Ministry for the Environment
Manatū Mō Te Taiao

Urban Design

Continuing Professional Development

Course Outline

NZ URBAN DESIGN PROTOCOL

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Contents

Course Outline

Description of general intent

This course provides an introduction to the principles and methods of urban design in a contemporary New Zealand context. It identifies a series of design issues commonly encountered within New Zealand towns and cities, and it provides conceptual and practical tools which can be used to address these. It does not produce "trained" urban designers. It augments the skills of practising professionals from other disciplines so that these individuals are better able to assess design proposals and consider the implications of design decisions.

General outline of content

The course has two main components:

Seminars — Five presentations address urban design principles and methods. Each seminar is divided into modules (typically four) to allow flexible delivery by a number of presenters.

The sixth and final presentation illustrates current best practice with reference to one or more case studies. It emphasises implementation and integration of design approaches.

Workshop — Working in small multi-disciplinary teams, participants produce design proposals for a local development site.

Seminar presentations and workshop sessions are fully integrated. They progress from generic principles and large-scale features of urban form to local conditions and design at a site and individual building scale. These two learning experiences alternate throughout the two-day programme, allowing an iterative approach to workshop tasks and encouraging a balance between listening and doing. The workshop sequence culminates with a critical review of workshop outcomes.

The sequence of seminar topics and workshop tasks is as follows:

Seminar 1: Introduction

- What is urban design?
- Relationship to the *New Zealand Urban Design Protocol*
- The value of urban design

Seminar 2: Urban Structure

- Do cities have a coherent structure?
- Benefits of a well-structured city
- Elements of urban structure

Workshop: Phase 1

- understanding context (macro level)
- creating a public space framework
- pathways and connectivity (macro level)
- land use and density

Seminar 3: Site and Neighbourhood Planning

- Concepts of urban space
- Connections: visual and physical
- Activity: mixed use and density

Workshop: Phase 2

- understanding context (neighbourhood level)
- pathways and connectivity (micro level)
- creating positive spaces between buildings

Seminar 4: Built Form and Neighbourhood Character

- How designers work
- Buildings which are not designed
- Scale

Seminar 5: Public Space Design

- Qualities of good public space
- Types of public space and their role
- Streets

Workshop: Phase 3

- site-specific design guidelines
- bulk and location controls
- public space design
- layout and function of internal spaces
- elevational treatments
- interface between public and private, interior and exterior

Workshop: Phase 4

- Presentation of designs
- Comparative review of alternative design strategies
- Critical assessment of outcomes

Seminar 6: Implementation

- Vision making
- Organisation
- Observations

Target audience

The course is geared to practising professionals from all sectors involved in the design, management or implementation of the built environment. In particular, the course will appeal to policy makers, property developers, planners, architects, landscape architects, transportation planners, traffic engineers and land surveyors. In a similar manner to real-life urban design projects, the course will bring together design and non-design disciplines. Participants from a broad range of professional backgrounds will collaborate in the workshop process.

Learning objectives

By the end of the course, participants should have done the following:

1 Developed a greater awareness of the principles and methods of urban design as applied to a contemporary New Zealand context.

2. Acquired a visual and verbal design vocabulary which allows a more articulate description and discussion of design issues.

3. Acquired conceptual tools necessary to assess design proposals and/or consider the implications of design decisions.

4. Developed a better understanding of the multi-disciplinary and cross-disciplinary aspects of urban design.

List of Selected Readings

Copyright review will be required to ensure that these papers can be copied and distributed for educational purposes in compliance with the requirements of the Copyright Act. All papers are subject to copyright law, and copyright permissions may be required.

1 Introduction

Carmona, M., de Magalhaes, C., and Edwards, M. (2002) What value urban design? *Urban Design International*, 7. pp 63–81.

2 Urban Structure

Dieleman, F. and Wegener, M. (2004) Compact City and Urban Sprawl. *Built Environment*, Volume 30, Number 4. pp 308–323.

3 Site and Neighbourhood Planning

Local Government Commission, US EPA. (2003) *Creating great neighbourhoods: Density in your community*. Washington: National Association of Realtors. Retrieved from www.lgc.org

4 Built Form and Neighbourhood Character

Anne Vernez Moudon (1986) *Built for Change: Neighbourhood Architecture in San Francisco*, Chapter 3 “Elements of order: Gridiron, Lots, and Boxes” pp 51–73.

5 Public Space Design

CABE Space (undated) *The value of public space: How high quality parks and public spaces create economic, social and environmental value*. London: Commission for Architecture and the Built Environment.

Two Day Programme Format

DAY ONE

8.45 am	Registration
9.00 am	**Seminar 1: Introduction**
10.00 am	Morning tea
10.20 am	**Seminar 2: Urban Structure**
11.20 am	*Workshop: Phase 1*
1.00 pm	Lunch
2.00 pm	**Seminar 3: Site and Neighbourhood Planning**
3.00 pm	*Workshop: Phase 2*
4.30 pm	Informal review of workshop

DAY TWO

9.00am	**Seminar 4: Built Form and Neighbourhood character**
10.00 am	Morning tea
10.20	**Seminar 5: Public Space Design**
11.20	*Workshop: Phase 3*
1.00	Working Lunch
2.00 pm	*Workshop: Presentation and review*
3.30 pm	**Seminar 6: Implementation**

Seminar Content Guidelines for Presenters

General guidelines for seminar presenters:

a) Use the seminar outlines as a guide for preparing your own personalised teaching material.

b) Address all headings and sub-headings identified in bold type in the seminar outlines. Bullet points under each of the headings provide suggestions for the detailed treatment of these topics.

c) Pitch information at several levels of complexity in order to reach a wide range of backgrounds and competencies among the participants. Identify the roles and responsibilities of a wide range of professions engaged in making or managing urban environments.

d) Tailor delivery to local audiences. Vary illustrations, case studies and the emphases given to different topics to suit metropolitan or regional venues. Consider the different urban design issues which arise in high-growth and low-growth conditions in different parts of the country.

e) Coordinate material with other presenters so as to avoid repetition or omissions.

f) Apply urban design principles and objectives to New Zealand towns and cities using successful examples wherever possible.

g) Address processes as well as outcomes.

h) Integrate discussion of implementation into each seminar, using examples as means of illustrating how design principles are applied.

i) Use photographs and other graphic material on Powerpoint to illustrate and clarify concepts.

j) As a rule, try to illustrate principles with successful cases and examples, although urban failures may be used as a means of introducing discussion on remedial actions.

