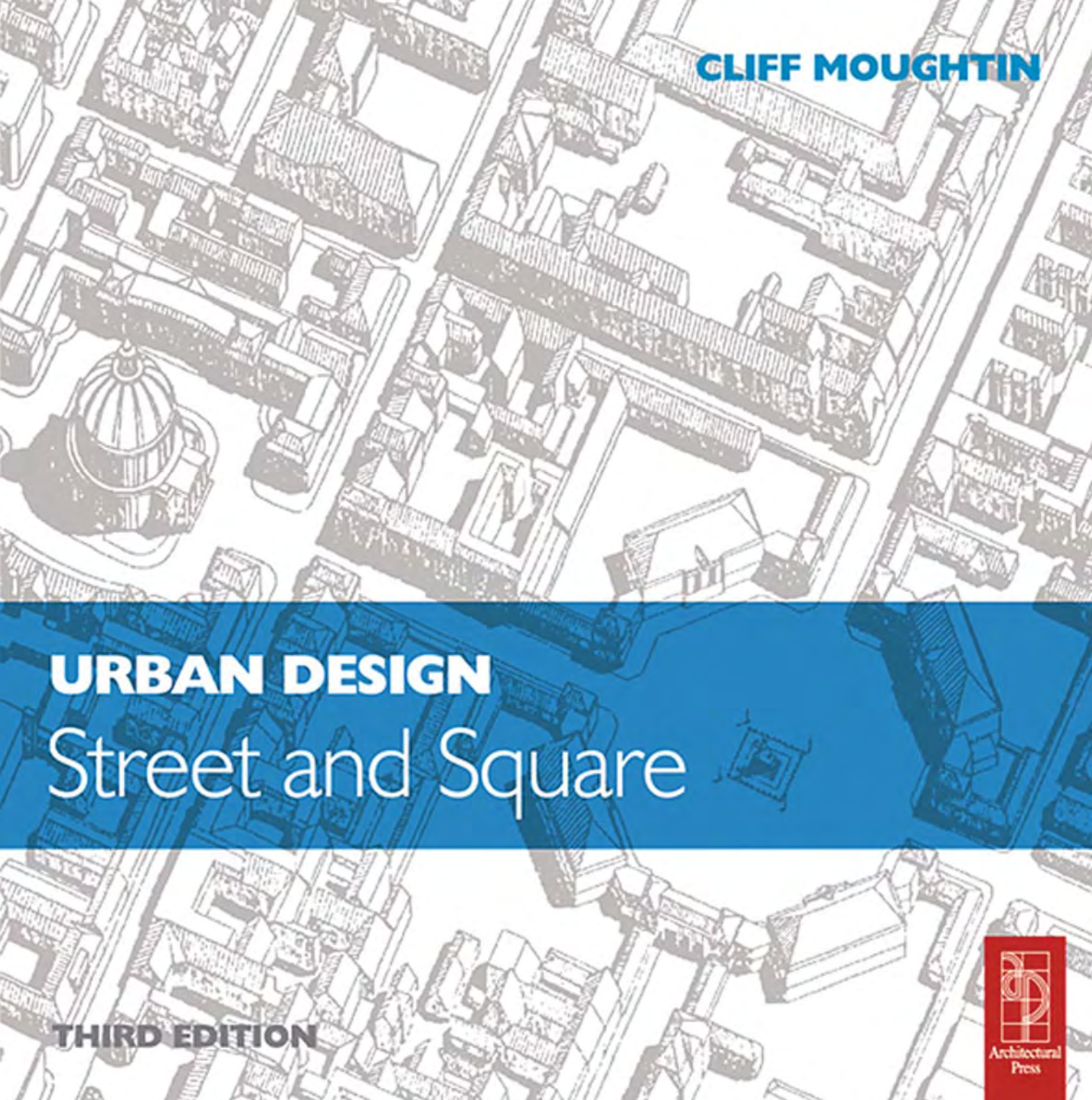


CLIFF MOUGHTIN

URBAN DESIGN
Street and Square

THIRD EDITION

Architectural Press

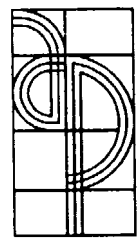
URBAN DESIGN:
STREET AND SQUARE

To Kate

URBAN DESIGN: STREET AND SQUARE

Third Edition

Cliff Moughtin



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PREFACE TO THE FIRST EDITION

My interest in urban design began in the mid 1950s with Professor McCaughan's history of planning lectures given in the then Department of Civic Design, University of Liverpool. At those lectures 'Mac' made it quite clear that he was a follower of Camillo Sitte, a Viennese architect whose main work dated from the last decade of the nineteenth century. After a five-year education in architecture where the heroic dimension of modern architecture was stressed, it came as a refreshing tonic to read the works of a scholar, Sitte, who analysed urban form to distil from it the principles of good design. After Sitte, the writings of Le Corbusier and those of like mind could be seen for what they were - polemical manifestos. This is not meant to denigrate the work of Le Corbusier, he is one of the great architects of this century, nothing can destroy that reputation. However, as a planner and urbanist Le Corbusier, and more particularly followers of lesser stature, are responsible for much environmental damage throughout European cities - vandalism would not be too strong a word for such developments.

The early years of my professional career were spent in developing countries, Singapore, Ghana, Nigeria and the Sudan. Those years living and working with people of diverse life-styles gave a valuable insight into the relationship of built form and culture. Again under the influence of 'Mac' I read works in social anthropology and made studies of traditional settlement form and architecture. Walking in Singapore's China Town or exploring the wonderful mud cities of the Hausa, Nigeria together with readings in anthropology convinced me of the aridity of much contemporary urban design.

From the mid 1960s onwards I worked closely with 'Mac', first at Liverpool University, then at the Queen's University of Belfast and latterly at Nottingham University. During 25 years 'Mac' and I collaborated on many European student field trips exploring a rich urban heritage with our students. This book is an introduction to our common European urban design heritage and the reader is advised to visit the places mentioned in the text as the printed word, drawings and photographs are no substitute for the excitement of personal discovery. The following text is a starting point which may help the development of the reader's own critical faculties and so lead to a greater appreciation of the European street and square.

The need for a book of this type was made apparent to me on my recent visits to universities in the developing world. For example, during a two-month visit to Nairobi University, where I was

teaching the urban studio, I undertook to develop the workshop lectures and seminars into some form of useful publication. Eight years later that task is now complete. Three further volumes on urban design have now been published entitled *Urban Design: Ornament and Decoration, Urban Design: Green Dimensions, Urban Design: Method and Techniques.*

PREFACE TO THE SECOND EDITION

This is the preface to the second edition of *Urban Design: Street and Square*, in which a new chapter, 'Seafront, River and Canal,' is incorporated. An additional case study of riverside regeneration has been added to the last chapter of the book to illustrate the role of water in urban design. The chapter and its case study are intended to fill a gap in the original text; they are concerned with the design of public space close to urban waterways.

Urban design is closely linked to both architecture and planning, yet is a quite distinct subject area. The main concern of urban design is the design and structuring of public space in cities, towns and also in the smaller settlements that comprise urban regions. In the Introduction to *Urban Design: Street and Square* it is maintained that the main component of urban design is the city quarter: 'Certainly, it could be, and has been, argued that clearly defined city quarters about 1.5 kilometres (1 mile) across will be a major preoccupation of urban designers in the coming decade.' The Introduction does go on to suggest that the urban designer may, nevertheless, be involved in smaller scale developments in street and square. This preface to the second edition reaffirms this definition of the core activity of urban design.

Urban design, however, is a large subject area which this book deals with in part only: it does not pretend to be a manual of good practice in urban design, nor is it prescriptive. The aim of the book is much more modest: it is to examine precedent to see if general principles can be deduced which may at some future date form the basis for a more definitive theory of urban design. Until such time the content of this book is presented as part of the ongoing discussion about the nature of this most absorbing art form.

Since the first edition of this book was published there have been, in this country, a number of far reaching developments in the practice of urban design. The Government has prepared or is preparing Planning Policy Guidance and other documents which have elevated urban design to a central position in the process of planning and regeneration. The importance of urban design is also confirmed by the report of Rogers and his Urban Task Force. An alliance of professional bodies with an interest in urban design has been formed which includes The Urban Design Group, the Royal Institute of British Architects, the Royal Town Planning Institute, the Landscape Institute, the Royal Institution of Chartered Surveyors, the Institution of Civil Engineers together with The Civic Trust: the

formation of such a group provides a vehicle to promote and lobby for the recognition and development of the subject. While much development in this country still fails to achieve high standards of urban design there are, nevertheless, notable exceptions many of which are being documented in *Urban Design*, the quarterly journal of the Urban Design Group.

PREFACE TO THE THIRD EDITION

Since the publication in 1992 of the first edition of this book there has been considerable development in the understanding and practice of urban design. These developments have been gathering momentum since the publication of the second edition in 1999. Many of the ideas in the Report of Lord Rogers and his Urban Task Force *Towards an Urban Renaissance*, also published in 1999, have been absorbed into Government thinking and may in part be responsible for the recent Planning Green Paper. Ideas in the Green Paper could, if implemented, lead to an innovative planning system where urban design is elevated to a central role.

In 2001, Lomberg's book *The Skeptical Environmentalist* was translated into English and published by Cambridge University Press. The optimistic, almost complacent, view of the state of the global environment presented in his book has been rebutted by most of the reputable scientists in the field. Nevertheless, this thought-provoking book and its assessment that conditions on earth are generally improving for human welfare, has encouraged those advocating an 'environmental free for all', particularly those to the right of American politics. Fortunately, here in Britain and indeed in Europe, sustainable development still seems to be a goal of urban planning. In his response to some of the criticisms of the Green Paper, Lord Faulkner promised to give more weight to sustainability as a goal of development in a future planning agenda. This book, and the others in the series, will continue to advocate 'the precautionary principle' as a guide for environmental design; this principle is fundamental to the theory of sustainable development. Until the Scientific Community decides otherwise it is sensible to propose development strategies, which reduce, as far as possible, the pressures on a fragile global environment.

The types of development and planning tasks that have involved urban design skills have increased over the past decade. For example, they now include tasks of urban restructuring over large sub-regional areas. If the ideas encompassed by the Green Paper on planning are implemented, then it is likely that the workload of the urban designer will increase; he or she will also be engaged in a wide variety of tasks, once thought to be the province of other disciplines. To some extent urban design can quite simply be defined as the work carried out by urban designers. However, throughout this series of books on urban design the core of the subject is considered to be the planning and design of the city quarter, district or neighbourhood. The nature of urban design is discussed elsewhere in this book.

Here, I wish to reaffirm that the main concern of urban design is the creation of sustainable quarters of environmental quality. This book deals with only part of this subject area: its theme is the design of street and square, that is, the design of the major components of the urban realm.

There are four main additions to this third edition. A chapter has been included which examines in outline, the theories of sustainable development in order to bring the contents of the book into line with current thinking: it deals specifically with the relationship of these theories to the design of street and square, taking into consideration the probable changes to transportation systems in the city. A chapter, Visual Analysis, has also been introduced to explain the practical significance of the theoretical contents of the book, and to clarify how the techniques of visual analysis can be used to achieve greater understanding of the form, function and meaning of the streets and squares that make up the major part of the urban realm. A new case study on regeneration of the seafront in Barcelona has been included in Chapter 9. This case study illustrates a major urban design achievement, emphasising the importance of the waterfront and its relationship to the cities network of streets and squares. Finally, there is a short concluding chapter, which brings together the main themes of the book, asking the question – why were so few great streets or squares developed in the twentieth century?

ACKNOWLEDGEMENTS

My greatest debt is to my friend and teacher the late Reginald Ellersley Manifold McCaughan, 'Mac' or 'Mek' to his colleagues, friends and students. 'Mac' was Senior Lecturer in Civic Design at Liverpool University for many years. Later, after his retirement, he became Special Professor in the History of Planning and the History of Architecture at The University of Nottingham. 'Mac' taught many generations of architectural and planning students in Liverpool, Nottingham and also in his native city of Belfast. I was fortunate to be one of his students from 1953 when I first heard him lecture until 1989 when he died. It was 'Mac' who introduced me to the delights and mysteries of urban design and it is to his teaching and his ideas that this book owes its origins; while the mistakes are my own, the inspiration is 'Mac's'.

This book would not have been completed if my wife Kate McMahon had not given great support and put pressure on me when other academic matters appeared to occupy both my mind and time. Kate read the manuscript and being an English graduate, she ensured that it both made sense and could be read easily. I also wish to acknowledge the help given by Dr Taner Oc and Dr Peter Tregenza: both read early versions of the text and gave valuable criticism. The students in my department at Nottingham and those at other universities where I have taught, particularly in Third World countries, have provided most useful feedback on the material for urban design as it has developed over the years. One particular student group gave great moral and intellectual support during a critical stage in the development of the text: Dave Armiger, Rafael Cuesta, Alison Gee, June Greenway, Persephone Ingram and Christine Sarris accompanied me on visits to Italian hill towns, indeed their work appears in the text. It was the enthusiasm of this student group which gave final impetus to the completion of this manuscript.

The drawings in the text were prepared by Peter Whitehouse. Peter is both a student and technician in the Institute of Planning Studies, University of Nottingham. Though performing both these roles, he found time to complete the lovely drawings which illustrate the text and without which it would lose so much meaning. I am also indebted to Glyn Halls, the senior technician in the School of Architecture, University of Nottingham. Glyn took my negatives and turned them into the photographs which also illustrate the text. This was a mammoth undertaking – the illustrations used here are the 'tip of the iceberg', representing barely a quarter of those produced and less than ten per cent of the negatives.

Last but by no means least, I wish to thank the secretarial staff in my department – Linda Francis, Liz Millward and Jenny Chambers. They prepared the final manuscript for publication, which as it turned out was the sixth draft. Linda Francis, in addition to organizing work on the manuscript, typing much of it herself, also managed my professional work (no mean feat!) so that as much time as possible remained for work on this book.

INTRODUCTION

The subject matter of this book is urban design or *City Planning According to Artistic Principles* as Camillo Sitte entitled his seminal work in 1889.[1] It is intended to begin after the manner of the theorist Sebastiano Serlio who in *The Five Books of Architecture* wrote:

> In the beginning of this book, I observed the comedians order, who (when they intend to play any comedy) first send out a Prologue, who in a few words giveth the audience to understand what they intend to entreat of, in their comedie. So I, meaning in this Booke, to entreat of the manner of buildings, viz Thuscan, Dorica, Ionica, Corinthia and Composita, have thought good, that in the beginning thereof, men should see figures of all the several kinds where I propose to entreat of.[2]

In the case of urban design the main actors in the play presented here are the square, the street and the buildings that make up the public face of towns and cities. The meaning and role these elements play in urban design, the ways in which they are arranged, designed and detailed is the subject matter of the remaining chapters.

Urban design is an important though often neglected aspect of planning and a topic which has not always received due recognition in architectural education. Urban design is at the interface between architecture and planning but is quite distinct from both disciplines.

There are a number of definitions of planning, in fact, almost as many as there are planners. At its broadest planning can be defined as the process by which resources are distributed.[3] Indeed some planners would see the planners' role as one which is deeply committed to redistribution of resources in favour of those less well-off sections of society.[4] These definitions elevate planning to the political arena, that is, deciding who gets what, where and when. Other more technical definitions of planning restrict the subject to the organization of land uses, transportation and infrastructural networks both for efficient functioning and the creation of a pleasant and well-ordered environment. This narrow definition of planning does not free the discussion entirely from politics, for land itself is a resource and all developments bring benefits to some and incur costs for others. It is, therefore, concerned with the distribution and allocation of resources, as such it is an activity of government. Planning periods are often long, possibly twenty years and may cover large urban and rural regions. On the

other hand action plans requiring entrepreneurial skills from the planners may have a timescale of five to ten years and cover only small parts of a town.

