, “La Défense de Paris,” erected in the area in 1883 to commemorate the war of 1870. The development of La Défense was not subject to the stringent planning controls within Paris’s Boulevard Périphérique that were developed after Paris’s 56-story Tour Montparnasse shocked the citizens of the city. The height of buildings within the city became restricted to 31 meters, but at the time of writing this policy has been relaxed due to pressures for higher densities of development. La Défense is an “edge city,” visually and symbolically connected to the heart of Paris by the Champs Élysées, the Métro system, the regional express line (RER), and the A-14 motorway.

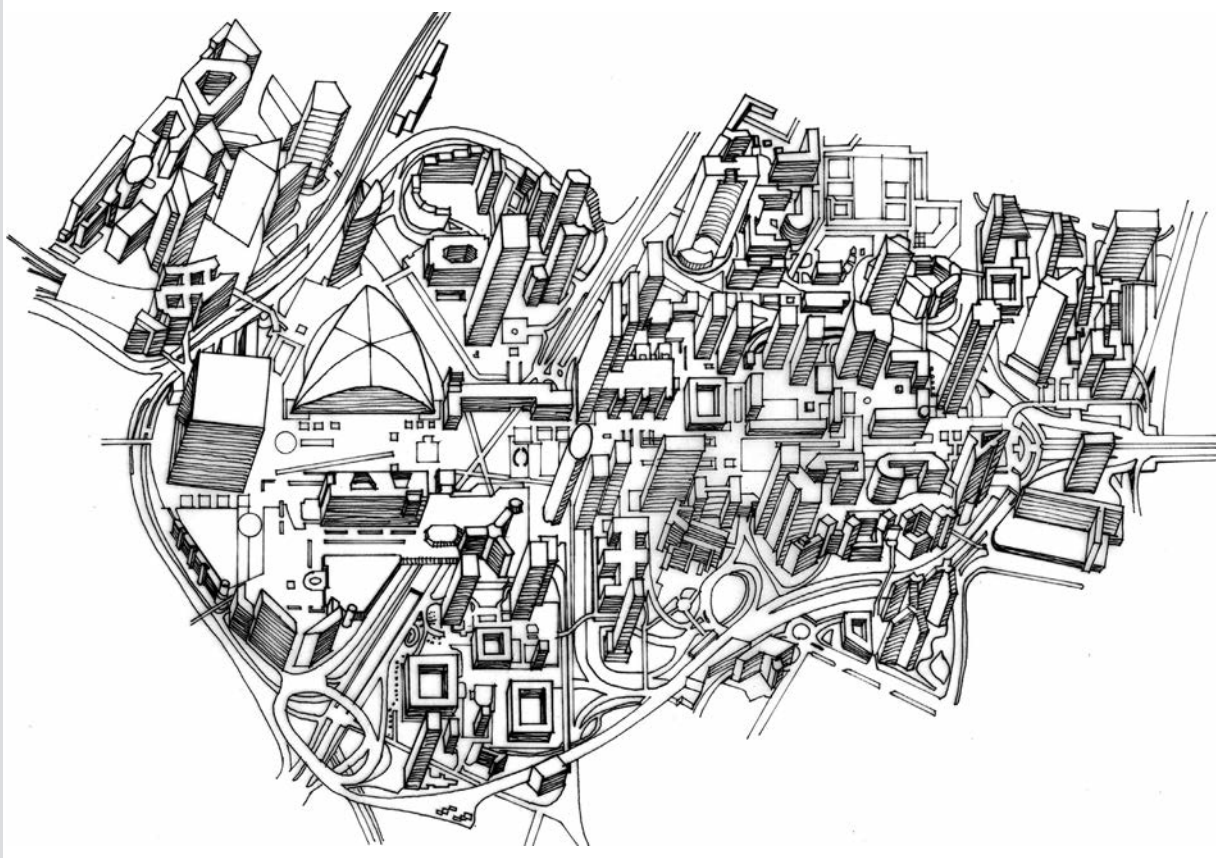
The conception of La Défense can be traced back to the 1920s. Regional plans and a 1931 competition for the Voie Triomphale (Triumphal Way) from the Etoile to La Défense gave impetus to the idea for the location of a new business district for Paris on its periphery. A 1956 plan proposed that the population density of the inner city be reduced and that nodes be established outside it—something that has subsequently happened to cities in many countries as much a result of market forces as planning policies. The desire was to maintain the character of the historic core of Paris. The result was the moving of some services to the periphery of the city and the building of a series of new towns around it.

In 1958 EPAD (Établissement Public pour l’Aménagement de la Région de la Défense) was formed and the planning of La Défense began. An EPA is a public body that collaborates with private companies to acquire and prepare land for development. EPAD had the power to expropriate land, establish a development zone, and expedite construction. It bought the land, demolished 9,000 dwellings and several hundred

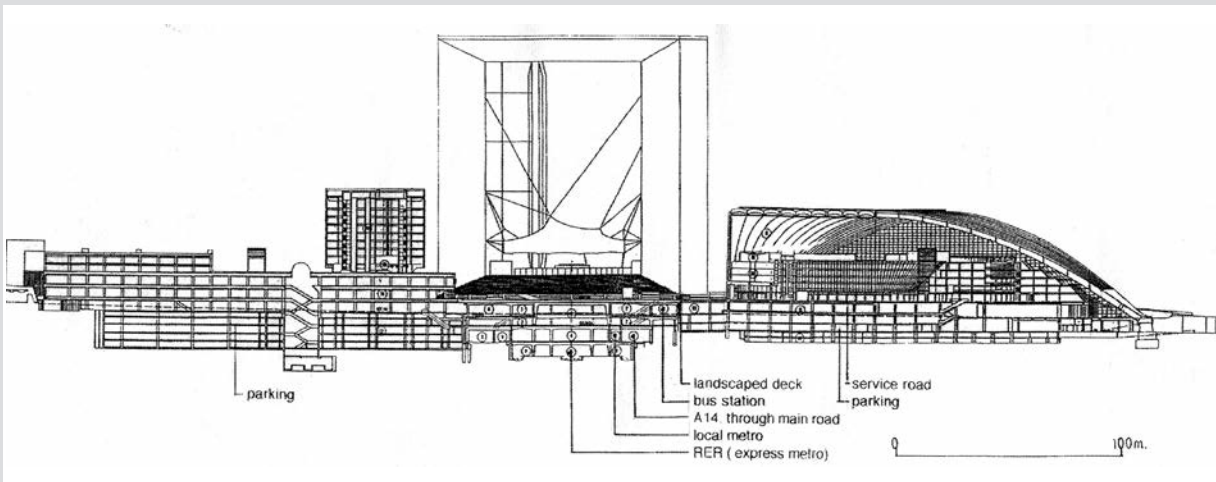
industrial and light-industrial factories, rehoused 25,000 people, and set about developing a commercial estate.

The design of La Défense was much influenced by successive presidents of France, each attempting to leave his imprint on Paris. A 1964 plan consisted of two rows of 100 meter-tall skyscrapers surrounded by housing and an esplanade covering the roadways. A more serious proposal for the site was prepared in 1971 by Emile Aillaud, who was chosen as the architect by President Georges Pompidou. A third proposal came from Jean Willerval, who was selected by President Valéry Giscard d’Estaing. President Giscard d’Estaing and Prime Minister Raymond Barre had intervened in 1978 because, in spite of state funding, the economic rationale of La Défense was being questioned. EPAD was in debt for 680 million francs; its resources came from the sale of construction rights, which was slow. Under Giscard d’Estaing’s leadership the central government supplied financial aid drawn from publicly owned savings banks. Restrictions were also placed on building within Paris by a national government authority, DATAR (Délégation à l’Aménagement du Territoire et à l’Action Régionale) and a differential tax rate was established to encourage development at La Défense. The third proposal is the basis for what we see today (Chammas 2010; see also the photograph introducing this part of the book).

The construction of the infrastructure was the major enabling step because it allowed buildings to be plugged into a vehicular, rail, and pedestrian transportation network. This network is organized into a multi-layered structure segregating the different transport modes with a vehicle-free 40-hectare (100-acre) pedestrian deck, or esplanade, forming the top layer. Vehicular traffic is kept on the periphery. The Centre National des Industries et Techniques, with its triangular roof, was one of the first landmark buildings in the area. It was a catalyst for further development.



(a)



(b)

FIGURE 10.9 La Défense, Paris. (a) The massing diagram in 2003; (b) a cross-section showing the below-deck elements.

Source: (a) Drawing by Thanong Poonterakul; (b) Richards 2001, courtesy of the Taylor and Francis Group

The termination of the axis from the Arc de Triomphe is the La Défense Arche designed by Danish architect Johan Otto von Spreckelsen. The Arche was the winning entry in a design competition held under the auspices of President Mitterand. Earlier proposals by I. M. Pei, Emile Aillaud, and Jean Willerval had been rejected. An architectural jury selected four finalists from 424 competition entries. They were submitted anonymously to Mitterand who selected Spreckelsen's design. The scheme was part of his Grands Travaux (Great Works) program to preserve Parisian monuments, and help finance major new works such as the Cité des Sciences at Parc de la Villette (see Chapter 7).

The Arche was completed in 1989, a century after the Eiffel Tower. It is an office building, 35 stories (100 meters; 328 feet) high by 100 meters wide. It is slightly skewed to the axis and in the form of an arch. It is topped by an art gallery and viewing platform. Today the Arche is a major tourist attraction and gives La Défense an identity. The landscape between the Seine and the Grand Arche is to the design of Dan Kiley, the North American landscape architect. Working in 1978, Kiley sought a classical modernism of fountains and art works. Four long lines of pollard London planes reinforce the visual axis.

La Défense is an all-of-a-piece urban design, but the conceptual diagram and how to achieve it were never carefully articulated. The building guidelines varied over time as the result of political pressures and economic necessities. The first set of design controls limited height and sought an architectural unity for the precinct. As the design evolved, the specifications of what should be built were loosened in order to get some variety into the scheme. By the early 1970s companies were encouraged to build distinctive skyscrapers (Collectif 2007). The result is that each corporation has tried to outdo the others with its building.

Has La Défense been a success? Admirers regard it as a modern day Utopia; detractors think it is

part of the Brave New World. It has been dismissed as a "business slum" (Eriksen 2001). EPAD has certainly created the premier business district in Europe and has the statistics to prove it. By 2010, La Défense had 3.5 million square meters of commercial space (37.7 million square feet), 230,000 square meters of retail space, 2,600 hotel rooms, and parking for 30,000 cars; 180,000 employees work there for over 1,500 companies. The design captures the imagination but La Défense lacks many of the qualities as a "place to be" that its traditional competitors possess.

Plans prepared in 2006 under the direction of Nicolas Sarkozy, then Minister for the Interior and Territorial Planning and again in 2010, aimed to rectify the limitations of the development. They proposed the updating of obsolete buildings and the construction of new buildings on the periphery and a better relationship between residential and commercial buildings. The goal is to better connect the development to its surroundings, to address the poor relationship of buildings to open space, and to improve the quality of the pedestrian environment at the deck level. High winds promoted by the tall buildings make the pedestrian environment particularly inhospitable in winter and even on some summer days. EPAD has made a valiant effort to make the esplanade more attractive by adding trees. It has increased the amount of shopping and promoted the development of art galleries, as well as including more sculptures on the deck to make an open-air museum (Horn 2014).

Le Défense has been a precedent for other developments. It impressed visiting politicians such as the United Kingdom's Prime Minister, Margaret Thatcher, and Shanghai's mayor (later premier of the People's Republic of China), Zhu Rongji. Canary Wharf and Lujiazui are the children of La Défense; Zuidas, Amsterdam's new CBD, and the proposed scheme for Hanoi North are among its grandchildren.

CASE STUDY

Canary Wharf, London, United Kingdom (1985–98, 2010+)

A second business district for London: the urban design of commercial pragmatism?

Canary Wharf is the centerpiece of the London Docklands redevelopment. It was planned to be and now is a second business district to London's traditional core, the City (D'Arcy 2012). This brown-field, former port site had been almost totally cleared except for the remnants of the docks. It obtained its name from the importation of bananas and tomatoes from the Canary Islands.

The first major phase of the development of Canary Wharf is now largely over. A second phase involves expansion to the east with the mixed-use Wood Wharf development. Canary Wharf itself comprises sixteen major commercial towers, a retail center, hotels, a conference and banquetting center, five parking stations (in addition to the parking below the office buildings), and landscaped open space. It is served by a light rail system and in 2000, too late to prevent the development sliding into insolvency, by an underground railway station on London's Jubilee Line (see Chapter 11). An important difference between Canary Wharf and La Défense is that the buildings have clear street addresses so they can be reached easily from the street.

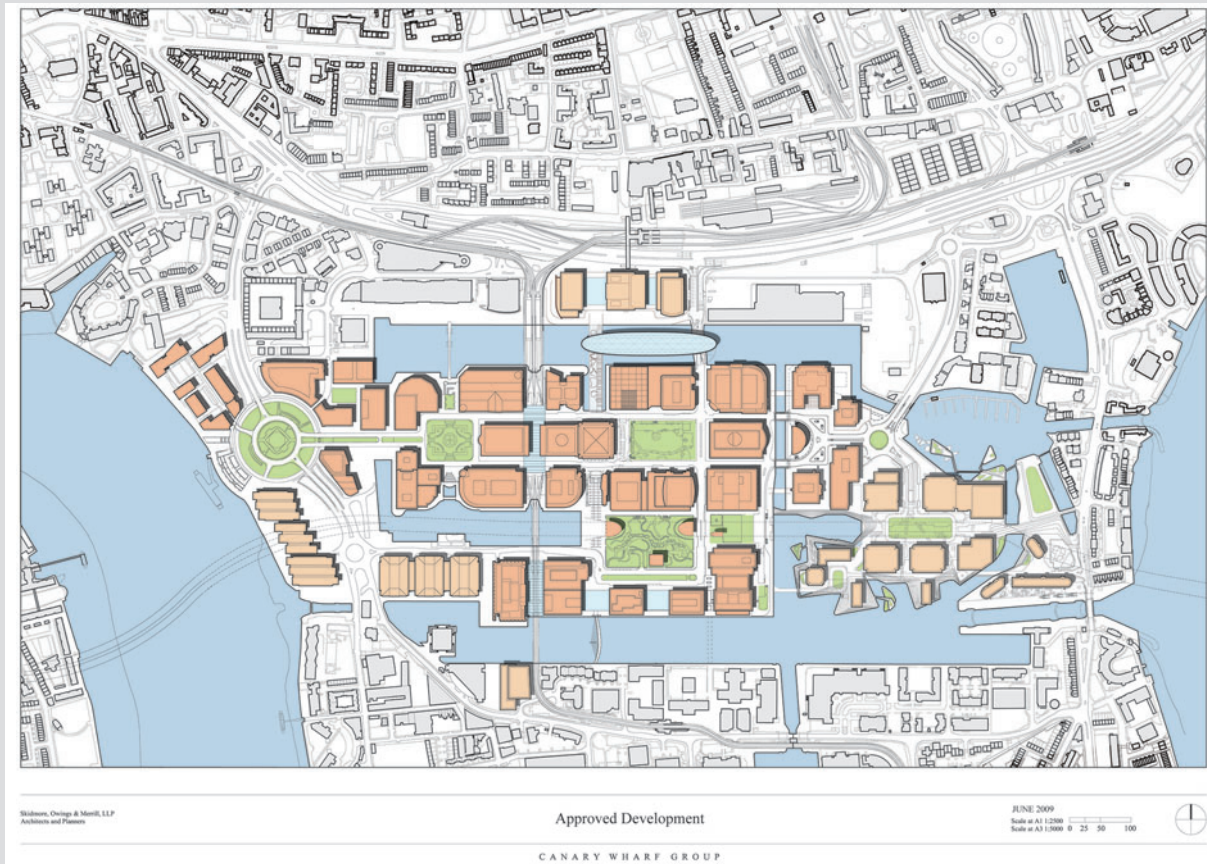
Getting to Canary Wharf's present state has been a trying experience. In the 1980s, the British government under Prime Minister Margaret Thatcher took over control of the Docklands area from the five local borough governments responsible for it and established the London Docklands Development Corporation (LDDC). The LDDC's task, as stated in 1981, was to "bring these barren areas back into more valuable use." The Corporation encouraged a market-led approach to design and created an enterprise zone that offered tax incentives for firms to locate at Canary Wharf (Edwards 1992).

In 1985 an American entrepreneur, G. Ware Travelstead, proposed a 35-hectare commercial development for the Canary Wharf site but in the same year Skidmore, Owings and Merrill (SOM) was commissioned to produce a master plan and

design guidelines for the area (Edwards 1992). The present layout retains the essential characteristics of that plan. The precinct was divided into twenty-six building sites and formal landscaped gardens. The central design feature is a City Beautiful/Beaux-Arts axis terminated by a landmark building. The design guidelines that were prepared by SOM and the LDDC specified height limits for the buildings, in order for the central towers to stand out as landmarks, and the requirements for the materials to be used in order to establish a sense of unity. Proposals for buildings that conformed to the guidelines did not require LDDC approval. Deviations did.

In 1987, the developers, Olympia and York, previously a key investor in Battery Park City (see later in this chapter), inherited the master plan. The company was part of the Reichmann family real estate empire in Canada. Otto Blau, a key member of the company advised against investing in Canary Wharf because of its location. Paul Reichmann, who had developed a close relationship with Margaret Thatcher, was persuaded to go ahead by her personal promise that an underground rail connection to the site would be made in order to make the site commercially viable. By the time she left office in November 1990 no progress had been made on the line. The lack of concern for the infrastructure necessary for the working population, particularly in public transportation, has now been largely addressed. In addition to the underground Jubilee Line, Canary Wharf will have a Crossrail station by 2018. It will consist of a 256 meter-long box over new retail areas.

The development of Canary Wharf, like that of La Défense, has not been smooth sailing. A total of £1.3 billion was quickly invested between 1981 and 1986. After that burst of speculation and development, bankruptcies in the 1990s saw the financial collapse of the development. No leading tenants had signed leases. Olympia and York went into receivership in 1992. Three years later Canary Wharf was sold to an international consortium of



(a)



(b)

FIGURE 10.10 Canary Wharf, London. (a) The master plan with the Wood Wharf development on the right; (b) a view towards One Canada Place from across the Thames in 2015.

Source: (a) © Skidmore Owings and Merrill LLP

which Paul Reichmann was a leading member for £700 million. In 1995 Prince al-Walid bin Abdul Aziz of Saudi Arabia helped bring Canary Wharf out of bankruptcy. In 1999 the consortium became a public company with shares selling at £3.30. The development was not helped by the Irish Republican Army's car bomb attack of February 1996 causing £50 million worth of damage and killing two people. The later rise in demand for office space, however, led to considerable building and an expanded program that included more restaurants, clubs, hotels, and leisure and entertainment facilities (Gordon 2010).

The LDDC having completed the regeneration program closed doors in 1998. A Canary Wharf Group now promotes the development but in late 2003 the Group had £3 billion in debts. Efforts were being made to sell off the company. The downturn in the London office market resulted in the company's shares dropping to a low of £2.20 early in the year. The financial difficulties were compounded by tenants whose leases were coming up for renewal seeking lower rates than they were currently paying to remain at Canary Wharf (Timmons 2003). Much has improved since those days (Gordon 2010). By 2015 the daytime population had increased to 100,000; it was 55,000 in 2004.

The architecture of the buildings has been described as "post-modern classical." Marble, limestone, brick, steel, and glass are the primary building materials. A unity of design is achieved through the round corner towers at the entrances to the squares, the pedimented façades facing the Thames, the window grid applied, and the attic story setbacks (D'Arcy 2012). The buildings were designed by major global architectural practices such as Kohn Pedersen Fox, I. M. Pei, and Troughton McAslan. César Pelli was hired by Olympia and York to design the key building, One Canada Square. One of three landmark towers that can be seen from a distance, it is a relatively plain 245-meter (800-foot) Modernist building of stainless steel and glass with a reconstituted limestone

base. It is distinguished primarily by its location at the end of the axis and by its height.

Canary Wharf has been criticized for its bland, hermetically sealed buildings. The office monoculture that isolates the development from the social difficulties of people in its surroundings has also been the subject of negative commentary. Outsiders regard Canary Wharf as a private estate. The residential area on the northwest of the site is a private gated world. It consists of a number of buildings: Berkeley Tower, Hanover House, Belgrave Court, and Eaton House. It is set in a park-like environment with its own Battery Club.

On the positive side the master plan has been praised for the quality of its landscaping: its circuses, squares, and tree-lined streets. The individuality of the buildings designed by different architects (that is, its all-of-a-piece urban design quality) has also been regarded as an achievement of merit. The overall success of the endeavor remains to be seen. It has, nevertheless, already achieved its primary goal of relieving, but not eliminating, pressure on the City. The development to the east, Wood Wharf, responds to some of the criticism of the development.

Wood Wharf's master plan was developed in 2011 by Atelier Ten with Allies and Morrison, architects with Wood Wharf Limited Partnership (Canary Wharf Group Plc., British Waterways, and Baltimore Properties) as client. The proposal is to build 3,100 residential units along with 180,000 square meters of commercial space, 100 retail shops, and restaurants on a 13.5-hectare (33-acre) site; 45 percent of the housing was expected to cater for families and 23.7 percent is supposed to be affordable for lower-income ones. The proposal includes educational establishments, a community center, and hotels. The centerpiece will be a 55-story residential tower by Herzog & de Meuron, which is a response to the criticism that Canary Wharf's architecture is bland. Ground was broken in 2014 and the first buildings are expected to be completed in 2018 (Whithers 2014).

CASE STUDY

Lujiazui, Pudong, Shanghai, Peoples Republic of China (1990–2014+)

A Hyper-Modern, global business precinct

The Lujiazui Finance and Trade Zone in Pudong, Shanghai is not only a good example of an all-of-a-piece urban design with highly laissez-faire overtones, but also a good example of the urban design and architectural values being displayed in China and many other Asian countries today (Olds 1997). Many foreign banking institutions are located there although, as yet, few international organizations have set up their headquarters in the precinct, but the number of regional headquarters rose from 53 in 2004 to 470 in 2014.

Pudong was a green-field site of agricultural land at its core but with shipbuilding works, petrochemical plants, and other industries along the Huangpu River. The land is publicly owned. In April 1990, the government of the People's Republic of China announced its plan to develop the Pudong New Area as part of its economic reform effort to attract foreign investment. The goal is to turn Shanghai into a global commercial center by creating a precinct of prestigious modern buildings and manicured open spaces with a coordinated infrastructure and communications network.

The development of Lujiazui has been divided into four distinct although overlapping phases. The first three lasted from 1990 to 2005 and the fourth from that date until the present. During the first three phases the focus was on economic development driven by the intervention of various levels of government and for the fourth, a more laissez-faire policy to development has been adopted as well as an attempt to retrofit the design to make it a more pleasant place for pedestrians.

The Lujiazui Finance and Trade Zone is one of four development zones in the Pudong plan. The others are the Jinqiao Export-Processing Zone, the Waigaoqiao Free Trade Zone, and the Zhanjiang High-Tech Park. The Finance and Trade Zone is planned to be the new commercial heart of Shanghai. It covers an area of 6.8 square kilometers (4 square miles) and houses financial, information technology, and real estate consultancy

organizations. Publicly owned, the land is leased for 99 years at 50 percent of its predicted value when developed.

The building of Lujiazui began in 1992 when the Shanghai government, under the leadership of Mayor Zhu Rongji, set up the Senior Consultants Committee (SCC) to initiate development. The committee was comprised of local officials and professionals and four foreign design teams. The international teams were from France (Dominique Perrault, designer of the glazed towers of the Bibliothèque Nationale in Paris, 1992–6), the United Kingdom (Sir Richard Rogers), Italy (Massimiliano Fuksas), and Japan (Toyo Ito). Their selection illustrates the type of architectural imagery sought for the district. The Shanghai Urban Planning and Design Institute submitted a fifth scheme.

In 1994, the municipal government of Shanghai and a new corporation, the Lujiazui Finance and Trade Zone Development Company, invited the Shanghai Urban Planning and Design Institute to create the urban design plan for the area by adapting aspects of the five schemes presented to the SCC. The resulting scheme was, however, simply an adaptation of the Institute's own proposal (compare Figures 10.11c and d). The plan divided Lujiazui into three sub-areas, proposed an underground pedestrian network, a park along the river, and a set of foreground buildings. The desire was also to create a mix of uses so that Lujiazui would not be simply a daytime commercial zone.

One of these sub-areas was proposed to be a district of high-rise buildings with a central park. Another was proposed to be a commercial district, located on the western side of a central avenue, and the third to be a waterfront precinct containing cultural and entertainment facilities, gift shops, and the pre-existing Oriental Pearl Television Tower. An underground pedestrian network would unite the three parts. A central avenue would link the waterfront and the central park.

Today the road network consists of two major components: the central avenue and a ring road.

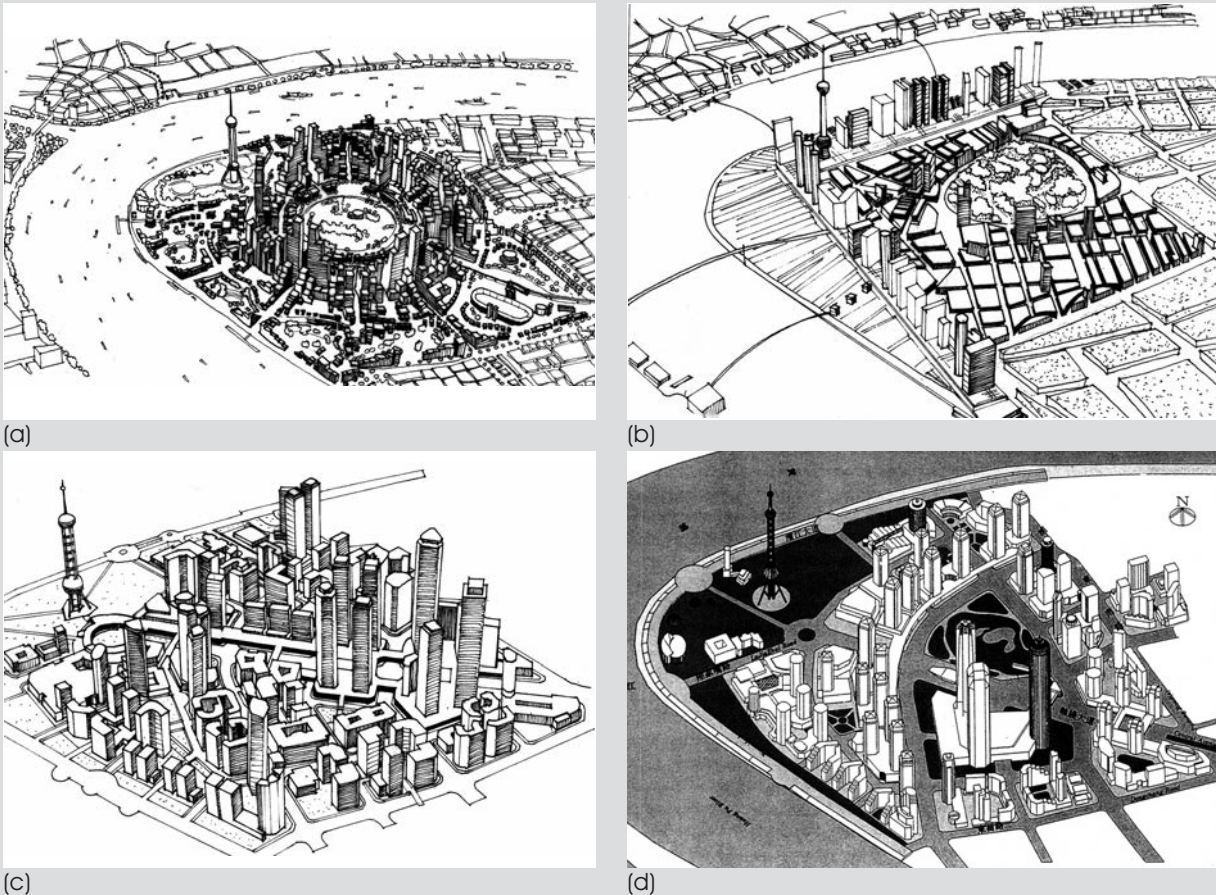
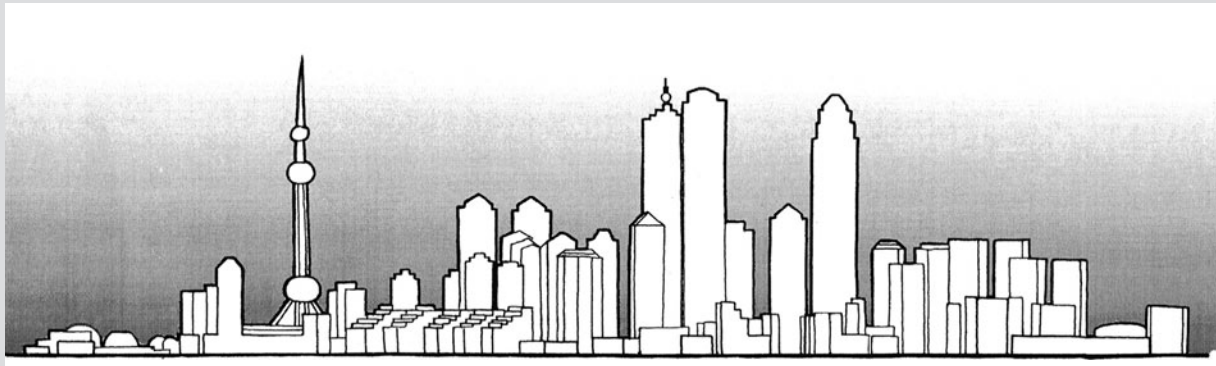


FIGURE 10.11 Three of the five conceptual schemes for Lujiazui and the master plan. (a) Richard Rogers's proposal; (b) Dominique Perrault's proposal; (c) The Shanghai Urban Planning and Design Institute's proposal; (d) the master plan for Lujiazui prepared by the proposal of the Shanghai Urban Planning and Design Institute.