All seminar presentations will contain the following components:

1. Underlying concepts - simple statements of urban design principles and objectives.

2. Practical advice – insights derived from extensive scholarship and professional practice i.e. more complex lessons and interpretations which help to apply abstract concepts into real-life situations.

3. Evidence that urban design really works – illustrations, case studies and other supporting material drawn from research and practice.

4. Tools for getting the job done – terminology, analytical concepts, design methods and other decision-making processes, documentation, drawing conventions, 3D simulations etc.

5. Places to go for additional information.

Seminar Content Outlines for Presenters

Outline Seminar 1: Introduction

General notes on content and approach

Seminar 1 defines urban design with reference to the origins of contemporary urban design practice, and the defining characteristics of urban design activity.

It recognises that while urban design is multi-disciplinary and integrative, it is also characterised by distinctive ways of thinking and working.

Explicit reference will be made to the content of the New Zealand Urban Design Protocol to link the content of the training back to New Zealand policy and practice.

Key points on the value of urban design are introduced early on in the training to establish the relevance of principles discussed in the seminar sessions.

1.1 What is urban design?

Definitions

- Urban design occurs on many different scales ranging from street furniture to infrastructure.
- Urban design can be defined narrowly as the design of public space or, more inclusively, as the design of whole urban environments: buildings as well as spaces, private developments as well as public ones.
- Although almost every aspect of urban life has some relevance to urban design, the discipline retains a focus on form and space i.e. on the constructed environments of cities and what occurs in them.
- Refer to the definition contained within the *New Zealand Urban Design Protocol.*

Origin of urban design

- Reactions to the 'failed' urban projects of the Modern Movement
- Increasing separation of architecture, planning and other design professions.
- Re-emergence of interest in cities and urban life

Defining characteristics of urban design

PRODUCTS: Urban design deals with space, form and activities i.e. physical places and the events which occur within them.

- Urban design considers the wider context and the longer term, including the social and economic implications of design; urban design assesses individual projects in terms of their relationships to neighbourhoods, towns and landscapes.
- Urban design focuses on spaces rather than individual buildings: it is concerned with the character, function and vitality of places, and the well-being of the people that use them.
- Urban design gives priority to the public environment, the shared parts of the city which are accessible to ordinary people; private buildings and spaces are important to the extent that they influence the character and amenity of public places; urban designers aim to encourage participation in public life by providing a good 'fit' between physical form and user needs or expectations.
- Urban design is concerned with 'ordinary' buildings and spaces as well as special ones.

PROCESSES: Urban design considers process as well as product i.e. interest in a physical outcome is coupled with a concern for how the result is achieved.

- Urban design looks at what makes one location different from another: criteria for good design vary from place to place.
- Urban design is incremental: comprehensive change is usually the result of many smaller projects carried out over an extended period by a large number of protagonists.
- Urban design encourages multi-disciplinary collaborations; the composition of project teams reflects the scale and duration of projects, as well as the complexity of issues and the need for public accountability.
- Urban design represents a broad constituency: one of the urban designer's roles is to help build a coalition of interests and the public interest is paramount.
- Urban design does not cease when a new space or building is completed: urban designers are also concerned with how urban places are brought to life through a series of formal and informal events; the on-going management and care of urban spaces are often as important as the initial design.

WAYS OF THINKING AND WORKING: Distinctive perspectives and approaches (specific tools and methods to be introduced in subsequent seminars).

- Greater uncertainty
- Higher level of abstraction
- Larger/multiple scales
- Physical and non-physical components
- Alternative strategies
- More pro-active approach to development

1.2 Who does urban design?

Multi-disciplinary and cross-disciplinary character

- Contributing professions and their roles and responsibilities:
  - Architecture
  - Engineering
  - Industrial design
  - Landscape architecture
  - Planning
  - Surveying

Generalists or specialists?

- Absence of accreditation system or professional institute
- Urban design training within the established design and planning professions
- Specialised training and practice

1.3 Relationship to the NZ urban design protocol

- The 7 Cs and what each means in terms of physical design and process.
- Relationship of the attributes of successful towns and cities, and the seven Cs to key design elements.

1.4 The value of urban design

- Who benefits and in what way?
- Is urban design profitable for the developer?
- Short term and long term values
- Externalities: taking account of the wider public good
- Key findings from the Value of Urban Design project
- Additional costs and other limitations on urban design

Outline Seminar 2: Urban Structure

General notes on content and approach

Seminar 2 acknowledges the impossibility of determining every aspect of city form. Cities are seldom comprehensively planned, and they are even less likely to be designed in the sense that a building is.

However, this seminar asserts that urban areas can be understood as complete entities. It provides the vocabulary and the conceptual tools necessary for describing urban structure on a macroscopic scale.

By emphasising the importance of macro elements and relationships, Seminar 2 demonstrates that urban design occurs at the scale of cities and regions as well as at the level of individual streets and sites. In other words, infrastructure and regional park systems are as much part of urban design as street furniture and paving patterns.

This seminar also introduces the notion that cities are an amalgam of planned and unplanned components. Arbitrary juxtapositions at one scale in one location do not undermine the value of well considered relationships on another scale elsewhere. On the contrary, a clear overall structure helps to organise a multitude of seemingly random events into a coherent whole.

Because Seminar 2 spans a wide range of topics, presenters will need to treat the material selectively. In all cases, full emphasis should be given to the benefits of well structured cities.

2.1 Do cities have a coherent structure?

Attempts to classify urban structure

- Planned/unplanned
- Organic/geometric
- Dynamic/static

Comprehensive planning

- Ideal cities e.g. religious centres, royal capitals, military bases
- 'Planted' cities on totally new foundations e.g. colonial towns and cities
- Rational overlay on older fabric e.g. Rome, Paris
- Modernist urban programme – complete break with history on a *tabula rasa*

Ad hoc development

- Uncoordinated private initiatives
- Expression of competing interests
- Succession of layers or ‘accretions’

Real cities are combinations of planned and unplanned, permanent and ephemeral

- Rarity of single persistent design concept
- Everyday fabric provides a field/foil for the occasional set piece
- Compromise and incompleteness more likely than realization of ideal vision
- Virtue in contrast and even contradiction in pluralist city
- Persistence of ‘primary elements’

Metropolitan and regional structures

- ‘Primate cities’ and traditional urban hierarchies
- Polycentric cities
- Urbanised growth corridors
- Network cities

2.2 Benefits of a well structured city

Functional efficiency

- Greater integration of physical components and activities
- Improved transportation and communication
- Easier way finding and place recognition

Distinctive identity

- Stronger sense of place at local and metropolitan scales
- Greater social integration and higher participation rates in decision-making
- Personal satisfaction at ‘discovering’ latent patterns
- Unique ‘brand’ enhancing economic competitiveness