Architecture is concerned with the design and construction of individual buildings. Usually the architect designs for clearly identifiable clients. The designs are made for particular sites. The construction period, for the most part, covers short term projects of one to five years' duration. However, an architect involved in hospital design or other large scale developments would be working on a building complex covering many acres of ground which would take ten or more years to build. The knowledge and expertise of the planner are as necessary as the professional skills of the architect for the successful execution of such a project. Hence, in practice, there is no precise differentiation between the domain of the architect and that of the planner. Since the boundary between these subject areas is blurred there can be no clear and precise subject definitions.

Urban design is allied to architecture and planning. For its practice it requires some of the skills and knowledge of both disciplines. The subject matter of urban design is the arrangement of many buildings so that they form a single composition. The designs may cover more than one site and involve many owners, users and government agencies. Since more than one owner is usually involved the time horizon is longer than that of a single building and usually varies between five and twenty years, though many of the finest urban designs such as the Piazza Annunziata, Florence, have taken centuries to complete. For the purpose of this book urban design is the study of the design of the urban realm as opposed to the private domain. By public realm is meant the streets, boulevards, squares and public parks together with the building façades that define them. Clearly, the design of the private domain, both as a study and as a professional activity, is the proper function of the architect. The planner and the urban designer are concerned with the private domain of individual properties only so far as it affects the public realm. For example, developments exceeding certain densities or volumes may put excessive strain upon roads and services, or indeed, may destroy the visual quality of the environment. The internal subdivision of a building is a problem for the owner and his designer. Such internal planning may have to satisfy by-laws, health and safety regulations, but it is not a matter for the planner and nor does it fall within the normal province of urban design. Nevertheless, the relationship between internal and external space, as depicted on Nolli's map of Rome, is a facet of design which should be an important consideration of all those working in the field of city construction and reconstruction.

It has been suggested by some writers that the city quarter is the main component of urban design.[5] Certainly the scale of development since the Second World War has increased significantly, first in the public then latterly in the private sector. It is now possible to consider whole urban quarters as single design problems undertaken by a single group of developers and a single design team. In the case of urban development corporations concerned with inner-city regeneration, major components of the city such as the Isle of Dogs, London, are managed and developed by specially constituted authorities. Certainly, it could be, and has been, argued that clearly defined city quarters about 1.5 kilometres (1 mile) across will be a major preoccupation of urban designers in the coming decade. Other smaller-scale groupings of urban design elements forming the urban realm, such as the area comprising the precinct around St Paul's, London, will, nevertheless, remain central to the professional interests of the urban designer. Indeed, the consideration of the design of small-scale developments in conservation areas is very much within the field of urban design.

Over the last decade there has been considerable development in the understanding and practice of urban design. The types of development and planning tasks in this country that have involved urban design skills have increased – for example,

urban design now includes tasks of restructuring large subregional areas. Ideas in the *Planning Green Paper*, produced in 2002 by the former Department of Transport, Local Government and the Regions for Her Majesty's Government, could lead to an innovative system of planning where urban design is elevated to a central role. If these ideas are implemented then it is likely that the workload of the urban designer will increase: he or she will be engaged in a wide variety of tasks once thought to be the province of other disciplines. The complex nature, however, of most urban development requires the skills of, amongst others, the planner, architect, urban designer, landscape architect and traffic planner.[6] The successful completion of these complex tasks requires that the urban designer exhibits ability and skill to work with these professionals from other disciplines.

City builders, architects, town planners and transportation engineers are in disarray, attacked, seemingly, from all sides. The gulf between the design professions and client group, those who live in or use the cities, is witnessed by critical press coverage and unsympathetic television programmes. Community destruction, demolition of pleasant, nineteenth-century terrace housing, inner-city blight, memories of new-town blues, high-rise development, all appear on the long menu of violations thought to be caused by the planner, a term used to cover a multitude of participants in the development process. The successes of the development professions are not given the same publicity. City conservation schemes, the protection of the green belt, the creation of national parks and the movement towards public participation in planning do not make headlines. Environmental success is not news, but planning and design disasters appear frequently on television and are fully documented. These negative views on the state of the city design professions are best articulated by Prince Charles. His pithy remarks about the 'monstrous carbuncle' or the 'giant glass stump' whether given in a lecture to the RIBA or made on a television programme have the immediacy and quality of the eye-catching headline.[7] These views do, however, appear to be closely in tune with those of the lay person.

This general discontent with city planning closely parallels conditions a century ago as Sitte, a Viennese architect saw them. Sitte, in the preface to the first edition of his book, *Der Stadte-Bau*, after noting the general approval at the time, in 1889, with the technical aspects of city planning, wrote:

> In contrast there is almost as prevalent a condemnation of the artistic shortcomings of modem city planning, even scorn and contempt. This is quite justified; it is a fact that much has been accomplished in technical matters, while artistically we have achieved almost nothing, modem majestic and monumental buildings being usually seen against the most awkward public squares and the most badly divided lots.[8]

Sitte's great seminal work is the starting point and the inspiration for this present study. He studied in detail magnificent civic design achievements of the past so that he could glean from them the principles that contributed to the quality of their composition. Sitte has been described, quite erroneously, as the founder of modern city planning. Even a cursory reading of his book *City Planning According to Artistic Principles* reveals quite clearly that the subject matter is not planning as it is defined and practised in Britain today.

Sitte's main preoccupation was the artistic design and decoration of streets and squares and, as such, he would more accurately be described as the founder of urban design. This present study follows Sitte's method using historical precedent to establish the ground rules for composition in the field of urban design. Though drawing heavily on historical examples, this is not a history of urban form and should not be confused with work in that field. The examples of streets and squares chosen for the text are ones that are generally accepted as fine city building and, indeed, are well-known tourist attractions, places thought worthy of visiting by many

people. It is argued here that if we can analyse the properties that made fine city streets and squares in the past it may be possible to reproduce some of those qualities in future development, not by outright copying, but by employing the underlying principles of composition.

The theoretical literature of western architecture starts with Vitruvius, the Augustan architect, and his treatise *De Architectura*. It was with Vitruvius that this present search for a theoretical understanding of urban design appropriately began. More important for urban design however, are the works of the Renaissance scholars, Leone Battista Alberti, Filarete, Serlio and Andrea Palladio. *De re aedificatoria* begun by Alberti in the 1430s was presented to Pope Nicholas V in 1452. With this great work Alberti established architecture as a learned discipline based upon principles articulated and structured by reason. In his text Alberti dealt also with elements of city design, streets, roads and piazze. Antonio Averlino, known as Filarete, was the first author to write a treatise on architecture, *Libro architettonico*, in a modern language. The book is of interest to the urban design student mainly for its description of a capital city, Sforzinda, and a port city, Plousiapolis: explanations are given not only for planning, design and construction of the city but also for its institutional organization. *Tutte l'opere d'architectura*, by Serlio, is probably best known for its exhaustive treatment of the five orders of architecture and the splendid illustration of their proportions and use.

It was, however, Palladio who wrote the most influential architectural treatise of the sixteenth century, *I Quattro Libri dell'Architettura*. It was frequently republished in Italy and other European countries and had an unprecedented impact on architects and architecture in the centuries following its publication. The book covers the general principles of architectural design, the Classical orders, the design of palaces, villas, bridges, civic buildings, temples and churches. Like Alberti a century before him, Palladio discussed the design of streets and piazze. There is little abstract theory in Palladio, most of the text discusses actual buildings and the problems of design they raise. The drawings of Palladio's own buildings with their great economy of form, simple symmetry and proportional regularity were probably the main reasons for the book's influence, an influence that can still fire the imagination of the young architect.[9]

Sitte reacted against a debased Classical tradition as it had been incorporated into design dogma at the large scale of the city. His counter proposals to the poor and mechanical imitations of Hausmann's axial planning of Paris were based largely on an exhaustive study of medieval towns. The opposing view of city design, the Beaux Arts, is represented by writers such as Julien Guadet and his *Elements et Théorie de l'Architecture*.[10] More important for this study, however, is the school of urban design stemming directly from Sitte and those he influenced through the many translations of his book into other European languages. In Britain, Raymond Unwin, a key figure in the Garden City movement, was an early convert to Sitte's influence. His own book *Town Planning in Practice*, an immense work on the design aspects of city planning, was of profound influence on the planning profession during the early part of the twentieth century.[11] Meanwhile, in the United States, there were Werner Hegemann and Elbert Peets, who, early in the last century, wrote *The American Vitruvius, An Architect's Handbook of Civic Art*. It was an important contribution to the development of urban design, and is still a delight to read.[12]

The writers associated with the Modern Movement in architecture, represented particularly by Le Corbusier or the manifestos of ClAM, were following dictates other than the concerns of Sitte. One of the foremost apologists of the Modern Movement, Sigfried Giedion, dismissed Sitte's ideas as palliatives and, instead, advocated mass housing, vast engineering roadworks and comprehensive city-centre development – now the subject of popular criticism. It may, however, be too soon to write an

objective critique of the pre-Post-Modern architectural styles current during the first part of the last century. Time and distance from those events may be necessary for them to be seen with any clarity. Giedions' *Space, Time and Architecture* however, is still a book well worth the attention of the student of architecture and urban design; of particular interest is the section dealing with the planning of Rome by Pope Sixtus V.[13]

The interest in urban design continued after the Second World War. As a result of this a number of important books were published in the 1950s. Frederick Gibberd's *Town Design* is still a standard text book on the design of elements that form the town.[14] He is clearly indebted for many of his ideas to Sitte, particularly in his analysis of the town square. Paul Zucker in *Town and Square*, like Gibberd, builds on the work of Sitte, but introduces a much broader typology of public squares. These two books are complemented by *Towns and Buildings*, by Steen Eiler Rasmussen, which, like Zucker, relies heavily on the analysis of urban groupings set in an historical setting.[15]

Three important works on the perception of cities appeared in the late 1950s and early 1960s. They were, *Experiencing Architecture*, by Rasmussen, *Townscape* by Gordon Cullen and *The Image of the City* by Kevin Lynch.[16] Rasmussen's main concern in his book is to try to show how we react to internal and external architectural space and the ways in which we appreciate forms, colours and textures. Cullen, by contrast, takes up the idea of serial vision which is also a feature of Sitte's work. With the aid of fine perspective sketches, Cullen dissects in great detail the form of the urban realm as the viewer moves through it. Clearly many of the towns and cities most admired are picturesque, in the sense that they are capable of analysis using Cullen's techniques for expressing serial vision. Lynch, too, was interested in the way in which the city is perceived. For his evidence Lynch conducted a survey among city residents analysing the drawings and mental maps made for him. From this analysis Lynch formulated the theory of 'Imageability', that is, the elements of urban structure which need to be present to create a strong visual image in the eye or mind of the beholder. Lynch's theories of urban form are probably the single most important contribution in the field of urban design in the twentieth century.

Christopher Alexander is among the most prolific writers on architecture and urban design. An early essay, 'The city is not a tree' is a well-argued critique of current planning concepts for the hierarchical distribution of facilities and services.[17] In support of his case, he pointed out the complexities and diversity of connections in the real world. Two other of Alexander's works will be mentioned here: *A Pattern Language* and *A New Theory of Urban Design*. In both works Alexander seeks to establish a natural or organic way of designing and building.[18] First he established a set of 253 patterns, such as the organization of an entrance or a window place: the criteria arrived at to define and describe these patterns, Alexander argued, applied to all similar cases. The designer, armed with this set of patterns from sleeping area to outdoor meeting place, is able to reproduce universally acceptable solutions forming part of an all-pervasive organic unity. In his theory of urban design, Alexander goes one step further by attempting to establish a natural or organic design process by which means the unity of the traditional town can be recreated. Alexander's work is challenging and it is a body of theory with which the urban design student must come to terms.

Two works which considerably affected architectural thinking both appeared in 1966. They are Aldo Rossi's *L'Architettura della Citta*, and Robert Venturi's *Complexity and Contradiction in Architecture*.[19] Rossi set the intellectual agenda for neo-Rationalism, while Venturi, with a preference for richness of meaning rather than clarity of meaning, gave further support to an empirical and flexible approach to city design.

Colin Rowe and Fred Koetter, in their enigmatic mid-1970's work *Collage City*, aimed to illuminate

the complex process of city building using a language often as obscure as poetry.[20] The book is a warning against the Utopian vision, whether populist or elitist. Instead, they put forward a pluralist view of city form, a collage city that accommodates a range of ideas and visions. In similar fashion, Christian Norberg-Schulz lays stress upon the unique qualities of place and the importance of symbolism in all that man creates.[21] Symbolism, like so many aspects of a rich and stimulating environment, was completely overlooked or considered unimportant by architects of the so-called 'heroic age' of modern architecture. Amos Rapoport with his seminal work *House Form and Culture*, and his later book *Human Aspects of Urban Form*, brought the close relationship between built form and culture to the attention of architects and planners.[22] The idea that architecture is applied social anthropology broadens the scope of urban design from 'architecture writ large' to a subject that now includes the social sciences. Urban form is clearly seen as resulting from the interplay of a number of factors such as location, transportation networks, land value and topography. A discussion of settlement form as the physical manifestation of culture is not a major theme in this present study, it has been explained elsewhere in, for example, *Hausa Architecture*.[23]

The other major theme to be found in the Post-Modern reaction to the hegemony associated with modern architecture is 'new rationalism' given, as we saw, its intellectual stimulus from Rossi. The creed of the new rationalists is *The Third Typology*.[24] The new rationalists, turning their attention to urbanism, reacted against the anti-historicism of the Modern Movement as encapsulated in the Charter of Athens. Architects such as Leon and Rob Krier turned instead to the city for typological components. Said Leon Krier: 'The history of architectural and urban culture is seen as the history of types. Types of settlements, types of spaces (public and private), types of buildings, types of construction. The bourgeois concept of architectural history – basically concerned with the monument – is extended to include the typological complexity of the urban fabric, of the anonymous buildings forming the flesh of the city, the skin of the public space.'[25] The prime concern of urbanism for the new rationalist is the design of the urban realm. Leon Krier again: 'In these new projects the form of the public realm is the prime concern. The public realm as a finite, unitarian, rational space.'[26] For those in the planning profession who have followed people like Sitte rather than worshipping at the feet of the false gods of the architectural profession this all sounds rather old fashioned producing a feeling of *déjà vu*.

The tension between the rational and empirical wings of the Post-Modern era is captured by the debate *Reconstruction Deconstruction, My Ideology is better than Yours*, in which Peter Eisenman and Leon Krier discuss architecture and city building in terms of 'presentness' and 'tradition'.[27]

The cudgels for rationalism are taken up by Alexander Tzonis and Liane Lefaivre who, using Classical architecture as a model, articulate a growing concern in some quarters for the poetics of order in architecture.[28] Reading once again about the canon of Classical design, emphasizing, as it does, order analysis and composition, is a refreshing return to sanity after some of the more whimsical excursions or architectural fashions in the 1980s. Tzonis and Lefaivre do not advocate a return to the glories of a past style, the dead hand of 'copyism' is not the message of this scholarly work. It is, however, a timely reminder of a systematic thought process that has produced many fine buildings in the past.

Deconstructionists following the writings of Jacques Derrida aim to deconstruct aesthetics. Derrida attempts to free philosophy from in-built constraints: centuries of thinking have, according to him, stultified the thought processes. In his literary and philosophical criticism, Derrida aims to deconstruct, among other things, the belief that logic and rational argument will provide the key to understanding – all things will become clear from rational explanation. Derrida, therefore, hopes to show that

by applying rational methods rationalism cannot work.[29]

Geoffrey Broadbent, in *Emerging Concepts in Urban Space Design*, presents an exhaustive account of the main contributors in the field of urban design.[30] This useful and extensive annotated bibliography deals in greater detail with the Post-Modern philosophical debate and is complementary to the foregoing, more selective, range of authorities chosen for their relevance to, and importance for, the thesis presented in the following chapters. For the moment, the last word will he left with Broadbent and his attempt to connect Venturi, Derrida and Rationalism:

> Venturi likes walls to be good and solid; obvious containers, protectors of internal space with transparent holes for windows. He cannot abide the Modem Movement idea of 'flowing space'; of outside and inside opening into each other through glass walls which 'can be discounted by the eye'. Inside and the outside are and must be different. Which is exactly what Derrida says of words. Spoken words, he says, are too transparent' – like Venturi's glass walls – which is why he, Derrida, gives such priority to writing.