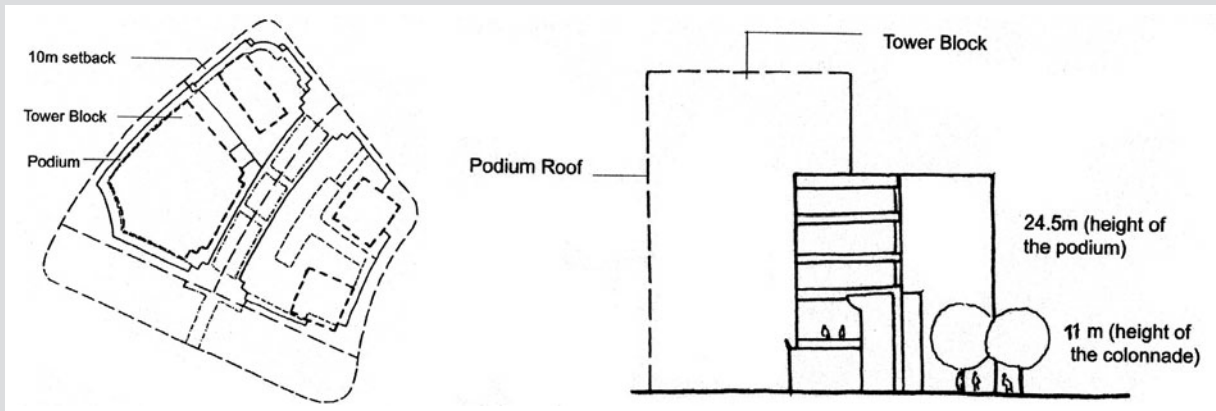
Source: (a), (b) and (c) Drawings adapted from various sources by Thanong Poonteerakul; (d) collection of the author

The central avenue is a two-way, arterial boulevard consisting of eight lanes with a median strip planted with grass and trees and containing a linear water feature. The avenue is not only a major road transportation route but a visual corridor linking the three sub-districts of Lujiazui. It has grade-separated interchanges connecting it to the roads that serve the interiors of the sub-districts. The ring road has six lanes and bounds the central area of Lujiazui. A landmark of Lujiazui is the Oriental Pearl Tower, a structure over 400 meters (1,260 feet) high. The tower is comprised of eleven red spheres—two large ones and nine smaller ones of up to 50 meters in diameter—supported on nine-meter diameter columns. Now somewhat dwarfed by its surroundings, it symbolizes the resurrection of Shanghai's international trading role.

Leading international architects have designed many of the buildings in Lujiazui. The Shanghai World Financial Center (Shi Mao) was planned by Kohn Pedersen Fox to be 488 meters in height. Construction on the building was started in 1997 but Asia's economic crisis halted work on it. Despite concerns about terrorist activity, the Mori Building Company of Tokyo changed the planned height to make it even taller in order to top the 508 meter-tall Taipei Financial Centre being built in Taiwan. The building overshadows its neighbor, the 88-storey, 420 meter-tall Jin Mao Tower (1993–9) that sits on a six-story podium. Designed by the Chicago office of Skidmore Owings and Merrill in a fusion of Art Deco and a touch of traditional Chinese types, the tower was the third tallest building in the world. Shanghai Tower (Figure 8.4) has now been added to the scene.



(a)



(b)



(c)

FIGURE 10.12 Lujiazui, Pudong, Shanghai. (a) The desired skyline profile in 2000; (b) Central area design guidelines; (c) the skyline profile in 2015.

Source: (a) Drawing by Zhe Xian adapted by Caroline Nute, (c) courtesy of Gensler

The design guidelines for the buildings of the first phase of Lujiazui's development consisted of height controls and a series of more detailed site-by-site requirements. In the core area, the landmark tri-towers were stipulated to be a minimum of 360, 380, 400 meters in height. The area around them

is a high-rise zone with buildings stepping down from 220 meters in height to 160 meters on the waterfront. In this linear zone the design guidelines stipulate building setbacks, building envelopes, the height of podiums, materials, and the height of colonnades (Xue, Zhai, and Mitchener 2011).

The expenditure on the first step of the Pudong development was estimated to be about \$US10 billion, obtained from the central government in Beijing, the Shanghai Municipal government, the Asian Development Bank, and the World Bank. The total cost for the whole development spread over thirty years will probably be at least \$US80 billion. Half of this sum is expected to come from foreign investment. To attain this goal a number of incentives are being offered to investors: (1) a reduced (15 percent) income tax rate, (2) exemption from duties on export-oriented imports, (3) tax relief for construction and infrastructure projects, and (4) land lease for 50 or 70 years (Wang 2000).

What has emerged is a spacious area of high-rise buildings with a dramatic skyline. The open spaces give an image of luxuriousness but they are also large and unfriendly for pedestrians. The width of the central avenue (now called Century Avenue) at 100 meters (328 feet) provides a strong visual link between the river and the core of Lujiazui but it is also a substantial divider between the area's components. Five kilometers (about three miles) long, based on the Champs-Élysées in Paris in design but without the enclosing buildings of Haussmann's city, it serves local vehicular traffic and below the ground, pedestrians. A new subway line provides public transport. Whatever the quality is perceived to be, Lujiazui is a precedent for other developments in China, both in process and product, as a symbol of modernity. In 1999, 70 percent of the office space in Pudong was estimated to be vacant because of the gross oversupply but by 2004 this figure had dropped to 15 percent.

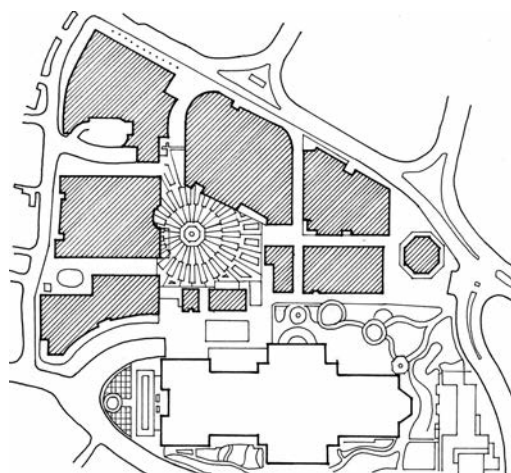
The current phase of development starting in 2006 recognized that much was already determined in the design, so the focus has been on addressing the details. In 2007 a competition for the extension of Lujiazui was won by Vittorio Gregotti Associati International with local firm Thape (*World Architectural News* 2007). It proposed that future developments should take place in a grid form, with streets lined by buildings that have 20-meter podiums rather than skyscrapers sitting as objects in open space, pedestrian-only streets, and avenues of water.

In 2010 attention was turned to the nature of the underground space inhabited by pedestrians. During the last decade developments such as Mingzhu Square and sunken courtyards have been built in an effort to improve the amenity level for pedestrians. Perceived conflicts between pedestrian and vehicular movements were tackled. More importantly the focus in development has moved from a concern with blocks bounded by streets to a concern for streets as seams unifying the development.

Much applauded and much criticized, Lujiazui is not simply a market-driven, all-of-a-piece, Hyper-Modernist urban design but rather a project that represents the aspirations of a people as imagined by their government officials. Its architecture is an example of "non-judgmental kitsch" in which diversity is exciting, everything is possible, and everything acceptable. It is a hybrid architecture reflecting concepts of individualism, modernity, and tradition. Lujiazui is evolving into a piecemeal design of separate buildings, each striving to be a foreground building barely within the constraints imposed by design guidelines.

Mixed-use Developments

A reaction to what is seen by many observers to be boring, single-use precincts in cities and suburbs has turned many planners into advocates for mixed-use developments. What is understood by "mixed-use" varies. Paternoster Square in London (Lang 2005a) is a commercial and retail place as is Potsdamer Platz in Berlin. Hafen City in Hamburg includes a major auditorium and Kings Cross in London a major educational facility. Hafen City, the largest inner city development in Europe, will be the city's new downtown (Walter 2010; Bullivant 2012a). The Potsdamer Platz complex of buildings includes the SONY Center with its commercial facilities and restaurants and retail shops, a theater,



(a)



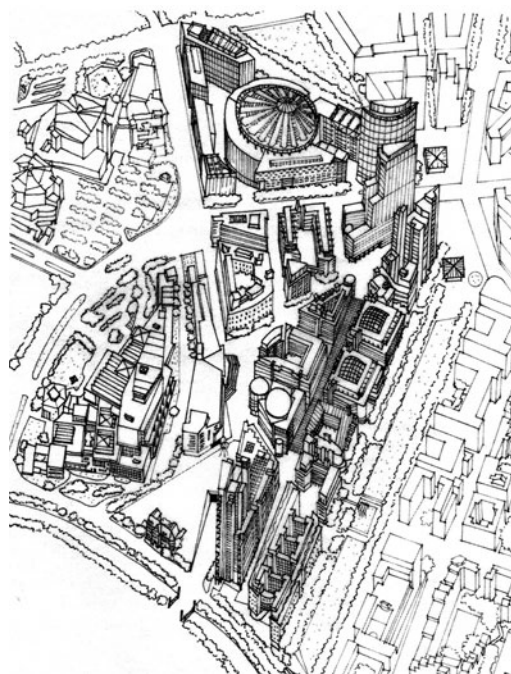
(b)



(c)



(d)



(e)



(f)

FIGURE 10.13

Three mixed-use all-of-a-piece urban designs. (a) Paternoster Square, London; (b) Hafen City, Hamburg; (c) the Potsdamer Platz development, Berlin.

Source: (a) Drawing by Munir Vahanvati; (b) left/right: Hafen City Hamburg GmbH, fotofrizz./HafenCity Hamburg GmbH, Thomas Hampel; (e) drawing by Thanong Poonteerakul

and cinemas (Lampugnani and Schneider 1997; Lang 2005b). The property developers in all these complexes devoted considerable attention to the quality of the public realm although in some cases the public realm is privately owned.

The case studies included here exhibit varying degrees of design control. A clear master plan and detailed building design guidelines shaped Battery Park City. Rouse Hill Town center is a neo-traditional district center; many would categorize it as a total urban design as it is so much a collaborative work. Ørestad and Hammarby Sjöstad are mixed-use, predominantly residential, areas. The former is a Neo-Modernist development while the latter is an exemplar of ecological design. The penultimate study is Central Park in Sydney, an inner city development on the site of a former brewery and the last, the World Trade Center site in New York, is a memorial and a commercial and institutional scheme.

CASE STUDY

Battery Park City, New York, New York, United States of America (1962–2012+)

A “new town in-town”: a history of shifting urban design paradigms

The development of Battery Park City was embroiled in political infighting (particularly between politicians and bureaucrats of the State of New York and those of the City of New York) and battered by the fluctuations in New York City's economy and the corresponding state of the real estate market, as well as by administrative changes (Urstadt with Brown 2008). Begun in 1962 and built out by 2010, what we see today is a product of the 1979 master plan.

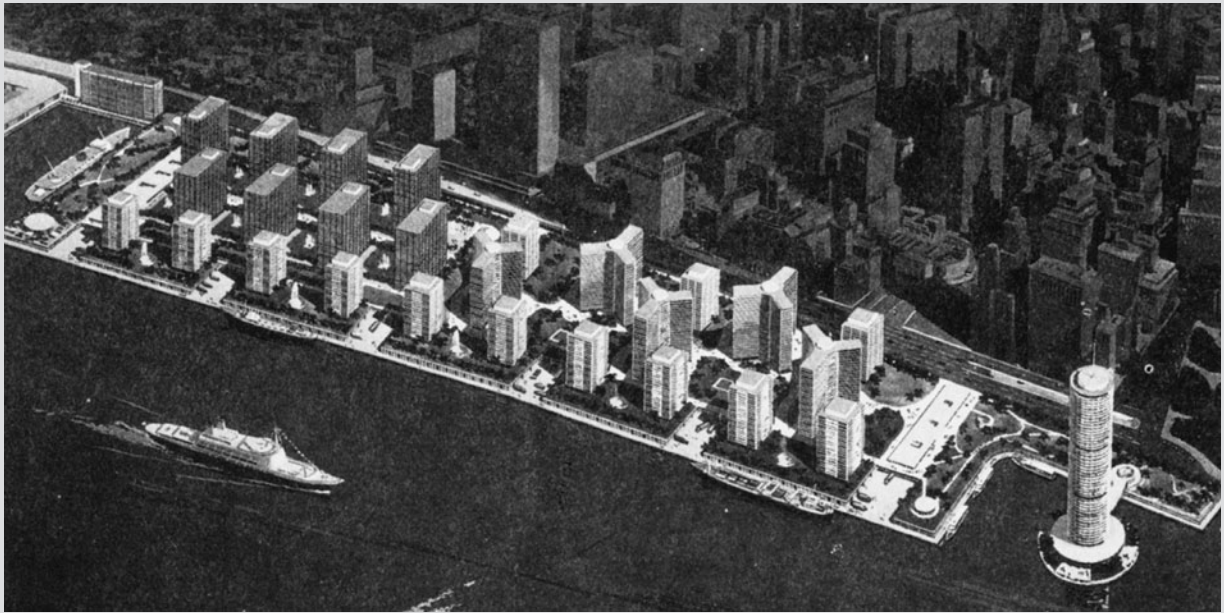
In Lower Manhattan in 1960, twenty decaying finger wharfs were owned by the city and run by its Department of Marine and Aviation. The river could legally be landfilled to pier-head line and the 92-acre (37-hectare) site so created used for development. In 1962 the Department produced a poorly received Modernist plan for a new shipping terminal, an industrial esplanade, and housing blocks. A series of alternative proposals followed.

The Governor of New York State, Nelson Rockefeller, wanted the development to be a comprehensive community built over a base of light industry. In 1966 Wallace K. Harrison of Harrison and Abramowitz, designer of the Empire State Plaza in Albany (see Chapter 8), prepared a plan. It was an unenthusiastically reviewed orthodox Bauhaus/Le Corbusian scheme. Like the 1962 plan, neither implementation nor funding procedures were worked out for it. The same was true of the next scheme for the site.

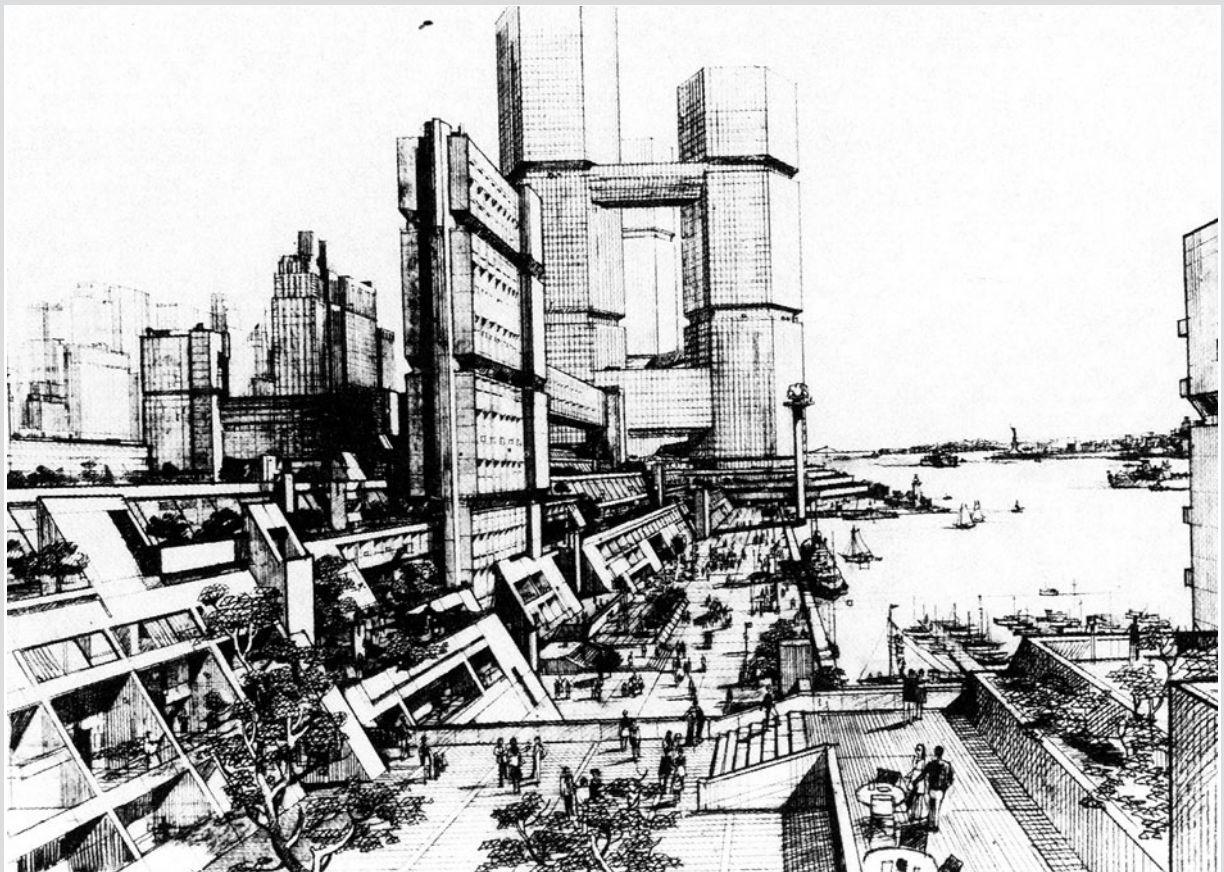
The Downtown Lower Manhattan Association under the leadership of banker David Rockefeller (Nelson Rockefeller's brother) produced a plan for the whole of the lower Manhattan waterfront. It proposed a waterfront full of artificial bays with stepped-back apartment buildings in U-shaped superblocks. The plan, the work of Wallace, McHarg, Roberts and Todd with the architecture primarily by James Rossant, is viewed favorably today but it was not adopted (Buttenweiser et al. 2002).

The conflict between the city and the state over control of the project was resolved with the formation of the Battery Park City Authority (BPCA) in 1968. BPCA's first official conceptual design, a megastructure, was produced in 1969. It was regarded by the press and public as appropriate for Manhattan. Running the length of the site it consisted of a seven-story, partly open interior mall containing a variety of urban functions and amenities: shops, restaurants, schools, parks, recreation facilities, access from transit lines, and utilities as well as some skyscrapers. The city's planning department translated the scheme into a voluminous zoning code. The 1973 recession and the close-to-bankruptcy condition of the BPCA and of the City of New York did not, however, encourage investment in such a mammoth project.

A 1975 proposal was pragmatically related to how developers finance their projects. It divided



(a)



(b)

FIGURE 10.14 Two early plans for Battery Park City. (a) The New York City Department of Marine and Aviation proposal, 1962; (b) the City/State proposal of 1969, a megastructure.

Source: (a) Gordon (1977, 9); (b) Gordon (1977, 28). Courtesy of David Gordon

the whole site into a number of residential clusters that could be developed independently. The pods turned in on themselves to create isolated, controllable, middle-class worlds. Who would finance the elevated walkways connecting the clusters was unclear. One, Gateway Plaza, was, nevertheless, completed in 1982. By then another master plan was in place. Gateway Plaza was fitted into it.

The poor financial environment of the 1970s led to New York State's Urban Development Corporation stepping in and transferring the land title to the BPCA, which enabled the authority to



FIGURE 10.15 The 1979 plan, Battery Park City, New York. (a) The plan; (b) massing diagram: World Finance Center (now Brookfield Place); (c) a view from Hoboken in 2015 with One World Trade Center in the background. Source: (a) Adapted from various sources by the author; (b) drawing by Chao Wang

make decisions rapidly. In 1979 a new plan was developed with great haste as payment on a \$200 million bond issue had to be made in 90 days and a plan requiring the approval of the New York State legislature had to be made within that time. It also had to be something that property developers could understand so the parcelization of the scheme had to be fairly standard. BPCA adopted a conceptual design by Alexander Cooper and Stanton Eckstut (Alexander Cooper Associates 1979). It was radical in its simplicity.

The plan proposed that up to 14,000 housing units be built on the site, that commercial facilities be incorporated as an integral part of the scheme, and that six million square feet (557,000 square meters) of office space be located opposite the World Trade Center. Thirty percent of the site would be squares and parks and an esplanade would run along the Hudson.

According to the plan Battery Park City would: (1) be an integral part of Lower Manhattan so the street pattern of Manhattan should continue through the site; (2) have circulation at ground level; (3) have its aesthetic qualities based on New York's architectural heritage; (4) have the commercial complex as its foreground buildings, with the other buildings as background; and (5) have its uses and development controls flexible enough to

respond to changes in the marketplace. The northern end of the site was to be a park. Public art would terminate the vistas from the center of the island on each street in order to provide elements of interest and act as symbols of high status (Alexander Cooper Associates 1979; Gordon 1997).

The building design guidelines were based on the buildings in well-loved parts of New York such as Gramercy Park and Morningside Heights. They stipulated the nature of materials, the location of stringcourses, that buildings should have articulated bases and cornices, and specific window-to-solid wall ratios. Each building was designed individually as can be seen in Rector Place (Figure 10.16). The commercial space was taken up by the World Financial Center and Winter Garden (1980–3) that were designed by César Pelli as foreground elements. The esplanade was designed by Hanna/Olin. Its hierarchy of levels has become a model for subsequent waterfront walkways. Bonds matching long-term financing with capital funding were used to finance the infrastructure.

The implementation process was considerably less complex than that proposed for the 1969 megastructure proposal (see Table 10.1). The first phase of construction involved the

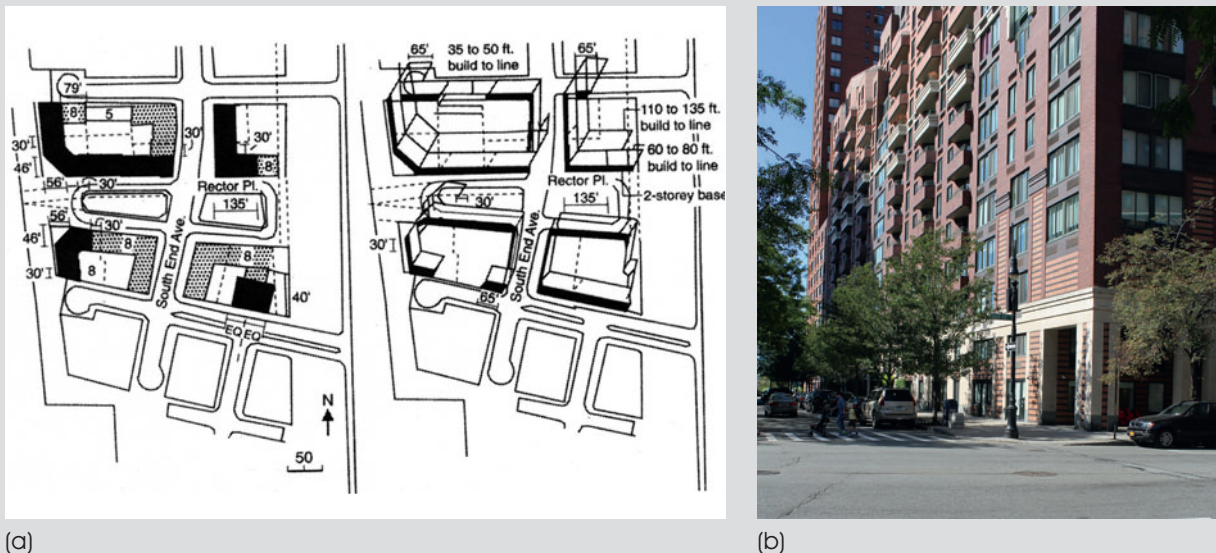


FIGURE 10.16 Rector Place, Battery Park City, New York. (a) Design guidelines: plan and heights (left) and street wall (right); (b) the appearance today.

Source: (a) Barnett (1987)

building of the World Financial Center with Olympia and York as developer. Then the tactic was to build towards the south and then the north (that is, from the center out). The northern sector placed great emphasis on the sustainability of the

environment and had less restrictive design controls than the southern.

The site was much damaged by the September 11, 2001 attack on the World Trade Center towers. It was soon restored but new security measures

TABLE 10.1 Plan Implementation Comparison

1969 DEVELOPMENT PLAN			1979 MASTER PLAN	
Physical Design Concept:			Physical Design Concept:	
Megastructure Public Circulation Spine 7 Pods Open Space Decks			Extension of Manhattan Grid Streets 36 Blocks Public Parks	
Planning Controls:			Planning Controls:	
City Ownership Master Lease Master Development Plan Special District Zoning			BPCA Ownership City Repurchase Option Master Plan Urban Design Guidelines	
Site Improvement Cost Estimates:			Site Improvement Cost Estimates:	
	1973	1979 ^a		1979
	(\$)	(\$)		(\$)
Utilities	14.1	25.2	Utilities	8.5
Civic Facilities	41.1	73.6	Civic Facilities	3.0
Streets, Spine	58.3	104.4	Streets	13.7
Foundations	19.2	34.4	Foundations	n/a
Arch & Eng	26.0	46.5	Arch & Eng	incl.
Contingency	15.8	28.3	Contingency	incl.
TOTAL (\$million)	174.5	312.4	TOTAL (\$million)	53.2
Implementation Process:			Implementation Process:	
<ol style="list-style-type: none"> 1. BPCA designs service spine 2. PARB reviews spine design 3. City Plan Comm. Amendments 4. Board of Estimate Amendments 5. BPCA starts spine construction 6. BPCA selects pod developer 7. Developer designs pod platform 8. BPCA reviews pod/spine connection 9. Developer designs towers 10. BPCA approves tower design 11. PARB reviews pod design 12. CPC amends MDP (if required) 13. B of E amends MDP (if req.) 14. Developer builds pod platform 15. Developer builds first building 			<ol style="list-style-type: none"> 1. BPCA prepares design guidelines 2. BPCA designs streets and parks 3. BPCA selects developer(s) 4. Developer designs buildings 5. BPCA reviews designs 6. BPCA builds streets & parks 7. Developer builds building 	

Note: 1973 costs inflated to \$1979 using CPI (1973=128.4; 1979=230.1), source: Economic Report of the President, 1987.

Source of table: Gordon 1997, 74; courtesy of David Gordon

were put into place in the precinct: curb side barriers, “tiger-traps,” and some street closures. The combination won a 2005 award from the American Society of Landscape Architects for the security achieved without a detrimental effect on the livability of the precinct. In 2012 Cyclone Sandy flooded the site but left surprisingly little lasting damage. The site continues to evolve although the initial urban design of Battery Park City can be said to have been completed. Now under control of the Brookfield Corporation, the World Finance Center has been renamed Brookfield Place. A \$250 million-dollar revamping was completed

in 2015. Facilities were upgraded to appeal to shoppers of a higher income bracket than before.

Battery Park City in its completion is a neo-traditional, all-of-a-piece urban design (Russell 1994). It shows what can be accomplished, particularly in times of high demand for development, through carefully conceived urban design rather than laissez-faire planning. Its architecture is not the type sought by the global economy. Yet, by all reports, it is well liked as a place to work by office workers and a place to live by its upper-income 25,000 residents. It is estimated to have cost \$US4 billion to create.

CASE STUDY

Rouse Hill Town Centre, Hills District, New South Wales, Australia (2000–7)

A privately owned mixed-use neo-traditional new suburban downtown

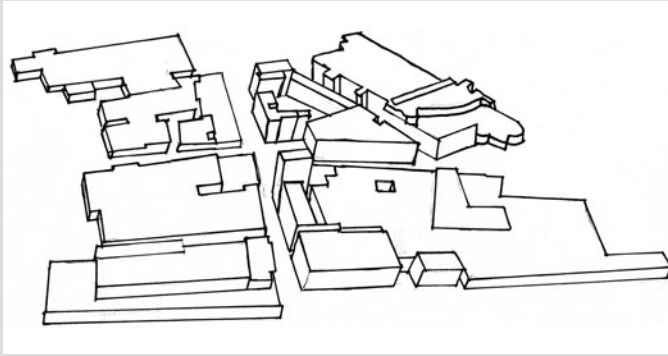
Rouse Hill Town Centre has a traditional CBD street-to-building pattern in an automobile-oriented suburb. It is a departure from the standard enclosed shopping mall design. In common with those malls it is privately owned by its developer, Lendlease, a listed property development and management organization.

The design was carried out by a consortium of architectural firms so closely linked and working within a clear set of guidelines that the scheme could be regarded as a collaborative total urban design as much as an all-of-a-piece urban design. The center’s plan was the work of Civitas Urban Design and Planning, Inc. The architectural design was done by a number of firms: Rice Daubney, Allen Jack and Cottier, and Group GSA. It is estimated that almost 100 designers were involved in the project. They worked in association with Cundell Services ESD, which was responsible for designing with the climate in mind.

The design of the center adapts the suburban shopping center type to create a neo-traditional project. It consists of four “big-box” stores at its corners and pedestrian ways lined with shops between them. At the center of the development

is a square with the Vinegar Hill Memorial Library opening on to it. The square has ground fountains in which children can gambol on a summer day. Four- to six-story apartment buildings line the streets providing for the potential watching of the open spaces. Some parking spaces for cars are on the street (Figure 10.17b) but the majority are located in a single subterranean garage under the whole site. Two cross streets, Main Street and Civic Way, divide the site into legible quadrants, each with its own character. Instead of the straight, wide, unimpeded pedestrian ways favored by shopping center developers, the pedestrian links have kinks to shift the vista of pedestrians. Canopies of adjustable fabric awnings that line the mini-squares, the paths, and the western-facing shop windows add to the neo-traditional flavor of the center (Harding 2008).

The center has 220 retailers, 104 apartment units, ten restaurants, a cinema, and a medical center as well as the library. The housing has proven popular, especially with empty nesters, contrary to predictions of the real estate market analysts. They can continue to live in an area with which they are familiar. At the eastern end of the



(a)



(b)



(c)

FIGURE 10.17 Rouse Hill Town Centre. (a) Generalized massing diagram; (b) apartments over shops; (c) the Town Square and library.

center is a major bus interchange; the Rouse Hill Station of the North West Rail Link to central Sydney will be adjacent to the center (Wiblin et al. 2012).

Part of the interest in the design stems from the concern paid to its energy-efficient operation. The center was partially built with recycled materials. Rainwater captured in a 150,000-liter tank is used to flush toilets, for gardens, and for cleaning. A filtered drainage system helps to revive nearby Caddies Creek. Passive solar design is used to

control the interior temperature of buildings. The use of rainwater and recycled water is reputed to have reduced water consumption by 60 percent in comparison to standard centers of its type; energy costs are 40 percent lower.

The design has received many accolades (Grennan 2010). In 2010 it was identified as one of the five most important developments in the world by Washington's Urban Land Institute, and the outstanding urban design project by the Australian Institute of Architects.

CASE STUDY

Ørestad, Copenhagen, Denmark (1992–2035)

An example of European public–private property development; a new town?

Ørestad is an ambitious proposal that is one of a number of Danish projects created to enable Copenhagen to compete effectively with Northern Germany for economic development. In 1992 Denmark's Folketinget formed a development corporation, Ørestadsselskabet I/S, to develop the precinct. The corporation is 55 percent owned by the Copenhagen Municipality and 45 percent by Denmark's Ministry of Finance. The corporation was responsible for planning Ørestad in conjunction with building a new metro line; the two were part of an integrated design. The long, narrow site, roughly 5 kilometers (3 miles) by 700 meters (0.4 mile) aided this integration.