Tolerance towards diversity

- Explicit neighbourhood or city-wide structures allow variety on individual sites
- Consistent treatment of the public realm unifies diverse private developments

Competitiveness

- Improved access to resources, markets and ideas
- Improved lifestyle at attractiveness to ‘knowledge workers’
- Point-of-difference for local and regional specialisation

2.3 Elements of urban structure

Landscape and natural features

- Distinctive geographic characteristics of New Zealand towns and cities
  - Coastal locations
  - Rivers
  - Broken terrain
- Response of urban development to natural features
- Response of sustainable urban development to ecologically sensitive areas
- Use of local materials in vernacular building traditions

Subdivision patterns and street layouts

- Original plans of New Zealand towns and cities
  - Background, skills and intentions of early land surveyors
  - Distinctive features of different street grids
    - block size and shape
    - directionality
    - hierarchy of routes
    - discontinuities
  - Persistence of original cadastral lines in contemporary layouts
- Characteristic street patterns corresponding to different eras of urban growth
  - Nineteenth-century grids
  - Garden suburbs
  - Modernist new town experiments
  - Post-war suburbs
  - New urbanism and traditional neighbourhood developments

Public open space systems

- Parks and squares in New Zealand towns and cities
  - Public open space within original town plans
  - Retrofitting cities with public open space
- Green belts
- Metropolitan and regional park systems
- Waterfronts

Transport and other infrastructure

- Contribution to economic efficiency and competitiveness
- Potential to determine the form and direction of urban growth
- Significance as conspicuous visual feature within cities
- Interface with urban fabric at local level
- Implications for environmental quality at macro and micro levels
- Potential to influence how cities are experienced and understood

Landmarks

- Characteristics of landmark sites or buildings
  - Prominent locations
  - Unusual size or appearance
  - Historical associations
  - Important functions
  - Distinctive quality in terms of design and construction

Seminar 2 should also . . .

Provide basic concepts and techniques for the **Workshop: Phase 1**

- context analysis (macro level)
- public space framework
- pathways and connectivity (macro level)
- land use and density (macro level)

Refer to **implementation methods** applicable to professional practice including:

- urban context analysis (macro level)
  - historical study of urban form
  - urban morphology
- urban structure plan
- regional growth strategy
- strategic planning workshop
- stakeholder reference group

Outline Seminar 3: Site and Neighbourhood Planning

General notes on content and approach

Seminar 3 introduces the ideas of space, connections, and distribution and type of activity that are fundamental to planning at the site and neighbourhood level.

Building on the preceding seminar on structure, this should describe the approach to defined and 'positive' urban space that is central to contemporary urban design practice, and demonstrate how the public space structure for sites and neighbourhoods may and should be connected to its context.

Integration of land use and structure planning should be emphasised and the implications of permeable, mixed use neighbourhood design.

This seminar also gives an opportunity to discuss the process of site planning in both the public and private sectors, including stakeholder reference groups and design workshops.

3.1 Concepts of urban space

Space as figure versus space as ground

- Systems of defined space
  - Definition and hierarchy
- Pavilion buildings in flowing open space
  - Front-back resolution, edge conditions and quality of experience

Positive open space and spatial definition

- Balance of closure and openness
- Dimensions of space

Measurement of spatial definition

- Street and space cross sections

3.2 Connections: visual and physical

Visual connections: alignments and relationships

- regulating lines
  - common alignments to establish visual connections
- axial planning
  - symmetry
  - shafts of space, and sightlines
- consistency vs variety at the local level

Physical connections: neighbourhood and site connectivity

- Rationale for connectivity at the neighbourhood level
  - Avoiding vehicle dependence
    - environmental sustainability
    - public health
    - social equity
  - Walkability
  - Choice of routes
- Options for urban structure
  - Formal and informal grids and curvilinear networks; axial planning; picturesque layouts and cul-de-sacs
    - visual characteristics (legibility, visual interest)
    - hierarchy of spaces and pathways
    - adaptability in response to terrain
    - capacity to accommodate a variety of lots and buildings
    - traffic effects (concentration, dispersal)
- Block size and variety of block sizes
  - Implications for site access and range of activities

3.3 Activity: mixed use and density

Mixed use

- Implications of mixed use development
  - Support for small business
  - Convenience
  - Safety and security benefits
  - Accessibility
- Means of achieving compatibility by design
  - Examples to illustrate mixed use development

Density

- Density gradients
  - highest intensity at local centres
  - ‘ped sheds’
- Benefits
- Amenity considerations of increasing density
  - Increased role for public open space
- Types and configurations needed to achieve quality design in a high density environment
  - Illustrate with range of dwelling types: single family detached, row housing, cluster townhousing, multi-storey apartments.

Interrelationship of mixed use, connectivity and density

- Importance of good design in the intensive, mixed use neighbourhood
- Integrating land use planning and urban structure
- Benefits

Seminar 3 should also . . .

Provide basic concepts and techniques for the **Workshop: Phase 2**

- context analysis (neighbourhood level)
- pathways and connectivity (local level)
- positive spaces between buildings

Refer to **implementation methods** applicable to professional practice including:

- design workshops
- stakeholder reference groups
- master planning
- design briefing for specific sites

Outline Seminar 4: Buildings & Neighbourhood Character

General notes on content and approach

The first purpose of Seminar 4 is to draw a distinction between consciously designed places and the everyday environment. Urban design needs to take account of both types of building. However, each subject has to be understood in different ways.

Section 4.1 deals with places which are not consciously designed but which account for the greater part of the fabric of cities. The seminar provides concepts and techniques which enable these buildings to be studied effectively. These tools concentrate on recurring patterns rather than individual characteristics.

Section 4.2 describes aspects of the design process. The purpose is of this material is to demystify design and, at the same time, to demonstrate that designers operate differently from most other professionals. Because of its elementary nature, this material will be of greatest interest to participants from non-design backgrounds. However, the material should be presented in a way that encourages designers to reflect on their own design philosophy and methods.

Section 4.3 describes the contribution which all buildings (regardless of their origin) make to successful urban design. This material takes the form of a checklist of features or attributes and their potential impact on public space.

The final section of the seminar deals with a particular attribute of built form: scale. This concept can be applied to designed entities as well as ordinary construction. It receives special emphasis because the expressions 'in scale' or 'out of scale' provide important criteria for assessing the merits of new building developments.