Broadbent goes on to say that Derrida demonstrates:

> the impossibility of conceiving the inside prior to the outside. Only an outside can define an inside! So whilst Derrida may have 'stunned' rationalism, he gives even more authority to Venturi's kind of Empiricism![31]

So has Rationalism been dealt the *coup de grâce?* While agreeing the primacy of the outside (which followers of Sitte wouldn't) this writer will cling irrationally to the rational process of testing ideas in the world of empirical fact: the idea or concept comes first, the test later. Those ideas are generated by theory, even Derrida's! The present text is firmly in the tradition of Sitte and that tradition's latest manifestations, the New Rationalism. There is, here, however, no attempt like that of David Gosling in 'Definitions of Urban Design', 'to discover whether there is indeed a shift away from The Third Typology towards new directions.'[32] The new rationalists publicized and brought back onto the urban design agenda the need to design using the main formal elements found in the city.

Three interconnected themes seemed to inform the discussion about 'urbanism' or urban design during the last decade of the twentieth century: they were participation, context, and sustainable development. With the growing awareness of the importance of urban design amongst the development professions, environmental quality became an important goal of city planning, a quality ultimately judged by the user. Participation was therefore thought to be a key component in the delivery of fine city development, which was both accepted and owned by its citizens. The impetus for this movement to politicize the planning and design process was generated by a number of books appearing in the 1960s, which were critical of the development process. Books such as Jacobs' seminal work, *The Death and Life of Great American Cities* published in 1965 and Gans series of essays in *People and Plans* published in 1968, were highly influential in changing the attitudes of architects and planners. Goodman's *After the Planners* published in 1972, with its suggestions for 'guerrilla architecture' and 'squatter environments in which the community as a body lays down what it requires', gave a positive architectural dimension to the critique of the then formal process of city development.[33]

The pursuit of environmental excellence is now equated with 'contextualism' or the design of development, which is suited to the local context as defined by environment and culture. As Tibbalds wrote in *Making People Friendly Towns,* 1992 'Places need to offer variety to their users. They need to be unique and different from one another – each rooted in their own particular historical, geographical, physical or cultural context'.[34] Context as a generator of environmental excellence in the

public realm has its roots in 'critical regionalism.' According to Frampton, who is also associated with the development of the concept, Alexander Tzonis and Liane Lefaivre first coined 'Critical Regionalism' in 1981.[35] The first International Seminar on the topic, however, was not until 1989, the University of Pomona – the proceedings were published later in 1991. According to Amourgis who edited the proceedings 'the intentions behind the use of the word "regionalism" are to express natural and social context, essential factors in the shaping and evolution of life and civilization.'[36]

The rest of this book is composed of ten chapters. Chapter one deals with the method of urban design and programme formulation, a fundamental study for establishing discipline. It poses the question: 'Where do design ideas origlnate?' concentrating on creative thinking as outlined by Edward de Bono, and Bryan Lawson.[37] The urban design programme, or the social and economic needs of society, is shown to be the generator or foundation of city building activities. Urban form is defined as a physical expression of culture and, as such, it is related directly to user satisfaction and, ultimately, to public participation in the design process.

Chapter two examines the laws of composition in architecture in order to determine how and in what ways they apply at the larger scale of urban design. Composition at the scale of urban design is used in a similar way to its use for music or literature; a musical composition has a beginning, an end, theme, movements, chords and notes; similarly, a novel has a beginning, an end, theme, chapters and words. This chapter examines the grammar and syntax of urban design.

Chapters three to nine form the core of the text. Chapter three examines the ways in which buildings can be arranged, both within space and to form space. It develops an idea for a general typology of built form. Chapter four discusses the design of the square or plaza. It starts with an outline of the role and function of the square in the built environment and goes on to analyse, through examples, its form. Chapter five discusses the design of the street – the other main element in urban design. It follows the structure of chapter four starting by outlining the role and function of the street in the built environment, then going on to analyse its form using examples. Chapter six specifically examines the role of water in the design of public spaces: it discusses the form and function of the river, canal and seafront with a particular concern for the spaces formed along the edge of such water courses.

Chapter seven introduces the principles of sustainable development as they affect the design of street and square. The second part of the chapter concentrates on public transport in street and square and pays particular attention to the architectural settings for the tram or light train. Chapter eight concentrates on the use of visual analysis as a tool for understanding the role of street and square in the urban quarter. The chapter starts with an outline of the principles of visual analysis, which is followed by a study of Tavira, a small town in the Algarve, Portugal: it concludes with a summary of the ways in which the technique of visual analysis can inform the urban design process for the better understanding and design of streets and squares. Chapter nine has five case studies, bringing together the main ideas in the previous chapters, namely the design of the public realm and, in particular, its streets and squares.

Chapter ten, a short concluding chapter, examines why it proved so difficult in the twentieth century to design and develop lively streets and squares of real quality. The chapter returns to the issues raised in previous chapters in order to learn both from past mistakes and also from the great achievements of earlier generations.

NOTES

1 Sitte, Camillo. *Der Stadte-Bau*, Verlag Von Carl Graeser and Co. Wien, 1889

2 Serlio, Sebastiano. *The Five Books of Architecture*, an unabridged reprint of the English edition of 1611, Book 4, Folio 3, Dover Publications, New York, 1982

3 Eversley, David. *The Planner in Society*, Faber & Faber, London, 1973

4 Davidoff, Paul. Working towards redistributive justice. In *Journal of the American Institute of Planners*, Vol 41, No 5, September 1975, pp.317-318

5 Gosling, D. and Maitland, B. *Concepts of Urban Design*, Academy Editions, London, 1984, p.7

6 Department for Transport, Local Government and the Regions, *Planning Green Paper, Planning: Delivering a Fundamental Change,* DTLR, London, 2002.

7 HRH, The Prince of Wales. *A Vision of Britain*, Doubleday, London. 1989

8 Collins, G.R. and Collins, C.C. *Camillo Sitte: The Birth of Modern City Planning*, Rizzoli, New York, 1986, p.138

9 Wiebenson, Dora. *Architectural Theory and Practice from Alberti to Ledoux*, University of Chicago Press, Chicago, 1982

The following are the English translations used in this text:

Vitruvius. *The Ten Books of Architecture*, Dover Publications, New York, 1960

Alberti, Leone Battista. *Ten Books on Architecture* (trns Cosimo Bartoli (into Italian) and James Leoni (into English) Tiranti, London, 1955

Filarete (Antonio di Peiro Averlino). *Treatise on Architecture* (trns J.R. Spencer) Yale University Press, New Haven, 1965

Serlio, Sebastiano. *The Five Books of Architecture* (an unabridged reprint of the English edn of 1611), Dover Publications, New York, 1982

Palladio, Andrea. *The Four Books of Architecture*, Dover Publications, New York, 1965

10 Guadet, J. *Elements et Théorie De L'Architecture,* Vols I to IV, 16th edn, Librarie de Ia Construction Moderne, 1929 and 1930

11 Unwin, Raymond. *Town Planning in Practice*, Benjamin Blom Inc. New York, 1971 (first published 1909)

12 Hegemann, Werner and Peets, Elbert, *The American Vitruvius, An Architect's Handbook of Civic Art*, Benjamin Blom, New York, 1922

13 Giedion, Sigfried. *Space, Time and Architecture*, Harvard University Press, Cambridge. Mass., 3rd edn, 1956

14 Gibberd, Frederick. *Town Design*, Architectural Press, London, 2nd edn, 1955

15 Rasmussen, S.E. *Towns and Buildings*, Liverpool University Press, Liverpool, 1951

16 Rasmussen, S.E. *Experiencing Architecture*, MIT Press, Cambridge, Mass., 1959

Lynch, Kevin. *The Image of the City*, MIT Press, Cambridge, Mass., 1960

Cullen, Gordon. *The Concise Townscape*, Architectural Press, London, 1986 (first publishcd 1961)

17 Alexander, Christopher. A city is not a tree. In *Architectural Forum*, New York, April 1965, pp.58-62 and May 1965, pp.58-61

18 Alexander, C., et al. *A Pattern Language*. Oxford University Press, Oxford, 1977

Alexander, C., et al. *A New Theory of Urban Design*, Oxford University Press, Oxford, 1987

19 Rossi, A. *L'Architettura della cilta* (ed. Macsilio), Padua, 1966

Venturi, R. *Complexity and Contradiction in Architecture*, Museum of Modern Art, New York, 1966

20 Rowe, C. and Koefler, F. *Collage City*, MIT Press, Cambridge, Mass., l978

21 Norberg-Schulz, Christian. *Existence, Space and Architecture*, Studio Vista, London, 1971, and *Genius Loci, Towards a Phenomenology of Architecture*, Rizzoli, New York, 1980

22 Rapoport, A. *House Form and Culture*, Prentice-Hall, Englewood Cliffs, New Jersey, 1962, and *Human Aspects of Urban Form*, Pergamon Press, Oxford, 1977

23 Moughtin, J.C. *Hausa Architecture*, Ethnographica, London, 1985

24 Vidler, A. The third typology. In *Rational Architecture*, Archives d'Architecture Moderne, Bruxelles, 1978

25 Krier, L. The reconstruction of the city. In *Rational Architecture*, Archives d'Architecture Moderne, Bruxelles, 1978, p.41

26 Ibid, p.42

27 Eisenman, P. and Krier, L. Reconstruction deconstruction, my ideology is better than yours. In *Architectural Design*, vol 59, No 9-10, 1989 pp.7-18

28 Tzonis, A. and Lefaivre, L. *Classical Architecture, The Poetics of Order*, MIT Press, Cambridge, Mass., 1986

29 Derrida, J. *Of Grammatologie* (trns G.C. Spivak) Johns Hopkins University Press, Baltimore, 1976; *L'Ecriture et la Difference* (trns A. Bass) Chicago University Press, Chicago, l978; *Speech and Phenomena*, Northwestern University Press, Evanston, 1973 and *Derrida and Deconstruction* (ed. H.J. Silverman) Routledge, London, 1989

30 Broadbent, G. *Emerging Concepts in Urban Space Design*, Van Nostrand Reinhold, London, 1990

31 Ibid, p.320

32 Gosling, D. Definitions of urban design. In *Architectural Design, Urbanism* (ed. David Gosling) Vol 54, No 1/2, 1984, pp.16-25

33 Jacobs, J. *The Death and Life of Great American Cities,* Penguin, Harmonsdworth, 1965. Gans, H. *People and Plans,* Basic Books, New York, 1968. Goodman, R. *After the Planners,* Penguin, Harmondsworth, 1972

34 Tibbalds, F. *Making People-friendly Towns,* Longman, Harlow, 1992

35 Tzonis, A. and Lefaivre, L. Critical regionalism. In *Critical Regionalism: The Pomona Meeting Proceedings* (ed. A. Amourgis) California State Polytechnic University, California, 1991

36 Amourgis. S. ' Introduction', in *Critical Regionalism,* ibid

37 de Bono, E. *Lateral Thinking*, Penguin Books. Harmondsworth, 1977, and Lawson, B. *How Designers Think*, Architectural Press, London, 1980

URBAN DESIGN AND PEOPLE 1

INTRODUCTION

The title of this chapter presents a dilemma. This dilemma is caused by the tension between the desire to practise an art form based upon method and principle, while, at the same time, involving people actively in the design process. The tension can be summed up in the phrase 'professionalism versus populism'. HRH Prince Charles is engaged with this dilemma by supporting public participation in planning and architecture while advocating, at the same time, a form of Classical design: 'Buildings should reflect these harmonies, for architecture is like a language. You cannot construct pleasing sentences in English unless you have a thorough knowledge of the grammatical ground rules. If you abandon these basic principles of grammar the result is discordant and inharmonious. Good architecture should be like good manners and follow a recognized code. Civilized life is made more pleasurable by a shared understanding of simple rules of conduct.'[1] Later he writes: 'People should be involved willingly from the beginning in the improvement of their surroundings. . .but participation cannot be imposed: it has to start from the bottom up.'[2]

In any dispute between the views of the 'people' and the 'professionals' which takes precedence? In Bath this dilemma was made manifest when an individual occupying a property in The Crescent wished to paint her door yellow. The professional view considered that all doors in John Wood junior's great piece of Classical urban architecture should be white. The law in this case upheld the individual's right to express her own taste.

The aim of this chapter is not to solve this dilemma but, more simply, to make it apparent and to set theoretical ground rules for incorporating public participation into the urban design process. The dilemma will not disappear, but it may be that the resolution of the tensions will stimulate creative design.

AN ANALYTICAL FRAMEWORK FOR PUBLIC PARTICIPATION

Urban design, or the art of building cities, is the method by which man creates a built environment that fulfils his aspirations and represents his values.[3] This he does in his own likeness, The sixteenth-century theorist and architect John Shute likens the

city to the human figure: 'A city ought to be like the human body and for this reason it should be full of all that gives life to man.'[4] Urban design, like its sister art architecture, is a people's use of an accumulated technological knowledge to control and adapt the environment for social, economic, political and religious requirements. It is the method learned and used by a people to solve the total programme of requirements for city building. The city is an element of a people's spiritual and physical culture and, indeed, it is one of the highest expressions of that culture.

Central to the study of urban design is man, his values, aspirations and power or ability to achieve them. The task of the city builder is to understand and express, in built form, the needs and aspirations of the client group. How does the city builder design to best serve the community's needs? How can the designer ensure that the end product is culturally acceptable? These and other similar questions are important issues for those in the city designing professions.

Experience from the recent past, in this and many other countries, is littered with well-intentioned, but totally unsuitable, developments. Developments that range from the faceless mass housing of the 1960s to the large-scale office blocks or commercial areas which totally destroy the intimate fabric of the city. As a reaction the conservation movement grows apace. Timidity, the fear of further mistakes, prevents even the replacement of mediocre buildings from the past. Yet Shute, one of the country's earliest theorists and author of the first English architectural book, recognized that all buildings have a natural lifespan then they need to be replaced, sometimes with reluctance: 'You can say one eats, and even so dies. The building must also decline through time just as one person dies sooner than another or has better or poorer health.'[5] Copying features from past architectural styles is once again in vogue among city builders around the world, as if the planting of an onion dome, a minaret or horseshoe arch will, of themselves, convert a barren design into culturally acceptable development.

The anarchy of the Post-Modern movement in architecture, with its dependence upon cliché and eclectic use of symbols from the past, must, if progress is to he made, give way to a more rational approach to architectural design steeped in discipline and method. Urban design, too, requires a return to its roots in method. Central to such a return to method is the relationship between designer and client.

It is evident that the architect has lost touch with his client. In traditional practice the architect worked for an individual or a small group representing a landed proprietor, the Church Commissioners, a company or government department. The individual client is a vestige of the past: a time when architect and client shared the same culture, values and may even have been on the same 'grande tour'. Growth of democracy and mass culture now requires the architect and city builder to recognise a wider client group. This wider client group includes the church congregation, the ordinary voter and the general user of the buildings. Many in this expanded client group do not share the values of the designer group. It is frequently possible that a wide cultural gap separates the city builder and the new client – the man and woman in the street.

The chasm between city designer and client can be bridged when the problem is recognized as existing and its nature defined: when the complexity and heterogeneity of the client group is admitted and when the designer realizes that culture is never static: it is in a constant state of change and to some extent, he or she – the designer – is an agent for those changes. Finally, it is necessary to develop methods and techniques for use when working with community groups.