The site is so well located in relationship to the Øresund link to Sweden and to the airport that it was envisaged that Ørestad would be the cross road of Scandinavia. The goal was to create an internationally recognized mixed-use development for 20,000 residents, with 20,000 students and 80,000 workers making a day-time population of about 100,000. The development reached about the halfway point in 2015.

In 1992 Ørestadsselskabet organized an international competition for the design of Ørestad. Four of the entries were selected by the jury for public exhibition. ARKKI, a Finnish architectural firm (now merged with Danish KHR) was selected to develop the master plan. The design divides Ørestad into four districts: Ørestad Nord, Amager Fælled Kvarteret, Ørestad City, and Ørestad Syd. Of these Amager Fælled has yet to see any development. Each of the other districts is divided into a number of neighborhoods with green areas wedged between them. These wedges along with the north–south canals give Ørestad a marketable green image and provide for recreation (Bullivant 2012b).

Ørestad Nord is the most developed. Organized around a central “village green” and the north–south University Canal, it contains a concert hall designed by Jean Nouvel, the Titencollegiet dormitory by Lundgaard and Tranberg, and VM house

designed by BIG (Bjarke Ingels Group). The district is the home of public institutions such as the southern campus of the University of Copenhagen, the city's IT University, and the Karen Blixen housing (named for the author of *Out of Africa*). Half of the 1,000 housing units are for students.

Ørestad City, which lies between Ørestad Nord and Ørestad Syd, is Ørestad's downtown. Daniel Libeskind produced a master plan in the form of a superblock containing a jumble of narrow streets inspired by the intricacies of the medieval city. In the center would be two tilted-façade 20 story-tall buildings to act as the “there” there. The economic crisis of the late 2000s derailed the scheme. Ørestadsselskabet replaced Libeskind's plan with a milder design by COBE architects. Its design largely follows the ideas of Libeskind's proposal but it can be built building-by-building as the real estate market dictates (Grabar 2012; Loerakker 2013).

Construction began in Ørestad City with the Ferring Tower, which was completed in 2001. The district is dominated by the Field's big-box shopping mall, the country's largest hotel, and the Bella Convention and Exhibition Center, the largest in Scandinavia. Fields saved Ørestadsselskabet from dire financial problems. A trade-off was made between providing for local needs and providing an economic lifeline for the development company.

Ørestad Syd is located on a green-field site, former meadowland. It has been planned to consist of a mixed-use commercial area in the north and a mixed-use residential precinct in the south. The two will be separated by a park. The plan, passed by the Copenhagen City Council in 2005 is for the northern part to be organized around a treed urban space and the southern portion to consist of high-density buildings organized around three north–south open spaces. The projected population for the precinct is 10,000 residents and 15,000 workers.

Ørestad is an example of the type of public–private partnership that is replacing traditional



(a)



(b)

FIGURE 10.18 Ørestad. (a) The site with the metro line running through it; (b) Ørestad Nord.

Source: (a) Photograph by Peter Sørensen, courtesy of By & Havn; (b) photograph by Ole Malling, courtesy of By & Havn

zoning as a technique for controlling and implementing urban designs in both European and American cities. Designs result from negotiated trade-offs between public and property development interests. The master plan for Ørestad shows a compact city with buildings framing the streets, but many of the blocks are being developed with buildings as objects in space. Indeed, some critics say that the master plan has been abandoned (Grabar 2012). The developers and their architects have become the self-interested dictating agency.

While it is premature to draw conclusions, the development has received praise and been

denigrated. It has been praised as a collection of architectural masterpieces and derided for its lack of urbanity. The quality of the streets has lost out in the focus on blocks. The inward-looking, big-box nature of Fields, for instance, limits the liveliness of the adjacent streets. Kay Fiskers Square, the major one in Ørestad City, acts mainly as a link between the metro and Fields and is otherwise empty of people. The decision to give almost total artistic freedom to the architects results in an accumulation of “cutting edge” buildings, but the qualities that could make Ørestad a unique livable place appear to be largely lost. The buildings could be almost anywhere.

CASE STUDY

Hammarby Sjöstad, Stockholm, Sweden (1990–2017)

A livable, sustainable, mixed-use precinct

Hammarby Sjöstad is an exemplar of a development designed for “eco-friendly living.” Located within Stockholm, the precinct is being built on 200 hectares (494 acres) of what was an industrial and harbor site. After being abandoned in the 1970s and 1980s it became a shanty town with a poor reputation. It was then planned under the direction of Stockholm’s city planner, architect Jan Inghe-Hagström, to help alleviate the pressure of the growing population of Stockholm on the city’s periphery.

When the original hopes for the site to be part of the Olympic Games of 2004 and 2012 fell through, the Stockholm municipality decided to build an Ecocity. The design was inspired by the United States Agenda 21 declaration on environment and development, the design of Western Harbor in Malmö, and the Sydney Olympics of 2000. Its intellectual basis can be traced back to the work of Ian McHarg (1969) and even earlier to Patrick Geddes (1915). When completed in 2017, the residential populations will be about 20,000 people with an additional 10,000 working in the commercial space. Many of the residential buildings have shops and/or cafés and restaurants on their ground floors.

From the beginning of the master planning process, it was decided to make environmentally friendly behavior easy through the urban design. A number of closed-loop infrastructure systems were the armature for the design of the precinct. An educational Center, Glashus Ett (Glasshouse One), provides residents with information on how to use the various systems. Most buildings have solar panels and cells that generate 50 percent of the electricity required by the householders during the summer. Linear green areas and fingers of the sea link the housing to nature reserves that provide a habitat for local wildlife (Iverot and Brandt 2011; Ignatieva and Berg 2014). One of the planning requirements was that each residential building had to have a green area/square of 25 to 35 square meters within 300 meters.

Hammarby Sjöstad is linked to the rest of Stockholm by two biogas-fueled bus routes, a free ferry service, and a new tram line. A car-sharing system with 25 cars dotted around the development reduces the number of cars on site. Only 0.5 car parking spots are provided per household. Its most innovative technological aspect is the vacuum waste suction of burnable and compostable household wastes. These wastes are delivered



(a)



(b)



(c)

FIGURE 10.19 Hammarby Sjöstad, Stockholm. (a) The waterfront; (b) a waterfront café; (c) sorting waste: the centralized waste handling system.

Source: (a) Photograph by Yanan Li; (b) photograph by Lennart Johansson; (c) photograph by Svartpunkt

to central points for collection. Filled waste bags are intermittently transported to substations on the periphery of the district and used to generate heat and co-generate electricity. Large-scale local waste and storm water harvesting and filtering has also been implemented.

Forty construction companies and their architects were involved in creating the built environment of the precinct. Most took the offer of a reduced price on building plots in return for paying for infrastructure costs. The architects

designed in a competitive manner but with a sense of decorum shaped by some very simple building guidelines. These guidelines restricted the height of buildings to five or six stories and each was to be built to the plot boundary lines. It was anticipated that empty-nesters would predominate as residents, but the people moving into the first units were young families seeking a viable alternative to suburban living. Schools and crèches were thus added to the building program (Foletta 2011).

Hammarby Sjöstad has been an inspiration to municipal authorities and urban designers throughout the world. Descendants include Caofeidan Ecocity in China and Symbiocity in

Brazil. The data on how Hammarby Sjöstad actually works are, as with many efforts to create low-energy consumption buildings, limited.

CASE STUDY

Central Park, Sydney, New South Wales, Australia (2003–25)

A loosely controlled, inner city, urban renewal project

Central Park is a mixed-use development now under construction in Chippendale on the edge of Sydney's Central Business District. The 5.6-hectare (14-acre) brown-field site was formerly occupied by the Kent/Carlton United Brewery. It became available for development in 2003 and Australand, a property developer now called Frasers, put in a conditional AU\$203 million bid for the purchase of the site dependent on the height control being raised substantially from the 45 meters specified by the Central Sydney Planning Committee (CSPC).

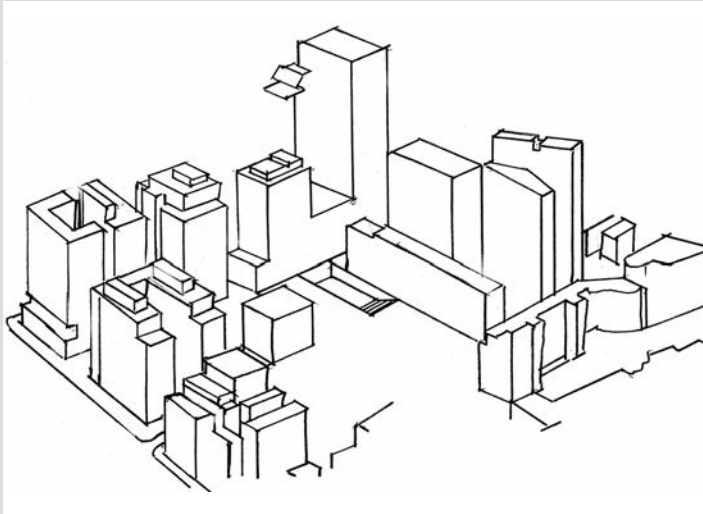
CSPC organized an invited design competition in order to set the parameters of the development. The submissions similarly suggested a 70 percent to 30 percent mixture of residential to commercial development and a mix of 4-, 8-, and 12-story buildings around a central green area, water recycling, and other energy-saving systems. The result was a change in height limits and floor space ratio controls for any development on the site (Sydney, City of 2014).

The site changed hands twice during the economic turmoil of the late 2000s. Today the project is a joint venture between Frasers Property, the Australian wing of a Singapore-based company headed by Stanley Quek, a former gynecologist, and Sekisui House, a large-scale Japanese development company. The consent authority was the Sydney City Council, which required Frasers to comply with all environmental planning policies, state and local, including the provision of open space for Chippendale's residents.

In 2008 Frasers said that it wanted to create "world-class architecture, innovative sustain-

ability initiatives, and a new inner-city square for Sydney" (Farrelly 2015). Sydney's Lord Mayor, Clover Moore, was a leader in establishing legislation for the inclusion of public art in major building projects. The result was the commissioning of artists Jennifer Turner and Michaelie Crawford who created Halo, a wind-activated, 12 meters in diameter, kinetic structure on a 13-meter spine that forms a conversation piece in Chippendale Green, the center of the complex. It was part of the public art program for the site. Chippendale Green is an open lawned and terraced area designed by Jeppe Aagaard Andersen and Turf Design. It has a gently cascading water feature running down one side of it where a path links the project to the neighborhood via a newly created pocket park.

Central Park will ultimately consist of a number of buildings each designed by a renowned architect. The key building of the complex is One Central Park, consisting of two apartment towers, one of 34 stories and the other lower and designed by Ateliers Jean Nouvel. Each has a heliostat (an apparatus with computer-controlled mirrors that follows the sun as it moves through the sky). The one on the lower building reflects sunlight up into the higher one, which is located on a 120-ton cantilever, and from there into the areas where the building casts a shadow over the open area on the south. One Central Park also features 1,000 square meters of hydroponic walls, designed by Patric Blanc, and an LED floating art display by Yann Kersalé. The wall contains over 38,000 indigenous and exotic plants that are tended by four full-time gardeners (with six in season). They may well



(a)



(b)



(c)

FIGURE 10.20 Central Park, Sydney. (a) Generalized massing diagram; (b) the sunken court; (c) a view from the south.

consume more energy than they save but the image that they create brands the development.

One Central Park contains a multi-story interior shopping mall at the basement, ground, and second floor levels. At the basement level it is connected to an outdoor restaurant area. Adjacent to Chippendale Green is the administration building of the former brewery that will house mixed retail and commercial uses. In the north-

western corner will be a connected set of commercial buildings designed by Foster and Partners. On the eastern side already in place is a residential building designed by Johnson Pilton Walker. Behind it across a narrow street is student housing. The collective impact has been to create a tight-knit, prestigious collection of buildings around an L-shaped open space that serves as a link to the surrounding low-height residential area

of Chippendale. The vest pocket park also acts as an intermediary between the development and the residential area.

A primary concern in setting the parameters for the development of the site was the height of buildings, their overshadowing effect, and the density of the development. Building heights decrease from the north, where the high-rise tower of the University of Technology exists, to the south in order to match the building heights of Chippendale. The buildings on the north side of the site will cast shadows over part of the southern portion, as can be seen in Figure 10.20b, which is fine on a hot summer day but not ideal in mid-winter. The heliostats do reflect 70 percent to 78 percent sunlight down into it but at the time

of writing it was unclear how successful they are.

Abandoned inner city sites when redeveloped are given a prestigious name which often means that they take on non-urban labels. Central Park hints at its New York namesake. Prominent architects, bold architecture, green walls, and parks all add to the prestige of a development. Corporations and individuals, consciously or subconsciously, choose to locate in places that reinforce their self-images. The quality of this scheme owes much to CSPC setting the armature of lanes and through routes that create a porous site for pedestrians. The mixed-use nature of the project and the extensive gardens, particularly in the area that abuts Chippendale, are additional advantages.

CASE STUDY

World Trade Center Site, New York, New York, United States of America (2002–20)

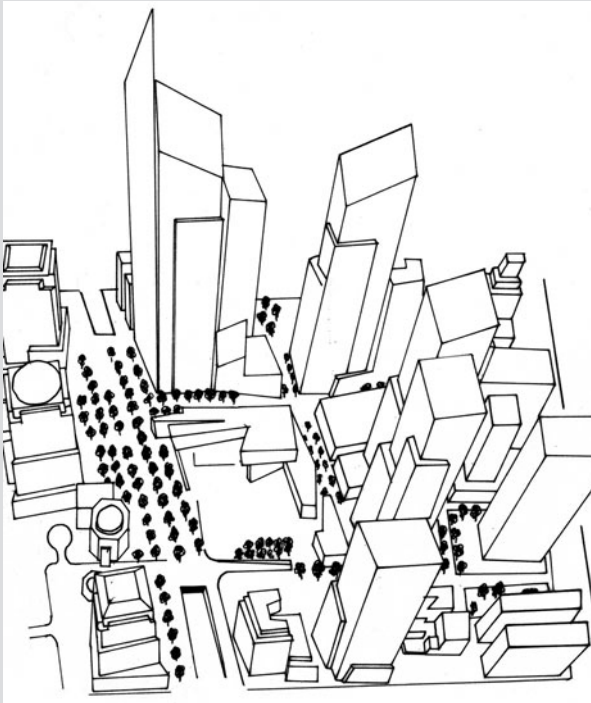
A fragmented all-of-a-piece urban design?

The design and development of the World Trade Center site after the devastation of September 11, 2001 has been a drawn-out affair. It was originally assumed that the site would be rebuilt by 2011 but the predicted completion date is now 2020. The controversies over how best to create what is a large architectural and landscape architectural project bring to the fore the complexity of factors and emotions that come to play at the intersection of the traditional design fields and urban design work.

Almost immediately after the destruction of the twin towers, Max Protech, an art dealer, took the initiative and asked leading architects to submit proposals for the site. The resulting exhibition drew thousands of visitors and ensured that design quality became an important consideration in any proposal for the site (Stephens et al. 2004; Goldberger 2005). The Lower Manhattan Development Corporation (LMDC) in partnership with the Port Authority of New York and New Jersey acted as the developer. In July 2002 they proposed six

initial design elements for the 16-acre (6.5-hectare) site: a memorial plaza, a memorial square, a memorial triangle, a memorial garden, a memorial park, and a memorial promenade. Two well-attended public hearings, an exhibit, and the solicitation of comments resulted in over 12,000 responses.

The LMDC and the Port Authority then sought expressions of interest from firms wishing to do the design. A total of 406 submissions were received of which seven teams were selected based on their perceived talents and reputations. Their charge was to create a “soaring vision” for the site. The schemes submitted when publicly exhibited drew over a million visitors. After both a qualitative and quantitative analysis by the LMDC, the Port Authority, and consultants, the number of schemes was reduced to two (the Memory Foundations scheme of Studio Daniel Libeskind and the World Cultural Center designed by THINK, a team led by Shingeru Ban, Frederick Schwartz, Ken Smith, and Rafael Viñoly). The Mayor of New York and the



(a)



(b)



(c)



(d)

Governor of the State of New York selected Studio Daniel Libeskind's scheme.

The Libeskind design, *Memory Foundations*, reflected the grid pattern of Manhattan. It left a portion of the slurry wall exposed and included a memorial museum and cultural spaces, a 541-meter (1,776-foot), with its spire, tall Freedom Tower (now One World Trade Center), and a variety of activity spaces. A refined master plan was presented to the public in September 2003 (Lubell 2004). The scheme included commercial office space, retail development, the integration of the site with the transportation network, public spaces, and a new park. The proposal replaced 1.34 million square meters of space in six buildings with 1 million in five, plus another million square meters of retail space and the same amount of space for a convention center, plus a September 11 Museum. The memorial formed the center of the composition. An open competition was held for it and 5,201 proposals were received from professionals and lay people.

The winning design, *Reflecting Absence*, was selected by a jury headed by Vartan Gregorian, formerly director of the New York Public Library. It included Maya Lin, Enrique Norton, and David Rockefeller. *Reflecting Absence* is the work of Michael Arad, an architect with the New York City Housing Authority, assisted by Peter Walker, an internationally renowned landscape architect (Greenspan 2013, 2014). It consists of two large voids containing pools of falling water with the waterfall ramps around them encompassing the footprints of the twin towers. The memorial is set in a field of deciduous trees. Their coming into leaf each spring symbolizes the revival of spirit of New York.

Santiago Calatrava, selected by the Port Authority from potential consultants who responded to a solicitation of credentials, designed the PATH terminal. The predicted cost was US\$2 billion but the actual cost was \$3.9 billion. The price is justified by Calatrava on the grounds that it is an important public space like Grand Central Station.

The design has soaring wings and a cathedral-like interior space. It represents both architecture as high art and the architecture of structural dexterity. It, like the memorial, is very different to the design in the Libeskind competition-winning scheme. It will be joined to a new transit hub designed by British high-tech architect Nicholas Grimshaw. It is hoped that this hub will spur adjacent developments in much the way that the renovation of Grand Central Station did in mid-town Manhattan.

As Libeskind had no experience in designing skyscrapers, the Governor of New York State, George E. Pataki, and the developer insisted that his firm work with David M. Childs of Skidmore, Owings and Merrill, an experienced office building designer. The Freedom Tower design is now considerably "fatter" than the original. The tower is now a generic 70-story office building in plan, 1,776 feet tall (1,500 feet in height with a 276-foot mast above it).

After all the law suits over insurance payments brought by Larry A. Silverstein, who had acquired a 99-year lease of the site only six months before the towers were destroyed, the jurisdictional battles, and design competitions a final design seems to have emerged. It is a street-bounded complex of: (1) One World Trade Center, (2) a multi-tiered train station, (3) a museum, (4) a performing arts center, and (5) a public park and memorial. Four adjacent city blocks will have towers designed by architectural lions such as Rogers Stirk Harbour + Partners, Maki and Associates, and Foster and Partners. The overall design opens up the site to views of the Hudson River and the Winter Garden of Battery Park City.

A once coordinated urban design scheme has broken down into fragments. The components are being built separately approximately according to the Studio Libeskind conceptual plan but subject only to standard New York building codes. The design guidelines submitted by Libeskind and urban designer Gary Hack in November 2003 had little, if any, binding power as the four major

FIGURE 10.21 (facing page) The World Trade Center Memorial, New York in early 2013. (a) The refined Libeskind proposal; (b) the expected final design; (c) One World Trade Center; (d) *Reflecting Absence*.

Source: (a) Drawing adapted from various sources by Munir Vahanvati; (b) Lower Manhattan Development Corporation

stakeholders were unable to agree on them. Thus the Memorial, the One World Trade Center, the other four towers, and the PATH terminal are proceeding in their own ways at costs way above original predictions. One World Trade Center was

originally budgeted at \$3 billion but cost about \$4 billion.

Thousands of visitors arrive at the site every day to pay their respects.

Campuses

New university campuses continue to be built and many existing ones are being transformed as university administrators try to make them attractive places for students (and their tuition-paying parents). They need to do so in order to compete effectively in the recruitment of students and to meet enhanced expectations of environmental quality. Some are total urban designs; others are all-of-a-piece designs. Many are haphazard affairs.

The term “campus,” as has already been observed, is applied more casually to developments other than universities. The three buildings designed by Foster Partners at Central Park in Sydney are referred to as “a commercial campus.” Other types of campus, in common with universities, consist of sets of buildings located in landscaped, park-like surroundings. Denver Technological Center, on the outskirts of the Denver, Colorado metropolitan area is one of those developments on a green-field site that is often considered to be a campus. It is the example of campus planning and design that is included here.

CASE STUDY

Denver Technological Center, Denver, Colorado, United States of America (1964+)

A suburban business campus for the automobile age, a “downtown” in a park-like setting

The Denver Technological Center (DTC) is one of the first and largest suburban office parks in the United States. George M. Wallace, a property developer, initiated the project on Route I-25, the highway along Colorado’s Front Range of the Rockies, where it intersects with I-225 south of the city of Denver (Worthington 1984). Initially a 40-acre (16-hectare) site, it was bought by Wallace for US\$80,000 in 1964 in order to relocate his office from central Denver. It is now 884 acres (335 hectares) in extent. Wallace, marketing aggressively, attracted key companies (for example, Honeywell and Control Data) to locate in the park in 1965. He also heavily promoted the development of nearby Arapahoe County Airport. By 1981, 5 million square feet (460,000 square meters) of

buildings had been completed. By 2000, DTC had over 600 companies, large and small, located there and almost 20,000 people working there (Denver Technological Center undated). The density is thus low by urban standards. At the entrance to DTC on I-25 stands the Identity Monument, the work of Barber Architecture. It was designed with the speed of passing vehicles in mind. It is thus visible at high speed and from a distance. It is a successful landmark.

DTC has had much more thought put into its design than many such parks. It has been and is an all-of-a-piece development rather than a laissez-faire one. The original designer was Carl A. Worthington, an architect who had his office in Boulder. Five major parkways with landscaped

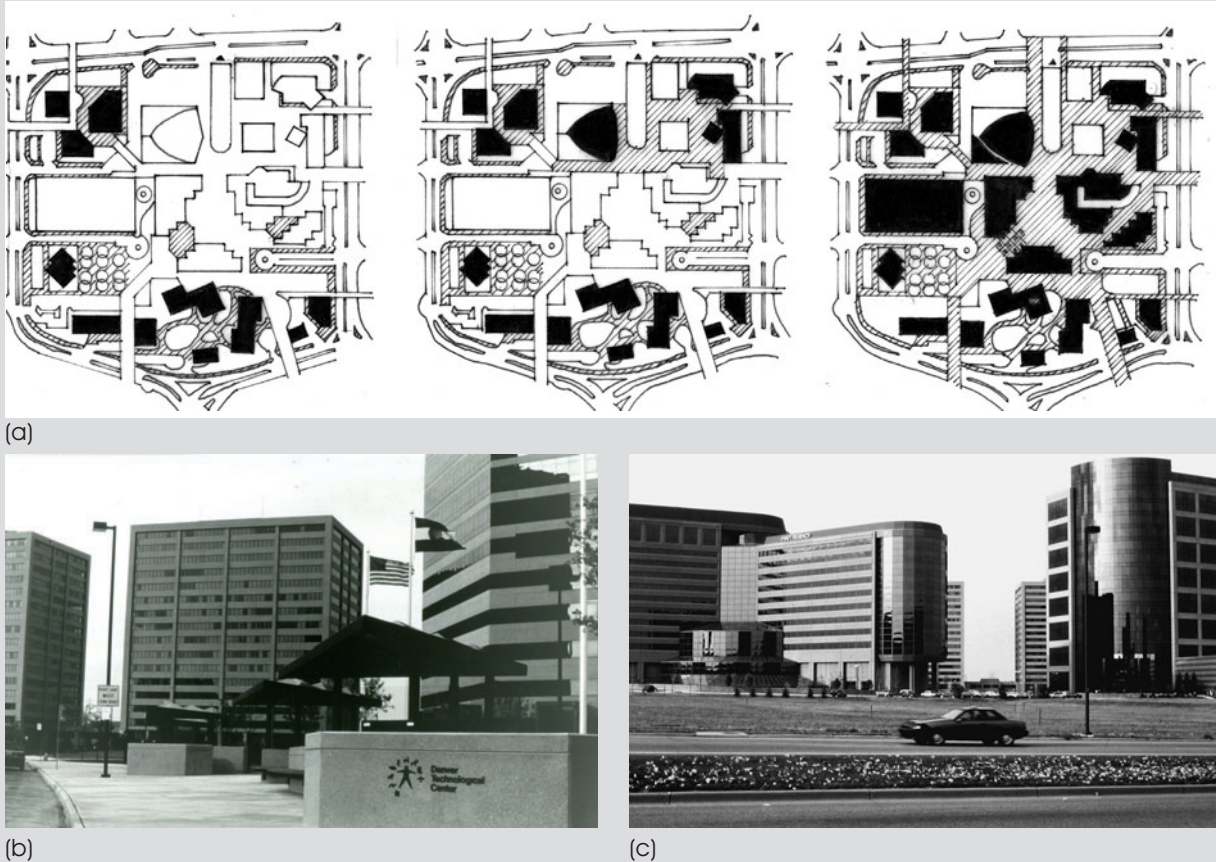


FIGURE 10.22 The Denver Technological Center. (a) The phasing of the superblock development; (b) the corporate architecture of the center.

Source: (a) Adapted from Worthington (1984) by Thanong Poonteerakul

medians provide the armature for the design (Worthington 1984). The site was then divided into twelve superblocks of mixed-use development. The highest density of development is at the center of each superblock around a pedestrian open space. Each building has its own parking lot under it or in a surface lot surrounded by landscaped berms. The purpose was to make vehicles easily accessible but unobtrusive. No on-street parking is allowed.

Each superblock is about 30 acres (12 hectares) in size—the equivalent of sixteen to twenty city blocks. The development of each started from the periphery and worked towards the center, which becomes a pedestrian square surrounded by buildings. The areas between the superblocks are parks with ponds and pedestrian tracks. In total, the open space comprises about 40 percent of the land area of the development. Most of the buildings are commercial but hotels, retail shops, and

residential buildings are concentrated at important locations.

Each site is sold to a private company which develops the buildings using its own architects. The site's infrastructure is built and maintained by DTC Development Properties from taxes raised through a Special Taxing District whose boundaries are coterminous with those of DTC. Sub-developers are required to build the internal infrastructure of their sites as well as the sidewalks and streetscape. The ease of access and the strict design guidelines ensuring environmental quality appear to have been major attractions for corporations to locate in DTC.

All construction proposals are reviewed by an Architectural Control Committee that has six regular members, all of whom are planning and/or design professionals. The design guidelines specify that each site should have a minimum of 30 percent open space. Parking space cannot comprise

more than 40 percent of the site and the buildings no more than 40 percent. The purpose is to ensure the park-like setting. Pedestrian and vehicular access has to be segregated on each site, with the entrances to buildings being obvious. The height of buildings is restricted to eight stories. Many suburban residents in the United States have a great distaste for high-rise buildings because they are seen to represent the traditional city centers that many of them fled. The result is that the buildings are all built to that height with flat tops.

Each development node is built phase-by-phase (see Figure 10.22a). In the first phase, the key buildings within a superblock are constructed and connected to the overall road network. Phase two

involves the building of the sidewalks along the streets and phase three, the building of the superblock plazas and pedestrian malls. Unlike Brasília and Battery Park City, the phasing of the development of the superblocks has been from the outside inwards.

One of the catalytic effects of DTC has been to drive the growth of Denver south along the I-25 corridor. With Denver's CBD as one anchor and DTC as the other, there has been considerable infilling between the two. The side effects of increased traffic, air pollution, and haphazard development have yet to be addressed. Whose responsibilities are they?

Housing

Large-scale housing projects tend to be total urban designs. A few are high-profile, all-of-a-piece housing designs. The two case studies included here are very different in character. The first is a high-architectural example led by a clear conceptual design; the second was driven by the desire to create a sustainable neighborhood. The development of the Stadtvillen an der Rauchstrasse, Berlin, Germany was headed by Rob Krier. Strong prescriptive building design guidelines shaped it. Well-known architects designed the individual "villas" that form part of the overall scheme. The second, the Quartier Vauban in Freiburg, Germany is, like Hammarby Sjöstad, an exemplar of an urban design paradigm that is of increasing importance. It was shaped by performance guidelines aimed at creating a sustainable urban development.

CASE STUDY

Stadtvillen an der Rauchstrasse, Berlin, Germany (1980–6)

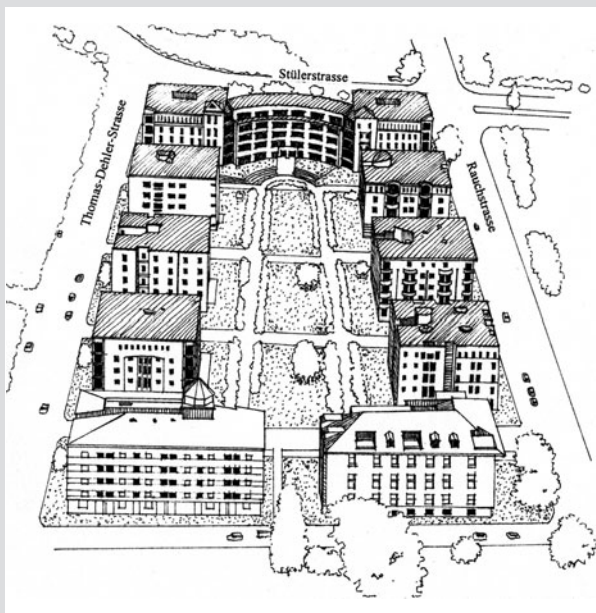
A Modernist site layout with Postmodernist architecture shaped by prescriptive guidelines

The Stadtvillen an der Rauchstrasse, located in the southern Tiergarten neighborhood of Berlin, was a part of the Internationale Bauausstellung. The developer was Land Berlin with Sozialer Mietwohnungsbau financing the project. The urban design plan and building design guidelines were, as just noted, created by Rob Krier (Broadbent 1990).

Nine new buildings form the group, with the tenth being the previously existing Norwegian Botschaft that encloses the southwestern corner. Each building is slightly set back from the street with a lawn, hedge, and a line of trees on the street front. One meter-high, four meter-wide slopes around each building's site provide a platform for the apartment blocks. The raised height provides

FIGURE 10.23 (facing page) Stadtvillen an der Rauchstrasse, Berlin. (a) A bird's eye view; (b) the interior garden and the Stülerstrasse building; (c) floor plans of the villas by Francy Valentiny/Hubaert Hermann, Hans Hollein, and Rob Krier; (d) the buildings respectively in 2015.