4.1 Vernacular construction: buildings which are not 'designed'

Significance of ordinary buildings

- Ordinary buildings help to determine the character of a neighbourhood
- Ordinary buildings are too numerous to study individually
- Their cumulative effect is more important than the individual examples
- Ordinary buildings can be classified according to underlying patterns or types

4.2 Creating special buildings: how designers think

Role of form-giving concepts

- Form does not automatically result from functional requirements
- Designers must also have a clear 'form-giving concept' or 'design idea'
- Possible sources for design ideas include:

- Geometry
  - additive and subtractive compositions
  - repetitive and unique elements
  - symmetry
  - asymmetrical balance
  - proportions
  - rhythms and progressions
  - plan-to-section relationships
- Site conditions
- Structural systems
- Historical precedents
- Symbols or narratives

Adapting a design concept in response to site and function

- Design concepts are seldom realised in a pure or ideal form
- Concept, setting and purpose must be reconciled with one another
- Reconciliation of competing imperatives produces subtlety and richness
- Integrity of original design concept must be retained

Iterative nature of design

- Design problems are usually open ended i.e. there is no 'perfect' solution
- Unlimited amounts of information and time can be brought to bear
- Designers often consider alternatives and keep options open

Basic composition strategies

- Design cannot be reduced to a formula
- Individual designers have different ways of working
- Some common strategies exist, for example:
  - Balancing verticals and horizontals
  - Balancing solids and voids
  - Balancing complexity and simplicity
  - Hierarchical relationships among elements

4.3 Features of buildings which contribute to good urban design

Layout of buildings and open spaces

- Common alignments:
  - lots
  - blocks
  - streets
  - buildings
  - landscape elements

- Exceptions to the rule
  - discontinuities in the street pattern
  - buildings within extensive grounds
  - landmarks

Position of buildings on lots

- Standard lot sizes
- Typical coverage
- Consistent set backs

Building dimensions

- Relative height
- Plan dimensions
- Common datums
- Recurring visual modules

Combinations of primary and secondary forms

- Recognising traditional construction techniques
- Providing a transition between new and existing
- Mitigating the effect of large structures
- Achieve a satisfying degree of visual complexity

Front/back relationships

- Separation of front and back
- Consistent orientations
- Lively frontages

Openings

- Size and proportion
- Location
- Treatment

Landscape features

- Public and private vegetation
- Fences and other boundary features
- Outbuildings
- Vehicle access and accommodation

4.4 Scale in the urban environment

Definitions of scale

- Impression of size based on comparison of dimensions
- Need to identify both the subject and object of comparison

Important dimensional comparisons

- Part-to-part and part-to-whole within a single architectural composition
- New buildings with their older neighbours
- Built form with human form
  - Imprints of human stature and movement
  - Hierarchical compositions which begin with a person-size module
  - Human effigies and other shapes with carry meaning
  - Dimensions matched to ideas rather than the human figure

Positive properties of scale

- Legibility – buildings should reveal their true size
- Consistency – nothing appears surprisingly large or small
- Human scale – building components are commensurate with the human figure

Rules for designing buildings so that they are in scale with their neighbours

- Large buildings are not dominated by large components
- Small buildings are not dominated by small components
- Composition includes modules with a range of sizes
- Components match size and proportions of those on neighbouring structures

Seminar 4 should also . . .

Provide basic concepts and techniques for the **Workshop: Phase 3**

- site-specific design guidelines
- bulk and location controls
- layout and function of internal spaces
- treatment of external surfaces
- interface between public and private, interior and exterior

Refer to **implementation methods** applicable to professional practice including:

- neighbourhood character analysis
  - historical research
  - urban morphology
  - building typology
  - figure/ground analysis
- neighbourhood design guidelines
- heritage precinct design guidelines
- design codes

Outline Seminar 5: Public Space Design

General notes on content and approach

This seminar should start by defining public space and its role in contemporary towns and cities.

The main types of public space are described along with the different in design approach appropriate to each.

One type of space is used as the subject for a more detailed examination good design attributes. The street is chosen for this purpose as it comprises the majority of public space in towns and cities. The qualities of successful streets should be illustrated with compelling examples of relevant precedents.

A concluding discussion on edge conditions sets the scene for the final seminar and workshop sessions which concentrate on building design.

5.1 Qualities of good public space

Forum for public life

- Freedom of access and action
  - Public space tolerates difference
- Vitality and eventfulness
  - Organised activities and events
  - Informal activities and events
  - People attracting people
- Adaptability – responsiveness to a wide range of users and needs

Cultural significance

- Historical development
  - Changing attitudes to public space
  - Modernist urban space
- Contemporary models and trends
  - Interiorisation and privatisation
  - Diminution of public life
  - Rediscovery of public life
- Identification with groups and individuals

Quality of space and link with frequency of outdoor activities

- Jan Gehl's 'necessary', 'optional' and 'resultant' (or social) activities

5.2 Types of public space and their roles

Streets

- Evolution of the modern city street
  - Cultural innovations
  - Technical innovations
- Destination as well as thoroughfare
- Multimodal, mixed use character
- Principal public open space resource

Squares

- Relaxation, recreation, passive or active social engagement
- Civic events

Green city parks

- Relaxation, recreation, passive or active social engagement

Waterfronts

- Common feature of New Zealand towns and cities
- Changing function and meaning in post-industrial era
- Reorientation within city centres – 'back door' becomes 'front door'
- Competing commercial and recreational functions

Town belts

- Historical significance in nineteenth-century town planning
- Delineation of city centre and suburb
- Changing character in response to revised perception of city and hinterland
- 'Reservoirs' of open space which accommodate new public amenities

Ecological reserves

- Connection with nature
- Recreational potential and visual amenity

5.3 Street design

Types of street

- Boulevards
- Principal streets
- Secondary streets
- Lanes and alleys

Relationship between vehicles and pedestrians

- Segregating vehicles and pedestrians
- Integrating vehicles and pedestrians
  - First generation traffic calming
  - Second generation traffic calming
  - "Living Streets"

Qualities of successful streets

- Walkability
- Physical comfort
  - Seating
  - Shelter
  - Microclimate
- Safety
  - Lighting
  - Presence of other people
  - Natural (informal) surveillance
- Spatial definition
  - Continuity along the street
  - Cross sectional dimensions
  - Subdivision of the right-of-way
- Active edges (see public–private interface below)
- Engaging all the senses
  - Serial vision and the aesthetics of movement
  - Memorable contrast with other places
  - More buildings rather than fewer
- Car parking
- Quality
  - Design concepts
  - Construction
    - materials
    - details
    - finishes
  - Maintenance

Public private interface

- Achieving active edges with different development types
  - main street 'strip' retail
  - large format 'big box' retail
  - commercial frontages
  - institutional buildings and campuses
  - residential street frontages
- Visual and physical connections

Seminar 5 should also . . .