For evidence of the gulf between the design professions and lay people one need only turn to the outpourings of the press or the many critical programmes appearing on television where planners and architects alike receive rough treatment. These

views are best summarized by Prince Charles's remarks at the Festival of Architecture held at Hampton Court in early 1984. In his blistering attack on architectural practice in Britain he compared the Ahrends, Burton and Koralek design for the National Gallery extension to 'a monstrous carbuncle on the face of a much loved and elegant friend' and he called the Mies van der Rohe design for Mansion House Square 'a giant glass stump better suited to Chicago'.[6] These views are important not only because they were expressed by a member of the Royal family but because they appear to be closely in tune with those of the lay person.

The reasons for the present public antipathy to much recent urban development lie squarely with the training of architects and planners. To a large extent architects, urban designers and planners have been trained in a rarefied atmosphere where the subject is taught with little or no reference to the public for whom the product is intended. Education in city building in the recent past has been dominated by the posturings of the avant-garde, a break with sound tradition and the pursuit of novel, but empirically untested, theory. The result is that we have a very special subculture designing with its own peer group in mind. The internal validating process in our subject area of urban design has produced a class of people out of touch with the general mass of users. There are notable exceptions to this general rule. There are also movements within the professions which espouse a more populist approach, but, generally speaking, the gap between designer and client is wide and goes unnoticed or disregarded by many.

The communities inhabiting towns and cities, and therefore the focus of our subject, are complex heterogeneous groups made up of diverse subcultures with differing values and aspirations. The understanding of an alien culture or subculture poses great difficulties. In our understanding of the world around us, we all start from our own cultural framework modified by a personal frame of reference. Such an analytical framework so deeply embedded in culture, while necessary for structuring thought can, in the process, limit understanding. Culture can be viewed as a filter, acting between the outside environment and the receiver. Understanding others requires, primarily, an understanding of the limitations of one's own cultural and personal frame of reference.[7] The modest approach to design advocated here is somewhat at variance with the egocentric attitudes inculcated in the great designer. I suggest that a change in attitude on the part of the design professions is essential for understanding a community's needs and aspirations and for working with people.

Culture is never entirely static, it is in a constant state of change. The world is getting smaller and there is increasing contact between peoples. As a result, cultures are changing. What is more, they appear to be changing at an increasing rate. Urban designers are forward looking; we plan and design, not only for the here and now, but also for the future. A backward looking or even static view is, therefore, a highly mischievous occupation. It is the dynamic of cultural change that must be the urban designer's primary concern. As anthropologists would say, it is the process of acculturation – the way in which new ideas and mores are grafted onto existing cultures – that should be the prime concern of those engaged in designing for the future.[8] It is the agents of change, those actors or processes that drive the engines of change, which have to be discerned and harnessed. The situation is further complicated when the architect, urban designer or planner realizes that he or she is an important agent of change. The designer even when working with people is not a neutered, objective observer, but a significant actor in the process of culture change.

An important aspect of the designer's skill is the development of a menu of techniques for incorporation into the design process. These techniques range from anthropological studies establishing essential cultural data, user studies, and planning surveys, through informative techniques, the exhibition and

1. Techniques of Participation
1. Community Administration
2. Self-Build
3. Community Planning & Design
4. Political Manifesto
5. Public Meeting
6. Public Enquiries
7. Planning Appeals
8. The Exhibition
9. Press Release
10. Planning Survey
11. User Study
12. Anthropological Study

Figure 1.1 Techniques of participation

2. Levels of Participation	
1. Citizen Control	Degrees of Citizen Power
2. Delegated Power	
3. Partnership	
4. Placation	Degrees of Tokenism
5. Consultation	
6. Informing	
7. Therapy	Non-participation
8. Manipulation	

Figure 1.2 Levels of participation

press notices, to administrative procedures such as public enquiries and planning appeals. People's views can also be elicited at public meetings or sought through the electoral process by including planning matters in political manifestos. Finally, there is the group of more active forms of participation such as community design exercises, self-build operations and community administration and control. The menu of techniques, Figure 1.1, has limited utility without the ability to predict the type of technique most useful in any given situation or, conversely, the changes in context necessary to facilitate the use of a technique.

Participation can have different meanings for different people. Fortunately for those working in this field Sherry Arnstein has described the shades of meaning attached to this term.[9] Her ladder of participation, Figure 1.2, though now 30 years old, is still a good tool for a preliminary analysis of participation. Her typology ranges from illusory forms of participation, which she terms manipulation and therapy, through degrees of tokenism such as informing, consulting and placating. The top rungs of the hierarchy are partnership, delegated power and citizen control, all of which infer a degree of citizen power, that is, they require some redistribution of power if they are to be realized.

The Arnstein typology makes it easy to understand the communication gap between the 'planned' on the one hand, the planner, urban designer and politician, on the other. The former, having had his or her expectation of participation raised, often thinks in terms of having the final word in the decision-making process while, to the professional and politician it usually means publicity and consultation. A phrase such as 'more participation' can mean to the public a more intensive form of participation, that is, moving up the ladder, while to the professional and politician it may mean greater consultation in the form of more publicity.

From Figures 1.1 and 1.2 it can be seen that in Arnstein's terms, the more intense forms of participation, that is participation of a type close to the top of the ladder, requires techniques which actively involve the individual in plan making, design, constructional work, and responsibility for estate administration including participation in any economic gains from development. The mid-range levels of participation, the more usual conditions found in western democracies, suggest the use of bureaucratic techniques usually advocated and organized by the professionals in any administration. Towards the lower end of the scale, which Arnstein defines as non-participation, are the more objective and scientific methods of information gathering which can inform the planning and design process but, at best, result only in a more sympathetic and human form of administration, still in all its essential features paternalistic.

The higher levels of participation require a redistribution of power, that is, power has to be removed from some sectors of society and placed in the hands of others. The higher one moves in Arnstein's ladder the greater is the degree in the shift in power. For example, the professional planner, urban designer and architect in a participatory situation lose much of their ability to decide the outcome of the development process. This line of argument brings the planning, design and development process directly into the political arena.[10]

American scholars in their writings have made it abundantly clear that planning decisions by their very nature are political and cannot be considered simply technical. For example, Paul Davidoff states:

'The essence of politics is who gets what. Or call it distributive justice. The public planning process as a part of the political system is inextricably related to the distributional question facing communities in which planners work.'[11] This point has also been made by writers such as David Eversley in Britain, who says:

> But it must be made clear that since the planner, as defined here, is the person who determines where people shall build, and where they shall not build, where there shall be new or expanded towns, or

> growth areas, and where national parks or Areas of Outstanding Natural Beauty shall prevent building, where power stations shall be sited and canals reopened, motorways built and railways shut down, he is in fact responsible for the allocation of this very large part of the national product and the benefits it confers.[12]

It can be argued that urban design is akin to planning in many respects and, since it deals with large parts of towns and cities, it too is concerned with distribution of resources and wealth. It would be advisable, for the urban designer wishing to remain within the safety of a technical design process, not to dabble with participation that confronts the designer directly with the issue of the distribution of power and wealth and, hence, takes the subject right to the centre of politics.

Figure 1.3 shows in simplistic form a scale of political structures, ranging from anarchy through various forms of democracies to the varieties of dictatorship which exist in the world. From the viewpoint of participation in development it is convenient to concentrate on the middle portion of the range. A state of anarchy, though an ideal among some thinkers and activists, in its more extreme forms does not last long before being replaced by a more disciplined regime. Totalitarian government, by definition, does not permit general and widespread participation.

Democracy according to Carole Pateman has three main definitions.[13] These are: first, representative or modern democracy; second, classical democracy associated with the writings of the eighteenth-century political philosophers and, finally, participatory democracy based upon a reinterpretation of the writings of Jean Jacques Rousseau to take regard of an industrialized society.

The theoretical basis of representative democracy has been developed by Joseph Schumpeter and others. Schumpeter states that: 'The democratic method is that institutional arrangement for arriving at political decisions in which individuals acquire the power to decide by means of a competitive struggle for the people's vote.'[14] Competition for votes is similar to the operation of the economic market. Voters choose between the policies offered by competing political entrepreneurs. Political parties are analogous to trade associations in the economic sphere and regulate competition. 'Participation' for the majority in a representative democracy is, therefore, only participation in the choice of decision makers.

Representative democracy does not require high levels of participation and interest in political affairs except from a small minority. Pateman points out that 'the apathy and disinterest of the majority play a valuable role in maintaining the stability of the system.'[15] Planners and urban designers should be aware of the shortcomings of this rather cynical view of the political process whereby plans are legitimized and development is implemented. Dealing with problems such as where and how people live, work and educate their children, should lead us to question the necessity and desirability of decisions in these fields being handed over to 'representatives of the people'. To remove people's right to make these decisions removes also their self respect and lessens their dignity as human beings.

For the followers of Rousseau and participatory democracy, 'participation' is an essential element of the decision-making process and is also a method of protecting private interest. This theory is also concerned with the psychological effect of social and political institutions. The central function of Rousseau's theory is educative and his chief concern is that the political system should develop responsible individuals. In effect, he is saying that as one can only learn to swim by swimming so too one can only learn to be democratic by being involved in democratic processes. These democratic processes, according to Rousseau and his twentieth-century followers, should permeate all aspects of society, and that, of course, includes planning and developmental decisions.

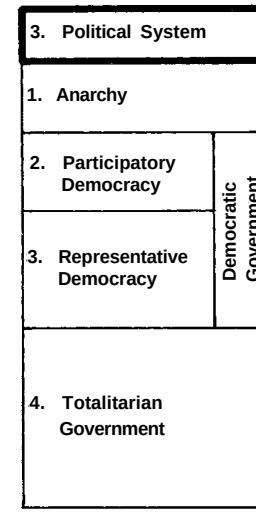


Figure 1.3 Political system

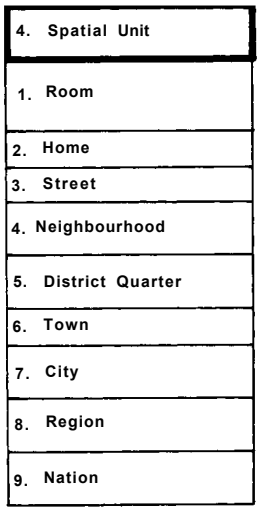


Figure 1.4 Spatial unit

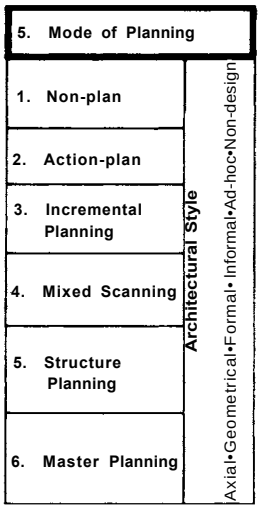


Figure 1.5 Mode of planning

Comparing Arnstein's ladder of participation, Figure 1.2, with governmental types, Figure 1.3, one would expect higher intensities of participation to be found in situations of near anarchy where group decision making is an amalgam of the total of individual decisions. It could also be predicted that the normal form of participation in a representative democracy would be tokenism to use Arnstein's terminology. Referring to Figure 1.1 the most usual techniques used in such politics tend to lie in the mid-range, that is, those administrative procedures defined and devised by the bureaucracy. It would appear that the use of techniques which represent the more intensive styles of participation requires a highly politicized and active population together with a high degree of tolerance for forms of local democracy by the central government.

Figure 1.3 is extremely simplistic; it takes no account of the administrative system or even relationships between central and local governments within any representative democracy which are both of great importance. Even within the same country, relationships may differ between central and local government. In Britain, for example, the 1980s saw a movement of power from the periphery to the centre. In the late 1990s, however, there seems a movement towards devolution of power to Scotland, Wales, Northern Ireland and the English Regions.

For full participation it could be postulated that it is necessary to have devolution of power to local communities; decision making in fields such as housing and local community services being placed in the hands of the residents of such communities. Such decentralization of power presupposes an active and highiy politicized population.

Figure 1.4 depicts a hierarchy of spatial units adapted from Constantinos Doxiadis: it is a simplified version of his Ekistic scale.[16] Moving down the scale involves greater numbers of users with an interest in the outcome of any decisions affecting the form of the element. Comparing Figure 1.4 with Figures 1.1 and 1.2 it would appear that techniques associated with citizen control, planning and decision making at the larger spatial scales are unrealistic despite any other favourable conditions which might prevail in the political or administrative climate. When coordination of services, infrastructure and the economy at higher spatial levels is advisable it may be necessary to forgo full citizen participation and to delegate power to elected representatives. At town scale and above, those bureaucratic procedures such as public meetings, enquiries and appeals, together with the enlightened use of the political manifesto, may be the best that can be achieved regardless of the political system involved. Increasing the level and intensity of participation in any large spatial unit requires its subdivision into small planning and design units the size of the neighbourhood and street block; each such unit having appropriate responsibilities delegated.

Figure 1.5 illustrates a range of planning styles. The scale ranges from the less formal types of planning, starting with the non-plan where economic forces determine settlement form through various types of ad hoc decisions, where short-term projects are pragmatically woven into the existing situation, to the more rigid planning methods culminating in the master plan, a blueprint for a desired future end state. A similar range could be devised for architectural style. Such a scale would range from the worst forms of entirely cost-oriented speculative housing, through incremental, additive and irregular design concepts and eventually to geometrically dominated design and highly formal axial compositions. Comparing these notions of planning and design with previous figures it can be seen that high levels of citizen participation are more compatible with less formal architectural and planning styles. In non-planning situations, however, the level of an individual's ability to participate is dependent upon his ability to pay. The physical result ranges from the large detached house in a wealthy European suburb to the temporary tin hut on the periphery of Nairobi. At the other extreme the blueprint for long-term city development and the rigid axial composition, almost by definition, are not

conducive to high levels of citizen participation.

Figure 1.6 is a composite of the scales so far discussed. It indicates some of the ways in which the participation process can be analysed. The diagram can be imagined as a type of complicated slide rule where each scale can be moved up or down in relation to its neighbours. It is then possible to outline or describe the sort of conditions likely to operate in any situation.[17] There may, however, be factors not represented on the scale which have to be taken into consideration.