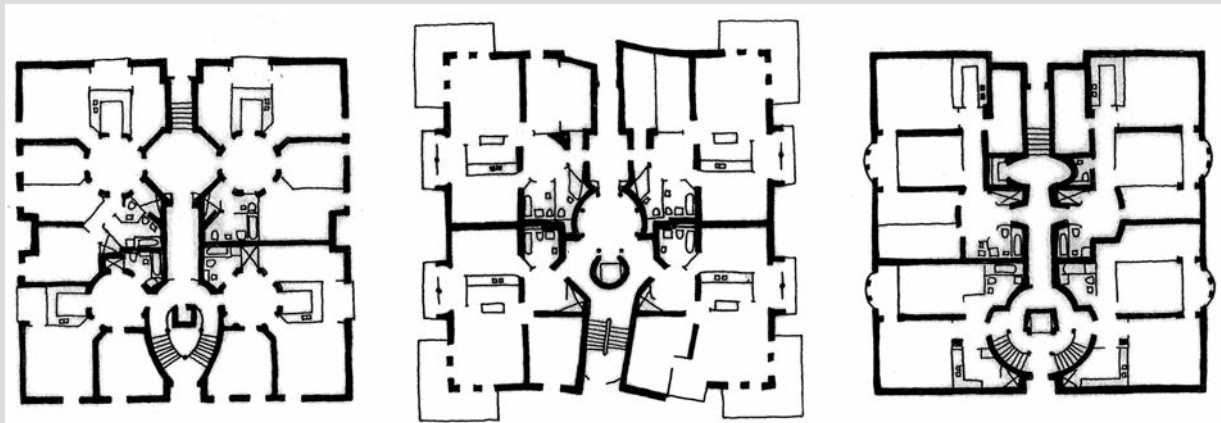
Source: (a) Drawing by Thanong Poonteerakul; (c) adapted from Kleihues (1987) by Thanong Poonteerakul



(a)



(b)



(c)



(d)

privacy for the ground floor apartments. The ratio of distance between the buildings and building height is between 1:3 and 1:5, a ratio widely understood to provide a sense of enclosure. The buildings are situated around a rectangular internal garden of lawns, trees, and a children's playground. A rectangular pathway with semicircular ends parallels the buildings and loops around this internal court. Three roads cut across the court in a north-south direction (Kleihues 1987).

The buildings of the complex are a variation of the building types—embassies and expensive villas—that existed on the site before the Second World War. The building in the northwestern corner matches the Norwegian Botschaft in massing. The head-house, the Stülerstrasse building, was designed by Rob Krier, but the other six buildings are variations on a specified cube building envelope. They were designed by Henry Nielebock, Giorgio Grassi, Brenner/Tonon, Francy Valentiny/Hubaert Hermann, Hans Hollein, and by Rob Krier himself. The head-house consists of two

cubes linked by a curved component concave to the interior of the block.

All the apartment buildings have similar floor plans with four apartments per floor being served by a central core. The building with the greatest variation is that designed by Hans Hollein. The building design had been originally allocated to Mario Botta, who withdrew because he could/would not design it within the cost limitations (Broadbent 1990). An angled staircase and walls set at angle in the center of the façade break the strictly cubical form (Kleihues 1987). The complex is a simple, highly unified, internally focused scheme containing 239 apartments. It is well loved by its residents and much visited by architectural tourists. The fragmented nature of the adjacent developments means that the streets act as boundaries to the scheme rather than seams joining it to its Tiergarten neighborhood. The result, nevertheless, shows that building guidelines can result in a unified design of buildings each with its own character.

CASE STUDY

Quartier Vauban, Freiburg im Breisgau, Germany (1993–2014)

A cooperatively designed sustainable neighborhood shaped by performance guidelines

From the end of Second World War until August 1992, the Forces Françaises en Allemagne had a tank infantry barracks on a 40-hectare (100-acre) site on the southern edge of Freiburg. The owner was the German Federal Property Administration and when the site became available, the Administration decided that it should become a residential neighborhood (Delleske undated). The Administration sold most of the land to the city at a negotiated price of €20 million that did not fully reflect its value (Salomon 2010). The project was financed through the difference between its pre- and post-development value. The precinct was subdivided into parcels and sold to developers at a value that would reflect the development. The land was expensive but the demand was, never-

theless, three times higher than the supply of sites. The €95 million yielded was sufficient to decontaminate the site and provide the infrastructure for a mixed-use complex of buildings including schools, kindergartens, parks, and playgrounds (Salomon 2010).

The city administration, through the Projektgruppe Vauban, which coordinated the work of various city agencies, was responsible for carrying out the planning and development of the precinct in association with the Forum Vauban, a nongovernmental organization. The Projektgruppe had both a social and environmental agenda. By 2010 the precinct was a fully operating neighborhood with a variety of dwelling types, a community center, schools, local shops, and medical



(a)



(b)



(c)

FIGURE 10.24 Quartier Vauban, Freiburg im Breisgau. (a) An aerial view of the overall layout; (b) and (c) housing.
Source: (a) Stadt Freiburg im Breisgau Büro Kommunikation und Internationale Kontakte

and other professional practices. In that year Quartier Vauban had a population of about 5,500 people living in 2,472 households. It is a young, well-educated population with a median age of 28. The population has chosen to live in the precinct because of its character and the ways of life that it affords. Many of the residents are young families often with several children. Their environmental values may be homogeneous but they constitute a heterogeneous population, although many work in academia or on cultural pursuits (Salomon 2010).

The design controls and guidelines had less to do with the appearance of the buildings than with the attaining of sustainability objectives. Performance guidelines aimed for the precinct to be modest in energy consumption. Communal infrastructure facilities were designed with energy

savings in mind. Another objective was to reduce the reliance on the use of the car by creating a walkable neighborhood with easy access to public transport. A light-rail line that joins the precinct to the city's metro system was opened in 2006. Much of the car parking is located at the periphery of the precinct although some on-street and underground parking exists within it. Automobile ownership is noticeably lower than in the rest of Freiburg.

Most houses have solar heating. They also have sophisticated insulation in their walls and roofs. The quartier has a local heating and power plant run on wood, a renewable source of fuel. The precinct also has a trench-trough handling rainwater, a biotope area along a stream bed, and green areas that ensure air movement through the district. It is a model design.

Waterfront "Festival Markets"

There are many kinds of waterfront developments. Battery Park City, on the Hudson River, with its central commercial area and residential background buildings, is one kind. The Singapore River, which was once a major trans-shipment location, has new pedestrian walkways on both sides of it. The docks of Kuching in Sarawak are now a waterfront park and promenade (Lang 2005c). The preservation and redevelopment of abandoned finger wharfs into mixed-use developments is yet another waterfront product type. Such developments tend to be total urban designs (for example, Pier 39 in San Francisco, Walsh Bay in Sydney, and De Boompjes in Rotterdam). One type of redevelopment is of pocket harbors that have been turned into what have been called "festival markets."

The precedent for the festival market type of development was set by Baltimore Inner Harbor (1965+) (Breen and Rigby 1996). There are many descendants in the United States (for example, Norfolk, Virginia and Miami, Florida), in South Africa (Cape Town's Victoria and Alfred Docks), and in Australia there is Darling Harbour in Sydney. Cynical critics say that they are all the same. They do indeed include many of the same uses—major attractions such as museums and international brand shops—and they are all on waterfronts. The successful ones, and there is a high success rate, all attract local, out-of-town, and international visitors. This mix is itself a major attraction for visitors. Darling Harbour, somewhat shaky financially, had the opportunity to learn from a number of antecedents.

CASE STUDY

Darling Harbour, Sydney, New South Wales, Australia (1984–95, 2010–17)

A fragmented, but lively pocket-harbor, urban renewal project

Darling Harbour was once Australia's busiest seaport. By the 1970s, however, it consisted of empty Victorian warehouses and rarely used railway tracks. By the end of the decade it was derelict. Its 56-hectare (138-acre) site and its location adjacent to the city center presented an opportunity for a major development.

During the 1970s the New South Wales State Government initiated studies of investment opportunities in the area, resulting in the building of the Sydney Entertainment Centre and later the Power House Museum. These two developments led to further exploration of uses for Darling Harbour. Given the success of Baltimore Inner Harbor, the Rouse Corporation, its developer, was invited to submit a master plan for Darling Harbour. Another impetus came from the ideas that emerged from a 1981 workshop run by Lawrence Halprin, the influential American landscape architect.

Late in 1984 the Darling Harbour Act was legislated by the state parliament. The goal was to create a major development by 1988, the bicentennial of European settlement of Australia (or invasion, as perceived by many indigenous populations). The act established the Darling Harbour Authority to take the development forward. Darling Harbour was thus planned in the speculative era of the late 1980s to enhance the economic state of Sydney and place it more firmly on the world map, as the Opera House had done at mid-century. The decision to go ahead with the project was based on consultants' positive feasibility studies.

A joint government/private enterprise team oversaw the development. The first step resolved the financial and administrative basis for the project. The second got the site cleared once the government-owned land was released for the development and land parcels bought from private owners. The third step was to select worthwhile projects. Individual developers were required to present architectural and engineering drawings and impact analyses of their proposals. Negotiations between the Authority and the developers

followed. Approvals for road closures, the use of air rights, as well as for the construction of buildings had to be obtained and agreements had to been made with utility providers. Once these steps had been completed, tendering for construction work took place (Young 1988).

No specific conceptual design was adopted but the principles of Baltimore's Inner Harbor design guided the development. In 1985 construction began on the publically funded Sydney Convention Centre (designed by John Andrews) and Exhibition Centre (designed by Philip Cox of Cox, Architects and Planners with Arup Consultants as engineers). The process was carried out in haste in a piece-meal manner, in order for the scheme to be sufficiently advanced by 1988 to be seen as a functioning entity.

Considerable political and public opposition to the development arose when a proposal for the site became public knowledge. Many people felt that the money would be better spent on hospitals and other public facilities rather than something "frivolous." There was particularly strong opposition to the building of an elevated monorail circuit that cut across the façades of buildings in the central area of the city before looping around Darling Harbour. (It operated from 1988 until its removal in 2013.) With the award of the landscape design contract to Regal Landscape, public opinion started to be supportive as the full nature of the development became apparent. By 1987 a vague master plan had evolved.

The site extends seamlessly under two major highways, with a mixture of hard surfaces in its heavily trafficked pedestrian core areas and grassed areas to the south. The buildings are arranged in a horseshoe manner around the harbour, which is now partially a marina and partially a site for water entertainment events. The horseshoe is anchored at its ends by the National Maritime Museum (with a submarine and destroyer in the water adjacent to it) and a privately developed aquarium that has been successful enough to be

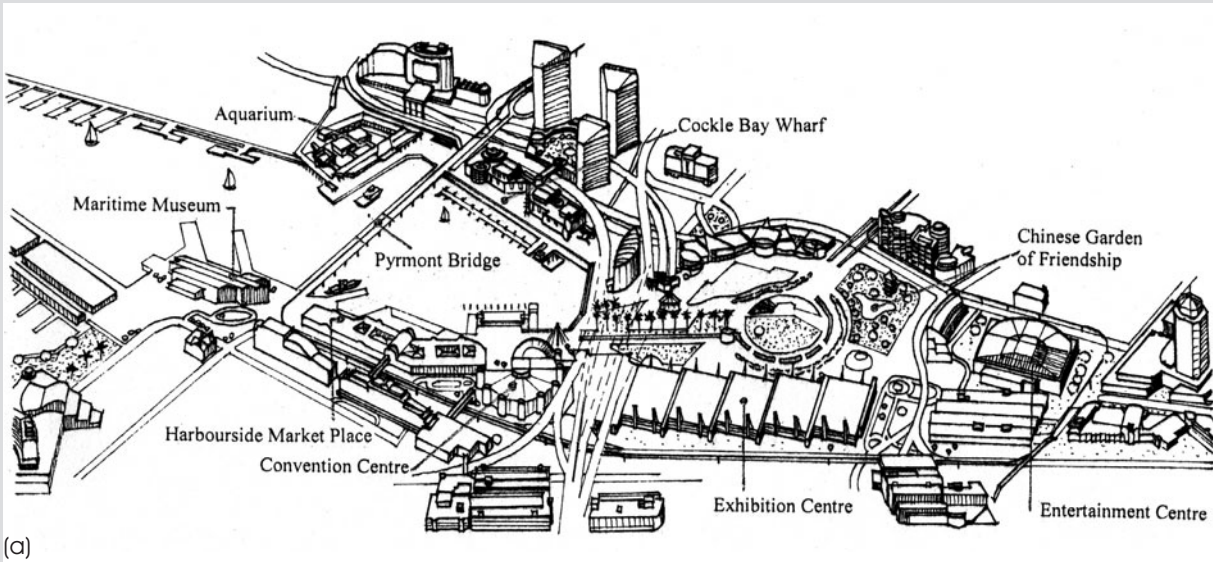


FIGURE 10.25 Darling Harbour, Sydney. (a) The layout in 2010 viewed from the west; (b) a general view with the marina in the foreground—the convention center now being replaced is on the left; (c) the proposed development with the new exhibition space and convention center in the middle and the new residential neighborhood on the left—a view from the east.

Source: (a) Drawing by Thanong Poonterakul, adapted by the author; (c) © Darling Harbour Live

extensively enlarged. Both these buildings were designed by Philip Cox.

By 2000 Darling Harbour included the Exhibition Centre, the Sydney Convention Centre (completed in 1999), the Harbourside Markets (designed by RTKL Associates, Inc. and Clarke Perry Blackmore), and, on the city side of the harbor, Cockle Bay Wharf (a restaurant and entertainment area, completed in 2001). A Panasonic IMAX Theatre, Palm Grove (a waterplay area), the Chinese Garden of Friendship, children's playgrounds, amphitheaters, water features, and parks were located to the south. The old Pyrmont Bridge was converted

to a pedestrian way but still opens for high-mast boats to pass under it.

Few guidelines shaped the development. In many ways the process followed a piecemeal ad hoc approach "rather than [being] a product design wherein everything is determined before implementation took place" due to the exigencies of time (Young 1988, 194). The landscape is used to coordinate the plan. The outdoor spaces provide the precinct with a sense of unity through the similarity of their surface materials, the use of linking elements such as linear water features, the unified design of streetlights, seating, rubbish bins, and the

vegetation. Tree species were selected for the microclimate conditions and planted to reinforce visual axes and provide shade.

The height of buildings within the harbor zone was restricted to four stories, and those immediately adjacent to it on the city side to fifteen. The height of those on the other side is supposed to be related to the height of the old wool stores. The height regulations allow for good light and views of the city's skylines. Three of the major buildings being the product of one architectural office also gave the development some visual unity.

The building of Darling Harbour originally occurred in two phases: the rushed development of the 1980s and the work after 1988. The first phase established the character of the scheme with the creation of the basic landscape, the Convention Centre, the Harbourside Markets, the Exhibition Space, and the waterfront. The second phase occurred between 1996 and 1998 with a burst of, primarily, private investments: Sega World, the Aquarium extension, the IMAX theatre, and Cockle Bay Wharf. Public investment continued with the extension of the Convention Centre and the building of an extensive children's playground.

A third phase of development is currently underway (Lendlease 2013). The convention center has been demolished and is being replaced by one capable of holding four concurrent events holding from 750 to 8,000 delegates, with a total exhibition space of 40,000 square meters (430,556 square feet). To the south the Entertainment Centre has been demolished to make way for a

new residential neighborhood with 1,400 apartments in tower blocks and accommodation for 1,000 students (the University of Technology, Sydney and the University of Sydney are nearby), and the enlarging and upgrading of Tumbalong Park. Terraced landscapes and an event deck will further "green" the development. The new neighborhood will have shops, cafés, and restaurants and a square at its center. Completed in 2015, an abandoned railway line is now a pedestrian boulevard linking Darling Harbour to Sydney's Central Station via the new neighborhood. A light rail system (developed by the Light Rail Consortium backed by the State Government) passes by Darling Harbour. Located along an abandoned rail track it links Sydney's Central Station to its inner western neighborhoods.

Darling Harbour possesses a mix of uses that attracts widely different people. Of the fourteen million annual visitors, 55 percent are Sydneysiders and the rest evenly split between international and interstate visitors. Private investment in Darling Harbour has outstripped public three to one over the last two decades. The project has spurred considerable development around it. Old warehouses have been converted to apartments; new commercial and hotel buildings are linked to the harbor. Sydney Casino is nearby. Waterfront housing was built to the north at King Street Wharf. Farther north is a major Hyper-Modernist development, Barangaroo, now under construction. Even more developments adjacent to it are in the planning stage.

Commentary

A wide variety of urban design projects have been guided by the procedures of all-of-a-piece urban design. Both public and private interests have initiated them. Increasingly they have involved close cooperation between the two sectors of the economy. Given an overall vision, the degree of control over the individual components of a conceptual design has varied considerably. Tight prescriptive building design guidelines were applied in places such as Celebration in Florida, Rector Place at Battery Park City, and to some extent in Modi-in in Israel with much looser ones in Darling Harbour, and largely performance ones at the Quartier Vauban.

A study drawing on considerable empirical evidence (from Garvin 1995; Punter and Carmona 1997; Punter 1999, 2003) developed a predictive model of the situation in which

urban design guidelines are implemented or not. It was developed and partially tested by Ahmad Soemardi (2005). The level of clarity in formulating, communicating, and administering the guidelines defines whether guidelines will enable the objectives of a scheme to be met or not (see also Punter 2007).

Table 10.2 categorizes the characteristics of guidelines by their level of clarity at each of the three phases of their use. Those projects that are high on all three dimensions are those that are implemented, while those that are low are unlikely to be implemented in accordance with the stated objectives of a project. Those that are a mixture of high, medium, and low levels of clarity will be partially carried out and will partially fall by the wayside. Much, however, depends on the strength of the design ideas, the distribution of power among the stakeholders involved, and the perceived necessity for coordinated action. Political pressures and governmental corruption can be intervening variables.

All the case studies presented in this chapter were a response to a perceived need for some level of coordinated action. In commenting on the Rauchstrasse scheme, Rob Krier wrote:

In order to achieve a coherent total image in an urban development plan of this size, the concept of the block must be clearly formulated in geometrical terms and should not embody exaggerated structural fantasies that represent only an individual artistic conception. For the sake of unity, each of the architects taking part must [exert] as much discipline as possible.

Krier 1988, 83

Many of the best-loved areas of cities in the world with extraordinarily high property values have a remarkable unity in design, but to many critics this search for unity today represents an old-fashioned idea in an era of individualism. Virginia Postrel suggests that “if you get the lots right, and the blocks right and the street right and the setback right, somebody can build a crummy building and the ensemble is still fine” (Postrel 2003, 58). I would add “if you get the nature of ground-floor uses right!”

The question comes back to the rights of individuals to pursue their own interests in democratic societies. In looking back at the turbulent history of his master plan (and implicitly the nature of all-of-a-piece urban design) and the evolving design of the World Trade Center site, Daniel Libeskind noted:

Although [the site design is] not literally what was in my original images, it shows a robustness and a new kind of idea about a master plan . . . It’s the reverse of the Potsdamer Platz in Berlin, which is just a bunch of architects following exactly what was on paper . . . the superficial has changed not the principles. . . This is the art of making a master plan rather than an 18th century plan that is obediently followed. We’re not living in Haussmann’s Paris. We have a pluralistic society . . . I’m not [even] the architect of [Freedom] Tower.

cited in Lubell 2004, 47

It has been suggested that instead of a “skin-deep” stylistic unity there should be a “critical reinterpretation” of the “underlying system” of unity in each building (Mitchell 2003). The trouble is that unless this connection is explained to observers, the unity is not seen; it is not obvious. There can, however, be a unity in chaos too. Creating a sense of unity through controlled chaos is more difficult than a sense of unity through similarity!

TABLE 10.2 A model describing the degree of implementation of urban design guidelines

Level of clarity	STEPS IN GUIDELINE DEVELOPMENT AND APPLICATION			Effectiveness	Example
	FORMULATION	COMMUNICATION	ADMINISTRATION		
High	Clear, operationally defined objectives and evaluation criteria based on empirical evidence	Written and illustrated guidelines that are publicly reviewed in meetings prior to acceptance	Single authority, legally empowered to enforce regulations, in control	Likely to be implemented and less battered by power relationships among stakeholders	Battery Park City
Medium	Objectives and evaluation criteria specified in general terms using words such as "appropriate"	Written and illustrated and placed on public display in exhibitions. Feedback in written form	A centralized agency or well-coordinated multiple agencies under single authority	Partially implemented but subject to the whims of political change	Lujiazui
Low	Advisory guidelines without operational definitions	Written and illustrated but not subject to any public review	Multiple agencies at the same time or in sequence	Loosely applied depending on architects' and developers' values	Darling Harbour
Source: Adapted from Soemardi (2005)					

References

- Alexander Cooper Associates (1979) *Battery Park City. Draft Summary Report and 1979 Master Plan*, New York: The authors, www.batteryparkcity.org/guidelines.htm, accessed May 20, 2010.
- Barnett, Jonathan (1987) In the public interest: design guidelines, *Architectural Record* 175 (8), 114–25.
- Breen, Ann and Dick Rigby (1996) *The New Water Fronts: A World Wide Success Story*, London: Thames and Hudson.
- Broadbent, Geoffrey (1990) *Emerging Concepts in Urban Space Design*, London: Van Nostrand Reinhold (International), 303–5.
- Bullivant, Lucy (2012a) Hafen City, in *Masterplanning Futures*, Abingdon: Routledge, 45–56.
- Bullivant, Lucy (2012b) Ørestad, Carlsburg, Loop City, Nordhavnen, in *Master Planning Futures*, Abingdon: Routledge, 27–44.
- Butenweiser, Ann L., Paul Willen, James S. Rossant, and Carol Willis (2002) *The Lower Manhattan Plan for Downtown New York*, New York: Princeton Architectural.
- Chammas, Camille (2010) La Défense Seine Arche: an emblematic CBD in the Paris Area, www.fccihk.com/files/dpt_image/5_committees/Infrastructure/Infra_seminar/Presentation%20cc8.pdf, accessed July 10, 2015.
- Collectif (2007) *Paris-La Défense: Métropole Européenne des Affaires*, Paris: La Moniteur.
- Cowan, Robert (2003) *Urban Design Guidance: Urban Design Frameworks, Development Briefs and Master Plans*, London: Thomas Telford.
- D'Arcy, Kevin (2012) *2nd City: Creating Canary Wharf*, London: Rajah.
- Delleske, Andreas (undated) An introduction to Vauban district, www.vauban.de/en/topics/history/276-an-introduction-to-vauban-district, accessed July 24, 2015.
- Denver Technological Center (undated), <https://denvertechcenter.wordpress.com/>, accessed July 20, 2015.
- Duany, Andres (2004) The Celebration controversies, www.webenet.com/celebration-duany.htm, accessed April 27, 2015.

- Edwards, Brian (1992) *London Docklands: Urban Design in an Era of Deregulation*, Oxford: Butterworth Architecture.
- Eriksen, Richard (2001) Some sights to make eyes weep, *Paris Kiosque* 8 (4), 605, www.paris.org/Kiosque/apr01/605slum.html, accessed July 15, 2004.
- Farrelly, Elizabeth (2015) One Central Park: Atelier Jean-Nouvel, *Architectural Record*, <http://archrecord.construction.com/projects/lighting/2015/1502-One-Central-Park-Ateliers-Jean-Nouvel>, accessed March 25, 2015.
- Foletta, Nicole (2011) Hammarby Sjöstad, Stockholm, Sweden, in Nicole Foletta and Simon Field (eds) *Europe's Vibrant Low Car(bon) Communities*, New York: Institute for Transportation and Development Policy, 30–46.
- Frantz, Douglas and Catherine Collins (2000) *Celebration, USA: Living in Disney's Brave New Town*, New York: Henry Holt.
- Garvin, Alexander (1995) *The American City: What Works. What Doesn't*, New York: McGraw Hill.
- Geddes, Patrick (1915) *Cities in Evolution: An Introduction to the Town Planning Movement and to the Study of Civics*, London: Williams and Norton.
- Goldberger, Paul (2005) *Up from Zero: Politics, Architecture and the Rebuilding of New York*, New York: Random House.
- Gordon, David L. A. (1997) *Battery Park City: Politics and Planning on the New York Waterfront*, London: Routledge and Gordon and Breach.
- Gordon, David L. A. (2010) The resurrection of Canary Wharf, *Planning Theory and Practice* 2 (2), 149–68.
- Grabar, Henry (2012) Why has Scandinavia's biggest development project abandoned its master plan? *The Atlantic CITYLAB* (August 30), www.citylab.com/design/2012/08/why-has-scandinavia-biggest-development-project-abandoned-its-master-plan/3120/, accessed July 15, 2015.
- Greenspan, Elizabeth (2013) *Battle for Ground Zero: Inside the Political Struggle to Rebuild the World Trade Center*, New York: Palgrave Macmillan.
- Greenspan, Elizabeth (2014) Daniel Libeskind's World Trade Center change of heart, *The New Yorker* (August 28), www.newyorker.com/business/currency/daniel-libeskind-world-trade-center-change-of-heart, accessed July 20, 2015.
- Grennan, Harvey (2010) Rouse Hill Town Centre one of the world's best, *Sydney Morning Herald* (October 19), www.smh.com.au/environment/rouse-hill-town-centre-one-of-worlds-best-2010-1018-16qxx.html, accessed July 15, 2015.
- Harding, Laura (2008) Rouse Hill Town Centre, *Architecture AU* (July 1), <http://architectureau.com/articles/rouse-hill-town-centre-1/>, accessed July 15, 2015.
- Horn, Christian (2014) La Défense: a unique business district, *Urbanplanet.info*, <http://urbanplanet.info/urbanism/la-defense-unique-business-district>, accessed January 5, 2015.
- Huang, L., Y. Liu, and F. Xu (2005) Research on the planning of Anting New Town of the Shanghai international automobile city, *Ideal Space* 6, 84–92.
- Ignatieva, Maria B. and Per Berg (2014) Hammerby Sjöstad: a new generation of sustainable urban eco-districts, www.thenatureofcities.com/2014/02/12/hammarby-sjostad-a-new-generation-of-sustainable-urban-eco-districts/, accessed July 16, 2015.
- Iverot, Sofie and Nils Brandt (2011) The development of a sustainable urban district in Hammerby Sjöstad, Stockholm, Sweden? *Environment, Development and Sustainability* 13 (6), 1043–64.
- Kleihues, Josef Paul (1987) Stadtvillen an der Rauchstrasse, in *Internationale Bauausstellung Berlin 1987: Projektübersicht*, Berlin: IBA, 30–3.
- Krier, Rob (1988) *Architectural Composition*, translated from the German by Romana Schneider and Gabrielle Vorreites, New York: Rizzoli.
- Laconte, Pierre (2009) *La Recherche de la Qualité Environnementale et Urbaine, Le Cas de Louvain-la-Neuve (Belgique)*, Lyon: Éditions du Certu.
- Lampugnani, Vittorio M. and Romana Schneider (1997) *An Urban Experiment in Central Berlin: Planning Potsdamer Platz*, Frankfurt am Main: Deutsches Architektur-Museum.
- Lang, Jon (2005a) Paternoster Square, in *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural, 248–52.
- Lang, Jon (2005b) Potsdamer Platz, in *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural, 259–64.
- Lang, Jon (2005c) Kuching Waterfront, in *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural, 102–5.
- Lang, Jon (2005d) The Citizen Centre, Shenzhen, in *Urban Design: A Typology of Procedures and Products illustrated with over 50 Case Studies*, Oxford: Architectural, 216–17.

- Lendlease Pty Ltd (2013) *Sydney International Convention, Exhibition Precinct Built Form and Public Realm Report for SSDA 1*, Sydney: The authors.
- Loerakker, Lea Olsson Jan (2013) The story behind failure: Copenhagen's business district Ørestad, www.failedarchitecture.com/the-story-behind-the-failure-copenhagens-business-district-orestad/, accessed July 12, 2015.
- Lubell, Sam (2004), Liebeskind's World Trade Center guidelines raise doubts, *Architectural Record* 192 (6), 47.
- McHarg, Ian (1969) *Design with Nature*, Garden City, NY: Natural History.
- Mitchell, William (2003) *Constructing complexity · nano scale · architectural scale · urban scale*, Sydney: Faculty of Architecture, Sydney University Press.
- Modi'in Maccabim-Re'ut (undated), www.modiin.muni.il/ModiinWebSite/GlobalFiles/010020100104120733.pdf, accessed 1 May 2015.
- Olds, Kris (1997) Globalizing Shanghai: the "Global Intelligence Corps" and the building of Pudong, *Cities* 14 (2), 109–23.
- Postrel, Virginia (2003) *The Substance of Style: How the Rise of Aesthetic Style is Remaking Commerce, Culture and Consciousness*, New York: HarperCollins.
- Punter, John (1999) *Design Guidelines in American Cities: A Review of Design Policies and Guidance in Five West Coast Cities*, Liverpool: Liverpool University Press.
- Punter, John (2003) From design advice to peer review: the role of the Urban Design Panel in Vancouver, *Journal of Urban Design* 8 (2): 113–35.
- Punter, John (2007) Developing urban design as public policy: best practice principles for design review and development management, *Journal of Urban Design* 12 (2), 167–202.
- Punter, John and Matthew Carmona (1997) *The Design Dimension of Planning: Theory, Content, and Best Practice for Design Policies*, London: E & FN Spon.
- Richards, Brian (2001) *Future Transport in Cities*, London: Spon Press.
- Ross, Andrew (1999) *The Celebration Chronicles: Life, Liberty and the Pursuit of Property Values in Disney's New Town*, New York: Ballantine.
- Russell, Francis P. (1994) Battery Park City: An American Dream of Urbanism, in Brenda Case Scheer and Wolfgang Preiser (eds) *Design Review: Challenging Urban Aesthetic Control*, New York: Chapman and Hall, 197–209.
- Rybczynski, Witold (2010) *Makeshift Metropolis: Ideas about Cities*, New York: Scribner, 190–8.
- Salomon, Dieter (2010) A model sustainable urban development project: The Quartier Vauban in Freiburg, in Federal Ministry of Transport, Building and Urban Affairs, Lütke Daldrup, and Peter Zlonicky (eds) *Large Scale Projects in Germany 1990–2010*, Berlin: Jovis, 154–9.
- Segal, Arlene (2010) Modi'in new town, Israel, *Urban Design Group Journal* 113, 9–11.
- Shepard, Wade (2015) *Ghost Cities of China*, London: Zed.
- Shirvani, Hamid (1985) *The Urban Design Process*, New York: Van Nostrand Reinhold.
- Soemardi, Ahmad Riad (2005) *Urban design, power relations and the public interest*, uncompleted doctoral dissertation, University of New South Wales, Sydney.
- Stephens, Suzanne, Ian Luna, and Ron Broadhurst (2004) *Imaging Ground Zero: the Official and Unofficial Proposals for the World Trade Center Site*, New York: Architectural Record.
- Sydney, City of (2014) Central Park, www.cityofsydney.nsw.gov.au/vision/major-developments/central-park, accessed July 18, 2015.
- Timmons, Heather (2003) Canary Wharf head plans bid, *International Herald Tribune* (November 24), 14.
- Urban Design Associates (1997) *The Celebration Pattern Book*, Los Angeles: The Disney Company, http://codesproject.asu.edu/sites/default/files/code_pdfs/Celebration_Pattern_Book2.pdf, accessed May 1, 2015.
- Urstadt, Charles J. with Gene Brown (2008) *Battery Park City: The Early Years*, New York: The author.
- Walter, Jörn (2010) Paths to a central urban quarter, in Federal Ministry of Transport, Building and Urban Affairs, Lütke Daldrup, and Peter Zlonicky (eds) *Large Scale Projects in Germany 1990–2010*, Berlin: Jovis, 42–7.
- Wang, An-de (ed.) (2000) *Shanghai Lujiazui Central Area Urban Design*, Shanghai: Architecture and Engineering.
- Watson, Ilene (2001) An introduction to design guidelines, *Planning Commissioners Journal* 41 (Winter), www.plannersweb.com/wfiles/w157.html, accessed April 25, 2015.
- Whithers, Iain (2014) Green light for Allies and Morrison's Wood Wharf master plan, *Building Design Online* (July 24), www.bdonline.co.uk/green-light-for-allies-and-morrison-s-wood-wharf-masterplan/5069899.article, accessed July 15, 2015.