Provide basic concepts and techniques for the **Workshop: Phase 3**

- location and layout of squares, parks and other public open spaces
- hierarchy of streets
- width and cross-sectional treatment of public rights-of-way
- bulk and location controls
- treatment of external surfaces
- interface between public and private, interior and exterior

Refer to **implementation methods** applicable to professional practice including:

- Town centre management programmes
- Main Street programmes
- Planning and briefing workshops
- Design workshops
- Stakeholder reference groups
- Standard designs and specifications
- Technical guidance notes

Outline Seminar 6: Implementation

General notes on content and approach

Seminar 6 focuses on how to implement urban design initiatives. It demonstrates that successful design outcomes demand an integrated approach to all the issues introduced in the preceding seminars.

The seminar will be based on one or more case studies which depict best practice, preferably in a New Zealand context. The presenter (or presenters) should have direct experience and detailed knowledge of all aspects of the case studies. Emphasis should be given to the roles which different professions can play in achieving good urban design.

This seminar should be run as an interactive discussion. One or more presenters will facilitate. However, there should be a minimum of formal delivery, and contributions from all participants should be encouraged.

The format and content of Seminar 6 are inherently less predictable that those of other seminars. For this reason, this outline has a more general character.

6.1 Professional roles in urban design

Questions about the contribution each profession make to urban design

- What are the core values of each profession?
- What are the key responsibilities with respect to urban design?

- What incentives are there to meet these responsibilities?
- What impediments are there? How can these be overcome?
- How should this professional be accommodated within the project team?

- How might power and influence differ from project to project?
- What can be done to shift the power?

Refer to ‘Powergram’ for urban design, for possible use as an illustration

Possible seminar illustration: 'Powergram' for urban design

This linear responsibility chart presents a generalised view, and might be used as a vehicle to provoke questioning, and generate debate and discussion on roles and responsibilities.

ELEMENTS	Developers	Local Authority				Private Sector				Urban Designers	Community
		Political decision-makers	Policy Planners	Consent Planners	Transport Planners	Planners	Surveyors	Architects	Landscape Architects		
City structure	–	●	o	–	●	o	–	–	o	o	o
Street pattern	o	●	o	o	●	–	**O**	–	o	o	o
Block and lot pattern	●	●	o	–	–	–	**O**	–	o	o	–
Public space quality	o	●	●	–	o	o	o	–	**O**	o	o
Land and building use	●	●	●	**O**	o	o	o	o	–	o	o
Ecology	–	●	●	–	–	o	–	o	**O**	o	o
Building bulk and form	●	●	●	**O**	–	o	–	**O**	–	o	o
Orientation to public space	–	●	**O**	**O**	–	o	–	–	–	o	o
Building elevations	●	●	**O**	**O**	–	o	–	**O**	–	o	o
Building detail and materials	●	●	**O**	**O**	–	–	–	**O**	–	o	o

(Adapted from Sue McGlynn's "powergram" for urban design)

KEY: ● Power – either to initiate or control; **O** Responsibility – statutory or contractual; o Interest/influence – by argument or participation only; – No obvious interest

Organisation

With reference to best practice precedents and case studies:

- How were participants and processes organised and why?
  - Organising public agencies so as to achieve better urban design outcomes
    - Achieving collaboration between the parts of an agency
    - Political context – what makes an effective design champion?
  - Organising private sector participants

Developer intentions and economic feasibility

With reference to best practice project precedents and case studies:

- Financial factors which support good design
- Short-term versus long-term returns
- Life-cycle costing
- Development motivations

Political feasibility & public participation in design

With reference to best practice project precedents and case studies:

- Political processes and influence and their relation to achieving good urban design outcomes
- Representing the public interest
- Role of the public
  - Contributing information – local knowledge
  - Client role – giving feedback
  - Generating community ownership and support for projects
- How to integrate successful public participation into project processes.

6.2 Closing observations

What are the lessons from these cases on how to achieve successful outcomes?

Case studies might refer to:

- Implications of statutory and non-statutory approaches and leverage to ensure good private sector design outcomes
- Success depends on engaging the right capability and mix of skills through organizations and project teams
- Implications of extended delivery time frames

Importance of ongoing management, monitoring and maintenance

Workshop Preparation Guidelines for Presenters

Criteria for selecting a project

- Sufficiently large to require consideration of urban structure
- Complex, with a range of uses, and presenting a design and development challenge
- High profile and/or representative of typical projects in the locality
- Type: Greenfield, infill or town centre

Guide to information required

The information required will include anything relevant to the development of the site, but is likely to include the following.

Detail should be limited to key characteristics and issues as the information is to be quickly assimilated by workshop participants and used in a series of relatively short workshop sessions.

1 Site History

- Origins of the site
- Relevant historical events and heritage features
- Recent development and activity history

2 Existing on-site conditions

- Notable physical site characteristics
- Topography
- Opportunities and constraints
- Existing buildings and activities

3 Site ownership

- number of owners
- nature of ownership of adjacent sites

4 Physical context

- Surrounding activity
- Access and roading infrastructure

5 Local Authority Plans and Policies

- Relation to growth strategy
- Zoning – site and surroundings
- Height, coverage and any other relevant restrictions

6 Directions for a Design Brief

- Likely development
- Past development proposals
- Local Authority intentions
- Developer intentions

This brief should be relatively open, recognizing that part of the workshop project is for participants to identify a possible brief for the site.

Preparation Material Required for Workshop

Powerpoint Presentation

- 20 minute (max) presentation to describe and introduce the project, covering the points noted above.
- Include base plans in full and in relevant parts in the presentation.
- Show key photographs of defining features and characteristics of site and surroundings – 10 maximum.

A Powerpoint presentation is required so that the entire workshop can be briefed as a group.

The presentation will be descriptive., and for simplicity might usefully follow the sequence of information required above.

One page project case study summary

As an A4 sheet for quick reference, this highlights the key points and parameters from your presentation

Its purpose is to be a quick reference memory aid for tutors and workshop participants.

Base plans for design studies

- Site in its wider context (regional structure plan) at 1:20,000 – 1:5000 scale depending on project.
- Site base plan at 1:2000-1:500 scale depending on project

As a guide for what to include in the site base plan, the context in site plans should extend at least the dimension of the site in each direction past the edge of the site.

