

UPR308

INTRODUCTION TO URBAN DESIGN AND PLANNING



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Course code: URP 308

Course title: Introduction to Urban Design and Planning

Course credit load: 2 Units

List of Series:

- **Series 1: Introduction to Urban Design and Urbanization**
- Series 2: Elements of Urban Design and Environmental Quality
- Series 3: Historical Evolution of Human Settlements
- Series 4: Civic Design Movements and Town Planning
- Series 5: Traditional Urban Design in Nigerian Cities

1 Introduction to Urban Design and Urbanization

Series outline

- **Part 1 (1.1): Defining Urban Design**
 - Sub-Part 1.1.1: Definitions and scope of urban design
 - Sub-Part 1.1.2: Urban design, urban planning, and architecture: distinctions and overlaps
 - Sub-Part 1.1.3: Goals and outcomes of urban design
- **Part 2 (1.2): The Nature and Process of Urbanization**
 - Sub-Part 1.2.1: The concept and meaning of urbanization
 - Sub-Part 1.2.2: Stages and forms of urbanization
 - Sub-Part 1.2.3: The urbanization process in Nigeria
- **Part 3 (1.3): Urbanization Patterns and Drivers**
 - Sub-Part 1.3.1: Global urbanization trends and statistics
 - Sub-Part 1.3.2: Push and pull factors in urban growth
 - Sub-Part 1.3.3: Consequences of rapid urbanization
- **Part 4 (1.4): Urban Design as a Discipline and Practice**
 - Sub-Part 1.4.1: Urban design as a field of study
 - Sub-Part 1.4.2: The urban designer: roles and competencies
 - Sub-Part 1.4.3: Urban design process and methods

Introduction

A planning model is one of the most powerful communication tools available to the urban planner. When a community is invited to respond to proposals for their neighbourhood, when a client needs to understand a proposed development, or when a planner must convey the three-dimensional character of a new layout to decision-makers, a physical model speaks with a clarity and immediacy that drawings and maps cannot match. The ability to design and construct



planning models is therefore a fundamental practical skill one that links spatial imagination to physical making and that connects the abstract world of planning proposals to the tangible reality of built form.

The aim of this Series is to introduce you to the field of urban design: its definitions and scope, its relationship to related disciplines, its goals, and the nature of the urbanization processes that urban designers seek to shape.

We shall commence this Series by introducing the concept of the planning model, its types, purposes, and the general model making process. Next, we will examine the cutting and shaping tools used in model making, including knives, saws, and forming tools. Following that, we will explore measuring, marking, and fixing tools, as well as adhesives and finishing equipment. Finally, we will wrap up by examining the range of materials used in planning model making from board and paper through foam and wood to supplementary finishing materials.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 1.1** define urban design and describe its scope, goals, and relationship to related disciplines,
- **SLO 1.2** explain the concept of urbanization and describe its nature, stages, and process in the Analysis context,
- **SLO 1.3** describe global urbanization trends, identify the principal drivers of urban growth, and explain the consequences of rapid urbanization,
- **SLO 1.4** describe urban design as a field of study and professional practice and outline the roles, competencies, and methods of the urban designer.

1.1 Defining Urban Design

1.1.1 Definitions and scope of urban design

Urban design may be defined as the collaborative, multidisciplinary process of shaping the physical setting for human activity in cities, towns, and villages. It operates at the scale between the individual building and the city-wide land use plan, concerned with the arrangement of buildings, streets, spaces, and landscapes and with the quality of the resulting environment as experienced by its users. The scope of urban design is broad: it encompasses the layout and character of streets and public spaces, the massing and height of buildings, the mix of land uses, the provision of green space, and the management of movement through urban areas. Urban design draws on architecture, landscape architecture, urban planning, civil engineering, and the social sciences, and its practitioners must be conversant with tools ranging from site analysis and spatial design to public engagement and development economics.

Fill in the blank: Urban design operates at the scale between the individual building and the city-wide _____ plan.





Short description: Image showing a well-designed urban public space with people walking and interacting, demonstrating the human-centred quality that urban design seeks to achieve.
Plate 1.1 A well-designed urban public space illustrating the human-centred goals of urban design

1.1.2 Urban design, urban planning, and architecture: distinctions and overlaps

Although urban design, urban planning, and architecture are closely related disciplines, they are distinct in their focus and scale of operation. Architecture is concerned primarily with the design of individual buildings: their internal organisation, structure, and aesthetic character. Urban planning addresses the strategic level of land use, infrastructure, transportation, and policy across the city and region. Urban design occupies the intermediate scale, concerned with the quality of the built environment as shaped by the relationships between buildings, streets, spaces, and uses rather than with any single structure or city-wide strategy. Effective urban design requires collaboration between these disciplines because no single profession commands all the competencies needed to address the spatial, social, economic, and environmental dimensions of urban form simultaneously. In Nigerian cities, where rapid growth, informality, and limited public resources place acute pressure on the built environment, this collaborative and integrative approach is particularly important.

Fill in the blank: Urban design is distinct from architecture in that it is concerned with relationships between buildings, streets, spaces, and uses rather than with any single

1.1.3 Goals and outcomes of urban design

Urban design seeks to achieve a range of interconnected goals in the built environment. Functionality ensures that streets, spaces, and land uses work efficiently for the people who use them. Liveability creates environments that are safe, comfortable, and enjoyable for residents and visitors. Visual quality gives urban areas a coherent, attractive, and legible character that



supports a sense of place and civic identity. Sustainability integrates environmental considerations into urban form, reducing energy consumption, managing water, and preserving green infrastructure. Equity ensures that the benefits of good urban design are accessible to all residents regardless of income or social status. In the Nigerian urban context, these goals must be pursued within conditions of rapid population growth, limited public resources, widespread informality, and a built environment shaped by a complex mix of traditional, colonial, and contemporary influences.