Where high levels of participation are thought desirable then the planner/designer must think in terms of community administration, self-build together with community planning and design. This situation would also presume high levels of participatory democracy together with some form of decentralization of power and decision making. Such

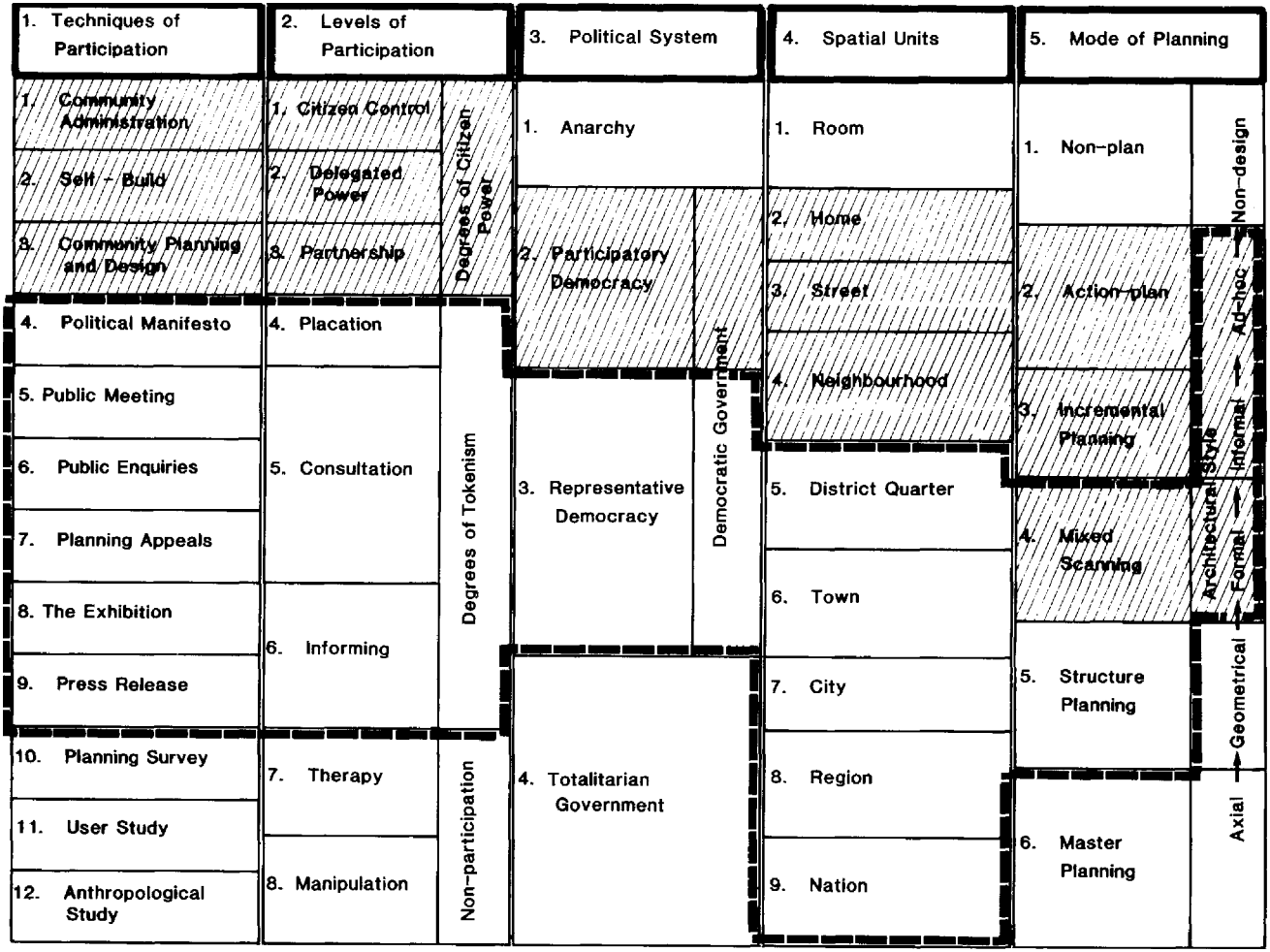


Figure 1.6 Analytical scale of participation

conditions would apply only to the planning of the home, the street and the neighbourhood. The room, it is assumed, is a purely personal space and requires little or no community action, while the district or quarter may be too large for effective community action. The sort of planning most suitable for such conditions would be incremental and ad hoc, probably resulting in less formal architectural solutions (see shaded section of Figure 1.6).

Conversely, the techniques of participation most suited to the planning of towns, cities, regions and for national planning would seem to be the political manifesto, public meetings, public enquiries, planning appeals, the planning exhibition and media releases. Arnstein would define this participation as tokenism but it would require some form of democratic structure. At these scales, mixed scanning or structure planning would be most appropriate. Presumably the architectural style would be determined by the amount of genuine citizen control exerted at local levels (see area in Figure 1.6 outlined with heavy dotted line).

THE URBAN DESIGN PROCESS

Urban development is the result of a process. It is, therefore, a little simplistic to discuss participation in planning or design unless one is specific about the type of participation and the techniques used at each stage in the process.

Planning method was for some time based upon Sir Patrick Geddes' dictum: 'Survey. Analysis. Plan.' However, in making a planning survey it is necessary to know what sort of information is required and for what purpose it is to be analysed. Others have since amplified Geddes' method inserting additional intermediate steps. One such amplification is shown in Figure 1.7. Descriptions of the planning method indicate that the process is not a simple linear progression where each phase is completed before proceeding to the next step. The planning process is deemed to be cyclical having intermediate loops. For example, after an evaluation of alternative plans it may be necessary to redefine goals, or to collect additional data, or to analyse the data in a different way.

Design methods advocated by architects are similar in nature to those prepared by planners. The RIBA practice and management handbook divides the design process into four phases:[18]

Phase 1 *Assimilation*: The accumulation of general information and information specially related to the problem.

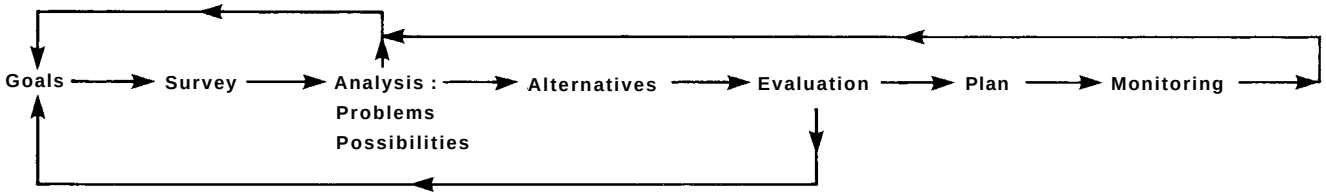
Phase 2 *General study*: The investigation of the nature of the problem: the investigation of possible solutions.

Phase 3 *Development*: The development of one or more solutions.

Phase 4 *Communication*: The communication of chosen solution/s to the client.

Thomas Markus and Thomas Mayer take the description of design method a little further.[19] They argue that the designer goes through a decision sequence – analysis, synthesis, appraisal and decision at increasingly more detailed levels in the design process (see Figure 1.8). During the analytical stage, goals and objectives are classified and patterns in information are sought. Synthesis is the stage where ideas are generated. It is followed by a critical evaluation of the alternative solutions against objectives, costs and other constraints. Decisions are made depending upon the findings of the evaluation,

Figure 1.7 Planning method



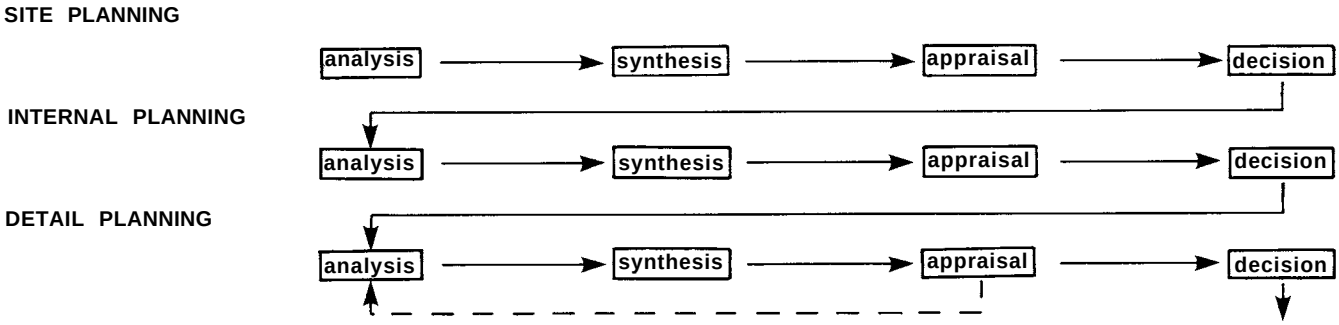


Figure 1.8 Architectural method

though, as with any other design method, return loops between stages are important.

This way of looking at the design process for an individual building can be extended to include urban design, town planning and regional planning (see Figure 1.9). In this case decisions at the higher level should inform the design process at the next, lower order of design, for example, from regional to town planning. It makes most sense when each component of the environment fits consistently within the framework of a higher order plan, for example, a building designed to fit within an urban design scheme which is determined by an urban structure plan based upon proposals for the region. It is, however, not simply a one-way process from large to small scale. It could, quite correctly, be argued that the design of each individual building should have some effect upon the design of the larger urban grouping and that this three-dimensional design of large city areas should inform the higher level of city planning. Hence in Figure 1.9 there are return loops between the distinct facets of the development process for city planning.

In the planning and design methodologies so far discussed there has been no mention of theory. Facts without theory are meaningless pieces of information. They take on meaning when related to each other by some theoretical construct. Solutions to urban design problems, alternative ways of organizing space in a city, ideas about the relationship of function and urban structure have their origins in theory. In order to insert theory into the design

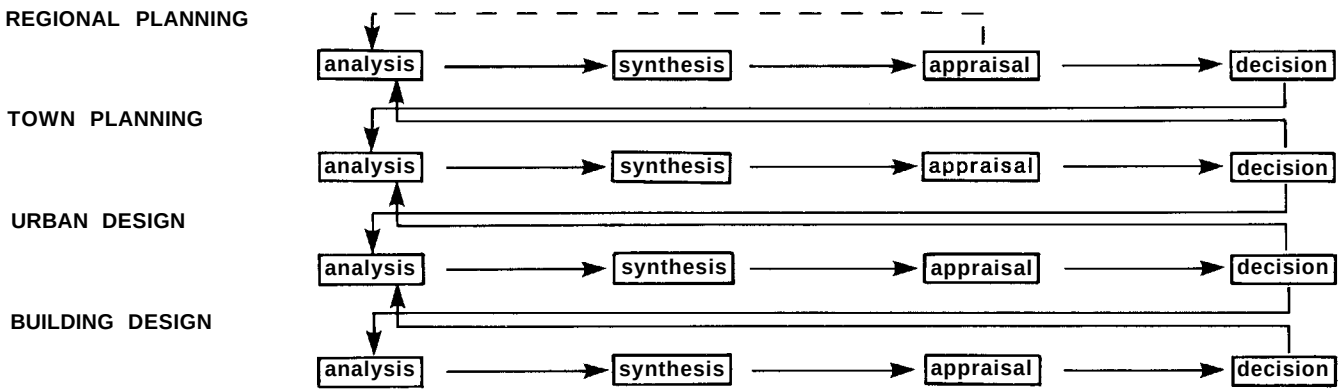


Figure 1.9 Integrated design process

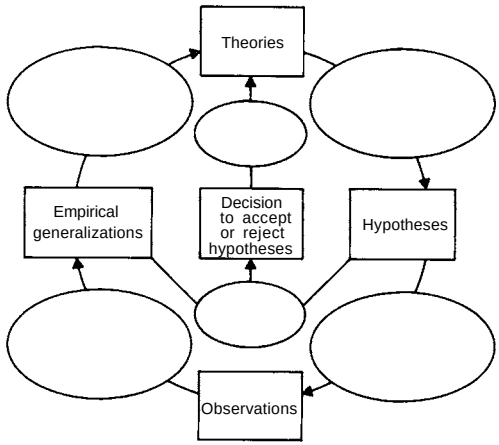


Figure 1.10 Scientific process: information sets

process a direct analogy can be made with scientific method. According to Walter Wallace: 'The scientific process may be described as involving five principal information components whose transformations into one another are controlled by six principal sets of methods...'[20] The five sets of information are: the body of theory, hypotheses, sets of unique observations from the surrounding environment, empirical generalizations derived from the unique observations and finally the body of decisions relating to the acceptance or rejection of hypotheses (see Figure 1.10). The six methods or techniques of transformation are shown in Figure 1.11. Theory, the most general type of information, is transformed into hypotheses through the method of logical deduction. The hypotheses are transformed into observations by interpretation into observables, instrumentation, scaling and sampling. The observations are transformed into empirical generalizations through the process of measurement, sample summarization and parameter estimation. The hypotheses can then be tested for conformity with the generalizations. From the test is derived the final information set, the decisions about the validity of the hypotheses. The last action in the process is the confirmation, modification or rejection of the theory through the processes of logical inference or concept formation, proposition formation and proposition arrangement.

While this outline of scientific method appears clear, precise and systematic, it is open to endless variation. Some elements of the process are more important for some research projects, some scientists practise a high degree of rigour while others behave quite intuitively and informally.

However, there appear to be two main constituents of science, theory construction and empirical research. The left-hand side of Figure 1.12 represents inductive construction of theory from an understanding of observations, while the right half represents the deductive application of theory to observations. The top half of the diagram represents the process of theorizing using inductive and deductive logic while the bottom half illustrates the process of carrying out a piece of empirical research.[21]

Figure 1.13 is a diagrammatic representation of design method incorporating theory and structured according to the analysis of scientific thinking by Wallace.[22] Entry into the design circle is possible at three points, design theories, ideas, or directly into the investigation stage. It is theoretically possible to move directly from problem definition to ideas for

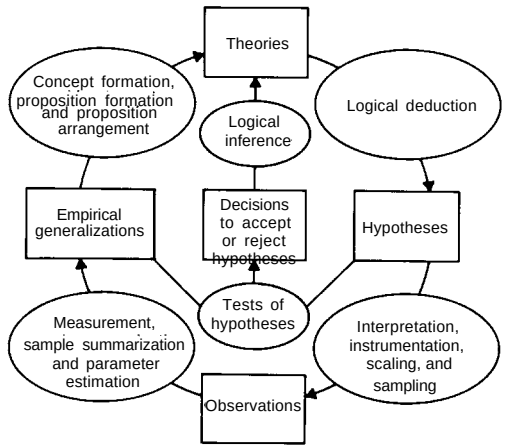


Figure 1.11 Scientific process: techniques of transformation

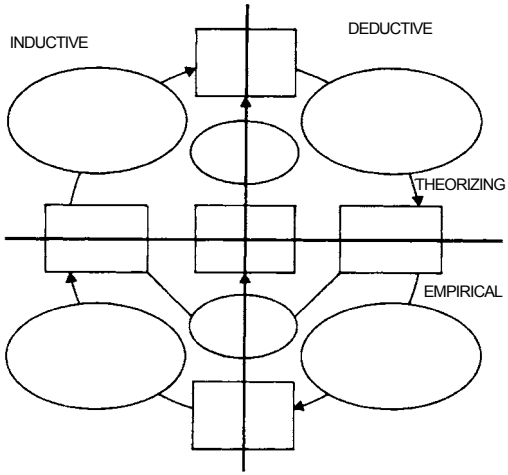


Figure 1.12 Inductive and deductive processes

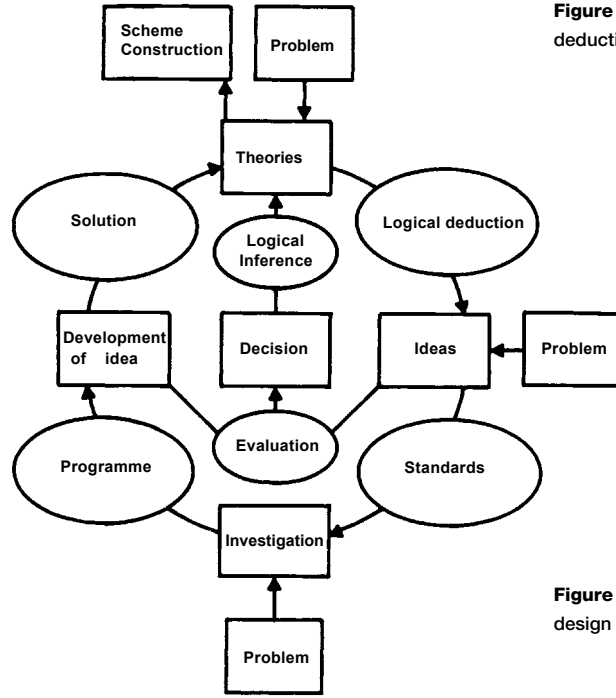


Figure 1.13 Scientific design process

its solution or to the search for data that will assist with finding the solution. Nevertheless, both of these procedures require some preliminary notions about theory however ill formed or inexplicit they may be; it is only through theory that ideas and data can be related to form a pattern. The more usual, the more classic procedure, is to move from problem definition to a theoretical understanding of the problem then to proceed through the steps in a clockwise direction.

At the core of scientific method is asking the right question or questions. We are all aware of the home truth that asking a silly question will result in a silly answer. The same is true of design. Posing the problem is the art of design. There is a school of thought, now somewhat out of fashion, which infers that the application of method results in good design. The 'method school', in its more extreme forms would have us believe that a study of the problem, followed by logical analysis of all possible solutions will result in the best solution being chosen to solve the problem. In complex design situations it is not always possible to define the problem, nor to collect all the facts, nor to generate all possible solutions. This is to misunderstand the design process where the problem is explored through the examination of solutions. An application of design method may result in the redefinition or clarification of the problem initiating a whole new round of investigation.