- Wiblin, Sue, Corinne Mulley, and Stephen Ison (2012) Precinct wide travel plans—learning from Rouse Hill Town Centre, *Australasian Transport Research Forum 2012 Proceedings*, https://en.wikipedia.org/wiki/Rouse_Hill_Town_Centre#cite_ref-1, accessed March 23, 2016.
- World Architectural News* (2007) Gregotti selected for extension of Pudong financial district, October 2, www.worldarchitecturenews.com/project/2007/1465/gregotti-associati-international-spa/extension-of-financial-district-in-shanghai-pudong.html, accessed July 14, 2015.
- Worthington, Carl A. (1984) The Denver Technological Center: evolution of a pedestrian oriented community, *Ekistics* 51 (306), 260–6.
- Xifan Yang (2015) Management disaster: a German ghost town in the heart of China, *Spiegel on line International*, www.spiegel.de/international/world/management-disaster-a-german-ghost-town-in-the-heart-of-china-a-791392.html, accessed May 2, 2015.
- Xue, Charlie Q. L., Hailin Zhai, and Brian Mitchener (2011) Shaping Lujiazui: the formation and building of the CBD in Pudong, Shanghai, *Journal of Urban Design* 16 (2), 209–32.
- Young, Barry (1988) Darling Harbour: a new city precinct, in G. Peter Webber (ed.) *The Design of Sydney: Three Decades of Change in the City Centre*, Sydney: Law Book, 190–213.

11

Plug-in Urban Design

Plug-in urban design involves the strategic building of specific infrastructure components of a city to shape its three- and four-dimensional built character and the behavior settings it affords. Infrastructure refers to elements such as streets and the services that make a development both possible and pleasant, and certain building types (for example museums, parking garages, and schools) that are expected to increase investments in their surroundings (Attoe and Logan 1989; Imam 2012). Public toilets, a necessary amenity, may or may not (Mololeh and Nolen 2011).

Plug-in urban design can be, first, the design and construction of the infrastructure of a development site, whatever its scale, as an incentive for individual owner-builders or property developers to invest in new buildings. Second, it can be the plugging-in of new infrastructure elements into existing built-up areas in order to bind them into a unit and/or boost their amenity level and thus their competitive advantage over other areas. Today urban designers are concerned with the harnessing of digital and telecommunications technology to create more efficient and property investment-attracting “smart cities” (Department for Business Innovation & Skills 2013).

Infrastructure designs vary in extent from the regional scale to the city to the neighborhood and to the complex of buildings scale (Guy et al. 2001; Urban Land Institute 2009). Regional and urban planning concerns are beyond what one generally regards as urban design issues, although much highway design based on the efficiency of movement of vehicles has had a destructive effect on the neighborhoods and lives of inner city residents in many places around the world. This observation has led to a much more careful analysis of the impacts of new infrastructure components on their surroundings. In addition, ecologists, landscape architects, and regional planners are demanding that the infrastructure of cities includes natural corridors of vegetation to provide habitats for animals and birds, to decrease the heat-island effect, and to increase the bio-diversity of cities.

Urban design product types vary considerably in the extent of the infrastructure they need. The requirements for cemeteries—necropolises—differ from those of residential or commercial precincts to cities as a whole. In designing the everyday environments for the living, the question is: What range of products does plug-in urban design cover? At one end of the financial scale we have publicly funded sites-and-services programs that have the objective of providing the water supply, drainage, sewerage, latrines, and road systems of a development in order to provide low-income residents with an incentive to build or upgrade their residences (Turner 1976). Much suburban development for wealthier families is similar but much more generous (Southworth and Ben-Joseph 1997). At another level of complexity, we have the system of vertically segregated transportation links, walkways, and decks, as in La Défense in Paris (Figure 10.9b). Perhaps most important, in terms of this discussion is the idea of plugging-in.

Plugging-in as a Concept

In urban design, the plug-in concept has emerged from two major streams of thought. The first has been the down-to-earth use of the infrastructure of cities as the armature for unifying developments; the second is that associated with the Archigram group in the United Kingdom in the 1960s and 1970s (Cook et al. 1991; Crompton 1994). It is the former concern that is of interest here, but the latter is important because its ideas rather than its designs remain of consequence in the development of normative urban design generic solutions.

The Archigram group observed that many of us live in throwaway societies. Certainly all kinds of products, from tissue paper to automobiles to computers, are discarded with remarkable ease once their utility, or “use-by” date, is past. The group suggested that components of cities could be considered in the same manner. Precincts could be designed to be plugged into the existing framework of a city as needed and moved away to another location as needed.

The closest example to the Archigram idea is the serviced camp-ground. Vacationers drive up in their camper-vans for a stay and then move on to another location or return home. Trailer parks are similar except the trailers once plugged in never move. Temporary townships for pilgrims, such as the Kumbh Mela in India (Figure 11.1) are more about infrastructure design than anything else. The design of such settlements is not generally regarded as urban design. Emilio Ambasz’s design for the 1992 Seville World’s Fair recognized that once such fairs are over, the pavilions of exhibitors are “thrown away” so he designed it accordingly (see Figure 11.6).

Cities are indeed ever changing. Buildings and precincts are being demolished and rebuilt. Many cities in Asia and Latin America are going through rapid development to accommodate the high number of rural–urban migrants. Housing areas will continue to be built on a mammoth scale. Traditional residential precincts of single-family homes catering to the middle class will be built. Many suburbs around the world will be built



FIGURE 11.1 The Kumbh Mela township, Allahabad.

by squatters with whatever materials are at hand. Newcomers will simply plug their huts into the infrastructure available.

The three sets of case studies included here demonstrate a variety of plug-in urban design types. The first consists of examples of infrastructure design at the citywide level: (1) where the infrastructure has preceded and/or coincided with precinct building, and (2) where the infrastructure has been plugged into an existing world. The second set of case studies deals with infrastructure design at the precinct level. The third set deals with the plugging in of specific building types to act as catalysts for development. The example of schools as infrastructure elements to upgrade a precinct in Chattanooga, Tennessee is included as a note rather than a case study because it is yet to be fully studied.

Urban Links: Binding a City into a Unit

The design of the links between precincts of a city might be expected to fall outside the purview of urban design and be a regional and city planning or civil engineering endeavor. Much new town design, however, starts out by working out the infrastructure pattern as Le Corbusier did in promulgating his design for the restructuring of Antwerp in the 1930s (Le Corbusier 1960) and certainly it was the approach applied in the design of the post-Second World War British new towns.

Links can be highways and roads, heavy or light rail systems, and pedestrian and cycle ways. A large number of cities in the world had extensive light-rail (or tram/trolley) systems until the 1940s. Lobbying by motor organizations had many of them ripped up because they inconvenienced automobile drivers, although in many European and Asian cities they never disappeared. Philadelphia is an American city that retained its street-car system. There are about 400 such systems now operating in the world; approximately eighty have been introduced since 1975. Los Angeles and San Diego initiated their new systems in the 1980s. Strasbourg opened its in 1994. These new networks are restricted in their range but plans for extension are numerous (Taplin 2012). In addition, many older systems are being rebuilt to operate in a more luxurious and smooth-running fashion. Designers today are paying special attention to the landscaping of streets and public squares along the light-rail routes to ensure that they are aesthetically pleasing. Important though all these networks may be, roads and pedestrian paths remain the major structuring elements of urban form.

A Case where the Infrastructure Preceded the Development of a City

In all urban design projects much of the infrastructure is built prior to buildings being plugged into it. Roads, water reticulation and sewer systems, and street lighting are built first and parcels of land for individual building sold to property developers. For economic reasons the minimum amount of infrastructure elements required to get the construction of buildings going is built and steadily extended as development demands continue. Historically many suburban developments—the railroad suburbs—were built around new heavy rail stations but in the late twentieth century few mass transit systems were built prior to or in conjunction with development. A case study of citywide infrastructures design with strong urban design overtones is included here. The Singapore Mass Rapid Transit (MRT) system was built in conjunction with the development of the city's new towns. It serves well as an example of how infrastructure and urban design projects can go hand in hand. It also develops the story of urban designing in Singapore presented in Chapter 6.

CASE STUDY

The MRT system, Singapore (1967+)

An outstanding rapid transit system integrated with new town development

The idea of the MRT in Singapore goes back to the very earliest days of the planning of the island state after independence. In 1962 Emile E. Lorange, in a study sponsored by the United Nations, made broad recommendations for an action plan for the highly crowded central area of Singapore but he said it should be seen within a larger regional context. The following year a team consisting of Otto Koenigsberger, Charles Abrams, and Susume Kobe stressed the need for a unified approach to the location of jobs and housing. Further support came from a transportation study, also sponsored by the United Nations, conducted by Britton Harris and Jack Mitchell of the University of Pennsylvania, which recommended that Singapore have a clear transportation structure plan in place before major development was undertaken. The study also doubted that a road-based system would be able to handle all the traffic that would be moving along the central circulation route. This series of recommendations resulted in the initiation of a United Nations Urban Renewal and Development Project.

The project's goals were to: (1) establish a long-range physical plan for the republic, including a transportation plan; (2) recommend policies and schemes for the central area; (3) recommend the type of mass transport system to be used; (4) assist in the preparation of specific projects; and (5) develop a fully operational agency that could develop the plan further and implement it. Crooks, Mitchell, Peacock and Stewart, based in Sydney, conducted the study between 1967 and 1971, when the population of Singapore was 2.07 million people and was predicted (with reasonable accuracy) to be 4 million in 2000 (Crooks, Michell, Peacock and Stewart 1971). The long-range proposal for Singapore was presented in a simple but powerful concept plan (see Figure 6.1).

Queenstown (1965), the first of the new towns, had already been completed and the second Toa Payoh was completed in the year of the publication of the concept plan. It was selected from a

number of possibilities based on the need for an efficient transportation system as described in the case study on planning in Singapore presented in Chapter 6. It consisted of a loop MRT with seven major nodes/new towns, varying in size from 100,000 to 400,000 people, being plugged into it (Chew and Chua 1998). Accompanying the MRT would be an expressway system with graded interchanges and other major roads. It was also recommended that a restriction be placed on the number of cars entering the Central Business District. (The implemented Area Licensing Scheme that charges a fee for cars entering the district set a precedent for London).

It was not until 1981 that the Singapore government committed itself to building the MRT. Construction began in 1983 and it has been the largest construction project in Singapore ever since. The first 67 kilometers of the system with 42 stations opened step-by-step between November 1987 and July 1990 at a cost of S\$5 billion. A spur was built in 1996 to form a loop connecting Woodlands in the north to new towns and industrial areas in the southeast and southwest. The system now has a route length of 89.4 kilometers (55.6 miles) and has 51 stations (16 underground, 34 elevated, and one, Bishan, at ground level). The lines run underground in the central area (23.3 kilometers; 14.5 miles), above ground for 62.3 kilometers (38.7 miles), and at ground level for 3.8 kilometers (2.4 miles). The 20-km (12.5-mile), sixteen-station North East Line was completed in April 2003. It is predominantly an underground line linking the CBD (Harbour Front) to the Singapore Exposition Centre and Pungol. It was built at a cost of S\$4.6 billion. The total length of the MRT lines will be expanded to 500 kilometers (310 miles) in the future to keep pace with and shape the location of Singapore's growth.

As time has gone by, more and more attention has been paid to the comfort level of users of the system (Richmond 2008). The MRT is designed to



FIGURE 11.2 Kent Ridge MRT Station.

Source: Photograph by Su-Jan Yeo

be attractive in order to attract users. Special attention has been paid to the design of subways and stations. The goal has been to make the stations column free and have sufficient gates to handle rush hour pedestrian traffic with ease. Pedestrian networks giving as easy access as possible to the stations have been built. Raffles Place and Orchard Stations have extensive subterranean links connecting the stations to surrounding buildings. In 2001 the Ministry of National Development established new guidelines for stations to have convenient and comfortable underground links with shopping areas. In addition, local bus routes and (in the case of Chua Chu Kang, Sengkang, and Punggol) light-rail systems are tied into the MRT stations.

Changing concepts of the public interest have posed great challenges for designers. New demands range from those dealing with access for the handicapped to those of attaining prestige through the employment of high-style aesthetics. The stations on the North East Line have been designed to be barrier-free in order to give access to people in wheelchairs and have been provided with tactile guidance systems for the blind.

Travellers have been introduced to speed up pedestrian movement where underground links are lengthy. Art works by world-renowned artists are being added to the stations to provide a feeling of luxury. As Liisa Ecola (2004) noted:

Singapore's MRT is simply the *crème de la crème* of transit: high-tech, spacious, efficient, and spotlessly clean. If Americans knew that transit could be this good, we wouldn't put up with anything less.

The system is being expanded. The Circle Line, which opened in stages between 2009 and 2013, will be completed in 2025. 2030 is the completion date for extensions of the Downtown Line, which opened late in 2013. The North East Line extension is due for completion at the same time.

The catalytic effect of the MRT stations was both foreseen and exploited by planners and urban designers. The construction of stations, for instance, led to the surge of high-density, high-rise development in the CBD and on Orchard Road. The Jurong industrial area was not doing very well until workers had access to it via the MRT.

Development around the stations is now being intensified.

An environment of which one can be proud is seen as essential for transit systems to compete effectively with the pleasure of driving oneself about the city. While the MRT is a good example

of plug-in urban design, it can also be seen as an all-of-a-piece urban design or as a planning project depending on where the emphasis lies in the analysis. It is the necklace on which the new towns and the central district of Singapore have been strung.

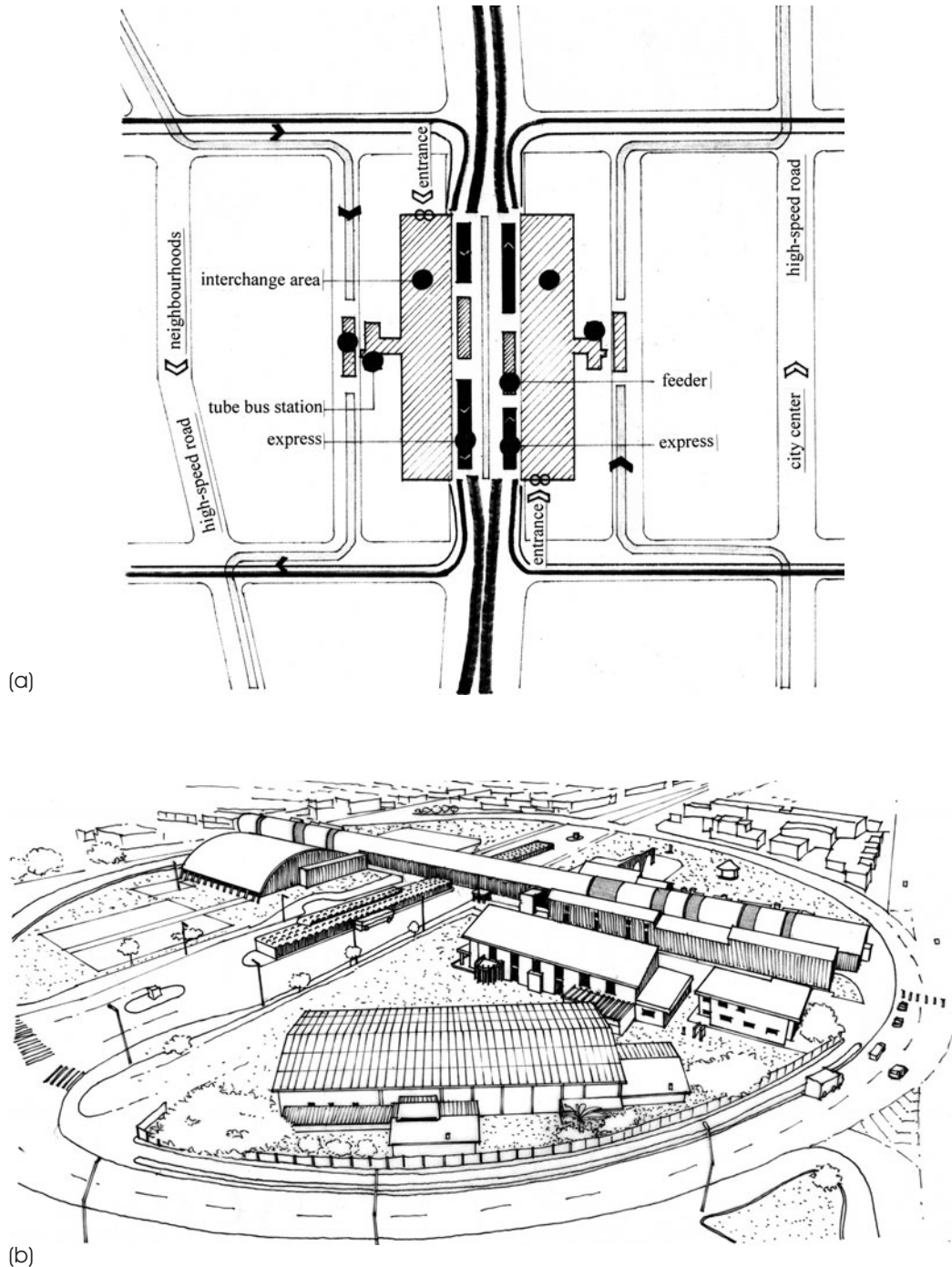


FIGURE 11.3
The transportation infrastructure of Curitiba. (a) A conceptual diagram of a transfer terminal; (b) a community center plugged into a stop. Source: Drawings by Thanong Poonteerakul

Cases where Transit Systems have been Plugged into Existing Cities

Subway systems have been put into place in response to potential demand, but also as a catalyst for local urban renewal projects in areas of a city undergoing transformation. The Jubilee Line extension in London is the case addressed here. The building of the line is not unique. Many extensive systems are being built around the world. Los Angeles' Metrorail started operation in 1990 and now has 80 stations on its lines. The system is being extended. About 360,000 people use it on a weekday. Delhi opened its Metro Rail in December 2002. It is planned to be a 241-kilometer system with 90 stations by 2021. It is being built to hold together the existing parts of a fragmented and rapidly growing city whose car ownership is reputedly the equivalent of the rest of India put together (to say nothing of the city's 47 other modes of road transportation, from buses to rickshaws to human-drawn carts). Bangkok has an elevated system running at the fifth floor level through the city. Curitiba is often regarded as the exemplar of planning for a system in an existing, rapidly growing, urban environment (Lang 2005d; Figure 11.3).

Curitiba received the Global Sustainable city award in 2010 for its integration of transportation and facilities planning. Its transportation system is both plugging into the existing city and a catalyst for the development of new nodes. The system is based on buses rather than rail transport; it functions in much the same manner but is much less expensive. It has its own right of way on major streets with stops that offer both easy access to the buses and shelter from inclement weather.

CASE STUDY

The Jubilee Line Extension, London, United Kingdom (1974–2000)

An underground rail link; a catalyst for urban revitalization

The Jubilee Line in London was extended both to enhance accessibility to existing areas of London and to spur new development. It sought to emulate the environmental quality of Singapore's MRT, the efficiency of the Hong Kong Mass Transit Rail (MTR) system, and improve on both of those systems' extensive new property developments adjacent to stations. The connection between Hong Kong and London is not surprising because the chairman of London Transport at the time, Sir Wilfred Newton, and the chief architect whom he brought on board, Roland Paoletti, were both involved in the planning and design of Hong Kong's MTR system (Saint 2013). Chew Tai Chong, who worked on Singapore's MRT system, was project manager on the Jubilee Line.

Like most such developments, the extension of the Jubilee Line was long in gestation and its conception difficult to date. It was first talked

about in 1949 but no action followed. By the early 1970s, the London Docklands became abandoned and much of East London's physical fabric was degenerating. Plans for extending the London transit network into the area had long been considered, but neither political nor financial support was sufficient for the idea to be furthered. The situation started to change with the formation of the London Docklands Joint Committee of the Five Boroughs into which the area fell, and the decision made in 1978 to build an underground line to the east from central London.

The new line would extend the existing Jubilee Line (completed in 1977) that ran from Stanmore in London's northwestern suburbs to Charing Cross in the heart of Westminster. A change of government, however, shelved the project until 1981 when the London Docklands Development Corporation (LDDC) was established and the need

for a transportation link to the Docklands became urgent. Lack of funding for a heavy-rail system led to the building of a light-rail line to the Docklands from the City. Completed in 1987, it has a daily capacity of 27,000 passengers (Figure 11.4).

To prevent traffic chaos, Canary Wharf badly needed access via a major mass transportation connection. The proposal for the Jubilee Line was supported politically by the British Prime Minister

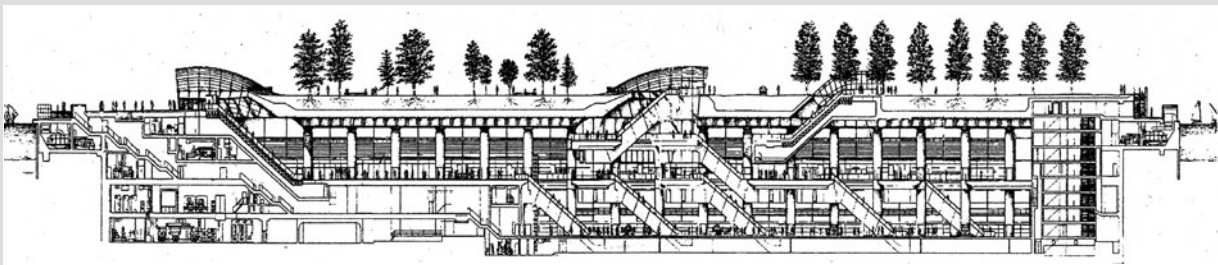
Margaret Thatcher, who promised to get the project funded. Olympia and York chipped in £400 million towards the cost of this infrastructure item. Government support was, however, too late to encourage companies to move to Canary Wharf and thus to save Olympia and York from bankruptcy (see the Canary Wharf case study in Chapter 10). It was not until 1996 that ground was broken for the scheme. The extension of the Jubilee Line



(a)



(b)



(c)



(d)



(e)

FIGURE 11.4 The Jubilee Line extension. (a) Canary Wharf Station; (b) an underground pedestrian link, Canary Wharf Station; (c) a longitudinal section through Canary Wharf Station; (d) interior, Westminster Station; (e) the development at Canada Water Station.

Source: (c) Wordsearch and the Royal Academy of Art (2001), courtesy of Foster and Partners, Architects

links two main railway stations (Waterloo and London Bridge) with depressed centers in east London. It also gives access to other urban regeneration projects (such as the Tate Modern art gallery near Southwark station). It terminates at Stratford, where it links with the Central Line of the Underground system and with British Rail lines.

Paoletti and his team completed the design of the line in eighteen months. Constructing it was a major engineering task because the new stations and line had to be plugged into the tunnels and concourses of existing stations. The line was sufficiently complete to be opened in late 1999 although work on it continued. Its programmed opening date of 1998 was highly optimistic as was its predicted budget (£2.5 billion). It cost £3.5 billion. It is comprised of twin tunnels and a dozen stations (six completely new). The tunnels are relatively deep (from 15 to 20 meters) because they run under existing buildings and also three times under the Thames (Pachini 2000; Powell 2000).

The design goal was to create an efficient system with good platform-to-ground connections and good links to other modes of transport. The stations would be architecturally distinctive (Wordsearch and the Royal Academy of Arts 2001). A different architectural team, most of them with high-tech aesthetic and engineering backgrounds, designed each station other than the stations at Waterloo and Canada Water which were designed by a team led by Paoletti (Saint 2013). Some details that visually unify the designs were specified: the floors of the concourses, the nature of the escalators, the glass doors, and the signage (Russell 2000).

What have been important are the stations, the way they link into neighborhoods, and their catalytic effect on their surroundings. The stations are varied in nature, not just aesthetically but in the way they relate to the ground level, to other

modes of transportation, and the way their surroundings have been handled. The largest of the stations is at Canary Wharf. It is 314 meters (1,030 feet) in length. Built through a cut-and-cover approach, it has a “cathedral-like” internal space (Russell 2000). The station plugs into the Canary Wharf development with the central tower buildings being directly linked into it.

All-of-a-piece urban design projects were established at stations such as Canada Water, West Ham, North Greenwich, and Southwark; the development at Wood Wharf is underway at the time of writing. The hope is that the designs at and around the stations by high-profile architects such as John McAslan, Chris Wilkerson, Norman Foster, and Eva Jiricna will spur further development. Canada Water has already seen considerable building around it (see Figure 11.4e).

In 2013 there were 105,000 workers at Canary Wharf; almost all are commuters. When Crossrail arrives in 2018 it has been predicted that this number will double. The catalytic effect of the investment in the public realm has been substantial. The £3.5 billion cost of the new stations has increased land value of the areas within 1,000 yards of each station by an estimated £13 billion. While this increment has a positive effect on the land taxes it also decreases the affordability of new housing (Riley 2001). The station at North Greenwich was located at a highly derelict location but it enabled the Millennium Dome to be built. Perhaps, Stratford has the greatest potential because of its connection to the new international station on the Channel tunnel and rail link. The station there is a multi-level structure that was a key arrival point for visitors to the 2012 London Olympics and Paralympics and for sporting events such as the 2015 Rugby World Cup matches. Overall the line binds into parts of London long neglected.

CASE STUDY

The Metrocable System, Medellín, Colombia (2004+)

A major public cable transit system; a catalyst for development

Medellín, Colombia's second largest city with a 2014 population of 2.44 million, is located in the Aburrá Valley in the Andes. In 1951 it had 358,189 inhabitants; by 1973 it had one million. Its growth during the 1950s spurred the city government and civic leaders to solicit a master plan from Modernist architects Paul Lester Wiener and José Luis Sert. As a consequence, the Medellín River through the city was canalized, the industrial precinct of Guayabal created, a city stadium built, and an administrative center created at Alpujarra. Unsuccessful attempts were made to stem the flow of rural–urban migrants flooding into the city. Today, the center of the city with its commercial, industrial, and wealthy and middle-class residential districts is located at the base of the valley. The lower-income populations and the severely disadvantaged live in informal developments and slums on the steep hillsides.

The hillside neighborhoods grow in a piecemeal manner. The streets are steep, tortuous, and largely unpaved. Pedestrian movement is uncomfortable and bicycles can only be ridden in a few areas. Walks to the nearest informal or public transport route in order to reach formal employment, education, and health service locations are lengthy and time consuming. Most residents of these informal settlements are thus isolated from opportunities for social mobility. Violence levels are high.

Under the leadership of Sergio Fajardo, mayor of the city, a new plan was produced in 2004. Its goal was to promote social equity. The state-owned Empresas Públicas de Medellín has invested its profits in the building of the city's public infrastructure, including some new squares and the refurbishment of others. A fundamental premise of the plan was that urban projects while transforming the built environment had also to promote social and cultural shifts in the population. The investment in public spaces in Medellín has raised the self-esteem of the residents of the city and, in particular, those who reside in its poorer neighborhoods and *barrios* (*comunas*). The armature of

this plan was the network of public spaces and infrastructure in the form of an integrated MTS. Traditional systems could not, however, serve the hillside informal neighborhoods. The Metrocable was the answer (Hidalgo and Velásquez 2015).

Metrocable is an electric motor-powered cable, bullwheel, gondola lift arrangement that links places on the hills with Medellín's bus network in the valley. The immediate antecedent of the system was the 1952 Caracas Aerial Tramway giving access to a luxury hotel, but examples of such systems can be traced back to the late nineteenth century in Gibraltar and even earlier to their use by the mining industry to move ore in mountainous regions. The skyway linking Singapore proper and Santosa Island opened in 1974, the Roosevelt Island Tramway in 1976, and the Mississippi Aerial River Transit in 1984. Metrocable appears to be the first major public transit system. Operated by Metro de Medellín, the first line was opened in 2004; by 2010 there were three lines.

The first Metrocable line is 2,072 meters (1.3 miles) in length and rises 399 meters (1,309 feet) above the valley floor. The gondolas travel at 16 kilometers/h (10 miles/h). The line has four stations, Acevedo, Andalucía, Popular, and Santo Domingo and can carry 3,000 people per hour in each direction. It is said to have cost US\$24 million. Public amenities such as community centers, squares, street lighting, offices to promote micro-enterprises, and schools have been plugged in adjacent to the stations. Each also has a family police center adjacent to it and the number of police patrols has been increased. The decisions about improving the vicinity of the stops were made with considerable public participation which, in turn, has strengthened the sense of community among the residents of the barrios.

The line cuts down the round trip of commuters from the hills to the valley from as much as 2 hours to 20 minutes. It has succeeded in giving easier access to formal jobs to residents of the barrios.

FIGURE 11.5

The Medellín Metrocable: a view towards a station.

Source: Courtesy of Metro de Medellín



In doing so it has made mobility a mechanism for achieving social equity, an objective of the 2014 plan. The lines, along with broader urban development projects, enabled Medellín to be selected as “City of the Year” in March 2013 by the *Wall Street Journal* and *Citi* magazine for the civic improvements made in the city over a twenty-year period.