Fill in the blank: Among the goals of urban design, _____ ensures that the benefits of a well-designed built environment are accessible to all residents regardless of income or social status.

Pilot questions 1.1

1. Define urban design and state two of its principal goals.
2. At what scale does urban design primarily operate and how does this distinguish it from architecture and urban planning?
3. Name three types of professionals who typically collaborate in urban design work.
4. Fill in the blank: Urban design is concerned with the quality of the built environment including buildings, spaces, streets, and _____ considered together as an urban whole.

1.2 The Nature and Process of Urbanization

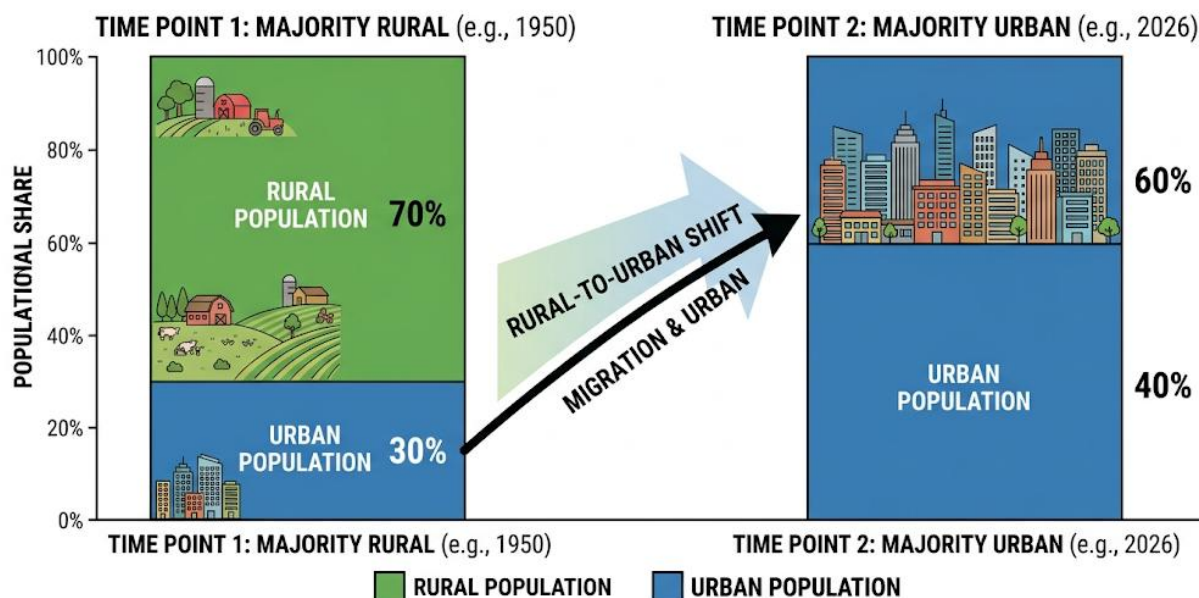
1.2.1 The concept and meaning of urbanization

Urbanisation refers to the process by which a growing proportion of a population comes to live in urban areas. It is important to distinguish urbanisation from urban growth: urban growth simply measures the increase in the total number of people living in urban areas, whereas urbanisation specifically measures the shift in the proportion of the population that is urban relative to rural. A country can experience urban growth without urbanisation if its rural population is also growing at the same rate. Urbanisation involves not only a physical process of urban expansion but also a social and economic transformation, as people move from agricultural and rural livelihoods into urban economies and ways of life. This transformation has profound consequences for housing, infrastructure, employment, social organisation, and the built environment, making it one of the central concerns of urban planning and design.

Fill in the blank: Urbanisation measures the shift in the proportion of the population living in _____ areas relative to rural areas.



URBANIZATION: SHIFT FROM MAJORITY RURAL TO MAJORITY URBAN POPULATION



Short description: Diagram illustrating urbanization as a shift in population distribution from rural to urban areas, showing proportional bars comparing rural and urban population shares at two points in time.

Figure 1.1 Urbanization as a shift in the rural-urban population balance

1.2.2 Stages and forms of urbanization

Urbanisation passes through recognisable stages as economies develop. In pre-industrial societies, the vast majority of the population lives in rural areas and urbanisation levels are low. Early industrialisation draws workers into cities, accelerating urbanisation. As development proceeds, urbanisation rates typically slow as the urban population approaches saturation. In mature economies, counter-urbanisation and suburbanisation may occur, with some population dispersing from dense city cores to suburbs or smaller towns. Beyond simple rural-urban movement, urbanisation takes several forms: suburbanisation describes the growth of low-density residential areas on the urban fringe; counter-urbanisation describes movement from large cities to smaller towns and rural areas; and reurbanisation describes renewed population growth in previously declining inner-city areas, often associated with gentrification and urban regeneration. Understanding which stage and form of urbanisation applies to a given city is essential to designing appropriate planning and urban design responses.

Fill in the blank: The pattern of urbanisation dominated by one or two very large cities is described as urban _____.

1.2.3 The urbanization process in Nigeria

Scoring is the process of partially cutting through a material to create a controlled fold line without cutting all the way through. A **scoring tool** (a blunt blade or spent ballpoint pen run against a ruler) compresses the surface fibres of card or board, enabling a clean, sharp fold. **Bone folders** are smooth, hard tools traditionally made from bone but now usually plastic used to



create crisp folds and to smooth down glued joints. **Tweezers** are essential for positioning and holding small components during assembly, particularly when adhesives are being applied. **Forming tools** including round dowels, pencils, and cylindrical objects are used to curve card and paper to produce cylindrical and conical forms for towers, silos, and curved building elements.