The design process is not linear but dialectical, taking the form of an argument between problem and solution. As Bryan Lawson says: 'It is clear from our analysis of the nature of design problems that the designer must inevitably expend considerable energy in identifying problems confronting him. It is central to modern thinking that problems and solutions are seen as emerging together rather than one following logically upon the other.'[23] Following this view of design the nature of the problem becomes clearer as the process develops. Lawson also goes on to say that: Since neither finding

problems nor producing solutions can be seen as predominantly logical activities we must expect the design process to demand the highest levels of creative thinking.'[24] Design, urban design included, does involve creative thinking, it would, however, be misleading to assume that this does not apply equally in the field of scientific investigation. It would also be misleading to think that design solutions cannot be generated through logical deduction from theory or inductively from the data or evidence, or indeed, that problem exploration is not the outcome of standard design procedures. It is, however, reasonable to suggest that the designer explores the nature of the problem through the examination of solutions or partial solutions.

While theory is an important source for the development of urban design ideas, it is not the only one. Ideas can be generated in other ways which fall outside the scope of inductive or deductive reasoning. Artists and designers often resort to the use of analogies in their work. Analogy is one of the most useful tools of the creative artist. Analogies offer a convenient technique for removing a thought block, a way of reviving design method instead of waiting patiently for inspiration to find new ways of looking at a situation. De Bono suggests that: 'The main usefulness of analogies is as vehicles for functions, processes and relationships which can then be transferred to the problem under consideration.'[25]

Ideas or concepts used in urban design can be generated by reference to general theory through a process of deduction, or from the facts by a process of inductive logic. Ideas, however, may be generated by a process of lateral thinking; these ideas can be evaluated later using techniques of logic. This all sounds very far from the life of the man in the street. How then can the community be involved in the process? At what point, therefore, do people take part in the design and development process?

The notions of the great architect and the 'big idea' that sets architectural fashion in new directions run deep in our profession. The planner is also loath to relinquish to the layman control over the creative part of plan making, the search for solution. Ideas are thought to be the province of the professions. Starting the design process from a theoretical foundation and from abstract notions does give to the professional, with his or her long period of education and experience, great advantages over the layperson. If, however, a positive form of participation is desired, these notions that the professions know best must be abandoned.

The layperson, too, has knowledge and experience. He or she is the expert on his or her family, its needs and aspirations. This is a highly specialized knowledge about the sort of housing, educational, health care and recreational facilities the family needs and can afford; it is his or her daily preoccupation. The layperson is well able to extend this personal knowledge and to form accurate ideas about his neighbours' needs also. The layperson then is the expert on the problems of the neighbourhood in which he or she lives. The professional when carrying out surveys into user requirements estimates in crude terms this knowledge, whereas the layperson's knowledge in this field is immediate and first hand. The ordinary citizen also has ideas about the ways in which these problems can be solved and how to capitalize on any possibilities that exist. For corroboration of this statement one has only to examine the self-help housing built in Third World cities or return to the roots of tradition when settlements were developed without the aid of the professional.[26]

Making the most of this wealth of experience requires starting the design process; either by investigating the problem, permitting the community to outline its problems, or by their posing solutions to problems already intimately known to them, then examining these solutions in the light of an evaluation. Experiments in Belfast, Nottingham and Newark confirmed that residents are perfectly capable of organizing their own survey and are also able to generate planning and architectural solutions.[27]

The professional's role, in citizen-participant dominated design, is not defunct. On the contrary, it becomes more delicate and subtle requiring patience and, above all, skills in listening. It also requires of the designer the humility to be able to offer advice only when requested.[28] The professional's advice on technical matters is supreme, experience shows that it is well respected by the layperson. The professional's role, however, is not so narrowly drawn; it is also one of education. The layperson can offer solutions only from within his or her own experience. The professional can open up a new world of experience to the client group through knowledge of many other similar situations. Sharing this knowledge with the client has always been part of the professional's role; it remains so in the process of participation.

The layperson's knowledge and experience of planning and design matters beyond the immediate neighbourhood decreases as does his or her interest. These wider issues, and their implications for the locality, have to be interpreted and made clear to the community by the professional. If, however, high levels of participation are thought desirable then the planning and design process should give emphasis to a bottom-up order rather than working from the region or city down to the neighbourhood and the street. The higher levels of planning then become an amalgam of small-scale plans co-ordinated to ensure that higher level services are not inhibited.

Culturally appropriate development may or may not result from deep, introspective, self-discovery by the designer or from a sensitive approach to the client group and its communal needs. Clearly, however, people associate more closely with an environment that they can make their own through their own actions. To facilitate the active participation of communities with the planning and development of the environment requires a whole range of approaches and a full menu of techniques. These approaches are likely to vary with the type of political and administrative system, the spatial unit being designed, the current mode of planning and the stage in the design process. Citizen participation is maximized when there is a democratic form of government with high participatory levels in many fields of administration, where much of the decision making is decentralized and where the form of planning is incremental in style. Even in such an ideal situation the greatest levels of participation could be expected to occur at the small scale of the group of families in the street, or the small community occupying a small neighbourhood. It is in such residential areas where the general public's knowledge and experience is paramount.

NOTES

1. HRH, The Prince of Wales. *A Vision of Britain*, Doubleday, London, 1989, p.80
2. Ibid, p.96
3. Rapoport, A. *House Form and Culture*, Prentice-Hall, Englewood Cliffs, New Jersey, 1969
4. Shute, John. *The First and Chief Grounds of Architecture*, published by John Shute, printed by Thomas Marshe, London, 1563, Book IV, p.45
5. Ibid, Book I, p.14
6. *Architect's Journal*, 6 June 1984, p.30
7. See for example the work of Rapoport, A. *Human Aspects of Urban Form: Towards a Man Environment Approach to Urban Form and Design*, Pergamon Press, New York, 1977
8. Moughtin, J.C. and Shalaby, T. 'Housing design in Muslim cities: towards a new approach'. In *Low Cost Housing for Developing Countries*, Vol II, Central Building Research Institute, New Delhi, 1984, pp.831-851
9. Arnstein, Sherry R. A ladder of citizen participation. In *Journal of the American Institute of Planners*, Vol 35, No 4, July 1969, pp.216-224
10. Moughtin, J.C. *Planning for People*, Queen's University, Belfast, 1972
11. Davidoff, Paul. Working towards redistributive justice. In *Journal of the American Institute of Planners*, Vol 41, No 5, September 1975, pp.317-318

12 Eversley, David. *The Planner in Society*, Faber & Faber, London, 1973

13 Pateman, Carole. *Participation and Democratic Theory*, Cambridge University Press, Cambridge, 1970

14 Schumpeter, J.A. *Capitalism, Socialism and Democracy*, Allen and Unwin, London, 1943

15 Pateman, C. Op cit, p.7

16 Doxiadis, C.A. *Ekistics: An Introduction to the Science of Human Settlements*, Hutchinson, London, 1968

17 Moughtin, J.C. Public participation and the implementation of development. In *Town and Country Summer School Report*, London, Royal Town Planning Institute, 1978, pp.81-84

18 RIBA, *Architectural Practice and Management Handbook*, RIBA Publications, London, 1965

19 Markus, T.A. The role of budding performance measurement and appraisal in design method. In *Design Methods in Architecture* (eds. G. Broadbent and A. Ward), Lund Humphries, London, 1969

Mayer, T.W. Appraisal in the building design process. In *Emerging Methods in Environmental Design and Planning* (ed. G.T. Moore), MIT Press, Cambridge, Mass., 1970

20 Wallace, Walter. An overview of elements in the scientific process. In *Social Research: Principles and Procedures* (eds. John Bynner and Keith M. Stribley), Longman, Harlow, 1978, pp.4-10

21 Ibid (Figures 1.10, 1.11 and 1.12 are taken from Wallace)

22 Ibid

23 Lawson, Bryan. *How Designers Think*, Architectural Press, London, 1980

24 Ibid

25 De Bono, Edward, *Lateral Thinking*, Penguin, Harmondsworth, 1977

26 Moughtin, J.C. *Hausa Architecture*, Ethnographica, London, 1985

27 Moughtin, J.C. Markets areas redevelopment. In *Built Environment*, February 1974, pp.71-74

Moughtin, J.C. and Simpson A. Do it yourself planning in Raleigh Street. In *New Society*, 19 October 1978, pp.136-137

28 Gibson, Tony, *People Power*, Penguin, Harmondsworth, 1979

References

Abercrombie, P. The fifty years' civic transformation. In Town Planning Review, Vol 1, No 3, October 1910, pp.220–234.
Abercrombie, P. Vienna as an example of town planning. In Town Planning Review, Vol 1, No 4, January 1911, pp.279–293.
Abercrombie, P. The era of architectural town planning. In Town Planning Review, Vol V, No 3, October 1914, pp.195–213.
Abercrombie, P. Town and Country Planning, London, 1944.
Abercrombie, P. Greater London Plan, HMSO, London, 1945.
Alberti, L.B. Ten Books on Architecture (trns. Cosimo Bartoli (into Italian) and James Leoni (into English)), Tiranti, London, 1955.
Alexander, C. A city is not a tree, Architectural Forum, New York, April 1965, pp.58–62 and May 1965, pp.58–61.
Alexander, C. Notes on the Synthesis of Form, Harvard University Press, Cambridge, Mass., 1974.
Alexander, C. A Pattern Language, Oxford University Press, Oxford, 1977.
Alexander, C. A Timeless Way of Building, Oxford University Press, New York, 1979.
Alexander, C. The Oregon Experiment, Oxford University Press, Oxford, 1979.
Alexander, C. et al. A New Theory of Urban Design, Oxford University Press, Oxford, 1987.
Allsopp, B. A Modern Theory of Architecture, Routledge & Kegan Paul, London, 1977.
Ambasz, E. Plaza Mayor, Salamanca. In Architectural Design, Architectural Design Profile, Urbanism, Vol 54, No 1/2, 1984, pp.44–45.
Anderson, S. (ed.) On Streets, MIT Press, Cambridge, Mass., 1986.
Anderson, S. (ed.) Studies toward an ecological model of the urban environment. In On Streets, ibid.
Appleyard, D. , Lynch, K. and Myer, J. The View from the Road, MIT Press, Cambridge, Mass., 1964.
Appleyard, D. Livable Streets, University of California Press, Berkeley and London, 1981.
Aristotle , The Politics (trns. T.A. Sinclaire (revised by Trevor J. Saunders)), Penguin, Harmondsworth, 1986.
Archives d'Architecture Moderne . The battle for corner properties in Brussels. In Architectural Design, Architectural Design Profile, Urbanism, Vol 54, No 1/2, 1984, pp.69–74.
Arnstein, S.R. A ladder of citizen participation. In Journal of the American Institute of Planners, Vol 35, No 4, July 1969, pp.216–224.
Ashby, T. and Pierce Rowland, S. The Piazza del Popolo: its history and development. In Town Planning Review, Vol XI, No 2, 1924, pp.74–99.
Ashby, V. The Capitol, Rome: its history and development. In Town Planning Review, Vol XII, No 3, 1927, pp.159–181.
Ashdown, J. The Buildings of Oxford, Batsford, London, 1980.
Aspbury, A. and Harrison, R. Newark-Millgate Revival. In The Planner, Vol 68, February, 1982
Averlino, Antonio di Piero (known as Filarete) Treatise on Architecture (vol trns. John R. Spencer), Yale University Press, New Haven and London, 1965.
Bacon, E.N. Design of Cities, Thames and Hudson, London, revised edn., 1975.
Baker, G.H. Le Corbusier, An Analysis of Form, Van Nostrand Reinhold, Wokingham, 1984.
Banham, R. Theory and Design in the First Machine Age, Architectural Press, London, 1960.
Banham, R. Megastructure: Urban Futures of the Recent Past, Thames and Hudson, London, 1976.
Banz, G. Elements of Urban Form, McGraw-Hill, San Francisco, 1970.
Barnett, J. An Introduction to Urban Design, Harper & Row, New York, 1982.
Baroero, C. et al. (eds.) Florence: Guide to the City, Univis Guide Series: Italy, MarioGros, Tomasone and Co, Torino, 1979.
Beazly, E. Design and Detail of Space Between Buildings, Architectural Press, London, 1967.
Beer, A.R. Development control and design quality, part 2: attitudes to design. In Town Planning Review, Vol 54, No 4, October 1983, pp.383–404.
Benevelo, L. The History of the City, Scolar Press, London, MIT Press, Cambridge, Mass., 1968.
Betsky, A. Take me to the water: dipping in the history of water in architecture. In Architectural Design, Vol 65, No 1/2, Jan-Feb, 1995, pp. 9–15

Black Country Development Corporation , ‘Before and After’, Oldbury, West Midlands, Black Country Development Corporation, undated report
Blowers, A. et al. (eds.) The Future of Cities, Hutchinson, London, 1974.
Blumenfeld, H. Scale in civic design. In Town Planning Review, Vol XXIV, April 1953, pp.35–46.
Boesiger, W. (ed.) Le Corbusier, Thames and Hudson, London, 1972.
Booth, P. Development control and design quality; part 1: conditions: a useful way of controlling design? In Town Planning Review, Vol 54, No 3, July 1983, pp.265–284.
Bor, W. The St Paul's precinct saga. In The Planner, May 1988, Vol 74, No 5, pp.26–28.
Braunfels, W. Urban Design in Western Europe, The University of Chicago Press, Chicago, 1988
Broadbent, G. and Ward, A. (eds.) Design Methods in Architecture, Lund Humphries, London, 1969.
Broadbent, G. Emerging Concepts in Urban Space Design, Van Nostrand Reinhold, London, 1990.
Browne, K. Why Isfahan? A special issue. In Architectural Review, Vol CLIX, No 951, 1976, pp.253–322.
Buchanan, C. Traffic in Towns: the Specially Shortened Edition of the Buchanan Report. Penguin, Harmondsworth, 1963.
Buchanan, P. Paternoster, planning and the Prince. In Architects' Journal, Vol 187, No 3, 20 January 1988, pp.26–29.
Burckhardt, J. The Architecture of the Italian Renaissance (ed. Peter Murray), Penguin, Harmondsworth, 1987.
Bynner, J. and Stribley, K.M. (eds.) Social Research: Principles and Procedures, Longman, Harlow, 1978.
Campbell, C. Vitruvius Britannicus (first published in three volumes, London, 1917–25), Vol 1, Benjamin Blom Inc. New York, reissued in 1967.
Canter, D. The Psychology of Place, St Martin's Press, New York, 1977.
Carlson, A.A. On the possibility of quantifying scenic beauty. In Landscape Planning, Vol 4, 1977, pp.131–172.
Chandler, E.W. The components of design teaching in a planning context. In Education for Planning: Retrospect and Prospect (ed. P.W.S. Batey), reprinted from Town Planning Review, Vol 56, No 4, October 1984, pp.468–482.
Chermayeff, S. and Tzonis, A. Shape of Community, Penguin, Harmondsworth, 1971.
Cherry, G.E. Urban Change and Planning, G.T. Foulis, Oxford, 1972.
Chambers, I. Piazzas of Italy. In Town Planning Review, Vol XII, No 1, 1926, pp.57–78, and Vol XI, No 4, February 1926, pp.221–236.
Church, A. Urban regeneration in London Docklands: a five-year policy review. In Environment and Planning: Government and Policy, Vol 6, 1988, pp.187–208.
Coleman, A. Utopia on Trial, Hilary Shipman, London, 1985.
Collins, G.R. and Collins, C.C. Camillo Sitte: The Birth of Modern City Planning, Rizzoli, New York, 1986.
Colquhoun, A. Vernacular Classicism. In Architectural Design, Architectural Design Profile, Building and Rational Architecture, Vol 54, No 5/6, 1984, pp.26–29.
County Borough of Belfast, City Planning Department , The Markets Redevelopment Area 18, County Borough of Belfast, Belfast, 1971.
County Borough of Belfast, City Planning Department , Industry and Commerce in Redevelopment 18, County Borough of Belfast, Belfast, 1971.
County Council of Essex , A Design Guide for Residential Areas, Essex County Council, 1973.
Cowan, R. It doesn't add up in Docklands. In Architects' Journal, Vol 188, No 39, 28 September 1988, p.17.
Crook, J.M. The Dilemma of Style, John Murray, London, 1987.
Crompton, D.H. Layout, chapter 7: land use in an urban environment, a general view of town and country planning. In Town Planning Review, Vol 32, 1961, pp.185–232.
Cuesta, J.R. et al. Appraisal and Proposals for San Giorgio Morgeto, Programa Erasmus, Universita di Reggio Calabria and University of Nottingham, Nottingham (unpublished report), March 1989.
Cullen, G. A square for every taste. In Architectural Review, Vol CII, No 610, 1947.
Cullen, G. Townscape, Architectural Press, London, 1961.
Cullen, G. The Concise Townscape, Architectural Press, London, 1986.
Danby, M. Grammar of Architectural Design, Oxford University Press, London, 1963.