While avoiding the trap of thinking deterministically about the impact of changes in the built environment on social behavior, the correlation between the improvement in the armature of the city and social indicators is impressive. Many social programs have also been implemented. The decline in homicide rates in those neighborhoods where interventions have taken place is as much as 66 percent (Cerdá et al. 2012). Daunting social problems still plague the city.

The success of systems such as Metrocable and the Portland Aerial Tram as a means of commuter transport has spawned other systems; proposals for yet more are in the works. The most similar are the configurations in Rio de Janeiro. The Emirates Air Line that transported many spectators to the London Olympic site in 2012 is another example of an implemented system although its economic viability is questionable. The proposal for the East River Skyway in New York, would, if implemented, link Manhattan with Brooklyn following a zigzag route. What makes Metrocable different is that it was conceived as a coordinated development of a transit system with amenities at its stops rather than simply a way of moving commuters.

Precinct-level Plug-in Urban Designs

Designing the infrastructure is a prerequisite for urban development. La Défense in Paris could be included here as an example of a precinct with a multi-layered infrastructure layout into which new commercial buildings have been plugged, but there the buildings and infrastructure were considered as a unit. The same principle applies to most World's Fairs although in their case everything is done in a great hurry. The infrastructure is built and the individual exhibitors then plug their buildings into it. The EXPO92 in Seville design proposed by Emilio Ambasz took the concept literally. Recognizing that exhibition pavilions are demolished/removed after the event, he suggested putting the pavilions on barges, plugging them into wharfs, and then towing them away when the expo was over (Ambasz 1998; Lang 2005a; Figure 11.6). The city authorities wanted something more expensive.

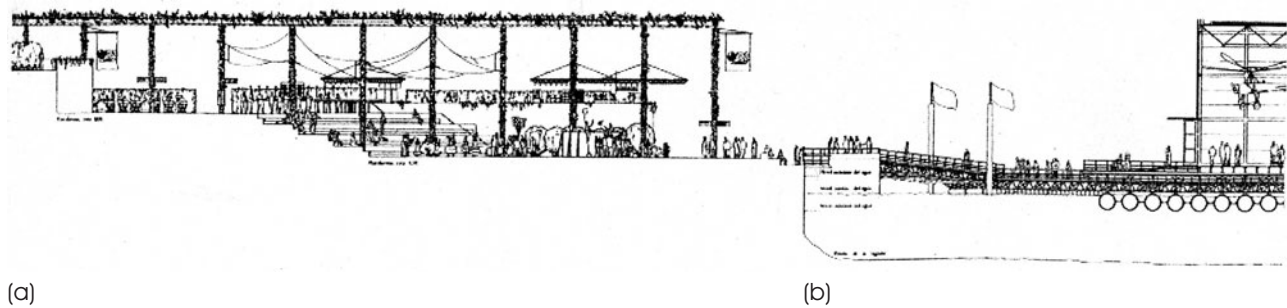


FIGURE 11.6 The Emilio Ambasz proposal for the 1992 Seville World's Fair. (a) The infrastructure; (b) an exhibition barge plugged into a wharf.

Source: Ambasz (1998), courtesy of Emilio Ambasz

On a much vaster scale, suburban housing developments throughout the world consist of the infrastructure (roads, sewers, water, and electricity supply) being built by a property developer, public or private, and houses being plugged into this armature. Many such developments are total urban designs but others are all-of-a-piece ones in which the designs of individual houses are heavily controlled by building design guidelines. In many developments the freedom of design allotted to individual owners is considerable. Each householder can build what they like, limited only by zoning regulations, building codes, and personal finances.

In the sites-and-services approach to the creation of housing for the very poor, a new precinct is provided with roads, streetlights, sewers, and a reticulated water system. Each site is provided with connections to the sewerage system, and a water faucet. In some cases, where the clients have greater resources, the site may be supplied with a latrine and a multi-purpose community room. The householders themselves build their houses, plugging them into the infrastructure provided. The approach was pioneered in India but has been widely applied in Africa and Latin America (Turner 1976; see also Habrakan 1999).

The sites-and-services approach has had mixed success. It works when the areas selected for development are close to jobs and it works when the projects are not heavily subsidized by the public sector. If a site is distant from jobs nobody wants to live there, and if heavily subsidized the cash-strapped poor are likely to sell their plots at market rates to higher-income groups in order to obtain cash-in-hand.

An atypical example of a site with minimal services is the Kumb Mela township in Allahabad (Figure 11.1); another is Black Rock City, Nevada. The latter consists of an

almost circular layout of streets around a central monument—the Man that is burnt each year—and nothing else (Chen 2009). It is the site of the annual week-long Burning Man festival that takes place in the Black Rock Desert in the northern part of Nevada each year. The festival coincides with the American Labor Day holiday. In 2014, the festival attracted 65,922 people. The participants bring all their requirements for food and accommodation with them and they are required to leave without a trace of their being there at the end of the festival. The site is completely deserted.

CASE STUDY

Arumbakkam, Madras (now Chennai), Tamil Nadu, India (1973+)

The first sites-and-services scheme for the poor

The slums in and around Indian cities are overcrowded, having poor drainage and little sanitation. Potable water is not easily available but has to be obtained from common pumps or taps. Built of thatch and other flammable materials, when a fire starts the entire area is soon engulfed in flames. Many people die and the whole social community is destroyed. The sites-and-service programs developed in the country were one attempt to resolve the housing problem of slum dwellers.

The idea of sites and services was that of Christopher Benninger, based on his 1966 thesis at Harvard University that was supervised by José Luis Sert and guided externally by John F. C. Turner. Benninger was asked by Kenneth Bohr (then in charge of urban projects in India for the

World Bank) to analyze a scheme designed to provide loans for low-income housing in Madras. The plan consisted of reinforced concrete-roofed duplex houses that, although small, would have been too expensive for slum dwellers to rent or purchase. An alternative was necessary (Benninger 2011).

To make a housing scheme that financially met the needs of low-income people meant that residents would have to build their own houses. All that could be provided them were a few basic requirements: potable water from a faucet, a one meter-wide paved approach path, storm drainage, and electric street lights. Initially the scheme had common toilets but these were replaced with individual “Indian W. C.s” that, unfortunately for cost



FIGURE 11.7
Arumbakkam: a self-built house photographed in 1979.

reasons, had to be placed in the front of the houses. Water was supplied to the large lots on an individual basis, but just one tap for two dwellings was provided for the smaller units (Figure 11.7).

Arumbakkam is one of five experimental schemes implemented in the 1970s as part of the Madras Urban Development Program. The site measures 730 meters (800 yards) by 425 meters (465 yards) and contains 2,034 served plots, 70 percent of which were reserved for the “economically weaker class.” The site is divided into a number of sub-areas. The residential plot sizes vary from 40 to 223 square meters.

How well has it worked? Once their basic needs are met, people are motivated to seek more advanced ends. The scheme met the basic requirements for shelter for low-income families who are from diverse backgrounds by caste, language, and

occupation. This diversity has meant that there is little enthusiasm for participation in block associations and a low sense of overall community. The men are happier with the district; they demand less of it than the women who spend more time at home. The women felt that plots are too small and that the drainage is inadequate during the monsoon season. One of the difficulties faced by the Madras Housing Board is maintaining the area. The residents report that broken pipes do not get repaired and that the sewerage drains get blocked. The lanes and by-lanes are kept very clean by residents but the larger roads become the places where refuse is dumped (Barker and Hyman 2002). Still, all-in-all, the scheme met its goal at the time it was created and has inspired many similar schemes throughout the world to be built on the same principles.

Plugging in the Infrastructure

Links designed to bind existing parts of a precinct into a unit take on several forms. The primary reasons for building them are to enhance accessibility and to provide an amenity to pedestrians. In Charles Center, Baltimore the skywalk system was designed to make the parts of the superblock more easily accessible from each other, but also to separate vehicular traffic from pedestrian on safety grounds and be a symbol of unity in an area of diverse buildings. Pedestrians still preferred to walk on the busy street sidewalks (Lang 2005b; Ciu et al. 2011).

An alternative type is the underground pedestrian network mentioned earlier in this chapter. That in Toronto connects 38 office buildings, 3 major hotels, and 5 subway stations. It houses 1,000 stores and restaurants. Montreal has its Golden Square Mile of protected walkways, reputedly the most extensive in the world, and Houston has 6 miles (9.7 kilometers) of underground tunnels. In Kansas City there is SubTropolis, an underground business complex of 4 million square feet (371,600 square meters) with an employee population of 1,300. Located in old mines it has wide, paved streets that are completely dry and brilliantly illuminated (Clark 2005). Many cities have extensive subterranean walkways in their centers. In Sydney these link the underground stations of its suburban railway system to basement shopping areas in adjacent blocks. The walkways themselves are lined with shops and lead to major destinations. They are well used.

Cheonggyecheon in Seoul is a very different example of an infrastructure element (Figure 11.8). The demolition of a deteriorating elevated highway and the restoration of a river between 2003 and 2005 has not only reduced the temperature in the surrounding areas by as much 2.6°C during the summer, but has been a significant catalyst for gentrification and development along its 10.9-kilometer (7-mile) length. The linear park so created introduced nature into the city, but this achievement is regarded as a symbolic



FIGURE 11.8
Cheonggyecheon.

gesture rather than an eco-friendly urban design. The Cheonggyecheon River had largely dried up and the restoration involves pumping water into it from the Han River. The park today is a major attraction in Seoul.

The two case studies included here differ in nature. The first is below street level but open to the sky; the second is at the second floor level and is enclosed. The first was implemented simply to make a city center a more attractive place in itself and as a catalyst for property development in a somewhat analogous way to Cheonggyecheon, although it was created much earlier. The second was designed to segregate pedestrians and vehicular traffic and to provide a comfortable passage from building to building in the harsh Minnesota winter.

CASE STUDY

Paseo del Rio, San Antonio, Texas, United States of America (1939–41, 1962, 2010+)

A plugged-in and plugged-into riverside walkway

The San Antonio River in the downtown area of San Antonio has paved walks along its banks. The design and implementation of these walkways, known as Paseo del Rio, or River Walk, is a pioneering example of a consciously designed riverfront park integrated with the buildings around it. The project is also an example of the effect that an individual with an idea can have on a city.

In 1984 it received a Distinguished Achievement Award in the American Institute of Architects Honors Program.

In the city center the river runs a level below the street grade. In the 1920s its banks were stabilized. In 1929 it was proposed to pave it over as a flood prevention measure and to make it a sewer, but this idea was not taken seriously. Robert

Hugman, a local architect, instead proposed the building of walkways along its banks. He was joined by groups such as the San Antonio Real Estate Board, the San Antonio Advertising Club, and the local chapter of the Daughters of the American Revolution in lobbying business and civic leaders to develop the project. A number of property owners along the river agreed to pay \$2.50/foot of river frontage into a fund to finance improvements but the City Commissioners refused to move ahead with them. It was not until 1938, with support from the Works Projects Administration (WPA), that funds became available to implement the scheme. When upstream engineering projects to control the flow of water in the river were completed, the implementation of the proposed improvements along the river began.

Hugman was appointed project architect and Robert Turk the superintendent of construction. A pedestrian esplanade running for almost two miles (three kilometers) along the river and stretching for 21 city blocks was constructed with the funding available. It was budgeted to cost about 1940 US\$300,000. It cost about \$430,000, funded partially by a city bond issue of \$75,000, a 1.5 cents/\$1000 assessed value property tax on local owners, and a WPA grant of \$335,000. The completed development consisted of the walkways, 31 stairways leading down to them from 21 bridges, and 11,000 trees. To unify the project visually, Hugman used a local sand-colored stone throughout. Today, tall cypresses and dense foliage make for a tropical atmosphere.

In 1940, due to the major cost overruns, Hugman was dismissed as project architect and replaced by J. Fred Buenz and the WPA project was completed. The onset of the Second World War inhibited development and a lack of maintenance meant that, by the 1960s, the river had deteriorated and had established a reputation of being a hanging-out area for down-and-outs. Perceptions of its state sparked a series of redevelopment ideas. A San Antonio businessman, David Straus, initiated a campaign to enhance the economic state of the downtown area by restoring the river and redeveloping its surroundings. San Antonio's Tourist Attraction Committee proposed

a redevelopment plan drawn up by MARCO Engineering, but the plan was rejected as being trite. In 1962 the San Antonio River Walk Commission was established and charged with developing a new master plan.

The design, an award winner from *Progressive Architecture*, was created by a group under the leadership of Cyrus Wagner and sponsored by the American Institute of Architects. The improvements and redesign of the walkway acted as a catalyst for the building of hotels (eight in all), shops, and many restaurants along the river. It was also a selling point for San Antonio when developing the proposal for the 1968 HemisFair held under the auspices of the Bureau of International Exhibitions. The fair was, in turn, a catalyst for the redevelopment of River Walk to which it was linked (Fisher 2015; Figure 11.09).

The reclaiming of the river, as intended, reinvigorated San Antonio's central area (Black 1979). Some of the buildings that backed onto the river have been turned around to face it, but the backs of others have simply been tidied up and act as a reminder of the former status of the river (Zunker 1983). Other buildings changed their uses (for example, a college into a hotel). The plugged-in elements include the Hyatt Hotel, the Convention Center, and River Center (a shopping complex). The Paseo del Alamo, an extension to River Walk, was designed by Ford Powell and Carson with Boon Powell as chief designer. It links River Walk with the Alamo Plaza. The 17-foot (5-meter) height difference between the two is handled with a multi-level walkway and a series of descending plazas. A positive response to a user satisfaction study led to plans for the expansion of River Walk and a study by Skidmore Owings and Merrill was commissioned.

A third generation of development followed (Fisher 2015). A team led by Ted Flato, David Lake, John Blood, and Elizabeth Danze won a competition to design the International Center on the walk and another scheme, by architects Rick Archer, Tim Blonkvist, and Madison Smith, set out to link the historic Aztec Theater to River Walk. A plan by SWA for developing a 14-mile (22-kilometer) corridor along the river received a 2001 American Society of Landscape Architects Honor Award for



FIGURE 11.9 A late evening view of the Paseo del Rio, San Antonio in 2015.

Analysis and Planning. In 2002 Ford Powell and Carson were, once again, engaged to create further improvements completed in 2010. One design task is to make River Walk more accessible to people in wheelchairs.

Today there are sightseeing cruises on the river and it is the site of the San Antonio Fiesta Parade of floats. River Walk is almost always filled with partygoers, children, tourists, and locals. It has proven to be a major asset to the city. Nine million people a year visit it and it is estimated to contribute \$800 million to San Antonio's \$3 billion tourist industry each year.

Keeping River Walk in good condition is expensive. It requires constant maintenance. The City's Department of Parks and Recreation has an annual budget of \$4.25 million to maintain the walkway. The department puts an extraordinary number of new plants into the ground each year. The effort yields results. The design has become a precedent for other cities to follow. Closed-in rivers, abandoned rail tracks (as in New York's High Line Park), and a host of alleys can be turned into attractive assets for a city. Hugman deserves recognition for his foresight and persistence. Urban designers need both.

CASE STUDY

The Skywalk System, Minneapolis, Minnesota, United States of America (1959–2020?)

A plugged-in and plugged-into elevated pedestrian network

The Minneapolis skywalk system consists of pedestrian walkways that link the interiors of buildings in the office and retail core of the city at the second story level (Robertson 1994; Corbett et al. 2009). These spaces consist of shopping galleries and hotel and commercial building lobbies. It is an indoor, climatically controlled network of links and places. It is not a unique example but it is the most extensive of sixteen such networks in the United States and longer than the underground networks in Houston and Montreal.

The idea to build such a system is credited to a single person, Leslie Park, the president of a real estate company, Baker Properties. His goal was to have the city center compete effectively with suburban shopping malls with their vast temperature-controlled internal spaces. Initially Park received little support from the city administration but, in 1959, the Minneapolis City Planning Department commissioned him and an architect, Ed Baker, to develop a plan for such a system.

Park and Baker proposed a skyway scheme to link buildings on Nicollet Mall, Minneapolis' main street. It would enable people to move from building to building without going outside. They proposed escalators at the corners of each block at street level to provide easy access to the elevated walkways. To demonstrate the merit of the scheme, Park commissioned Baker to design Northstar Center, a mixed-use building. It was opened in 1959. The first link (1962) in what has become the Skyway System joined the Center to what was then the Northwestern National Bank building.

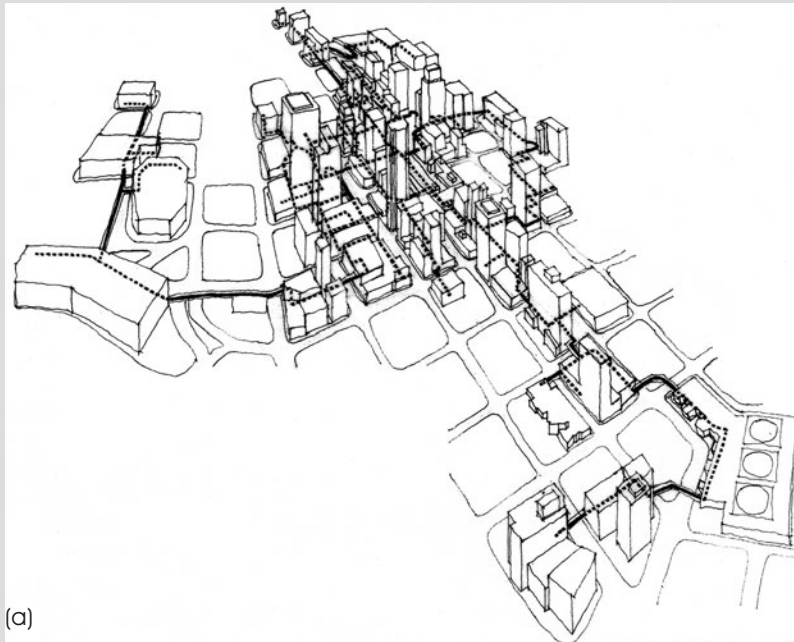
Link after link followed. By 1990 there were 28 bridges connecting 27 contiguous blocks with the IDS Crystal Court as its primary hub. By 2002 there were 5 miles (8 kilometers) of skyways and tunnels and 62 bridges. They joined 65 blocks linking 2,000 stores, plus coffee shops and kiosks, 34 restaurants, 1,500 apartment units, 4,000 hotel rooms, and 2 million square feet (190,000 square meters) of office space. The Skyway Advisory

Service, part of the municipal government's Downtown Council, was formed in the late 1970s. While it is only an advisory service it has developed considerable political clout over the years. It is thus able to insist on particular types of links even though private corporations whose buildings are joined pay for and own them.

Constructing the links is not easy. To build across a street, owners first must obtain an encroachment permit and post a \$500,000 bond to cover potential removal costs. The cost of a link varies from about \$550,000 to \$6.3 million. The former is for a standard link between two buildings and the latter is the cost of the skyway and tunnel combination linking Minneapolis City Hall with the United States Court House, the Grain Exchange, and the Jerry Haaf Memorial Ramp (Figure 11.10).

The design of the links must meet a number of prescriptive guidelines. They must be at least 12 feet (3.6 meters) wide and no wider than 27 feet (8.27 meters) and be horizontal in appearance even if their passageway slopes. Street clearance must be 17 feet (5.2 meters) and they must have glass walls to make orientation easier for the users of the system. The trade-off is that heat gains and losses are high. The design guidelines for the exterior appearance are highly permissive so the look of the bridges varies considerably. They are supposed to be "in harmony" with the buildings they link although the appearances of the buildings they join are often very different. The links themselves cannot be used for retail purposes. They are just links. They do block certain vistas for pedestrians in the street but they create views for those on the links.

While the skywalk is in the ownership of many private hands and thus hours of access vary, the network is generally open to the public from 6.30 a.m. to 10 p.m. on weekdays and for shorter periods on weekend days. It is very well patronized, especially during winter months when



(a)

FIGURE 11.10

The Minneapolis skyway system.
(a) The network in 2005; (b) the
Nicollet Mall transit way in 2005.

Source: (a) Drawing by Yin Yin



(b)

temperatures often plunge well below zero Celsius and even Fahrenheit. The busiest link is between the IDS Block and the Baker Block. Twenty-three thousand people use it each day. They are primarily middle-class and almost 60 percent of them are women.

Is the skyway a success? One hallmark of its success is the increase in the number of links over the years. They continue to be built. The U. S. Bank Stadium will be linked to the network via a new \$400-million-dollar mixed-use building of offices and apartments in Downtown East. The skyway is

certainly successful in terms of the comfort, ease, and sense of security that it provides pedestrians. It is successful in terms of second floor retail activity. It has, however, taken much business off the street level. Closed shops attest to that (Roper 2012).

The downtown area of the city has become more attractive to investors in terms of what it offers. It has enabled the city center to compete effectively with suburban sites for development, although the cost of building bridges has deterred some organizations from locating in the city.

Parking lots in fringe areas have had their patronage boosted and the usage of the city's bus system has increased because of the added convenience provided by the skyway links in moving around downtown. Some observers decry the way the system provides shops catering to the middle class and in doing so separates middle-class people and the poor, thus creating a dual downtown society. The Nicollet Mall transit way, originally designed by Lawrence Halprin, was about to undergo a major revamp at the time of writing.

Plugging in Buildings: Strategic Investments as Catalysts

National, state, and city administrations often invest in specific buildings as catalysts for further development (Attoe and Logan 1989). In France, for instance, it was a national policy to invest in museums in the heart of many provincial towns to revitalize their cores by bringing in visitors. Los Angeles and Philadelphia are among the cities in the United States that have followed suit. Glasgow in Scotland has been revitalized through the arts. At least 90 U.S. cities are following the same tack with Arts Districts (Vossman 2002). In Glendale, California the investment was in parking garages to spur retail development (Lang 2005c). Many universities are plugging in "magnet infrastructure" off campus to rejuvenate run-down neighborhoods. The University of California, Riverside, for instance, has developed a Museum of Photography and a School of Visual Arts to attract young people downtown. In Chattanooga it has been two schools.

It is not the architecture of the building that is the attraction, but what it offers in terms of services to the area around them. The Guggenheim Museum in Bilbao may be an exception. It was, however, also part of a much larger municipal investment strategy. Museums attract visitors who spend money. Schools fall into a different category. They are parts of the infrastructure of everyday life. Good schools are essential in attracting middle-income people to live nearby.

A NOTE

Schools, Chattanooga, Tennessee, United States of America (2000–2+)

Inner city schools as a catalyst for precinct revitalization

Many civic authorities and politicians around the world recognize the importance of the quality of the built environment in attracting private investment and middle-class residents into the hearts of cities. Chattanooga is among the American

cities that have come to this realization. The whole downtown riverfront has been rejuvenated, with \$120 million having been invested in its redevelopment by 2005. In 2013, \$100 million and \$40 million developments were approved. The

streets and streetscape have been improved both in response to and as a catalyst for the upgrading of older buildings and the development of new residential units. Private financial resources are being put into public facilities both as philanthropic gestures and as a catalyst for the creation of further private investment opportunities. Using schools as a catalyst for urban upgrading may be unusual but it is not unique.

Public schools are usually built and abandoned in response to population demands represented by the number of school-age children in a precinct. As downtown residential populations dwindled in United States cities and/or became restricted to single people and empty-nesters, so schools were closed down. A number of cities, recognizing that good schools attract families to live in specific districts, have built schools in downtown areas to attract middle-class families back to the city as part of the policy to create more diverse populations. In Chattanooga, Tennessee two elementary schools opened at the beginning of the 2002–3 academic year seventeen years after the last school had been closed.

The development of the schools is a product of aggressive policy formation, community support, civic leadership, and philanthropy combining to achieve a social goal. The improvement of the quality of the physical environment was a vital component of the scheme. The urban design process began with a decision in 2000 by the Department of Education of Hamilton County (population 308,000 people) to create a K-5 magnet school downtown. The objective was to provide a local school for about 400 students who were being bussed out of Chattanooga to suburban schools. Civic activists saw an opportunity for a more ambitious scheme.

The Planning and Design Studio in Chattanooga is part of the joint Chattanooga-Hamilton County Regional Planning Agency that both funds and staffs it. The studio also receives funds from private philanthropic organizations. The agency perceived that one school would cater only for the existing poor in the city and that to attract more housing into the downtown area one additional school, at least, was needed. The Department of Education did not have the financial resources to foot the

\$8 million cost of a second school. A number of civic and philanthropic organizations came to the department's aid. The River City Company, a non-profit organization committed to the revitalization of central Chattanooga, raised \$US4 million. Two local foundations, the Lyndhurst Foundation and the University of Tennessee at Chattanooga Foundation, provided an additional \$4 million. The latter donation is typical of the concern that a number of centrally located urban universities in the nation have for the settings around them. To attract good staff and good students the universities need to be located in pleasant settings with good community facilities. To further this end, the Board of Education opened the enrolment in the schools to both local children and the children of downtown workers, which immediately created a diversity of students (Kreyling 2002).

The most important concern in site selection was cost. One school, the Herman H. Battle Academy for Teaching and Learning, was built on city-owned property while the other school is located on property dedicated to the city by the University of Tennessee. Battle Academy is located in Southside, a previously blighted industrial zone that, as part of the city's 1997 plan, was designated a revitalization district. In its plan the city hoped to increase the residential component of the area by about 200 units. The Academy was built as a catalyst for attracting the additional residential population. So was the Tommie F. Brown Academy of Classical Studies.

The sites of both schools are small in comparison to the 13-acre (5-hectare) sites typical of suburban schools. Battle Academy is 3.3 acres (1.3 hectares) in size and Tommie F. Brown Academy is barely 2.5 acres (1 hectare), so the architects (TWA Architects at Battle Academy and Derthick Henley at Brown Academy) had to design buildings taller than the norm. Even so, at Battle Academy recesses have to be staggered, but the playground, although tiny, also acts as a neighborhood park after hours. Brown Academy is located adjacent to an abandoned railroad line that will be turned into a linear park; it will provide a playground for the school. The long-run catalytic effect of the schools remains to be seen, but casual observations are optimistic.

Commentary

In many ways, much of what has been discussed in this chapter involves city planning and project development practice. An argument can be made for the inclusion of all these examples in Chapter 6 on city planning, and certainly the Chattanooga schools in Chapter 8 on architecture as was Bilbao's Guggenheim Museum. It, however, involved educational policy decisions. The Paseo del Rio could be claimed as their type of work by landscape architects even though its designers have been primarily architects. All these cases, however, show that the continuous development and maintenance of cities through urban design schemes is essential for their success.

Explicit in the projects included in this set of case studies are social and/or economic objectives, but there is also a strong recognition of the importance of the physical environment. Social objectives are often difficult to meet without consideration of the nature of the milieu in which activities take place.

The goal of infrastructure projects is to have a catalytic effect on their surroundings—social and physical.

A catalyst is an element that is shaped by a city and then, in turn, shapes its context. Its purpose is the incremental, continuous regeneration of urban fabrics. The important point is that the catalyst is not a single end product but an element that impels and guides subsequent development.

(Attoe and Logan 1989, 43)

The case studies reinforce the observation that individual initiatives such as that of Robert Hugman in San Antonio and Leslie Park in Minneapolis are crucial in perceiving opportunities for improvement in the built environment of cities. The studies also show that infrastructure elements cover a broad array of product types. The quality of design is crucial to the success of urban design endeavors. Quality is obtained through the coordinated action of diverse groups of people and individuals acting cooperatively in a common cause.

References

- Ambasz, Emilio (ed.) (1998) *Emilio Ambasz: The Poetics of the Pragmatic, Architecture, Exhibit, Industrial and Graphic Design*, New York: Rizzoli.
- Attoe, Wayne and Donn Logan (1989) *American Urban Architecture: Catalysts in the Design of Cities*, Berkeley and Los Angeles: University of California Press.
- Barker, A. and B. Hyman (2002) Assessing residential health in low income sites and services housing schemes, Madras, India, in Rais Akhtar (ed.), *Urban Health in the Third World*, New Delhi: S. B. Nangia and A. P. H., 27–64.
- Benninger, Christopher (2011) Channels of access to shelter, in *Letters to a Young Architect*, New Delhi: India House, 85–9.
- Black, Sinclair (1979) San Antonio's linear paradise, *American Institute of Architects Journal* 68 (9), 30–9.
- Cerdá, Magdalena, Jeffrey D. Morenoff, Ben B. Hansen, Kimberly J. Tessari Hicks, Luis F. Duque, Alexandra Restrepo, and Ana V. Diez-Roux (2012) Reducing violence by transforming neighborhoods: a natural experiment in Medellín, Colombia, *American Journal of Epidemiology*, <http://aje.oxfordjournals.org/content/early/2012/04/01/aje.kwr428.full>, accessed August 1, 2015.
- Chen, Katherine (2009) *Enabling Creative Chaos: The Organization behind Burning Man Event*, Chicago: University of Chicago Press.
- Chew, Tai Chong and Chua Chong Keng (1998) Development of Singapore's Rapid Transit System, *Japan Railway and Transport Review* 18 (December), www.jrtr.net/jrtr18/pdf/f26_singapore.pdf, accessed July 31, 2015.