Nigeria has one of the fastest urbanising populations in the world. Driven by high rates of rural-to-urban migration and a large natural increase in the urban population, Nigerian cities have grown at extraordinary speed since independence. Lagos, already one of the largest cities in Africa, continues to grow rapidly; Abuja has grown far beyond its original master plan projections; and secondary cities including Kano, Ibadan, Port Harcourt, and Benin City face intense pressure on housing, infrastructure, and services. Nigerian urbanisation is characterised by a high degree of informality: a large proportion of urban residents live in informal settlements that have developed without formal planning approval, often on land with insecure tenure and without access to piped water, reliable power, or adequate sanitation. This informality is not simply a problem to be solved but a reality that urban designers and planners must engage with directly if they are to improve conditions for the majority of urban Nigerians.

Pilot questions 1.2

1. Distinguish between urbanization and urban growth.
2. What are the two main drivers of urbanization in developing countries?
3. Fill in the blank: The pattern of urbanization dominated by one or two very large cities is described as urban _____.
4. Name three major urban centres in Nigeria other than Lagos.
5. What is suburbanization and how does it differ from counter-urbanization?

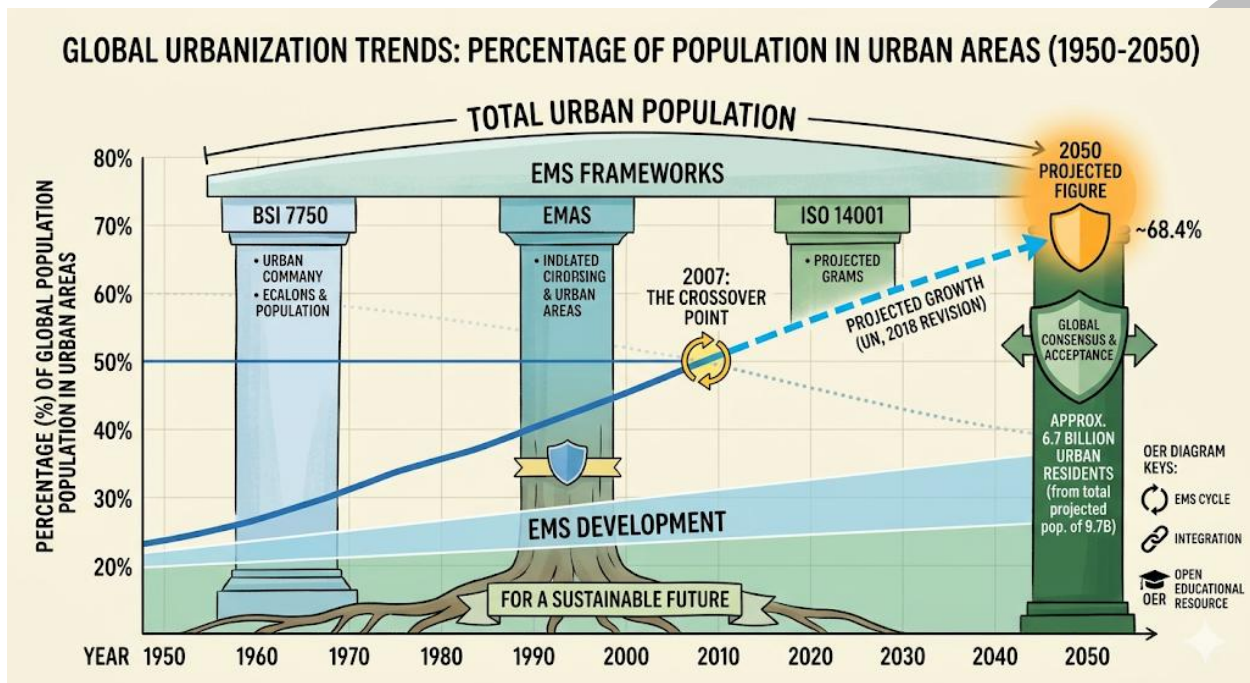
1.3 Urbanization Patterns and Drivers

1.3.1 Global urbanization trends and statistics

The global trend toward urbanisation has been one of the most significant demographic shifts of the modern era. In 1950, approximately 30 percent of the world's population lived in urban areas. By 2007, for the first time in history, the urban population exceeded the rural population globally. By 2023, approximately 56 percent of the world's people lived in cities, and projections suggest this figure will reach 68 percent by 2050. This global trend masks significant regional variation: high-income countries are already highly urbanised, with rates above 80 percent in North America and Western Europe; Latin America is also highly urbanised at around 80 percent; while Asia and Africa remain majority rural but are urbanising rapidly. Sub-Saharan Africa has one of the lowest urbanisation levels globally but one of the highest urbanisation rates, meaning the urban proportion is growing faster than almost anywhere else. The implications of this growth for housing, infrastructure, employment, and urban design are immense.



Fill in the blank: Sub-Saharan Africa has one of the lowest urbanisation levels globally but one of the highest urbanisation _____, meaning the urban proportion is growing faster than almost anywhere else.



Short description: Graph showing global urban population as a percentage of total population from 1950 to 2050 projected, highlighting the crossover point in 2007 and the projected figure for 2050.

Figure 1.2 Global urbanization trends 1950 to 2050: percentage of population living in urban areas

1.3.2 Push and pull factors in urban growth

Urban growth is driven by a combination of push factors that encourage people to leave rural areas and pull factors that attract them to cities. Push factors include agricultural decline and the mechanisation of farming, which reduce rural employment; rural poverty and limited access to education, healthcare, and services; land scarcity and insecurity of tenure in rural areas; and environmental pressures such as drought, flooding, and land degradation. Pull factors include the concentration of formal employment opportunities and higher wages in urban centres; access to better schools, hospitals, and public services; the social and cultural attractions of urban life; and the agglomeration economies that make cities more productive than dispersed rural economies. In Nigeria, both sets of factors operate powerfully: limited rural opportunities push migrants toward cities, while Lagos, Abuja, and other major centres exert a strong pull through real and perceived economic opportunities. Understanding the interplay of push and pull factors is essential to designing planning policies that address urban growth at its source as well as in the cities that receive migrants.