de Daney, D. Canary Wharf: critical mass. In The Planner, Vol 72, No 3, March 1986, p.36.
Davidoff, P. Working towards redistributive justice. In Journal of the American Institute of Planners, Vol 41, No 5, September 1975, pp.317–318.
Dean, J. The inner cities and urban regeneration. In The Planner, TCPSS Proceedings, Vol 75, No 2, February 1989, pp.28–32.
de Bono, E. Lateral Thinking, Penguin, Harmondsworth, 1977.
Derrida, J. In discussion with Christopher Norris. In Deconstrnction II (ed. Andreas C. Papadakis) Architectural Design, London, 1989, pp.7–11.
Derrida, J. Positions (trns. Alan Bass), Athlone Press, London, 1981.
Dewhurst, R.K. Saltaire. In Town Planning Review, Vol XXXI, No 2, July 1960, pp.135–144.
Dougill, W. The present day Capitol. In Town Planning Review, June 1927, Vol XII, No 3, pp.174–183.
Downes, K. Hawksmoor, Thames and Hudson, London, 1969.
Doxiadis, C.A. On linear cities. In Town Planning Review, Vol 38, No 1, April 1967, pp.35–42.
Doxiadis, C.A. Ekistics, Oxford University Press, New York, 1968.
Edwards, A.M. The Design of Suburbia, Pembridge, London, 1981.
Edwards, A.T. Architectural Style, Faber and Gwyer, London, 1926.
Eisenman, P. and Krier, L. My ideology is better than yours. In Reconstruction: Deconstruction (ed. Andreas C. Papadakis) Architectural Design, London, 1989, pp.7–18.
Ellis, W.C. The spatial structure of streets. In On Streets (ed. S. Anderson) MIT Press, Cambridge, Mass., 1986, pp.114–131.
Eversley, D. The Planner in Society, Faber & Faber, London, 1973.
Fagence, M. Citizen Participation in Planning, Pergamon Press, Oxford. 1977.
Falk, N.P. Baltimore and Lowell: Two American approaches. In Built Environment, Vol 12, 1986, pp. 145–152
Falk, N.P.H. Waterside renaissance: a step by step approach. In Urban Waterside Regeneration: Problems and Prospects (K.N. White et al., eds), Ellis Horwood Ltd, Chichester, 1993, pp. 22–30
Falk, N. UK Waterside development. In Urban Design, Vol 55, July, 1995, pp. 19–23
Farmer, J. Green Shift: Towards a Green Sensibility in Architecture, Butterworth–Heinemann, Oxford, 1996
Farrell, T. Terry Farrell in the context of London. In The Planner, Vol 74, No 3, March 1988, pp.16–19.
Fishman, R. Urban Utopias in the Twentieth Century, Basic Books, New York, 1977.
Frampton, K. The generic street as a continuous built form. In On Streets (ed. S. Anderson), MIT Press, Cambridge, Mass., 1986.
Frick, D. Post-Modern planning: a retreat to urban design. In AESOP News, No 2, spring 1988, pp.4–5.
Fyson, A. Paternoster shows the way. In The Planner, Vol 74, No 12, December 1988, p.3.
Gadd, D. Georgian Summer: Bath in the Eighteenth Century, Adams and Dart, Bath, 1971.
Gans, H. People and Plans, Basic Books, New York, 1968.
Gardner, J.L. et al. Urban waterside: context and sustainability. In Urban Waterside Regeneration: Problems and Prospects (K.N. White et al., eds), Ellis Horwood Ltd, Chichester, 1993, pp. 4–14
Guadet, J. Elements et Théorie de L'Architecture, Vols I–IV, 16th edn., Librarie de Ia Construction Moderne, Paris, 1929 and 1930.
Ghorst, T. Isle of Dogs has its day. In Architects' Journal, Vol 176, No 47, 24 November 1982, pp.46–49.
Ghyka, M. The Geometry of Art and Life, Dover, New York, 1977.
Gibberd, F. Town Design, Arehitectural Press, London, 2nd edn, 1955.
Gibson, T. People Power, Penguin, Harmondsworth, 1979.
Giedion, S. Space, Time and Architecture, Harvard University Press, Cambridge, Mass., 3rd edn., enlarged, 1956.
Glancey, J. New British Architecture, Thames and Hudson, London, 1989.
Gosling, D. and Maitland, B. Concepts of Urban Design, Academy Editions, London, 1984.
Gosling, D. Definitions of urban design. In Architectural Design, Architectural Design Profile, Urbanism, Vol 54, No 1/2, 1984, pp.16–25.

Grant, D.P. A general morphology of systematic space planning approaches. In Design Methods and Theories, Journal of the DMG, Vol 17, No 2, 1983, pp.57–98.
Grassi, G. On the question of decoration. In Architectural Design, Architectural Design Profile, Building and Rational Architecture, Vol 54, No 5/6, 1984, pp.10–13 and 32–33.
Griffith, R. Listed buildings and listed building control. In The Planner, Vol 75, No 19, 1 September 1989, p.16.
Gropius W. The New Architecture and the Bauhaus (trns. P. Morton Shand with introduction by Frank Pick), MIT Press, Cambridge, Mass., 1965.
Gutkind, E.A. Urban Development in Western Europe: *Vol. VI* The Netherlands and Great Britain, The Free Press, New York, 1971.
Gutkind, E.A. International History of City Development, *Vol I* Urban Development in Central Europe, The Free Press, New York, 1964.
Gutkind, E.A. International History of City Development, *Vol IV*, Urban Development in Southern Europe: Italy and Greece, The Free Press, New York, 1969.
Gutman, R. The Street Generation. In On Streets (ed. S. Anderson) MIT Press, Cambridge, Mass., 1986, pp.249–264.
Habraken, N.J. Three R's for Housing, Scheltema and Holdema, Amsterdam, 1970.
Habraken, N.J. Supports: An Alternative to Mass Housing (trns. B. Valkenburg), Architectural Press, London, 1972.
Hall, E.T. The Hidden Dimensions, Garden City, Doubleday, New York, 1969.
Hall, P. The age of the mega project. In The Planner, Vol 75, No 24, 6 October 1989, p.6.
Halprin, L. Cities, MIT Press, Cambridge, Mass., 1963.
Hambidge, J. The Elements of Dynamic Symmetry, Dover, New York, 1926.
Hegemann, W. and Peets, E. The American Vitruvius, An Architect's Handbook of Civic Art, Benjamin Blom, New York, 1922.
Hobhouse, H. History of Regent Street, Macdonald and Jane's, London, 1975.
Holford, W. St Paul's: report on the surroundings of St Paul's Cathedral in the City of London. In Town Planning Review, Vol XXVII, No 2, July 1956, pp.58–98.
Hollamby, E. , Gosling, D. , Cullen, G. et al. Isle of Dogs: Urban Design Plan; A Guide to Design and Development, London Docklands Development Corporation, London, November 1982.
Houghton-Evans, W. Planning Cities, Lawrence and Wishart, London, 1975.
House, M.A. , Ellis, J.B. and Shutes, R.B.E. Urban rivers: ecological impact and management. In Urban Waterside Regeneration: Problems and Prospects (ed. K.N. White et al.), Ellis Horwood Ltd, Chichester, 1993, pp. 312–322.
Howard, E. Garden Cities of Tomorrow. Faber & Faber, London, 1965.
HRH , The Prince of Wales. A Vision of Britain, Doubleday, London, 1989.
HRH , The Prince of Wales. Building a better Britain. In The Planner, mid-month supplement, May 1989, pp.4–5.
Hunt, W.P. Measured symmetry in architecture. In RIBA Journal, Vol 56, No 10, August 1949, pp.450–455.
Insall, D. Comments on conservation issues. In The Planner, Vol 74, No 3, March 1988, p.32.
Irving, R.G. Imperial Summer, Lutyens, Baker and Imperial Delhi, Yale University Press, New Haven and London, 1981, p.I43.
Jacobs, J. The Death and Life of Great American Cities, Penguin, Harmondsworth, 1965.
Jarvis, B. Design language? In The Planner, Vol 75, No 26, 20 October 1989, p.2.
Jefferson, B. Getting better buildings. In The Planner, Vol 74, No 2, February 1988, pp.47–51.
Jencks, C. Language of Post-Modern Architecture, Academy Editions, London, 4th edn., 1984.
Jencks, C. and Silver, N. Adhocism, The Case for Improvisation, Anchor Press, New York, 1973.
Jencks, C. and Baird, G. (eds.) Meaning in Architecture, Barrie and Jenkins, London, 1969.
Jung, C. Man and his Symbols, Pan, London, 1978.
Katz, D. Gestalt Psychology, Ronald Press, New York, 1950.
Kennedy, M. Paternoster's piazzas fit for a prince. In The Guardian, 19 November 1988, p.3.
Kepes, G. The New Landscape in Art and Science, Paul Theobald and Co, Chicago, 1956.
Kersting, A.F. and Ashdown, J. The Buildings of Oxford, Batsford, London, 1980.
Koenigsberger, O. et al. Manual of Tropical Housing and Building, Part 1, Climatic Design, Longman, London, 1974.

Koffka, K. Principles of Gestalt Psychology, Harcourt, Brace and World Inc, New York, 1935.
Krier, L. Rational Architecture, Archives d'Architecture Moderne, Brussels, 1978.
Krier, L. Houses, Palace, Cities (ed. Demetri Porphyrios), Ad Editions, London, 1984.
Krier, L. The cities within the city, II: Luxembourg. In Architectural Design, Vol 49, No 1, 1979, pp.18–32.
Krier, L. and Jencks, C. Paternoster Square. In Architectural Design Vol 58, No 1/2, 1988, pp.VII–XIII.
Krier, R. Breitenfurterstrasse, Vienna. In Architectural Design, Architectural Design Profile, Urbanism, Vol 54, No 1/2, 1984, pp.80–81.
Krier, R. Typological and morphological elements of the concept of urban space. In Architectural Design, Vol 49, No 1, pp.2–17.
Kroll, L. Les vignes blances, Cergy-Pontoise. In Architectural Design, Architectural Design Profile, Urbanism, Vol 54, No 1/2, 1984, pp.26–35.
Lawson, B. How Designers Think, Architectural Press, London, 1983.
Le Corbusier . Towards a New Architecture, Architectural Press, London, 1946.
Le Corbusier . Concerning Town Planning, Architectural Press, London, 1947.
Le Corbusier . The Home of Man, Architectural Press, London, 1948.
Le Corbusier . The Modulor, Faber & Faber, London. 1954.
Le Corbusier . The Chapel at Ronchamp (trns. Jacqueline Cullen), Architectural Press, London, 1957.
Le Corbusier . Chandigarh, The New Capital of the Punjab, India (ed. T. Futagawa), Global Architecture, Tokyo, 1957.
Le Corbusier . The Radiant City, Faber & Faber, London, 1967.
Le Corbusier . The City of Tomorrow, Architectural Press, London, 1971.
Lee, T. The psychology of spatial orientation. In Architectural Association Quarterly, July 1969, pp.11–15.
Levin, P.H. The design process in planning. In Town Planning Review, Vol 37, April 1966, pp.5–20.
Levitas, G. Anthropology and sociology of streets. In On Streets (ed. S. Anderson), MIT Press, Cambridge, Mass., 1986.
Lim, Y Ng. An Historical Analysis of Urban Spaces, unpublished BArch dissertation, Nottingham University, 1980.
Linazasoro, J.I. Ornament and Classical order. In Architectural Design, Architectural Design Profile, Building and Rational Architecture, Vol 54, No 5/6, 1984, pp.21–25.
Linder, A. New thinking about urban design. In The Planner, Vol 74, No 3, March 1988, pp.24–25.
Little, B. The Building of Bath, Collins, London, 1947.
Little, B. Bath Portrait, The Burleigh Press, Bristol, 1961.
Llewelyn-Davies, R. Some further thoughts on linear cities, In Town Planning Review, Vol 38 No 3, October 1967, pp.202–203.
Llewelyn-Davies, R. Town design. In Town Planning Review, Vol 37, October 1966, pp.157–172.
Lock, D. The making of Greenland Dock. In The Planner, Vol 73, No 3, March 1987, pp.11–15.
Lowndes, M. and Murray, K. Monumental dilemmas. In The Planner, Vol 74, No 3, March 1988, pp.20–23.
Lozano, E.E. Visual needs in the urban environment. In Town Planning Review, Vol 45, No 4, October 1974, pp.351–374.
Lynch, K. The Image of the City, MIT Press, Cambridge, Mass., 1960.
Lynch, K. Site Planning, MIT Press, Cambridge, Mass., 2nd edn., 1971.
Lynch, K. What Time is This Place?, MIT Press, Cambridge, Mass., 1972.
Lynch, K. A Theory of Good City Form, MIT Press. Cambridge, Mass., 1981.
MacPherson, T. Regenerating Industrial Riversides in the North East of England. In Urban Waterside Regeneration: Problems and Prospects (K.N. White et al., eds), Ellis Horwood Ltd, Chichester, 1993, pp. 31–49
Maertens, H. Der Optische Mastab in der Bildenden Kuenster, 2nd edn, Wasmath, Berlin, 1884.
Madanipour, A. Design of Urban Space, Wiley, Chichester, 1996
Maitland, B. The uses of history. In Architectural Design, Architectural Design Profile, Urbanism, Vol 54. No 1/2, 1984, pp.4–7.
Manser, M. RIBA licks its wounds after Charlie's bombshell. In Architects' Journal, 6 June 1984, p.30.
Markets Redevelopment Association and the Planning Projects Unit , The Markets Area of Belfast, The People's Plan (preliminary report). Queen's University, Belfast, 1973.
Markus, T.A. , The role of building performance measurement and appraisal in design method. In Design Methods in Architecture (eds. G. Broadbent and A. Ward), Lund Humphries, London, 1969.