- Ciu, Jianqiang, Andrew Allan, and Dong Lin (2011) Influencing factors for developing underground pedestrian systems in cities, *Australasian Transport Research Forum 2011 Proceedings*, http://atrf.info/papers/2011/2011_Cui_Allan_Lin.pdf, accessed March 18, 2015.
- Clark, Patrick (2005) Massive business complex buried under Kansas City, www.bloomberg.com/news/features/2015-02-04/welcome-to-subtropolis-the-business-complex-buried-under-kansas-city, accessed November 12, 2015.
- Cook, Peter, Warren Chalk, Dennis Crompton, David Green, Ron Herron, and Mike Webb (1991) *Archigram*, Boston: Birkhäuser.
- Corbett, Michael J., Feng Xi, and David Levinson (2009) Evolution of the second story city: The Minneapolis skyway system, *Environment and Planning B: Planning and Design* 36, 711–24.
- Crompton, Dennis assisted by Pamela Johnston (1994) *A Guide to Archigram 1961–74*, London: Academy.
- Crooks, Michel, Peacock, Stewart, Pty Ltd (1971) Report. The urban renewal and development project, Singapore. Prepared for the United Nations Development Program Special Fund, Sydney: The authors.
- Department for Business Innovation & Skills (2013) *Smart Cities: Background Paper*, London: The authors, www.gov.uk/government/uploads/system/uploads/attachment_data/file/246019/bis-13-1209-smart-cities-background-paper-digital.pdf, accessed July 31, 2015.
- Ecola, Liisa (2004) Tales of a transit junkie, *Planning* 70 (9), 34–6.
- Fisher, Lewis (2015) *American Venice: The Epic Story of San Antonio's River*, San Antonio: Maverick Press.
- Guy, Simon, Simon Marvin, and Timothy Moss (eds) (2001) *Urban Infrastructure in Transition: Networks, Buildings, Plans*, London: Earthscan.
- Habrakan, N. John (1999) *Supports: An Alternative to Mass Housing* (Second edition), Gateshead: Urban International Press.
- Hidalgo, Dario and Juan Miguel Velásquez (2015) Mobility solutions for marginalized cities, *The City Fix* (January 27), <http://thecityfix.com/blog/aerial-cable-cars-mobility-solutions-marginalized-communities-equity-dario-hidalgo-juan-miguel-velasquez/> accessed August 1, 2015.
- Imam, Sahar (2012) *Buildings as Catalysts in Community Development: Monitoring, Evaluating and Enhancing the Interrelationship between Building Settings of Value and Urban Communities*, Saarbrücken: Lambert Academic.
- Kreyling, Christine (2002) New Schools for downtown Chattanooga, *Planning* 68 (7), 32–3.
- Lang, Jon (2005a) Expo '92 Seville, in *Urban Design: A Typology of Procedures and Products Illustrated with Over 50 Case Studies*, Oxford: Architectural, 341–4.
- Lang, Jon (2005b) Charles Center, Baltimore, in *Urban Design: A Typology of Procedures and Products Illustrated with over 50 Case Studies*, Oxford: Architectural, 271–6.
- Lang, Jon (2005c) Central Glendale, in *Urban Design: A Typology of Procedures and Products Illustrated with over 50 Case Studies*, Oxford: Architectural, 271–82.
- Lang, Jon (2005d) Curitiba, in *Urban Design: A Typology of Procedures and Products Illustrated with over 50 Case Studies*, Oxford: Architectural, 325–9.
- Le Corbusier (1960) *My Work*, translated from the French by James Palmer, London: Architectural.
- Mololeh, Harvey and Loren Nolen (2011) *Toilet: Public Restrooms and the Politics of Sharing*, New York: New York University Press.
- Pachini, Luca (2000) The Jubilee Line extension project, *Casabella* 64 (678), 64–83.
- Powell, Kenneth (2000) *The Jubilee Line Extension*, London: Laurence King.
- Richmond, Jonathan E. D. (2008) Transporting Singapore: the air-conditioned nation, *Transport Reviews* 28 (3), 357–90, <http://the-tech.mit.edu/~richmond/publications/aircon.pdf>, accessed July 31, 2015.
- Riley, Don (2001) *Taken for a Ride*, London: Centre for Land Policy.
- Robertson, Kent A. (1994) *Pedestrian Malls and Skywalks: Traffic Segregation Strategies in American Downtowns*, Aldershot: Avebury.
- Roper, Eric (2012) Maze of skyways: a dead end? *Star Tribune* (January 22), www.startribune.com/maze-of-minneapolis-skyways-a-dead-end/137828733/, accessed October 16, 2015.
- Russell, James S. (2000) Engineering civility: transit stations, *Architectural Record* 188 (3), 129–33.
- Saint, Andrew (2013) Roland Paoletti obituary, *The Guardian* (December 16), www.theguardian.com/artanddesign/2013/dec/15/roland-paoletti, accessed April 26, 2016.
- Southworth, Michael and Eran Ben-Joseph (1997) *Streets and the Shaping of Towns and Cities*, New York: McGraw-Hill.

- Taplin, Michael (2012) A world of trams and urban transit, www.lrta.org/world/worldind.html, accessed April 12, 2016.
- Turner, John F. C. (1976) *Housing by People: Towards Autonomy in Building Environments*, London: Marion Boyars.
- Urban Land Institute (2009) *Infrastructure: A Global Perspective*, Washington, DC: The authors.
- Vossman, Laura (2002) How many artists does it take to make a downtown? *Planning* 68 (6), 20–3.
- Wordsearch and the Royal Academy of Arts (2001) *New Connections, New Architecture, New Urban Environments and the London Jubilee Line Extension*, London: Royal Academy of Arts.
- Zunker, Vernon G. (1983) *A Dream Come True: Robert Hugman and San Antonio's River Walk*, Seguin, TX: The author.

12

Piece-by-piece Urban Design

Piece-by-piece urban design is one method of maintaining or improving the quality of the precincts of cities and towns. Unlike all-of-a-piece urban design, it does not begin with a specific concept plan showing the desired three-dimensional end state of a precinct but rather it begins with a generalized idea of what a precinct should be like. It is concerned with the policies, incentives, and controls that are required to achieve that end.

Planning Districts and Urban Design

A district is a precinct that is characterized by a similar texture of buildings in terms of their massing and materials and/or a particular set of activities. Most cities have a clear central business district; many have shopping, entertainment, and industrial areas. Some have areas dominated by ethnic minorities; consider all the cities around the world that have Chinatowns. On a smaller scale many have, for instance, a jewelers' row. The mix of these elements gives a city its character. In many cities changing land values due to technological or social change threaten the existence of such areas that are deemed to add a quality to a city's character. Piece-by-piece urban design addresses such concerns at the policy level (Barnett 1974, 2003; Punter 2007).

Piece-by-piece urban design differs most notably from mainstream city planning in the way it uses zoning codes at the precinct level. Whereas zoning controls are generally used to protect people from the negative effects of particular land and building uses, in piece-by-piece urban design they are used to encourage the erection of particular building types and other facilities that would enhance the qualities of a particular precinct. The precincts are designated *special planning districts*. Incentives are drawn up for private property developers to build the sought-after buildings or facilities not in any specific location but somewhere within the district. In addition to relaxing zoning controls, the incentives may include mechanisms such as tax increment financing and the transfer of development rights. As it involves neither the design of specific buildings on specific sites nor the design of specific elements of the public realm, many people would not regard such an activity as urban design but rather as some aspect of city planning.

All four case studies presented in this chapter are of special districts. The first is the internationally known example of the Theater District in New York and the second the very different case of Little India in Singapore. In common they deal with maintaining the character of an area. The special planning districts in New York were first established when it was feared that the character of some precincts would change as the result of investment pressures and that these changes were not in the public interest. It was expected that if unchecked, these changes would result in a significant loss of what makes

New York “New York” (Barnett 1974). The second case study is of urban design through the conservation of the physical fabric of a precinct. It has achieved that end but it has also sustained, intentionally or accidentally, an ethnic neighborhood.

The third case study is of one special type of planning district called a Business Improvement District (BID) in the United States; the British equivalent is a Town Center Management Program (Houstoun 2003; Morçöl et al. 2008). There are over 1,000 in North America and many elsewhere, all initiated and operated by property and/or business owners under the authorization of state and/or local governments. They are created to enhance the qualities of the locations where they conduct business. The objective is to retain or increase the competitive advantage that a BID may have over other districts. Legal mechanisms established at some governmental level enable businesses to tax themselves in order to: (1) improve the ambiance of their precincts, (2) run special events to attract people, and (3) maintain the area after improvements have been made. Much of the design work involves landscape architecture—improved street lighting, better paving, the inclusion of trees and other planting, and coordinated signage (Houstoun 2003). The goal is to improve the district piece-by-piece through direct action and indirectly by enhancing investment opportunities for businesses through an improved physical environment. To supporters, BIDs are important examples of self-governance and public-private partnerships. To detractors, they are an example of neoliberal economic initiatives that are driving the privatization of what should be government responsibilities. The case study included in this chapter is of the Philadelphia Center City Business Improvement District. The fourth case study is also of a CBD. It is of the laneways program in Melbourne, Australia. It has involved more direct governmental investment intervention than the other cases included here.

The last discussion in this chapter is on planning/urban design in Portland, Oregon, a city that has been at the forefront in using government powers allied with both public and private capital in achieving a city that is generally regarded as one of the finest in the United States for what it offers its residents and visitors. The chapter concludes with a commentary on urban design as public policy.

CASE STUDY

The Theater District, New York, United States of America (1967–74, 1982–2001, 2012)

Keeping Broadway “Broadway” in the face of real estate market challenges

In 1961, a comprehensive zoning revision in New York City introduced incentives to create specific elements of urban form and building uses. The goal was to have public plazas as part of any new development in the city. Having more open space within the dense environment was perceived to be in the public interest. Urban designers became policy creators rather than the creators of conceptual designs for projects and the mechanisms to implement them. They started working as “merchants of allowable building space”, trading

floor area in a development for the attainment of public interest ends (Barnett 1974). The distinction between urban design and standard physical (and, indeed, social and economic) planning became blurred.

The 1961 zoning regulation allowed up to 20 percent more floor area in a commercial or residential building than the zoning codes permitted if an approved plaza was included in its design. The popularity of the new regulation with property developers led to less than desirable out-

comes. Jerold Kayden estimates that only 20 percent of the large number of new plazas created in New York served a beneficial purpose (Kayden 2000). Buildings became isolated towers surrounded by unconnected and largely purposeless open space unrelated to street fronts or the movement of the sun through the sky. The continuity of the street as the basis for urban life got lost. The lessons learned were (1) that the design of elements of the public realm has to be conceived within a precinct-based vision, and (2) the way open spaces function in a city needs to be fully understood; they are not automatically a public good.

John Lindsay, mayor of New York from 1966 to 1974, established the Urban Design Group to initiate projects that would stop the “hemorrhaging” of the city’s life at a period when American cities were seen to be in crisis. The major products of the group’s efforts were a series of special districts in the city and the refocusing of the 1961 incentive zoning program. These districts included the Theater District, the Lincoln Square Special Zoning District, the Fifth Avenue District, the Greenwich Street Special District in Lower Manhattan, and the Lower Manhattan districts of Battery Park City and Manhattan Landing. The Theater District, established in 1967, was the first (Barnett 1982). At that time the major limitations of the 1961 incentive zoning program were yet to be clear (Marcus 1991).

The Theater District extended around Broadway from Sixth to Eighth Avenue east to west and 40th Street to 57th Street south to north in central Manhattan. Faced with the demand for commercial office space in the area, building legitimate theaters was neither an attractive financial investment for developers nor were existing theaters generating enough return on capital invested to warrant their retention. What, however, would New York be without Broadway and its theaters as an attraction? The Urban Design Group set about the task of devising mechanisms to retain the character of the area based on the assumption that it was in the public interest to do so.

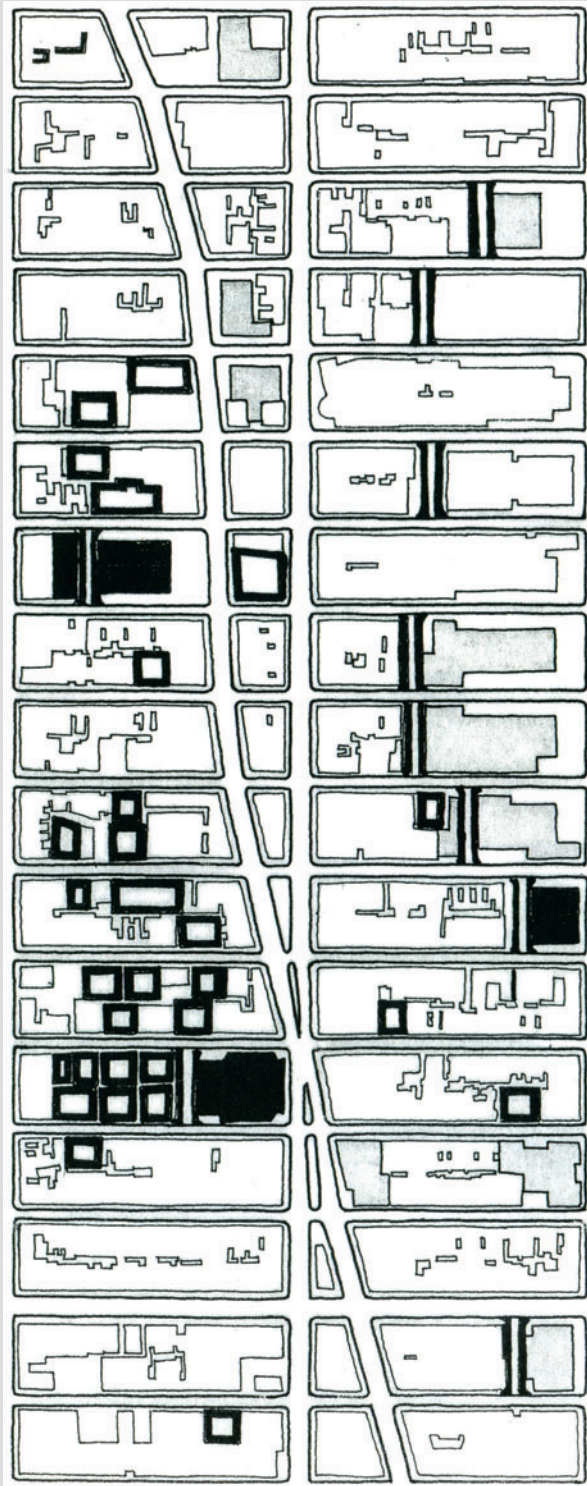
The group developed a modified incentive zoning code. It is a simple tool but establishing its legitimacy involved many debates. The legislation had to be passed by New York’s Planning

Commission and Board of Estimates. Rather than being a city-wide blanket policy, the incentives were tailor-made for each district. In the case of the Theater District the objective was to make an investment in a theater commercially viable for property developers. As in the 1961 legislation, a 20 percent floor area bonus was offered to a property developer in exchange for building a theater within a new building. In this way the arts would be indirectly subsidized by the private sector and pedestrians would have to tolerate extra shadowing of the street. The test case was the site of the Astor Hotel. Mayor Lindsay was directly involved in the negotiations with the property developer, Sam Minskoff and Sons. The success of the venture was largely due to his personal participation (Figure 12.1).

The new building, One Astor Plaza, is a 745-foot (227-meter) tower designed by Der Scott of Ely J. Kahn & Jacobs architects. The 1,621-seat Minskoff Theater, named for the developer of the building, is located on its third floor overlooking Times Square with an entrance on the street. Other new buildings with theaters in the district followed. By the mid-1970s four had been built. The existing theaters are shown in bold outline in Figure 12.1a; the new are in solid black. The plan also shows the mid-block crossings that resulted from another incentive program. The hope was that by 2000 another half dozen theaters would be built in the district but this did not happen. Today Broadway, nevertheless, remains a theater district.

Attempts to enhance the district included a 1982 effort to get the US Congress to pass a bill to establish the area as a National Historic Site. It would have required Federal funding to support the preservation of the precinct. The effort failed because the New York City administration of Mayor Ed Koch fought the designation. A more successful “Save the Theatres” campaign led to the formation of a Theater Subdistrict, which permitted the sale of air rights from theater sites to other sites in the area. A 2012 amendment to New York City Zoning Resolution added incentives for the rehabilitation of existing theaters.

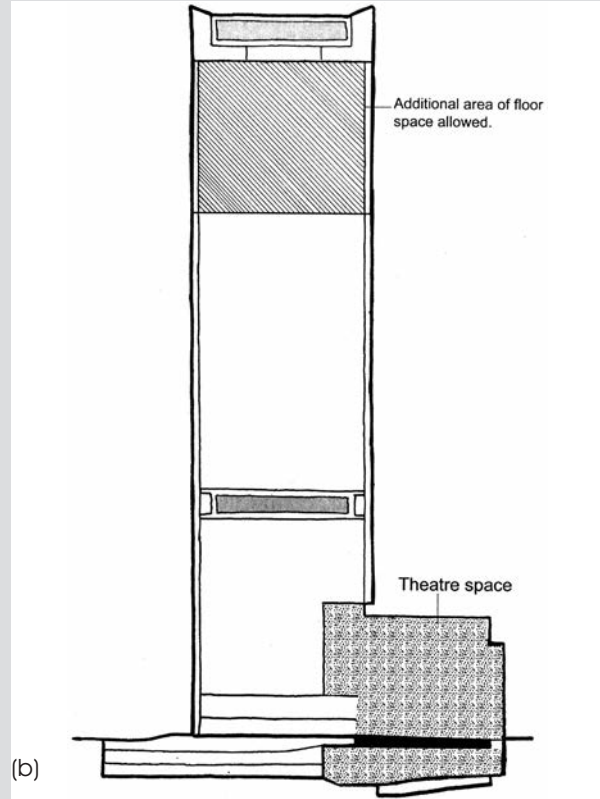
The work of the Urban Design Group in the Theater District led to other efforts. The Fifth Avenue District was one of them. The purpose



(a)

FIGURE 12.1 The Astor Plaza and Minskoff Theater, New York. (a) The district; (b) cross section; (c) One Astor Plaza.

Source: (a) and (b) Drawings adapted from Barnett (1974) by Susanti Widiastuti



(b)



(c)

there was to maintain its quality as one of the world's great shopping streets. The urban design goals were to have a lively around-the-clock environment and to protect the financial profitability of the large department stores located along Fifth Avenue. The location of these stores made the smaller shopfront stores economically viable. A continuous line of shops fronting a street with a minimum intrusion of plazas, and bank and office building entrances provides a fine shopping

and window-shopping environment. Unlike the 1961 zoning ordinance, the legislation for the Fifth Avenue District prohibited the provision of plaza space on the street. It also broke away from traditional one-use zoning classes to include mixed-use zoning that encouraged a combination of residential, office, and retail space within single buildings. Fifth Avenue is still Fifth Avenue, a world-renowned, if a little unkempt, shopping street.

CASE STUDY

Little India Conservation Area, Singapore (1991+)

A conservation plan that is simultaneously reinforcing the ethnic quality of a precinct

Unlike Chinatown and Kampong Glam, which were created in Singapore for Chinese and Muslim settlers by Stanford Raffles, the founder of modern Singapore, the area around Serangoon Road was not designated for Indians. The area's earlier history is reflected in the street names: Dunlop, Cuff, Dickson, and Clive after Europeans who clustered there. Bilillo Street is named after a cattle dealer and Desker for a butchery and slaughterhouse owner. Settler-by-settler from the mid-1880s onwards, however, the precinct became an Indian enclave.

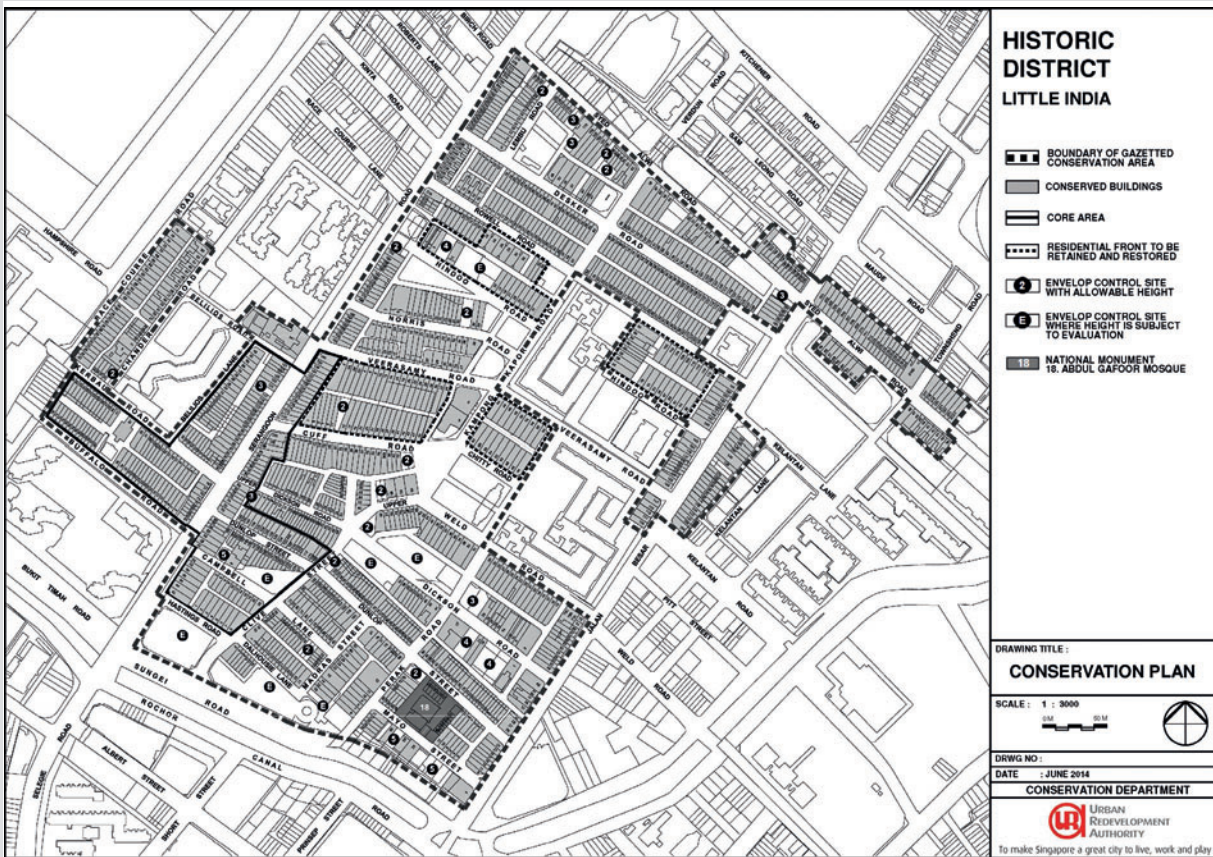
Two main streets, Serangoon Road and Jalan Besar run in a north-south direction through the precinct while the remainder of the street pattern is a tilted grid. Slums were cleared in the 1970s and Modernist public housing projects such as Tekka Centre, Rowell Court, and Kerbau Street were built to house those displaced. In 1989 the government of Singapore established an ethnic integration policy stating that the city/state's ethnic groups should be distributed evenly in its public housing developments according to the proportion of each ethnic group in Singapore. Questions have been asked about the efficacy of the policy in enhancing racial harmony and social mobility, but the policy is still deemed to be necessary.

Little India is different. It is a place where ethnic Tamils are concentrated residentially and commercially although ethnic Chinese and Eurasian

businesses also lie within the bounds of the precinct. "The activities, smells, sounds and colours testify to it being the commercial hub of Indians in Singapore" (Boey 1998, 136). People from all over Singapore shop, conduct business, and frequent the restaurants there. The stores that sell Indian spices, food, textiles, jewelry, and handicrafts are major drawcards. Little India is also a destination for international tourists.

The basic building type is the shophouse. The shophouses were built at different times and are thus in a variety of styles: Early Shophouse (1840–1900), Late Shophouse (1900–40), First Transitional and Art Deco (1930–60), and Second Transitional (late 1930s) styles. Most of the shophouses are built to the property line but some have forecourts. As blocks were developed at similar times the streets tend to have a unified character (Urban Redevelopment Authority 1995).

Under the current masterplan the area is zoned residential except for properties fronting the main roads, which are zoned for shopping. Open spaces, religious, and institutional uses are scattered within the area. A number of religious buildings are of local importance; the Hindu Lakshminarayan Temple and the Muslim Masjid Angullia, a structure showing both Hindu and Arabic influences, are of particular note. A national monument, the Abdul Gaffoor Mosque, is another structure of importance. Buddhist and Christian



(a)



(b)



(c)

FIGURE 12.2 Little India, Singapore. (a) The conservation area; (b) an aerial view looking southeast; (c) Serangoon Road.

Source: (a) Courtesy of the Urban Redevelopment Authority; (b) and (c) photographs by Su-Jan Yeo

places of worship show the diversity of faiths present in Little India (Urban Redevelopment Authority 1995).

In 1988, the Urban Redevelopment Authority (URA), the national planning and conservation authority of Singapore, drew prescriptive guidelines and manuals to shape the decisions that building owners and developers make in reno-

vating properties. Its goal was to retain the ambience of the area. For the buildings to be conserved: “the entire building shall be restored in accordance with conservation guidelines. All original exterior and façade elements shall be restored.” If the elements are missing, they have to be restored. Particular attention in the guidelines is paid to the ground floor use of the buildings. They “must be

retail or eating establishments.” Incompatible uses such as “Western fast-food restaurants and supermarkets’ show rooms, banks, nursing homes, and laundrettes are barred. Offices are only permitted on upper floors (Urban Redevelopment Authority 1991).

The restoration guidelines are detailed. They deal with roof profiles and materials, eave projections, copings, skylights, and jackroofs (which are only allowed if they comply with specific guidelines). Precise requirements guide the restoration of those shophouses with forecourts. Prescriptions are provided for how the street façades should be treated floor-by-floor. Some of the guidelines are suggestive but most are prescriptive in nature.

Much of the character of Little India, indeed of Singapore, for the pedestrian depends on how the five-footways—the sidewalks—are designed. “In order to retain the traditional character of the five-footway, the original height of the covered walkway, the design and size of columns shall be retained” (Urban Redevelopment Authority 1991). The traditional surface material of the areas of different shophouse styles must also be kept. If they are different, it is suggested that the traditional materials should be used for them. For instance,

the footways of Early Style shophouses have red-colored cement screed surfaces with gridded rope indentations and granite edge slabs, and those that are different should be changed to the traditional. Non-traditional materials such as ceramic tile or slate are “not allowed” (Urban Redevelopment Authority 1991).

What has been the impact? During the period 1991–2010 many shophouses were conserved; some were changed to “compatible uses.” One street, Race Course Road “has become a showcase of Indian cuisine while numerous arts groups are housed in conserved shophouses along Kerbau Road” (Boey 1998). Newer establishments such as boutiques and souvenir shops mingle with the old. Backpacker hostels and late night “eateries” add to Little India’s round-the-clock life. The Indian Heritage Centre displaying the contribution of the Indian Community to Singapore’s development opened in 2014.

For the URA the scheme is a success in achieving its goal of maintaining the physical fabric of a precinct. For locals the conservation of the precinct is seen as a way of ethnicizing the place and strengthening its identity as an ethnic-Indian cultural area (Khun 1998).

CASE STUDY

The Center City District, Philadelphia, Pennsylvania, United States of America (1990–2025)

A business improvement district (BID)

Central Philadelphia, known as Center City, did not suffer the very severe economic and physical degradation of many downtowns of cities in the United States during the 1960s, but its economy stagnated. It was at a competitive disadvantage to the Sunbelt cities and to its own suburbs. The municipal government relies heavily on taxing business profits and wages to support its activities. They were in decline. A number of organizations sought to halt the decline.

The Central Philadelphia Development Corporation (CPDC) was founded in 1956 to give

private sector leadership in shaping Center City. Today more than 100 major businesses and institutions support the CPDC (Central City Development Corporation undated). Despite a number of planning and urban design successes in the area, Center City, apart from some well-loved places and streets, was seen as dirty and poorly maintained and not a particularly attractive place to visit or in which to conduct business. National and international conglomerates were buying up locally owned businesses and not maintaining them well (Lehman 2000). The city government

was perceived to be unable either to cope with the situation or make improvements. What then to do about it?

The Center City District (CCD) was formed by city officials and the business community in 1990 with the power to levy taxes on property owners above that of the municipal government solely to make improvements in the district. The

general idea of local tax assessment independent of the city council has a long history in Philadelphia going back to the 1700s. An improvement district was instigated in 1762 to pave streets (Dilworth 2010). The CCD was, nevertheless, something new. According to the state law, if more than 30 percent of property owners objected it would not have been possible to form the district.

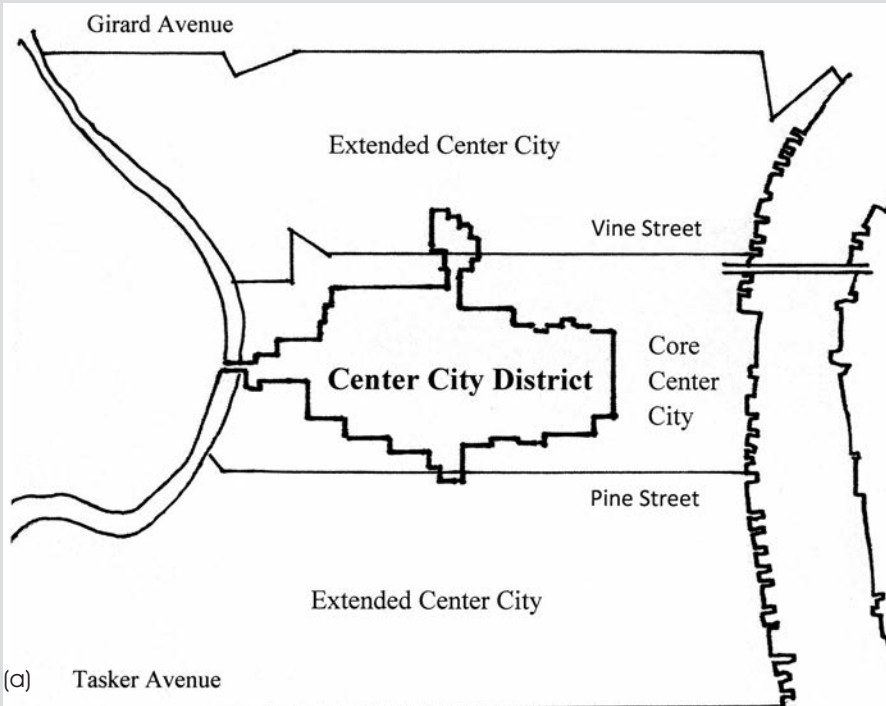


FIGURE 12.3

The Philadelphia Business Improvement District.

(a) The Center City District;
(b) Walnut Street in 2015.



The proportion in opposition did not reach this figure.

The formation of the CCD was supported by the City Council, who authorized its operation until 1995 by a 14 to 1 margin. This authorization was extended in 1994 until 2015 and in 2004 until 2025. Paul Levy, a one-time academic at the University of Pennsylvania, was elected to head it and he still does. He is responsible to a 23-person board whose members are drawn from property owners who represent the interests of businesses, labor unions, and civic and health care organizations. The board sets directions and has the power to chase the small proportion of property owners who are slow in paying their dues.

The CCD's budget (about \$14 million in 2004 from a levy on the property tax that is now about \$20 million) goes primarily for salaries of 18 uniformed sidewalk cleaners and 45 community representatives. In 1991 the board solicited proposals and received 75 responses from individuals and groups for carrying out the security and cleaning programs, including graffiti removal, deemed necessary to improve the quality of the area under its jurisdiction. The goal was "to increase the number of people on the streets—workers, residents, shoppers, tourists, conventioners, and people drawn for entertainment—to recreate 1948" when the center of Philadelphia was bustling with pedestrians and activities (Levy 2001, 190). The early success of their efforts gave the board confidence that its activities would be fruitful.