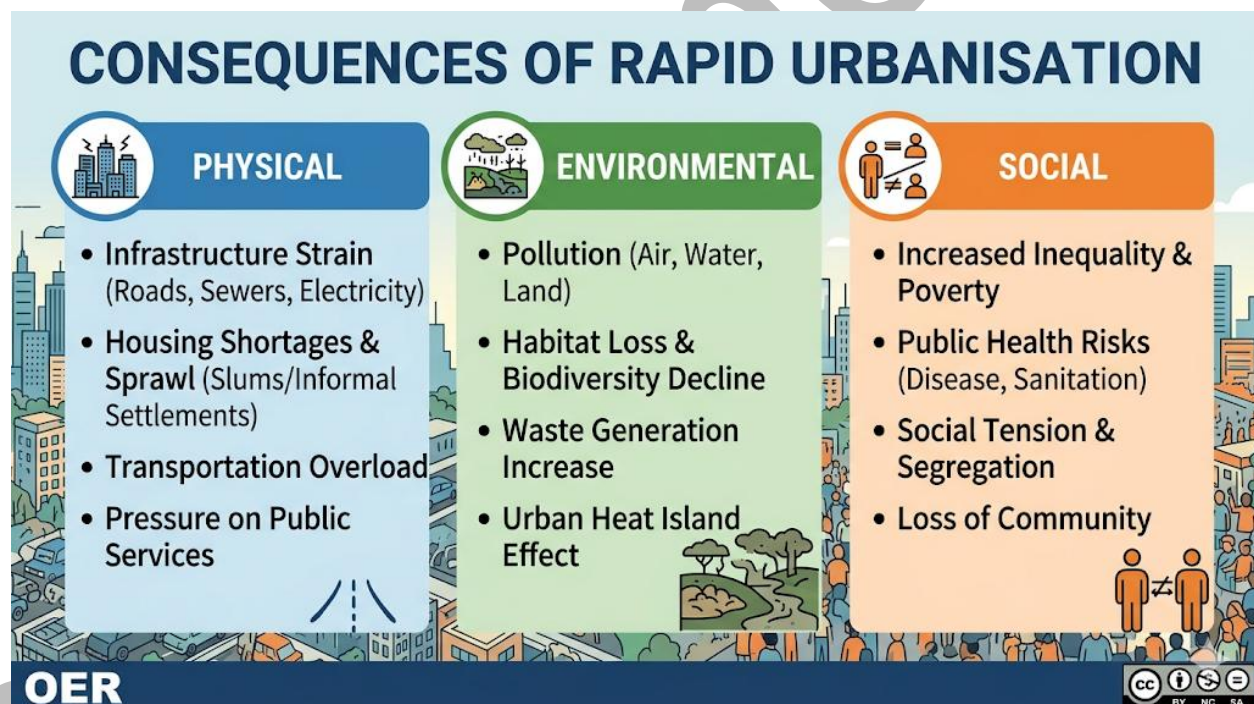
Fill in the blank: The concentration of formal employment and higher wages in cities is an example of a _____ factor driving rural-to-urban migration.



1.3.3 Consequences of rapid urbanization

Rapid urbanisation produces consequences that are physical, environmental, and social in character. Physical consequences include acute housing shortages as cities cannot build new dwellings fast enough to accommodate incoming populations, leading to overcrowding, the proliferation of informal settlements, and the deterioration of existing housing stock. Infrastructure deficits in roads, water supply, sanitation, power, and public transport are also characteristic: systems designed for smaller populations are overwhelmed, and new infrastructure cannot keep pace with urban expansion. Environmental consequences include air and water pollution from inadequate waste management and industrial activity, increased flood risk as natural drainage systems are built over, and loss of peri-urban farmland and green space. Social consequences include rising inequality and spatial segregation as better-off residents access formal housing and services while lower-income groups are pushed to peripheral informal areas. These consequences are not inevitable: well-designed, well-governed, and adequately resourced cities can absorb rapid population growth while maintaining quality of life, as the experience of several rapidly urbanising East Asian economies demonstrates.

Fill in the blank: Rapid urbanisation that is poorly managed leads to infrastructure _____, in which city systems designed for smaller populations are overwhelmed.



Box 1.1 Consequences of rapid urbanization: physical, environmental, and social dimensions
Short description: A box summarising the main consequences of rapid urbanization under three headings: physical consequences including housing shortage and infrastructure deficit; environmental consequences including pollution and flooding; and social consequences including inequality and segregation.

Pilot questions 1.3

1. What proportion of the global population lived in urban areas by 2023?



2. State two push factors and two pull factors driving rural-to-urban migration in Nigeria.
3. Fill in the blank: Sub-Saharan Africa has one of the lowest urbanization levels globally but one of the highest urbanization _____, meaning the urban proportion is growing faster than almost anywhere else.
4. State two physical and two environmental consequences of rapid urbanization.
5. Why are the consequences of rapid urbanization described as not inevitable?

1.4 Urban Design as a Discipline and Practice

1.4.1 Urban design as a field of study

Urban design has developed as a distinct field of study since the mid-twentieth century, drawing on the work of theorists who exposed the limitations of modernist planning and articulated new frameworks for understanding urban form and experience. Jane Jacobs argued in *The Death and Life of Great American Cities* that healthy urban neighbourhoods depend on a fine-grained mix of uses, buildings of varying age, sufficient concentration of people, and short blocks that allow pedestrian movement in multiple directions. Kevin Lynch showed in *The Image of the City* that urban legibility depends on identifiable paths, edges, districts, nodes, and landmarks. Jan Gehl documented in *Life Between Buildings* the relationship between urban form and human behaviour in public space, showing how street design, building frontages, and spatial scale directly affect whether people choose to spend time outdoors. These theoretical contributions provide the intellectual foundation for contemporary urban design education and practice.