Workshop Briefing Notes for Presenters

Consider the following in each of the workshop phases:

Phase One: The Site

Natural features:

- land form
- water courses
- significant vegetation/ecological areas

Subdivision patterns:

- street layout
  - geometry
  - hierarchy
  - discontinuities
- public open spaces
- lot size, shape, orientation

Streetscape character:

- width/treatment of right-of-way
- street trees
- curb crossings

Existing and surrounding built form:

- landmarks
- heritage features
- building types
- building scale (height, bulk, modules)
- density/coverage
- distribution of fronts and backs
- spatial definition
  - degree of enclosure
  - consistency of set back
  - recurring relationships between buildings and open spaces

Existing circulation patterns:

- pedestrian
- vehicle
- public transport

Community design and development

- distribution of activities
- distinctive identity

Experiences:

- way finding
- memorable sequences
- views

Social, economic and political contexts

Output should include:

- annotated maps and diagrams recording your analysis of the site and its wider context
- a brief for design, including reasons for indicated activities and design directions

Phase Two: The Skeleton

Framework of buildings, streets and public open spaces:

- new or extended streets
  - connectivity/permeability
  - pedestrian/vehicle orientation
  - optimum block size and shape
  - streetscape character
- network of public open spaces
  - linkages
  - pedestrian catchments
  - activity
  - custodianship/safety
- transport infrastructure
- landmark buildings and spaces
  - location
  - significance
  - distinctive character
  - catalytic effect
- indicative distribution of activities
  - compatible mixed use
  - density and intensity

Output will be a site plan to scale, including indication of activity and linkages to the wider context.

Phase Three: The Tissue

Development patterns which "flesh out" the Framework:

- shapes and sizes of lots
- indicative building envelopes
- generic building types
- indicative building design
- relationship of buildings to open space

- landmarks / singular buildings
- distribution of activities

Output will be illustrative material including perspectives, axonometric or isometric drawings, elevations and cross sections as required to show the key features of the site.

Phase Four: Review

Output: group presentation of designs:

- Comparative review of alternative design strategies
- Critical assessment of outcomes

Seminar Notes for Participants

Introduction

The importance of planning and design

> *"… cities needn't just happen. They can and, in general, should be designed. If nobody is designing them, they become the chaotic and accidental result of a random collision of forces. Design doesn't mean, of course, imposing anybody's single vision. It means working through the democratic process towards a consensus view of what the shape of the city should be."*

Robert Campbell (2002) In Russell, J. (ed) *The Mayors' Institute: Excellence in City Design* p. 9

What is urban design?

NZ Urban Design Protocol Definition

> *"Urban design is concerned with the design of the buildings, places, spaces and networks … and the ways people use them. … it involves both the process of decision-making as well as the outcomes of design."*

Origins of urban design

Contemporary urban design arose during the 1960s as a reaction to the 'failed' urban projects of the Modern Movement and the increasing separation of planning from architecture and the other design professions.

Defining characteristics of urban design

PRODUCTS: Urban design deals with space, form and activities i.e. physical places and the events which occur within them.

- Urban design considers the wider context and the longer term, including the social and economic implications of design; it assesses individual projects in terms of their relationships to neighbourhoods, towns and landscapes.
- Urban design focuses on spaces rather than buildings: it is concerned with the character, function and vitality of places, and the well-being of the people that use them.
- Urban design gives priority to the public environment, the shared parts of the city which are accessible to ordinary people; private buildings and spaces are important to the extent that they influence the character and amenity of public places; urban designers aim to encourage participation in public life by providing a good 'fit' between physical form and user needs or expectations.
- Urban design is concerned with 'ordinary' buildings and spaces as well as special ones.

PROCESSES: Urban design considers process as well as product i.e. interest in a physical outcome is coupled with a concern for how the result is achieved.

- Urban design looks at what makes one location different from another: criteria for good design vary from place to place.
- Urban design is incremental: comprehensive change is usually the result of many smaller projects carried out over an extended period by a large number of protagonists.
- Urban design encourages multi-disciplinary collaborations; the composition of project teams reflects the scale and duration of projects, as well as the complexity of issues and the need for public accountability.
- Urban design represents a broad constituency: one of the urban designer's roles is to help build a coalition of interests and the public interest is paramount.
- Urban design does not cease when a new space or building is completed: urban designers are also concerned with how urban places are brought to life through a series of formal and informal events; the on-going management and care of urban spaces are often as important as the initial design.

The value of urban design

- Good urban design sometimes costs more but it need not. It can also offer significant benefits to the community.
- Conversely, 'business as usual' – lack of connection and coordination and use segregation – is likely to have significant adverse environmental, social and even economic effects. The 'external costs' generated by such development are significant; essentially such urban design is unsustainable.
- Urban design can impact on people's ability and preparedness to undertake physical exercise, with consequent health benefits, can help make places safer and more secure and where it delivers improved quality of life is valued by the community.
- All stakeholders benefit in various ways from good urban design.

Useful references

Jonathan Barnett (2003) *Redesigning cities: principles, practice, implementation*

- Integrates history, theory and practice, describing qualities of community, livability, mobility, equity and sustainability and how to realise these in towns and cities.

Matthew Carmona et al (2003) *Public Places Urban Spaces: The Dimensions of Urban Design*

- Comprehensive summary of contemporary urban design ideas and practice, structured around morphological, perceptual, social, visual, functional and temporal dimensions.

Francis Tibbalds (1992) *Making People-Friendly Towns: Improving the Public Environment in Towns & Cities*

- Compelling analysis of 12 issues relating to place-making in towns and cities, providing directions for design with recommendations and an action checklist.

Urban Structure

Urban structure helps to define our cultural identity

"Settlement patterns are the physical foundation of our society and, like our society, they are becoming more and more fractured."

Peter Calthorpe (1993) *The Next American Metropolis* p.16

Do cities have a coherent structure?

Planned and unplanned components

- Cities can be classified according to their overall shape and composition. Commonly used categories include: planned/unplanned, organic/geometric and dynamic/static.
- Formally laid out cities are relatively rare. Colonies and other 'planted' cities often begin with regular plans (usually grids). However, as a city grows, it typically evolves into a more complex entity which combines planned and unplanned elements.
- Ordinary buildings and spaces account for the great majority of a city's fabric. These everyday environments provide settings for occasional urban 'set pieces': places which have been consciously designed.

Structure at metropolitan and regional scales

- Some aspects of urban structure are evident at the metropolitan or regional scales. Examples include urban hierarchies, polycentric cities and network cities.