The board then undertook a street upgrading program. A 20-year \$21 million bond was issued to finance capital improvements to the streetscape. The objective was to establish a "new look" in order to raise the prestige level of the city. The new look was created through "pedestrian-scale" lighting standards, new street trees, new mounted maps and unified signage, the repaving of streets, making the sidewalks barrier-free for people in wheelchairs and by decluttering the sidewalks. The CCD board took over the maintenance of street trees from the city administration. It also helped to improve the local parks and squares in the district, many of which were languishing.

The concern for the architectural dimension of

the built environment of the city is restricted to creating advisory guidelines for how property owners might improve the façades of their buildings and convert disused or underused buildings to other, predominantly residential, uses. By owners following the guidelines the district would be improved piece-by-piece over time. Each improvement would act as a catalyst for further improvements initiated by the property owners themselves. The objective is for the property owners to benefit from increased income, the city to have an increased tax base, and for the inhabitants of and visitors to Philadelphia to have a district of which they are proud.

Today the CCD and the CPCD strive to make Center City Philadelphia a thriving 24-hour downtown and a great place to live, work, and have fun. Another allied group, the Central Philadelphia Transportation Management Association, works to make travel within Center City efficient, reliable, pleasant, and safe. How successful have all their efforts been? They could not prevent the failure of the internally facing Gallery shopping mall on Market Street, but that failure illustrates the importance of getting the urban design right in the first place (Saffron 2014).

According to surveys, most people are aware of the presence of the customer service representatives and street cleaners who not only provide services but add to the sense of security people feel when in Center City. The volume of pedestrians on the street has increased while serious crime rates tumbled 47 percent between 1995 and 2014. The number of residents in Center City has risen 16 percent since 2000. Retail occupancy has increased and the commercial space occupancy rate is a high 86.7 percent. A total of \$132 million has been spent on public realm improvements since 1997 and \$700 million in major developments, while \$7 billion is in the offing (Levy 2015). At the same time the average rent for commercial space is only \$27 per square foot; New York's is nearer \$75. The number of jobs remains stagnant. Despite this situation the overall perception is that the BID's work has been very successful. Center City Philadelphia is certainly a more pleasant place to be than in 1970. The number of outdoor restaurants is an indicator of that.

CASE STUDY

Laneways Programs, Melbourne, Victoria, Australia (1990–2016+)

Public policies to reuse obsolete laneways to enhance the liveliness of a city's CBD

In 1837 the center of Melbourne was laid out by surveyor Robert Huddle in a grid of square 660-foot (approximately 200-meter) blocks bounded by 99-foot (30-meter) main roads. These large blocks were subdivided by 33 foot-wide streets. The goal was to prevent the development of slums, but property owners soon subdivided the blocks with the insertion of over 200 laneways. Used for horse and cart deliveries, the lanes became dirty and were associated with antisocial behavior.

In the 1970s the center of Melbourne was in decline and the laneways neglected. The city administration initiated a series of policies to remedy the situation, including those designed to turn the laneways into active street-life links between the major streets. The 1992 Melbourne's Postcode 3000 program encouraged the develop-

ment of residential buildings in the CBD. It provided financial incentives and performance-based refunds on permit fees for developers. In 1990 the population in central Melbourne was under 2,000 people; today it is over 20,000.

The impetus for these efforts was a study undertaken by Jan Gehl, which ultimately resulted in the 1994 publication of *Places for People* (Melbourne, City of 1994). In 2001 the city established the Laneways Commissions Program that began with annual arts shows in the laneways and the city granting permission for the painting of murals on blank walls with established artists mentoring budding ones. Additional policies took the upgrading of the laneways a step forward.

The improvement of selected laneways as part of the City's capital works program, particularly



FIGURE 12.4 A revitalized laneway: Delgraves Lane, Melbourne.

those that enhanced pedestrian connectivity between the major streets, acted as a catalyst for private initiatives. This city program was enhanced by a policy to provide small business grants to attract young talent to locate street-front cafés and shops in the laneways (Melbourne, City of undated). The opening of cafés and restaurants on the laneways had been made possible in 1988 by the relaxing of laws prohibiting outdoor eating. The changes also allowed bars not serving food to trade. That made small bars financially feasible.

Artists took advantage of the low rents to locate businesses on the laneways and the city promoted formal gatherings such as music festivals in them. Vehicular traffic was strongly discouraged by differentiating the surfaces of the laneways from the larger streets. New buildings have to be built to the street-front line and have to have a significant proportion of active frontage. The result of the programs is impressive. The total length of improved laneways in Melbourne's CBD increased from 300 meters to over 3 kilometers between 1994 and 2015 (Oberklaid 2015; Figure 12.4).

A number of factors contribute to the successful upgrading of a laneway (Ferreter et al. 2008). First of all, a critical mass of potential patrons of eating establishments and shops exists. Over 800,000 people come into central Melbourne each day. A laneway itself also has to provide easy pedestrian access from one street to another; its layout has to structurally afford building backs/fronts to being opened up for shops and cafés. A laneway itself needs to have a visually interesting character and the views out of it need to hold a person's attention.

Melbourne's laneways are now widely known for their art displays and galleries, boutique shops, small cafés, and difficult-to-find bars. They are a major tourist attraction. The effort to create them was partly a plug-in urban design with the strategic upgrading of certain lanes and the pedestrianization of others, but their transformation is largely the result of policies that encouraged private sector individuals to reinvigorate semi-abandoned laneways.

A NOTE

Portland, Oregon's Public Policies and Public-Private Partnerships (1993+)

The city of Portland (population about 600,000) has been at the forefront of American cities in using public policies to achieve urban improvements over the past three decades (Adams 2013). Even earlier, in 1904, a plan by the Olmsted brothers (John and Frederick, Jr, the sons of Frederick Law Olmsted) provided the basis for the creation of Portland's neighborhood and regional parks, boulevards, and pedestrian ways. The plan was completed when the City Beautiful paradigm held sway among city planners and urban designers (Abbott 2011). Today the planning and urban design ideas shaping Portland are more in step with many of the precepts of Neo-traditional approaches to urban design. Perhaps the city's street pattern was an influence on New Urbanist ideas?

Planning and urban design in Portland have been closely intertwined in a way unusual in the United States although common in the cities of continental Europe. The city has harnessed governmental powers and those of private and non-profit organizations to achieve design goals that would not otherwise have been attainable. The desire has been to "make a wide range of distinctive places for people" where the public can participate in both formal and communal activities within a compact, walkable setting. In the center of the city this objective is assisted by Portland having a grid layout of 200-foot (about 61-meter) blocks based on a plan that was commissioned by private land owners in 1845.

The Portland Comprehensive Plan specifies a number of policies for improving the public realm

of the city. It recognizes that the city is experienced most closely on foot. Not only do people walk from point to point but they are also pedestrians at the end of the journeys they make by automobile, public transit, or bicycle, so one goal is to make travelling on foot comfortable and attractive. Its policy is also to enhance the closeness Portlanders feel to nature by improving access to green areas and waterbodies, by creating linear parks, and by protecting the natural features of the topography. Portland is known for its transit-oriented development and its use of height limits in its zoning legislation to maintain views of mountains, rivers, and parks in order to use them as landmarks.

A sub-goal has been to strengthen the connections among the city's distinctive places—its waterfront, hills, and its locales, in two ways. First, it was through a light rail system and since 2006 an aerial tram linking the two campuses of Oregon Health and Sciences University and, second, through a series of green corridors that connect wildlife habitats. The purpose has been to establish Portland's international reputation as a vibrant, sustainable city (Portland, City of 2014).

The success of Portland is due to a strong collaborative environment created by the Portland

Development Commission, the city's economic development agency. A sum of \$150 million of public investment has leveraged over \$1 billion in private investment. Catalytic projects such as serving the Pearl District with light rail have resulted from this kind of collaboration, although in this case it was overwhelmingly (79 percent) funded by the public sector. The South Waterfront Ecodistrict, an urban regeneration project under construction is an all-of-a-piece urban design with strong design controls that ensure the development is a frugal consumer of energy. It is also the location of the lower terminal of the aerial tramway that now carries 3,300 passengers a day. To achieve such ends the financial viability of projects is constantly addressed.

Strong planning controls have been used to achieve specific objectives as part of its goal of creating a livable city of districts, places, and links. It is this use of controls and emphasis on planning by the public sector in general that has raised the ire of a number of conservative critics (for example, O'Toole 2007). They see the mode of planning and urban designing in Portland as interference with individual rights. They also, apparently, do not like the results.

Commentary

Much can be learnt from how public policies have been used to meet what are deemed to be public interest ends. The first is simply that much can be achieved through piece-by-piece urban design. It has, however, to be based on controls that are clearly enforceable; legislation must precede or accompany the development of regulations. In looking at the successes achieved in different cities around the world, the legal context must be borne in mind. Those countries whose legal systems are based on the Napoleonic code, such as France, differ from those such as the United States whose legal procedures have antecedents in English common law (Lai 1988).

A lesson from the New York City experience with incentive zoning is that the consequences of using it as a design tool must be carefully considered. The 1961 code that sought to achieve more open space at street level in the city did so, but not as well as hoped or predicted. What seemed intuitively obvious turned out to achieve less than desirable ends (Kayden 2000). Jane Jacobs' personal observations about open spaces in cities went unheeded (Jacobs 1961). New York's experience is by no means unique.

The four case studies presented in this chapter all represent top-down approaches to decision making although they resulted from the pressures exerted by various interest groups. They illustrate the importance of strong leadership in attaining civic ends.

Using the cases as precedents needs to be done with caution. They do show that without political and civic commitments, piece-by-piece urban design is likely to lead nowhere. To withstand legal challenges, regulations seeking to attain a specific image and character for a locality must be based on an empirical understanding of how cities function and an empirical understanding of community values (Stamps 1994). The potential problem with incentive zoning is that it can soon become open to mismanagement and corruption when property developers seek ways to achieve additional benefits for themselves if they are obliged to provide public benefits.

There is a much broader lesson too. The urban design task is surely to create salubrious environments for life, to upgrade the behavioral opportunities for people, and to enhance their self-images (to lift their spirits) through improvements in the quality of the built environment. Zoning districts and zoning modifications may create opportunities for achieving these ends but in many instances the zoning tools that are legally available to urban designers are, by themselves, not strong enough. BIDs, and a more inclusive approach to urban upgrading, may achieve more. A high-quality public realm can be good for business.

References

- Abbott, Carl (2011) *Portland in Three Centuries: The Place and its People*, Corvallis: Oregon State University Press.
- Adams, Bill (2013) 7 ways Portland is better than other cities—an outsider's perspective, *San Diego UrbDeZine* (July 27), <http://sandiego.urbdezine.com/2013/07/27/7-ways-portland-is-better-than-other-cities-an-outsiders-perspective/>, accessed June 25, 2015.
- Barnett, Jonathan (1974) *Urban Design as Public Policy: Practical Methods for Improving Cities*, New York: McGraw Hill.
- Barnett, Jonathan (1982) The evolution of New York's special zoning districts, in *An Introduction to Urban Design*, New York: Harper and Row, 77–93.
- Barnett, Jonathan (2003) *Redesigning Cities: Principles, Practice, Implementation*, Chicago: American Planning Association.
- Boey Yut Mei (1998) Urban conservation in Singapore, in Belinda Yuen (ed.) *Planning Singapore: From Plan to Implementation*, Singapore: Singapore Institute of Planners, 133–68.
- Central Philadelphia Development Corporation (undated), www.centercityphila.org/about/CPDC.php, accessed July 26, 2015.
- Dilworth, Richardson (2010) Business improvement districts and the evolution of urban governance, *Drexel Law Review* 3 (1), 1–9.
- Ferreter, Sarah, Mike Leis, and Mike Pickford (2008) Melbourne's Revitalised Laneways, https://courses.washington.edu/gehlstud/gehl-studio/wp-content/themes/gehl-studio/downloads/Autumn2008/Melbourne_Lanes.pdf, accessed March 20, 2015.
- Houstoun, Lawrence O. Jr (2003) *Business Improvement Districts*, Washington, DC: The Urban Land Institute.
- Jacobs, Jane (1961) *The Death and Life of Great American Cities*, New York: Random House.
- Kayden, Jerold S. (2000) *Privately Owned Public Space: The New York City Experience*, New York: John Wiley.
- Khun Eng Kuah (1998) State, conservation and ethnicization of Little India in Singapore, *Urban Anthropology and Studies of Cultural Systems and World Economic Development* 27 (1), 1–48.
- Lai, Richard Tseng-yu (1988) *Law in Urban Design and Planning: The Invisible Web*, New York: Van Nostrand Reinhold.
- Lehman, Nicholas (2000) No man's town: the good times are killing off America's local elites, *The New Yorker* (June 5), 42–9.
- Levy, Paul R. (2001) Downtown: competitive for a new century, in Jonathan Barnett (ed.) *Planning for a New Century: The Regional Agenda*, Washington, DC: Island, 177–95.
- Levy, Paul R. (2015) *State of Center City Philadelphia 2015*, Philadelphia: Center City District & Central Philadelphia Development Corporation, www.centercityphila.org/docs/SOCC2015.pdf, accessed July 26, 2015.

- Marcus, Norman (1991) New York City zoning—1961–1991: turning back the clock with an up-to-the-moment social agenda, *Fordham Urban Law Journal* 19 (3), 706–26, <http://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1559&context=ulj>, accessed July 27, 2015.
- Melbourne, City of in collaboration with GEHL architects (1994) *Places for People*, <https://issuu.com/alabarga/docs/jan-gehl—places-for-people>, accessed March 23, 2015.
- Melbourne, City of (undated) *Melbourne Planning Scheme, Local Planning Policies—Clause 22.20*, http://planningschemes.dpcd.vic.gov.au/schemes/melbourne/ordinance/22_lpp20_melb.pdf, accessed March 31, 2015.
- Morçöl, Göktuğ, Lorlene Hoyt, Jack W. Meek, and Ulf Zimmerman (eds) (2008) *Business Improvement Districts: Research, Theories and Controversies*, New York: CRC.
- Oberklaid, Sarah (2015) Melbourne: a case study in the revitalization of a city's laneways, Part 2, www.theurbanist.org/2015/09/17/melbourne-a-case-study-in-the-revitalization-of-city-laneways-part-2/, accessed January 30, 2016.
- O'Toole, Randall (2007) Debunking Portland: the city that does not work, *Policy Analysis* 596 (July 9), www.cato.org/publications/policy-analysis/debunking-portland-city-doesnt-work, accessed March 20, 2015.
- Portland, City of (2014) *Urban Design Framework*, Portland: The author.
- Punter, John (2007) Developing urban design as public policy: best practice principles for design review and development management, *Journal of Urban Design* 12 (2), 167–202.
- Saffron, Inga (2014) The changing skyline: the anti-Gallery, http://articles.philly.com/2014-12-27/entertainment/57423911_1_east-market-street-new-development-gallery, accessed May 21, 2015.
- Stamps, Arthur E. (1994) Validating contextual urban design principles, in S. J. Neary, M. S. Symes, and F. E. Brown (eds) *The Urban Experience: A People-Environment Perspective*, London: E. & F N Spon, 141–53.
- Urban Redevelopment Authority (1991) *Conservation Guidelines for Little India*, Singapore: The author.
- Urban Redevelopment Authority (1995) *Little India Historic District*, Singapore: The author.



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FIGURE 13.0 State Street, Chicago.

Epilogue

How Good is the Typology? Learning from the Case Studies

Most of the case studies and the other projects mentioned in this book have, with a few exceptions, been remarkably successful both financially (at least in the long term) and in the terms of the ways of life they afford. The exceptions have been pointed out. The people who visit, use, or live in the projects that form the case studies generally enjoy the results. The designs have been thoughtful responses to the concerns they address as their clients, property developers, and designers perceived the problems and issues facing them to be. None are whimsical, highly egotistical statements, although many have strongly opinionated designers behind them and bear the hallmark of their designers' oeuvre. None is above criticism. A few of the schemes discussed were misguided; in retrospect many have incurred opportunity costs—they could have been done better. All, nevertheless, were carefully conceived and executed within the limitations of the resources, intellectual and financial, available at the time of their creation.

The purpose of this book has not been to provide an architectural or behavioural critique of the cases described, although such commentary could not be avoided in passing. The goal has rather been to make some sense of the way the term “urban design” has been and is used and also to cover the types of projects that are described as urban design schemes. In doing so it has taken the normative position that the definition of urban design as project design is the appropriate one for describing a specific professional design activity. With this position as a basis I have presented a three-dimensional model for categorizing projects. Two of the dimensions of the model—project type and paradigm type—deal with the physical nature of the schemes and what they afford. The third—procedural type—deals with the process of implementing them. The first two are common ways of categorizing urban design schemes; the third I have found useful.

To illustrate the typology, 50-odd case studies have been described in this book. Most are well known and have been extensively described in the urban design and architectural literature, although not necessarily in other than physical form terms and the way in which they represent the work of an architect. The focus has been on the creator and the creator's ideas and not on the project and its performance. Each of the projects that form the case studies has been categorized, some more easily than others. Some clearly fit into one of the boxes of the three-dimensional typology; others have a more ambiguous position. Many building complexes designed by a single architectural firm, for instance, can be considered to be total urban designs rather than simply architectural schemes.

Product Types

The pages of architectural journals such as *Architectural Record* often contain case studies of buildings. They are categorized into classes such as houses, hospitals (or well-being centers), commercial buildings, schools, or factories. Similarly urban design product types include residential, commercial, and industrial areas. There is, however, no generally accepted categorization of urban design product types although all approaches, in one way or another, either focus on the primary utilitarian function—the activities, or behavior settings, a scheme may house—or, alternatively, its physical/geometric form. Super-blocks, organic, or radial plans are examples of the latter.

The two primary types that have been considered in this book and that emerge from an analysis of projects around the world are new towns and precincts. This broad distinction focuses on the scale of a project; it is certainly no sharp classification. Some observers may find this primary distinction too broad but it presents a point of departure in thinking about urban design projects. New towns are supposed to include many, if not all, the behavior settings that comprise a well-functioning city. I have distinguished among new towns that are capital cities, company towns, and a broad category of other types. New towns is itself a broad category that includes those that were and are the result of governmental public policies to distribute populations geographically for economic or political reasons and those, such as Columbia, Maryland that are the products of private enterprises. Brasília's pilot project, the new towns of countries as diverse as the United Kingdom, the former Soviet Union, and India were all part of government policies. Many of the Soviet new towns were, like the Gujarat State Fertilizer Company's township, company towns as well as products of government policies. The GSFC Township is also a suburb of the city of Vadodara. The categories thus soon overlap.

The term suburb is ambiguous because it can refer to an independent municipality on the outskirts of a major city or a neighborhood within it depending on which English-speaking country one is in. Both come in a variety of types. Some of the former are new towns; others are predominately dormitory residential areas. A number of the residential urban design projects covered in the case studies fall within a category of larger, laissez-faire, market-driven, suburban developments. They are enclaves. Le Quartier de Frugès is a small enclave within Pessac; Raleigh Park lies within the suburb and city of Randwick that forms part of the Sydney metropolitan area. Hammarby Sjöstad is a mixed-use neighborhood within Stockholm. Suffice to say that precincts come in a variety of forms.

Precincts in my categorization include business districts such as La Défense and Canary Wharf, the (in 1970s nomenclature) mixed-use new-towns-in-town such as Battery Park city, campuses (both university and commercial), and suburbs. Streets, squares, and parks, the pedestrian's view of the city, are finer types subsumed under this category of product type but not specifically identified.

Precincts can be predominantly single-use areas or house a variety of combinations of uses. They come in a great range of geometrical forms. Le Quartier de Gratte-ciel in Lyon is named after its buildings' form but it is a mixed-use development comprised of housing, retail, and civic buildings. Mixed-use is in itself no sharp class of precinct types as no clear definition of mixed-use exists. Different projects have a different mix of uses, but designing specifically for a mixture of activities represents an attitude towards creating a sense of place. To some critics mixed-use implies that a project contains some housing. If it does not, it is considered not to be a mixed-use scheme. No such distinction is made here.

Some of the case studies fit neatly into the categories identified in this book, others do not. Many, as noted, fall into more than one category. At the same time, designers

continue to identify product types by their primary use. The categorization used in this book crosses the line between use and scale. It appears to be a useful way of considering works of urban design.

Paradigms

Distinguishing between Rationalist and Empiricist schemes may seem to be straightforward but the boundaries between one and the other are often fuzzy. The Pilot Plan of Brasília as implemented is an example. The southern portion and the capitol complex of Brasília are pure types but the northern part, while Modernist in spatial layout, has more of a Postmodernist architectural character. A number of the case studies are, nevertheless, clearly Modernist schemes in spatial layout.

During the course of the last century, a number of architectural and landscape architectural paradigms have sought hegemony in the professional design fields and in academia. The case studies in this book were selected to be a representative sample of urban design projects and to both illuminate and test the typology. They also illustrate well how the prevailing urban design paradigm shifted over the course of the twentieth century and into the early twenty-first. A number of competing urban design paradigms, each with its protagonists, now coexist. Each addresses a set of specific concerns.

Only one of the projects included among the case studies is a City Beautiful scheme, although that paradigm dominated the urban design discourse at the beginning of the twentieth century. The conceptual designs for the capital cities of Australia and a year later of India, Canberra and New Delhi respectively, were based on it as were the design of many American university campuses (see Turner 1984). The 1970s design of the Avenue of the Victory of Socialism in Bucharest is the only City Beautiful scheme described here, but is a very pure type in design if not pure in the ideology behind its creation.

The planning and design of La Défense, Paris' new Central Business District, was begun during the 1960s when Modernist ideas held sway. This observation can be extended to projects such as the Nelson A. Rockefeller Empire State Plaza in Albany, New York. The work of its architects was consistently Modernist. While the Modernist paradigm may be said to have died with the demolition of Pruitt Igoe in St Louis (Jencks 1984, 9), much that is being built today is still Modernist in spatial layout. Developments such as Lujiazui in Shanghai, Ørestad in Copenhagen, still under construction, are in the same spatial tradition as is much of what is being built in East Asia.

Modernist designs generally regarded streets as unpleasant spaces rather than the seams of life for a precinct. They favoured super-block type designs, unlike schemes such as Le Quartier de Gratte-ciel in Lyon where the traditional street pattern was an integral part of the design in the manner of current neo-traditional urban designs such as Celebration in Florida. Celebration, consciously or not, was based on an empirical understanding of the role of streets in cities and their neighborhoods.

Empiricist urban designs come in a variety of forms as the case studies illustrate. The Garden City and the Neo-traditional paradigms are the two fundamental types. Adaptations of the Garden City model are clear in schemes such as Columbia, Maryland with its hierarchy of precincts and its spatial qualities and similarly in the design of the GSFC Township in India. The design of the latter is based on the superblock. A number of the case studies are Empiricist and Neo-traditional. Celebration, Florida, Battery Park City in New York, and the Rouse Hill Centre in Sydney are prime examples. While each of these three comes from a different tradition, each is based on a model that worked in the past and was predicted to continue to function well in the future.

The overlapping sequence of paradigms favored by urban designers since the Second World War is best exemplified in the history of the development of Battery Park City in New York. The first conceptual designs produced by a number of architectural firms during the 1960s were purely Rationalist and Modernist in character, but the scheme finally implemented is Empiricist and Neo-traditional. The same observation can be made about the sequence of new towns that form part of Singapore. Over time the perception of the problems that needed to be addressed changed and thus the image of a good city or a good precinct within it changed. This change is reflected in the design of the physical form of an area and, consciously or subconsciously, the behavior settings it does and does not afford.

Some of the most recent and current precinct designs show the increased need to address long-term concerns of sustainability under change and in terms of energy consumption. Hammarby Sjöstad in Stockholm and Quartier Vauban in Freiburg are much examined by politicians, city planners, and architects alike. They are already proving to be models for similar projects now in the planning stage. They are representative examples of what may seem to be a new attitude to urban design, but one that has antecedents in the work of advocates such as Patrick Geddes in the early twentieth century (Geddes 1915).

Not all the projects described in the case studies are as easy to characterize as the ones mentioned above either in architectural or landscape architectural paradigm terms. Categorizing some as falling within one paradigm rather than another depends on the focus of attention. For instance, the spatial layout of a project may follow one paradigm while the architecture of the individual buildings another. Alternatively, one part of the scheme may be based on one paradigm rather than another as each is required to resolve different problems. The overall idea of Louvain-la-Neuve, for instance, is Neo-traditionalist harkening back to the medieval town, but much of the layout is based on the Garden City model.

Urban designers, whether city planners, architects, or landscape architects, do not like their work to be categorized. It detracts from what they perceive to be a unique creative act. The urban designing process is, nevertheless, largely a mimetic one in which generic solutions are adapted to the situation at hand. The categorization applied here may be a gross one but, provided the paradigm is understood, it enables an observer to understand the particular problems being addressed in the design of a scheme. The danger, as was pointed out earlier in this book, is that an observer forces a project into a category based on some specific characteristics rather than others.

Procedural Types

The categorization of procedural types of urban design holds up well for the initial development of many urban design projects, although ambiguities exist. I have questioned whether schemes such as the Nelson A. Rockefeller Empire State Plaza in Albany, New York and Federation Square are total urban design schemes, as many architects would consider them to be, or simply large architectural projects. They could easily have been categorized as total urban design and perhaps they should have been. They combine elements of architecture and landscape architecture as well as city planning. Individual buildings such as the Shanghai Tower are clearly architectural projects even if one considers them to be vertical mixed-use precincts. The case of Arcosanti is more ambiguous. Until the death of Paolo Soleri it was the work of a single architect and, being the design of a new town, could have been regarded as a total urban design. Now under new hands the development process can be regarded as an all-of-a-piece urban design following the design principles of its founder.

Most of the total urban designs described in this book remained just that until they were built out but have undergone many changes since their original completion. While the overall design of some such as the Le Quartier de Gratte-ciel in Lyon, the Avenue of the Victory of Socialism, and the cooperative housing in Trudslund has remained the same since they were finished, many changes have taken place in the interiors of the buildings that form them. In addition, the way they have been inhabited over time has resulted in their taking on the patina of their residents and/or other users. As the populations and the cultural and technological context have changed so the behavior settings they comprise have changed.

In Le Quartier de Frugès in Pessac, a total urban design, the changes made by the inhabitants of the various types of housing it contained were substantial. Little has, as yet, changed in the layout and design of the more recent schemes included in the case studies. In some projects such as Canary Wharf in the Docklands of London and La Défense in Paris, both new CBDs, the program/brief changed in response to the perceived tedium of what was being created prior to the projects being built-out. While the program and the guidelines may have changed along the way, both schemes remain all-of-a-piece designs as ongoing development continues to this day.

In a number of all-of-a-piece urban designs the guidelines shaping development changed during the course of their implementation either because the economic situation and the availability of money changed or because the prevailing design paradigm gave way to a more appropriate or more fashionable one. The development of Battery Park City in New York, as noted, is a saga of changing design paradigms. Indeed its history is a history of the urban design paradigms attracting architects' and politicians' attentions during the second half of the twentieth century.

While the total and all-of-a piece urban designs included in the case studies are, at their core, clearly belonging to the category into which they have been slotted, almost all of them have had an effect on property values of their surroundings. Urban designs having this specific goal in mind have been classified as plug-in urban designs, but many total and all-of-a-piece urban designs also consciously served that purpose. Many urban designs can thus be regarded as plug-in urban designs even though they were discrete spatially bounded schemes. Rockefeller Center and Lincoln Center in New York can also be considered to be plug-in urban designs, as one of their purposes was to upgrade their surroundings. One of the objectives of the former was to consciously enhance the neighborhood in which the Rockefellers' city mansion was located. Under Robert Moses' planning regime, the goal of the Lincoln Center was to gentrify the whole area around it as much as to provide a major home for the performing arts in New York. It has clearly done both (Caro 1974).

The plug-in urban design projects that have been presented here follow much of the Modernist thinking exemplified by Le Corbusier in his plan for Antwerp (Le Corbusier 1960). They are, however, less a coordination of land use, project design, and infrastructure types than what Le Corbusier proposed. The design of Singapore's MRT system comes closest to the type of urban design that Le Corbusier imagined. The other plug-in examples are more ad hoc solutions to specific problems.

Many of the case studies began as one type of procedural type and over time became another. The southern part of Pilot Plan for Brasília is certainly a total urban design. After Oscar Niemeyer's departure from the implementation of the project, the northern portion became a loosely guided all-of-a-piece urban design and now seems to be a *laissez-faire* development. This sequence of events is not uncommon. Once the basic framework

of a scheme has been implemented the development process gets opened up to the demands of market forces. The northern neighborhood of Battery Park City was subject to fewer and less demanding controls than the southern.

Some ambiguity exists as to whether some urban designs described here as all-of-a-piece urban designs are really total urban designs. Projects such as the Rouse Hill Town Centre in Sydney might be regarded as total urban designs rather than all-of-a-piece projects, because they were such a unified collaborative effort of a number of architects. In Rockefeller Center the individual buildings were designed by different architects although under the control of a single architectural firm. Its status is even more ambiguous than the Rouse Hill Centre, which suggests that the procedural type category should be more finely subdivided into sub-categories.

Conclusion

The general plea of design professionals is for urban design to be neither narrowly nor sharply defined. Indeed, as mentioned at the outset, many designers would prefer the boundaries and content of urban design as a professional activity not to be defined at all. "Urban design is what I do," said David Wallace of Wallace, McHarg, Roberts and Todd, a Philadelphia firm, many of whose projects during the period covered in this book were all-of-a-piece designs with strong environmental sustainability considerations. Wallace's is the type of definition many architects prefer. It is, however, inadequate for a field if it is to make progress in terms of the services it provides professionally or as an academic discipline.

The typology presented here, despite its limitations, provides a broad-brush approach to both understanding the scope of urban design and a way of categorizing the various projects under the rubric of urban design that have been and are being implemented around the world. It does not provide a mechanism for uniquely classifying each project in the way the Dewey Decimal system does library books. The categorization of projects provided by the typology presented in this book is being used by other scholars and professionals often, it seems, simply because no other is generally available. The basic three-dimensional categorization, despite its limitations, holds up well. It provides for a broad understanding of the nature of the projects subsumed under the title of urban design.

References

- Caro, Robert (1974) *The Power Broker: Robert Moses and the Fall of New York*, New York: Knopf.
 Geddes, Patrick (1915) *Cities in Evolution: An Introduction to the Town Planning Movement and to the Study of Civics*, London: Williams and Norton.
 Jencks, Charles (1984) *The Language of Post-Modern Architecture*, New York: Rizzoli.
 Le Corbusier (1960) *My Work*, translated from the French by James Palmer, London: Architectural.
 Turner, Paul V. (1984) *Campus: An American Planning Tradition*, Cambridge, MA: MIT Press.

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