Fill in the blank: Kevin Lynch identified five elements that contribute to urban _____, including paths, edges, districts, nodes, and landmarks.





Short description: Image showing an urban design studio with students working at drawing boards and computers surrounded by site maps, design drawings, and physical study models.
Plate 1.2 An urban design studio environment

1.4.2 The urban designer: roles and competencies

The urban designer brings together a range of competencies that span analytical, design, and communication skills. Spatial analysis involves reading and interpreting the physical, social, historical, and environmental characteristics of urban sites and their wider context. Design synthesis translates analytical findings into spatial proposals: layouts, land use patterns, massing strategies, street sections, and public space designs. Communication requires the ability to convey spatial proposals to a range of audiences through drawings, models, reports, and presentations. Stakeholder engagement involves working with communities, clients, politicians, and other professionals to develop proposals that reflect diverse needs and interests. In practice, urban designers rarely work alone: they collaborate with architects, planners, landscape architects, engineers, and community representatives, acting as integrators who hold the vision of the whole environment together while others work on its component parts. In the Nigerian context, urban designers must also engage with the realities of informal development, land tenure complexity, and the constraints of limited public investment in infrastructure.

Fill in the blank: The ability to convey spatial proposals to a range of audiences through drawings, models, and reports is a core urban design competency known as _____.

1.4.3 Urban design process and methods

The urban design process typically follows a sequence of stages that translate an understanding of context into a set of proposals for the built environment. Site and context analysis systematically examines the physical form, movement patterns, land uses, social character, historical development, and environmental conditions of the site and its surroundings, identifying opportunities and constraints that will shape the design response. Concept development translates



the key findings of analysis into a design concept: a spatial idea or strategy that sets the direction for the detailed proposals. Detailed design works up the concept into specific proposals for streets and public spaces, land use and development briefs, building heights and massing, landscape, and infrastructure. Consultation and engagement runs throughout the process, refining proposals in response to the views of communities, clients, and other stakeholders, and building the support needed for implementation. In Nigerian cities, this process must also engage with the realities of rapid growth and informality, developing strategies that are realistic given available resources and the limited reach of formal planning systems.

Fill in the blank: The first stage of the urban design process, which examines the physical, social, historical, and environmental characteristics of a site, is known as site and context

Pilot questions 1.4

1. Name two theorists who have made key contributions to urban design theory and state the focus of each.
2. List four core competencies required of the urban designer.
3. What is the first stage of the typical urban design process?
4. Why must urban design in Nigeria engage with informality and land tenure issues?

Fill in the blank: Urban designers must engage with the realities of informal development, land tenure complexity, and limited public investment, particularly in the _____ context.

Series Summary

This Series has introduced you to the field of urban design and the urbanization processes that shape the environments urban designers work in. We began by defining urban design, describing its scope and goals, and distinguishing it from the related disciplines of architecture and urban planning.

We then examined the cutting and shaping tools used in model making knives, blades, saws, files, abrasives, and forming tools before exploring the measuring, marking, and fixing instruments, adhesives, and finishing tools and equipment that complete the model maker's toolkit. Finally, we described the range of materials used in planning models board, paper, foam, wood, and supplementary finishing materials explaining the properties and appropriate applications of each. By engaging with these topics, you should now be able to define urban design, explain its scope and goals, and distinguish it from architecture and urban planning; describe the concept and process of urbanisation and its particular character in Nigeria; identify global urbanisation patterns and explain the push and pull factors and consequences of rapid urban growth; and describe urban design as a professional practice and outline the roles, competencies, and methods of the urban designer, as outlined in the Series Learning Outcomes.

Glossary of Terms



- **Agglomeration economies** : The economic benefits that arise from the concentration of firms, workers, and activities in cities, making urban areas more productive than dispersed rural settings.
- **Counter-urbanisation** : The movement of population from large urban centres to smaller towns and rural areas, associated with improved transport and communications.
- **Equity** : A goal of urban design concerned with ensuring that the benefits of a well-designed built environment are accessible to all residents regardless of income or social status.
- **Informal settlement** : A residential area that has developed without formal planning approval, typically on land with insecure tenure and without access to basic infrastructure and services.
- **Liveability** : The quality of the urban environment as a place to live, encompassing safety, comfort, accessibility, green space, and social interaction.
- **Pull factor** : A condition in urban areas that attracts migrants from rural areas, such as employment opportunities, higher wages, or access to services.
- **Push factor** : A condition in rural areas that encourages people to migrate to cities, such as agricultural decline, rural poverty, or limited access to education and healthcare.
- **Suburbanisation** : The growth of low-density residential and commercial development on the outer edges of existing urban areas as population and activities disperse from city cores.
- **Urban design** : The collaborative, multidisciplinary process of shaping the physical setting for human activity in cities, towns, and villages, operating at the scale between the individual building and the city plan.
- **Urban legibility** : The ease with which people can orient themselves and form a mental map of a city, dependent on identifiable paths, edges, districts, nodes, and landmarks.
- **Urban primacy** : A pattern of urbanisation in which one city dominates the urban system and concentrates a disproportionate share of population and economic activity.
- **Urbanisation** : The process by which a growing proportion of a population comes to live in urban areas, involving both physical urban expansion and the transformation of social and economic life.