Maver, T.W. Appraisal in the building design process. In Emerging Methods in Environmental Design and Planning (ed. G.T. Moore), MIT Press, Cambridge, Mass., 1971).
McKei, R. Cellular renewal. In Town Planning Review, Vol 45, 1974, pp.274–290.
McKay, K. Gryzmek, B. and Holden, Joe . The Markets, Gown, Belfast, 9 May 1972.
Moore, G.T. (ed.) Emerging Methods in Environmental Design and Planning. MIT Press, Cambridge, Mass., 1970.
Morgan, B.G. Canonic Design in English Medieval Architecture, Liverpool University Press, Liverpool, 1961.
Morris, A.E.J. History of Urban Form, George Godwin, London, 1972.
Moughtin, J.C. Hausa Architecture, Ethnographica, London, 1985.
Moughtin, J.C. Planning for People, Queen's University, Belfast, 1972.
Moughtin, J.C. Markets Areas redevelopment. In Built Environment, February 1974, pp.71–74.
Moughtin, J.C. The Plansters Vision, University of Nottingham, Nottingham, 1978.
Moughtin, J.C. and Simpson, A. Do it yourself planning in Raleigh Street. In New Society, 19 October 1978, pp.136–137.
Moughtin, J.C. Public participation and the implementation of development. In Town and Country Summer School Report, Royal Town Planning Institute, London, 1978, pp.81–84.
Moughtin, J.C. et al. The Nottingham Experiments, Towards Positive Participation in Planning, Institute of Planning Studies, Nottingham, 1979.
Moughtin, J.C. and Bone, D. The Building of a Community, Second Experience at Millgate in Newark, Nottinghamshire, Institute of Planning Studies, Nottingham, 1981.
Moughtin, J.C. and Shalaby, T. Housing design in Muslim cities: towards a new approach. In Low Cost Housing for Developing Countries, Vol II, Central Building Research Institute, New Delhi, 1984, pp.831–851.
Mowl, T. and Earnshaw, B. John Wood, Architect of Obsession, Millstream Books, Bath, 1988.
Mumford, L. The Culture of Cities, Secker and Warburg, London, 1938.
Mumford, L. City Development, Secker and Warburg, London, 1946.
Murray, P. The Architecture of the Italian Renaissance, Thames and Hudson, London, revised 3rd edn., 1986.
Nairn, I. Outrage, Architectural Press, London, 1955.
Newark and Sherwood District Council , ‘Capital Challenge Bid for Newark Riverside Regeneration,’ Newark and Sherwood District Council, Newark, undated report
Newark and Sherwood District Council , ‘SRB Challenge Fund Bid for Newark Riverside Regeneration,’ Newark and Sherwood District Council, Newark, undated report
Newman, O. Defensible Space. Macmillan, New York, 1972.
Norberg-Schutlz, C. Intentions in Architecture, Universitetsforlaget, Oslo, 1963.
Norberg-Schulz, C. Meaning in architecture. In Meaning in Western Architecture (eds. Charles Jencks and George Baird), Barrie and Jenkins, London, 1969, pp.215–229.
Norberg-Schulz, C. Existence, Space and Architecture, Studio Vista, London, 1971.
Norberg-Schulz, C. Genius Loci, Towards a Phenomenology of Architecture, Rizzoli, New York, 1980.
Norris, C. The Contest of Faculties: Philosophy and theory after deconstruction, Methuen, London. 1985.
Norwood, H. Planning at York. In The Planner, Vol 72, No 3, March 1986, p.5.
The Observer . The Prince and the ten commandments. In The Observer, 30 October 1988. p.18
Owen, J. The water's edge: the space between buildings and water. In Urban Waterside Regeneration: Problems and Prospects (K.N. White et al., eds), Ellis Horwood Ltd, Chichester, 1993, pp. 15–21
Palladio, A. The Four Books of Architecture, Dover Publications, New York, 1965.
Pateman, C. Participation and Democratic Theory, Cambridge University Press, Cambridge, 1970.
Pawley, M. Prince and country. In The Guardian, 31 October 1988, p.38.
Pawley, M. Final act of the Fawcett saga. In The Guardian, 5 February 1990.
Pevsner, N. Three Oxford colleges. In Architectural Review, Vol CVI, No 632, 1949, pp.120–124.
Pevsner, N. The Buildings of England: North Somerset and Bristol, Penguin, Harmondsworth, 1958.
Pevsner, N. An Outline of European Architecture, Penguin, Harmondsworth, 7th edn., 1977.

Piaget, J. The Child's Conception of the World, Routledge & Kegan Paul, London, 1929.
Pidwell, S. Salford Quays: The urban design and its relationship with that of other wateside initiatives. In Urban Waterside Regeneration: Problems and Prospects (K.N. White et al., eds), Ellis Horwood Ltd, Chichester, 1993, pp. 94–105
Pirenne, H. Medieval Cities, Princeton University Press, Princeton, New Jersey, 1969.
The Planner, news . Canary Wharf: president urged secretary of state to intervene. In The Planner, Vol 71, No 12, December 1985, p.5.
The Planner, news . Time for design. In The Planner, Vol 74, No 3, March 1988, pp.29–31.
The Planner, news . Always a time for design. In The Planner, Vol 74, No 5, May 1988, p.7.
The Planner, news . Covent Garden plan: opponents lose appeal. In The Planner, Vol 74, No 11, November 1988, p.6.
The Planner, news . Paternoster exhibition. In The Planner, Vol 74, No 12, December 1988, p.6.
The Planner, news . DoE welcomes Docklands accord. In The Planner, Vol 75, No 21, September 1989, p.4.
The Planner, news . Government on LDDC: ‘it's big and we did it’. In The Planner, Vol 75, No 21, September 1989, p.7.
The Planner, news . Docklands experiment: a failure rejected even by its own disciples, says Shepley. In The Planner, Vol 75, No 26, October 1989, p.3.
The Planner, news . Underground to Stratford via Canary Wharf. In The Planner, Vol 75, No 31, November 1989. p.5.
Plato . The Laws (trns. Trevor J. Saunders), Penguin, Harmondsworth, 1988.
Plato . Timaeus and Critias (trns Desmond Lee), Penguin, Harmondsworth, 1987.
Pogacnik, A.B. A systems approach to urban design. Town Planning Review, Vol 48, 1977, pp.187–192.
Popham, A.E. The Drawings of Leonardo da Vinci, Jonathan Cape, London, 1964.
Prak, Niels Luming . The Language of Architecture, Mouton, The Hague, 1968.
Proshanksky, H. , Ittelson, W. and Rivlin, L. Environmental Psychology, Holt, Rinehart and Wilson, New York, 1970.
Pugin, A.W.N. Contrasts, Leicester University Press, Leicester, 2nd edn, 1841, reprinted 1969.
Pugin, A.W.N. The True Principles of Pointed or Christian Architecture, Henry G. Bohn, London, 1841.
Punter, J. A history of aesthetic control: part 1,1909–1953. In Town Planning Review, Vol 57, No 4, October 1986.
Rapoport, A. and Kantor, R.E. Complexity and ambiguity in environmental design. In Journal of the American Institute of Planners, Vol 33, No 4, July 1967, pp.210–221.
Rapoport, A. House Form and Culture, Prentice-Hall, Englewood Cliffs, New Jersey, 1969.
Rapoport, A. Some observations regarding man-environment studies. In Art, February 1971.
Rapoport, A. Human Aspects of Urban Form: Towards a Man-Environment Approach to Urban Form and Design, Pergamon Press, New York, 1977.
Rapoport, A. The Meaning of the Built Environment. Sage, London, 1983.
Rasmussen, S.E. Towns and Buildings, Liverpool University Press, Liverpool, 1951.
Rasmussen, S.E. Experiencing Architecture, John Wiley and Sons, New York, 1959, MIT Press, Cambridge, Mass., 1959.
Rawlinson, C. Design and development control. In The Planner, Vol 73, No 12, December 1987, pp.25–26.
Rawlinson, C. Design and development control. In The Planner, Vol 75, No 19, September 1989, pp.17–20.
Rhodes, E.A. The human squares: Athens, Greece. In Ekistics, Vol 35, 1973.
RIBA . Architectural Practice and Management Handbook, RIBA Publications, London, 1965.
Robertson, H. The Principles of Architectural Composition, Architectural Press. London, 1924.
Rogers, R. (and Partners). Proposals for the banks of the River Arno, Florence. In Architectural Design, Architectural Design Profile, Urbanism, Vol 54, No 1/2, 1984, pp.62–68.
Rosenau, H. The Ideal City, Studio Vista, London, 1974.
Rowe, C. Collage city. In Architectural Review, August 1975, p.80.
Rowe, C. and Koetter, F. Collage City, MIT Press, Cambridge, Mass., 1978.
Rudofsky, B. Architecture without Architects, Doubleday and Co, New York, 1964, Academy Editions, London, 1977.
Rudofsky, B. Streets for People, Braziller, New York, 1969.
Rykwert, J , The street: the use of its history. In On Streets (ed. S. Anderson), MIT Press, Cambridge, Mass., 1986, pp.14–27.

Saarinen, E. The Search for Form in Art and Architecture, Dover Publications, New York, 1985.
Sandy Row Redevelopment Association , Sandy Row at the Public Enquiry, Sandy Row Redevelopment Association, Belfast, 1972.
Savoja, U. Turin the regular town. In Town Planning Review, Vol XII, No 3, 1927.
Schumacher, T. Buildings and streets. In On Streets (ed. S. Anderson), MIT Press, Cambridge, Mass., 1986, pp.132–149.
Schumpeter, J.A. Capitalism, Socialism and Democracy, Allen and Unwin, London, 1943.
Scoffham, E.R. The Shape of British Housing, Godwin, London, 1984.
Scoffham E.R. Balancing community and commerical interests in Newark-on Trent. In Urban Waterside Regeneration: Problems and Prospects (K.N. White et al., eds), Ellis Horwood Ltd, Chichester, 1993, pp. 106–115
Scruton, R. The Aesthetics of Architecture, Methuen and Co, London, 1979.
Scully, V. The Earth, The Temple and The Gods: Greek Sacred Architecture, Yale University Press, New Haven and London, 1962.
Segal, H. A psychoanalytic approach to aesthetics. In International Journal of Psychoanalysis, 1952, pp.196–207.
Serlio, S. The Five Books of Architecture, An Unabridged Reprint of the English Edition of 1611, Dover Publications, New York, 1982.
Shane, G. Contexualism. In Architectural Design, No 11, 1976, pp.676–679.
Sharp, T. The Anatomy of the Village, Penguin, Harmondsworth, 1946.
Sharp, T. Oxford Replanned, Architectural Press, London, 1948.
Sharp, T. Dreaming spires and teeming towers, the character of Cambridge. In Town Planning Review, Vol 33, January 1963, pp.255–278.
Sherwood, J. and Pevsner, N. The Buildings of England: Oxfordshire, Penguin, Harmondsworth, 1974.
Shute, J. The First and Chief Grounds of Architecture, John Shute, London, 1563.
Simpson, J. Paternoster Square redevelopment project. In Architectural Design, Vol 58, No 9/10, 1988, pp.78–80.
Sitte, C. Der Stadte-Bau, Carl Graeser and Co, Wien, 1901.
Smith, P.F. Architecture and Harmony, RIBA Publications, London, 1987.
Smithson, A. and Smithson, P. Urban Structuring, Studio Vista, London, 1967.
Sommer, R. Personal Space: The Behavioural Basis of Design, Prentice-Hall, Englewood Cliffs, New Jersey, 1969.
Southworth, M. and Southworth, S. Environmental quality in cities and regions. In Town Planning Review, Vol 44, No 3, July 1973.
Spencer, D.K. Urban Spaces, New York Graphic Society, Greenwich, Conn., 1974
Spreiregen, P.D. Urban Design: The Architecture of Towns and Cities, McGraw-Hill, New York, 1965.
Stones, R.C. Grain theory in practice: redevelopment in Manchester at Longsight. In Town Planning Review, Vol. 41, October 1970, pp.354–356.
Summerson, J. John Nash, Architect to King George IV, Allen and Unwin, London, 1935.
Summerson, J. Architecture in Britain 1530–1830, Penguin, Harmondsworth, 1953.
Summerson J. The Classical Language of Architecture, Thames and Hudson, London, 1963.
Summerson, J. Inigo Jones, Penguin, Harmondsworth, 1966.
Summerson, J. The Architecture of the Eighteenth Century, Thames and Hudson, London, 1986.
Taggart, W.D.R. and Taggart, R.T. Cromac RDA 18, Planning Appraisal, W.D.R. and R.T. Taggart, Belfast, 1985.
Tallis, J. London Street Views, 1838–1840, Nattali and Maurice, London, 1969.
Tibbalds, F. Mind the gap! A personal view of the value of urban design in the late twentieth century. In The Planner, Vol 74, No 3, March 1988, pp.11–14
Tibbalds, F. Planning and urban design: a new agenda. In The Planner, mid-month supplement, April 1988, p.4.
Tiesdell, S. et al. Revitalizing Historic Urban Quarters, Architectural Press, Oxford, 1996
Thiel, P. A sequence-experience notation for architectural and urban spaces. In Town Planning Review, Vol 32, April 1961.
Thorburn, A. Leisure on the Waterfront. In The Planner, Vol 73, No 13, 1990, pp. 18–19

Tunnard, C. The City of Man, Architectural Press, London, 1953.
Tzonis, A. and Lefaivre, L. Classical Architecture, The Poetics of Order, MIT Press, Cambridge, Mass., 1986.
Ulster Architectural Heritage Society , Survey and Recommendations for the Joy Street and Hamilton Street District of Belfast, Ulster Architectural Heritage Society, Belfast, 1971.
University of Liverpool, Recorder , Report of the Development Committee to the Council of the University for the years 1959–1964, The University of Liverpool, Liverpool, January 1965.
Unwin, R. Town Planning in Practice, London. 1909.
Vale, B. and Vale, R. Green Architecture, Thames and Hudson, London, 1991
Vasari, G. The Lives of the Artists (a selection trns. by George Bull), Penguin, Harmondsworth, 1965.
Venturi, R. Complexity and Contradiction in Architecture, MOMA, New York, 1966.
Vidler, A. The third typology. In Rational Architecture, Archives d'Architecture Moderne, Bruxelles, 1978.
Vidler, A. The scenes of the streets: transformations in ideal and reality. In On Streets (ed. S. Anderson), MIT Press, Cambridge, Mass., 1986, pp.28–111.
Vitruvius . The Ten Books of Architecture, Dover Publications, New York, 1960.
Violich, F. Urban reading and the design of small urban places: the village of Sutivan. In Town Planning Review, Vol 54, No 1, January 1983, pp.41–62.
Wallace, W. An overview of elements in the scientific process. In Social Research: Principles and Procedures (ed. John Bynner and Keith M. Stribley), Longman, Harlow, 1978, pp.4–10.
Weller, J.B. Architects and planners: the basis for consensus. In The Planner, Vol 75, No 22, 22 September 1989, p.11.
Webber, MM . Order in diversity, community without propinquity. In Cities and Space: The Future Use of Urban Land (ed. L. Wingo Jr), Johns Hopkins University Press, Baltimore, 1963.
Webber, M.M. The urban place and the nonplace urban realm. In Explorations into Urban Structure (eds. Melvin M. Webber et al.), Oxford University Press, London, 1967, pp.79–153.
Webber, M.M. et al. Explorations into Urban Structure, University of Pennsylvania Press, Philadelphia, 1963.
Whinney, M. Wren, Thames and Hudson, London, 1987.
White, K.N. et al. Urban Waterside Regeneration: Problems and Prospects, Ellis Horwood Ltd, Chichester, 1993
Wilford, M. Off to the races, or going to the dogs? In Architectural Design, Architectural Design Profile, Urbanism, Vol 54, No 1/2, 1984, pp.8–15.
Williams-Ellis, C. Portmeirion – the Place and its Meaning, Portmeirion Ltd, Penrhyndeudraeth, Wales, 1973.
Wittkower, R. Architectural Principles in the Age of Humanism, Tiranti, London, 1952.
Wittkower, R. Art and Architecture in Italy 1600–1750, Penguin, Harmondsworth, 1958.
Wolf, P. Rethinking the urban street: its economic context. In On Streets (ed. S. Anderson), MIT Press, Cambridge, Mass., 1986.
Wölfflin, H. Renaissance and Baroque, Collins, London, 1964.
Wotton, H. The Elements of Architecture, Gregg, London, 1969.
Wright, F. Lloyd . The Living City, Horizon Press, New York, 1958.
Yeats, W.B. Yeats Selected Poetry, Pan Books, London. 1974.
Zevi, B. Architecture as Space (trns. M. Gendel), Horizon Press, New York, 1957.
Zucker, P. Town and Square, Columbia University Press, New York, 1959.