Benefits of a well structured city

- A well structured city is more likely to function efficiently because places and activities are more fully integrated.
- Well structured cities are more legible. It is easier to find ones way around places which have distinct landmarks, nodes, districts and connections.
- The elements and relationships which provide structure to a city also give the place a memorable character.
- Urban structure also exists at the scale of individual neighbourhoods, where it helps to differentiate one locality from another.
- People derive satisfaction from discovering the elements and relationships which structure a city.
- A strong overall 'framework' gives coherency to the disparate private developments which compose the bulk of any city.
- A well structured city is likely to be more competitive. As well as facilitating access, clear structural relationships help to give a city its point-of-difference.

Elements of urban structure

Landscape and natural features

- Most of New Zealand's towns and cities are shaped by coastlines, rivers, broken terrain and other natural features.
- In future, sustainable urban development will be directed away from ecologically sensitive areas such as water courses.

- Local construction materials sometimes contribute to the distinct character of traditional buildings.

Subdivision patterns and street layouts

- The original plan of a city has a persistent effect on layout and character.
- Although most New Zealand towns and cities were laid out on grids, each plan is unique and each offers its own advantages and disadvantages.
- Each era of urban expansion is characterised by its own characteristic street layout. These layouts affect the character, utility, amenity and adaptability of suburbs.

Public open space systems

- New Zealand cities were some of the first in the world to be laid out with dedicated green belts. However, early surveyors often made little provision for parks and squares within the platted area.
- To correct this deficiency, towns and cities have been 'retrofitted' with new public open spaces. Waterfront recreational areas are an important example of this phenomenon.

Transport and other infrastructure

- Well designed infrastructure is essential to the functional efficiency and economic competitiveness of a city.
- Infrastructure also influences the form and direction of urban growth.
- Roads, railways and other above-ground elements of infrastructure have a direct impact on the character and appearance of a city.
- Transport routes influence how people experience a city. Well located routes contribute to legibility and a positive sense of place.
- City-wide transport infrastructure should be designed to have a positive interface with local urban fabric.

Landmarks

- Landmark sites and buildings stand out from the rest of the city fabric.
- A number of attributes can confer landmark status. These include: prominent location, exceptional size, unusual appearance, historical associations, important functions and distinctive quality.
- Distinctive quality results from the integrity of the nature of the design concept as well as the choice of construction materials, details and finishes.

Useful references

Edmund N. Bacon (1967) *Design of Cities*

- Classic analysis of the structure of cities, public space systems and spatial quality.

Hildebrand Frey (1999) *Designing the City: Towards a more sustainable urban form*

- Overview of the rationale for various city structures, considering micro and macro structure.

Urban Design Associates (2003) *The Urban Design Handbook,* Chapter 2 "Urban Structure: Frameworks and Development Patterns" pp.27–43

- Practical guidance for design, considering both form and process.

Site and Neighbourhood Planning

Definition of a city

"that place where the greatest number of activities takes place in the least amount of space"

Lewis Mumford, quoted by Krieger (2002) p.106

Concepts of urban space

Space as 'figure'

Historically and in contemporary urban design space is the primary or figural element in the city. Buildings and landscape elements are used to shape systems of space.

- Space that is shaped and defined to form an identifiable place is known as 'positive open space'.

Space as 'ground'

Modernist theory placed buildings as objects in a field of flowing open space.

- much space is 'residual' and lacks the qualities that attract or support use.

Most towns and cities comprise a **hybrid** of these approaches.

- Successful urban spaces generally include a balance of closure and openness.
- Both an identifiable sense of place and connection to other places is important.

Relationship to context at a structural level

Alignments and relationships for visual connection

- 'Regulating lines' describe alignments and establish clear relationships between buildings and spaces. They introduce order into site planning.
- Axial planning can be used to achieve connections and relationships

Consistency and diversity

- If every building or place attempts to be singular the general result is chaos and illegibility. However a place can be too consistent and become monotonous. An element of diversity and difference is required to give character and vitality
- Justifications for landmark status include prominent position and public relevance of building use.
- The 'Rationalist' analysis (Leon Krier) describes the city as a combination of 'monuments' (the civic and other special buildings), and the vernacular (the ordinary buildings that comprise the bulk of the urban fabric)

Connectivity – neighbourhood and site

- Connectivity at the neighbourhood level enhances walkability reducing vehicle use and the need to use a car to access local facilities.
- A range of different approaches to neighbourhood structure have been used. These include formal or informal grids with or without axial planning, curvilinear networks, and hierarchical cul-de-sac structures.
- In addition to connecting to surrounding areas, some neighbourhood structure considerations are:
  - visual interest and legibility
  - hierarchy
  - adaptability to terrain
  - effect on lot type and variety
  - concentration or dispersal of traffic

Mixed use and density

Mixed use provides:

- Convenient access to local facilities
- Support for small and local business
- Safety and security benefits

People in mixed use neighbourhoods tend to value the opportunities these provide. Potential incompatibility between uses can usually be resolved by careful attention to relative location and frontage orientation. Building design, including position of openings and acoustic quality is usually able to resolve aspects of incompatibility.

Density

Good public space and building design is required to deliver an intensive, mixed use neighbourhood that attracts and retains people. Mixed use, connectivity and density are interrelated concepts and optimum benefits will be achieved when all these qualities are present.

Useful references

Llewelyn Davies (2000) The English Partnerships *Urban Design Compendium*

- Provides guidance on both assessing and enhancing urban design quality, and a useful summary of current urban design ideas and practice.

David Rudlin and Nicholas Falk (1999) *Building the 21st Century Home: the sustainable urban neighbourhood*

- Provides an overview of the idea of neighbourhood in a UK context, addressing contemporary ideas of sustainability at the neighbourhood level.

Peter Neal (ed.) (2003) *Urban Villages and the Making of Communities*

- Contains illustrated essays and case studies on principles for neighbourhood design and implementation. Eminent contributors include Sir Peter Hall, William J. Mitchell, Andres Duany and Ken Worpole.

Public Space Design

"… public life in public spaces is desirable for people, good for societies …

Public places afford casual encounters in the course of daily life that can bind people together and give their lives meaning and power … Public spaces not only can serve daily needs but can also be places to gather for special occasions …."

Stephen Carr et al (1992) *Public Space* pp.43–45

Qualities of good public space

Public space is a forum for public life

- It provides for freedom of access and action and tolerates difference. It is a venue for both organised and informal activities and events.
- With increased use of the car, contact with others in public space has been reduced. Similarly, the popularity of the mall has seen what was public space increasingly interiorised.
- Paradoxically, the intense communication allowed by information technology leads to greater demand for public meeting places rather than less.