Concept Check Questions 1

Objective questions

1. Define urban design. (Linked to SLO 1.1)
2. Identify two goals of urban design. (Linked to SLO 1.1)
3. Fill in the blank: Urbanization measures the shift in the proportion of the population living in _____ relative to rural areas. (Linked to SLO 1.2)
4. State one core competency of the urban designer. (Linked to SLO 1.4)

Short-answer questions

5. Explain the distinction between urban design, urban planning, and architecture, and explain why effective urban design requires collaboration between these disciplines. (Linked to SLO 1.1)



6. Describe the concept of urbanization, explain what distinguishes it from urban growth, and identify its two main drivers in developing countries. (Linked to SLO 1.2)
7. Compare the push and pull factors driving rural-to-urban migration in Nigeria, giving two examples of each. (Linked to SLO 1.3)
8. Describe the stages of the typical urban design process and explain what each stage involves. (Linked to SLO 1.4)

Long-answer questions

9. Describe the nature and process of urbanization in Nigeria, identifying the principal drivers of urban growth, the pattern of urban primacy, the role of informality, and the main consequences of rapid and unmanaged urbanization. (Linked to SLO 1.2)
10. Evaluate urban design as a field of study and professional practice, describing its theoretical foundations, the competencies required of the urban designer, the stages of the urban design process, and the particular challenges urban design faces in the Analysis context. (Linked to SLO 1.4)

Answers to Concept Check Questions 1

Objective questions

1. Urban design is the collaborative, multidisciplinary process of shaping the physical setting for human activity in cities, towns, and villages, operating at the scale between the individual building and the city plan.
2. Any two of: functionality, liveability, visual quality, sustainability, equity.
3. Urban.
4. Any one of: spatial analysis, design synthesis, communication, stakeholder engagement.

Short-answer questions

5. Architecture is concerned with individual buildings; urban planning addresses land use, infrastructure, and city-level strategy; urban design occupies the intermediate scale, concerned with the quality of the built environment as experienced by people. Effective urban design requires collaboration because no single discipline commands all the competencies needed to address spatial, social, economic, and environmental dimensions simultaneously.
6. Urbanization is the process by which a growing proportion of a population comes to live in urban areas, involving both physical urban expansion and the transformation of social and economic life. It is distinct from urban growth, which simply measures the increase in total urban population. Its two main drivers in developing countries are rural-to-urban migration and the natural increase of the existing urban population.
7. Push factors driving rural-to-urban migration in Nigeria include agricultural decline and limited rural employment and rural poverty and limited access to education and healthcare. Pull factors include the concentration of formal employment and higher wages in Lagos, Abuja, and other major centres, and access to better schools, hospitals, and public services.
8. The urban design process typically proceeds through site and context analysis, which systematically studies the physical, social, and historical characteristics of the site; concept development, which translates findings into a design concept; detailed design, which works up



specific proposals for streets, spaces, land uses, and building heights; and consultation and engagement, which refines proposals and builds support for implementation.

Long-answer questions

9. *Basic response:* Cutting tools include the craft knife for card and thin materials, the snap-off cutter for thicker materials, scissors for thin paper, and saws for wood and hard plastics. Safety requires sharp blades, metal rulers, cutting mats, and careful posture.

Value-added response: Outstanding learners may explain how the choice of cutting tool depends on the material, the thickness, and the cut required distinguishing, for example, between the scoring cut for fold lines, the full cut for separation, and the saw cut for structural wood and may discuss how maintaining sharp blades and using a mitre box for angled cuts directly affects the quality of joints and therefore the overall finish of the model.

10. *Basic response:* Board and paper are versatile and inexpensive for walls and roofs; foam board is ideal for clean rigid elements; polystyrene foam is used for terrain; balsa and basswood provide structural elements; supplementary materials add landscape, scale, and detail.

Value-added response: Outstanding learners may evaluate how material selection affects both the process and the communicative outcome of model making for example, how a white foam board model communicates massing and spatial relationships clearly without the distraction of colour, while a fully finished colour model with landscape materials and scale figures communicates character and liveability and may discuss the practical challenge of sourcing standard model making materials in Analysis workshop contexts, proposing locally available substitutes and improvised solutions that maintain model quality.

Answers to Pilot Questions 1

Part 1.1

1. Urban design is the collaborative, multidisciplinary process of shaping the physical setting for human activity; goals include functionality, liveability, visual quality, sustainability, and equity
2. The intermediate scale between the individual building and the city plan
3. Architects, urban planners, landscape architects, civil engineers, and communities
4. Infrastructure

Part 1.2

1. Urbanization measures the shift in the proportion of the population living in urban areas; urban growth measures the increase in total urban population
2. Rural-to-urban migration and natural increase of the existing urban population
3. Primacy
4. Kano, Ibadan, Abuja, Port Harcourt, Benin City, Kaduna
5. Suburbanization is growth on the outer edges of existing urban areas as people and businesses decentralize from the city core; counter-urbanization is the movement of population from urban to rural areas

Part 1.3



1. Approximately 56 percent
2. Push factors: agricultural decline and limited rural employment; rural poverty and limited access to services. Pull factors: concentration of formal employment and higher wages in major cities; access to better education and healthcare
3. Rates
4. Physical: housing shortage and infrastructure deficit. Environmental: air and water pollution and increased flooding
5. Because well-designed, well-governed, and adequately resourced cities can absorb rapid population growth while maintaining quality of life

Part 1.4

1. Any two of: Lynch on the image of the city; Jacobs on conditions for safe and diverse neighbourhoods; Gehl on urban form and human behaviour in public space; Cullen on townscape and visual urban quality
2. Spatial analysis, design synthesis, communication, stakeholder engagement
3. Site and context analysis
4. Because a large proportion of urban development in Nigeria occurs outside formal planning frameworks, and urban design that ignores this reality will fail to engage with or improve the conditions of the majority of urban residents
5. Analysis

References and Attributions 1

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Illustrations

Course code: URP 308

Course title: Introduction to Urban Design and Planning

Course credit load: 2 Units

List of Series:



- Series 1: Introduction to Urban Design and Urbanization
- **Series 2: Elements of Urban Design and Environmental Quality**
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2 Elements of Urban Design and Environmental Quality

Series outline

- **Part 1 (2.1): The Physical Elements of Urban Design**
 - Sub-Part 2.1.1: Buildings, blocks, and plots
 - Sub-Part 2.1.2: Streets, edges, and frontages
 - Sub-Part 2.1.3: Density, mix, and grain
- **Part 2 (2.2): Urban Space and the Public Realm**
 - Sub-Part 2.2.1: Types and functions of urban space
 - Sub-Part 2.2.2: Enclosure, scale, and proportion
 - Sub-Part 2.2.3: Vitality and activity in public space
- **Part 3 (2.3): Movement, Permeability, and Legibility**
 - Sub-Part 2.3.1: Movement networks and permeability
 - Sub-Part 2.3.2: Legibility and imageability
 - Sub-Part 2.3.3: Accessibility and inclusive design
- **Part 4 (2.4): Environmental Quality in Urban Design**
 - Sub-Part 2.4.1: Microclimate and comfort in urban space
 - Sub-Part 2.4.2: Noise, air quality, and sensory environment
 - Sub-Part 2.4.3: Green infrastructure and urban ecology

Introduction

A planning model is one of the most powerful communication tools available to the urban planner. When a community is invited to respond to proposals for their neighbourhood, when a client needs to understand a proposed development, or when a planner must convey the three-dimensional character of a new layout to decision-makers, a physical model speaks with a clarity and immediacy that drawings and maps cannot match. The ability to design and construct planning models is therefore a fundamental practical skill one that links spatial imagination to physical making and that connects the abstract world of planning proposals to the tangible reality of built form.

The aim of this Series is to introduce you to the principal physical elements of urban design and to the concept of environmental quality, equipping you to analyse, describe, and evaluate the built environment at the scale of the street, block, and neighbourhood.



We shall commence this Series by introducing the concept of the planning model, its types, purposes, and the general model making process. Next, we will examine the cutting and shaping tools used in model making, including knives, saws, and forming tools. Following that, we will explore measuring, marking, and fixing tools, as well as adhesives and finishing equipment. Finally, we will wrap up by examining the range of materials used in planning model making from board and paper through foam and wood to supplementary finishing materials.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 2.1** identify and describe the principal physical elements of urban design and explain their role in shaping the built environment,
- **SLO 2.2** explain the concept of urbanization and describe its nature, stages, and process in the Green context,
- **SLO 2.3** explain the concepts of permeability, legibility, and accessibility and apply them in the analysis of urban environments,
- **SLO 2.4** describe the environmental quality dimensions of urban design including microclimate, sensory environment, and green infrastructure.

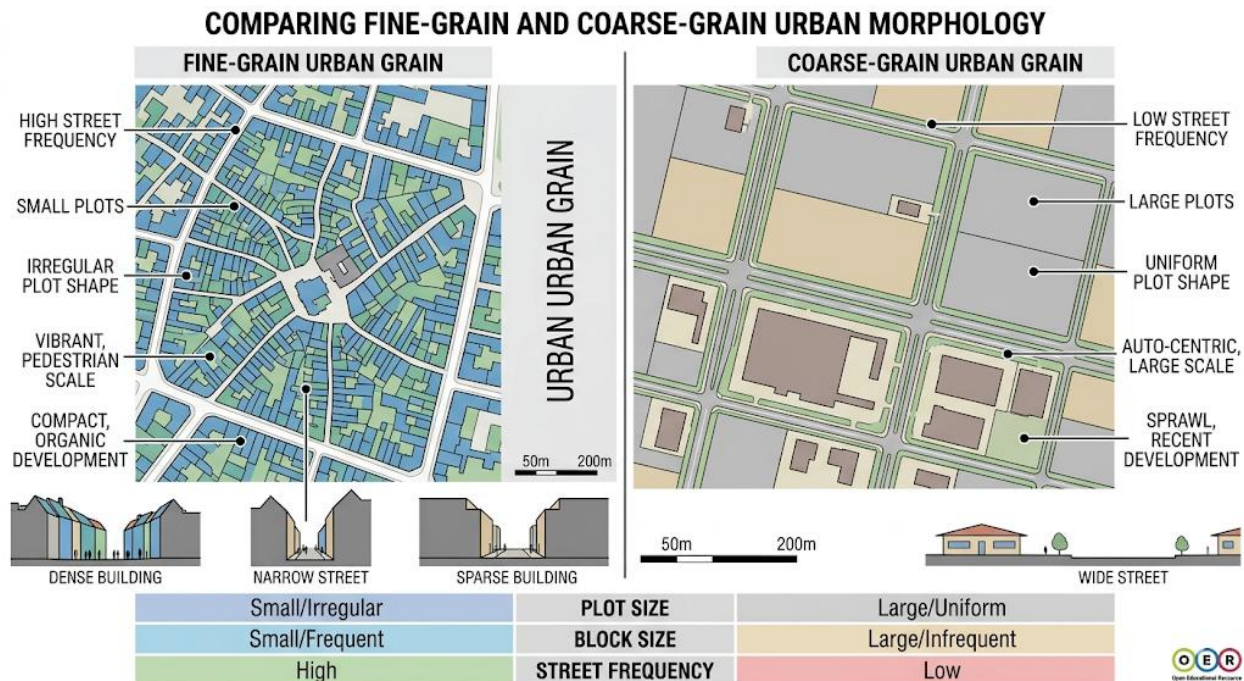
2.1 The Physical Elements of Urban Design

2.1.1 Buildings, blocks, and plots

The physical structure of an urban area can be understood through three nested elements: the plot, the block, and the street. A plot is the individual unit of land ownership or development, the basic cell of urban form. Plots are aggregated into blocks, which are parcels of land defined on all sides by streets. Streets connect blocks and provide the public framework within which private development takes place. The pattern, size, and shape of plots and blocks determines the grain of an urban area. Fine grain, produced by small plots and frequent subdivision, accommodates a variety of building types and uses and gives streets a varied, active character. Coarse grain, produced by large plots and infrequent subdivision, is associated with large single-use buildings, monotonous streetscapes, and reduced permeability. In traditional Nigerian cities, fine-grained compound-based morphologies produced dense, mixed, and highly permeable urban fabrics.