Quality of space is linked with frequency of outdoor activities

- People attract people and good public spaces are characterised by activity.
- Observation of public space use by Jan Gehl reveals that when environmental quality is poor, only activities that are 'necessary' occur. As spatial quality improves, 'optional' activities occur, greatly increasing occupation. The highest quality spaces also become venues for 'social' activities.

Types of public space and their roles

Streets are the principal public open space resource of towns and cities. They should be destinations as well as thoroughfares.

Squares provide for civic events as well as relaxation, recreation, and social engagement

Green city parks provide for relaxation and recreation as well as contact with nature and occasionally respite from the busy town or city.

Waterfronts are a common feature of New Zealand towns and cities. Previously serving a service function, they have increasingly become the 'front door' of the city, and now commercial and public recreational functions compete to be present.

Town belts are of historical significance in nineteenth-century town planning, providing a delineation of city centre and suburb. They are 'reservoirs' of open space which accommodate new public amenities.

Street design

Relationship between vehicles and pedestrians

Good public space is adaptable – responsive to a wide range of uses, users and needs. Except for high speed highway environments streets can and should accommodate both vehicles and pedestrians.

- The presence of people in cars contributes to personal security in public places.
- Parallel parked cars can act as a barrier between the road and footpath, enhancing a sense of safety.
- 'Traffic calming' establishes an environment with landscape features, narrow streets and short straights where the temptation and ability for vehicles to speed is reduced.
- The concept of "Living Streets" recognises that streets offer opportunities for a whole range of living activities as well as movement.

Qualities of successful streets

- Walkability: conditions that support walking including physical comfort (seating, sun and reasonable shelter) and safety – the presence of people for natural (informal) surveillance.
- Spatial definition: including general continuity and consistency of the street wall achieved with buildings and landscape elements
- Active edges: that is, visual and physical connections at the public–private interface. These contribute towards the liveliness, visual interest and safety required to attract and retain use in adjacent public spaces.
- A sequence of events: The street is experienced by a moving observer – 'serial vision' and the aesthetics of movement are important
- A sense of place: achieved by distinctive character and a memorable differentiation from other places
- More buildings rather than fewer: necessary for vitality and visual interest, and to avoid monotony.
- High quality construction: robust materials, details and finishes that are clean and well maintained.

Useful references

Allen B. Jacobs(1993) *Great Streets*

- In this urban design classic, Jacobs describes the nature of streets, analyses the physical qualities of successful streets, and provides criteria for design.

Alan Tate (2001) *Great City Parks*

- Tate describes and systematically assesses the qualities of 20 of the world's most highly regarded city parks and identifies management and design criteria for success.

Jan Gehl and Lars Gemzøe (2001) *New City Spaces*

- Gehl and Gemzøe review the public space strategies of nine cities world-wide and describe and discuss 39 international public space projects.

Buildings and Neighbourhood Character

Finding unity in the urban environment

"The interest in ensembles is partly responsible for the attention paid in architectural theory to style, and to repeatable form. All serious architecture aims at an effect of unity …."

Roger Scruton (1979) *The Aesthetics of Architecture* p.11

Vernacular construction

- Ordinary or 'vernacular' buildings are not consciously designed. They tend to follow well-established precedents for layout, construction and appearance.
- Ordinary buildings have a major impact on the form, character and amenity of a locality. However, their cumulative impact is more significant than the particular features of individual examples.
- Ordinary buildings are too numerous to study singly. However, they can be classified and interpreted according to underlying patterns or 'types'.

Special buildings: how designers think

- Functional requirements do not automatically determine a building's form and appearance. Designers also need a 'form-giving' concept.
- Form-giving ideas may come from geometry, site conditions, structural systems, historical precedents and symbols or story-lines.
- Design concepts are seldom realised in a pure or ideal form. They are almost always adapted in response to a project's setting and purpose.
- Design is an iterative process. There is never a single 'perfect' solution. Instead, the investigation of options can continue as long as time allows. For this reason, designers often like to keep their options open until the last minute.
- Design cannot be reduced to a formula. Individual designers have their own preferred ways of working, and what suits one project may not suit another. However, there are a number of frequently used compositional strategies. These include balance, symmetry and hierarchy.

Building features which contribute to good urban design

Layout of buildings and open spaces

- In many locations, particularly in the older gridded sections of our towns and cities, most buildings conform to a common alignment. They are laid out parallel or perpendicular to one another.
- Where this occurs, new development should continue the pattern. If buildings depart from this common alignment, they will appear conspicuous, and they may also create awkward irregular open spaces.
- When land is first subdivided, it is frequently laid out with lots of a standard size and shape. Buildings are often placed on these lots in a uniform manner e.g. set back the same distance from front and side boundaries. If new construction is to fit in, it must respect these recurring dimensions.

Overall building dimensions

- Height is the most commonly used parameter for assessing the impact of new buildings in areas of established character. However, relative height differences are usually more important than absolute limits.
- A preoccupation with height can mask the impact of other building dimensions. Excessive footprints and long uninterrupted elevations can be equally disruptive.

Combinations of primary and secondary forms

- Traditional building styles are usually based on assemblies of large and small forms.
- The main volume of a house may be augmented by a secondary wing at the front and a lean-to extension at the rear. Bay windows, entrance porches and the like may add smaller modules to the composition.
- Where these patterns exist, new development should continue the modular composition so as to produce a similar degree of visual complexity.
- To some extent, splitting a large new building into subsidiary volumes can mitigate its impact. While an additive composition can never fully conceal bulk, it can provide transitional volumes which mediate between the development and its neighbours.

Fronts and backs

- The fronts and backs of buildings have quite different associations. Usually these two orientations are kept separate, and each is given a distinct appearance.
- In traditional city fabric, fronts face fronts and backs face backs. If this convention is ignored in new development, functional conflicts along with unseemly juxtapositions between public and private zones.

Scale in the urban environment

- Scale is the impression of size which is gained from a comparison of dimensions. A precise definition requires the subject and object of the comparison to be identified.
- Comparisons are frequently made between one part of a building and another, or between new and existing buildings. Scale is also judged by a building's relationship to human stature.
- Well scaled buildings reveal their true size. They are neither larger nor smaller than expected.

Useful references

Andres Duany and Elizabeth Plater-Zyberk (1991) *Towns and Town-Making Principles*

- Series of case studies and essays placing New Urbanism in context. Includes description of codes.

Francis Ching (1979) *Architecture, Form, Space and Order*

- Highly graphic and accessible architectural primer describing vocabulary and compositional principles.

Charles Moore and Gerald Allen (1976) *Dimensions: Space, Shape and Scale in Architecture*

- Excellent reference on architectural form and composition.