Fill in the blank: Urban grain is determined by the size and pattern of _____ and blocks.





Short description: Diagram showing the relationship between plots, blocks, and streets in an urban area, illustrating fine and coarse urban grain side by side.

Figure 2.1 Plots, blocks, and streets: fine and coarse urban grain compared

2.1.2 Streets, edges, and frontages

Streets are the primary framework of the city: they provide routes for movement, define the edges of blocks, and create the setting for building frontages. The character of a street is determined by its section, the cross-sectional profile showing carriageway width, footway widths, cycle lanes, verges, and the relationship of building lines to street edges. A building frontage is the face of a building as it addresses the street. Active frontages, with doors, windows, shops, and other openings at ground level, create visual interest, natural surveillance, and pedestrian activity. Blank or inactive frontages, with solid walls, car parks, or service entries at street level, deadening the street and undermine safety and vitality. Edges are the boundaries between different urban districts or between the built environment and open space: a hard edge defined by a blank wall or fence creates separation; a soft edge with permeable frontages, setbacks, or planted boundaries creates transition and connection. In Nigerian urban design, the management of edges between formal and informal settlements is a particularly important challenge.

Fill in the blank: A building frontage with doors, windows, and shops at ground level that generates pedestrian interest and natural surveillance is called an _____ frontage.

2.1.3 Density, mix, and grain

Density measures the intensity of development, typically expressed as the number of dwelling units per hectare or the floor area ratio of built floor space to site area. Higher densities generally support a greater range of uses, more frequent public transport, and a more active street life, but must be balanced against the need for light, air, and amenity space. Mix refers to the variety of land uses within an area: a well-mixed neighbourhood integrates residential, commercial, civic,



and recreational uses in close proximity, reducing travel distances and supporting active streets throughout the day. Grain, density, and mix interact closely: fine-grained, mixed-use, medium-to-high-density environments tend to produce the most active, legible, and sustainable urban places. Many Nigerian urban areas already combine relatively high densities with a fine-grained mix of uses in informal settlements; the challenge for urban design is to support and improve these qualities rather than to replace them with lower-density, single-use layouts.

Fill in the blank: Higher densities generally support a greater range of uses, more frequent public transport, and a more active _____ life.

Pilot questions 2.1

1. Define urban grain and explain the difference between fine grain and coarse grain.
2. What is a building frontage and why do active frontages matter for street quality?
3. What does the street section show and why is it important in street design?
4. Fill in the blank: Higher densities generally support a greater range of uses, more frequent public transport, and a more active _____ life.

2.2 Urban Space and the Public Realm

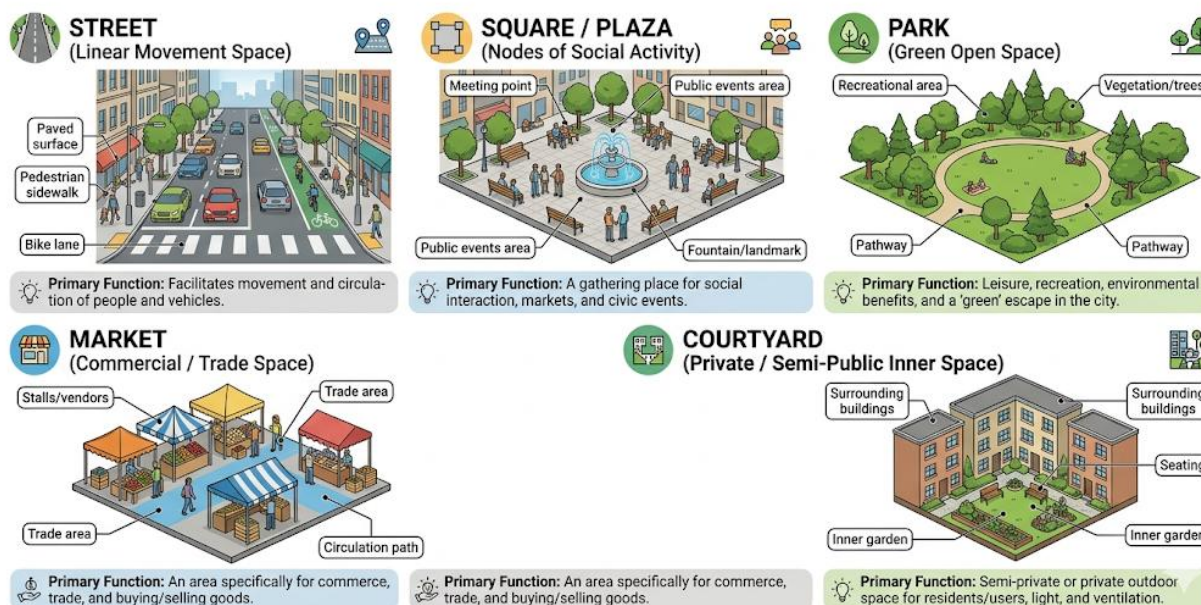
2.2.1 Types and functions of urban space

Urban spaces are the outdoor voids of the city: the streets, squares, parks, markets, and courtyards between and around buildings. They serve as the setting for movement, commerce, social interaction, civic ceremony, and recreation, and their quality profoundly affects the liveability of an urban area. Streets are the most common type of urban space: they are both movement corridors and social settings, and their design must balance the needs of pedestrians, cyclists, and vehicles. Squares and plazas are formal open spaces defined by buildings on multiple sides, typically used for civic gatherings, markets, and public events. Parks and gardens provide green space for recreation, ecology, and relief from the built environment. Markets, whether covered or open-air, are spaces of intense exchange and social interaction; in Nigerian cities, the market is among the most vital and characteristic urban spaces. Courtyards are semi-private spaces enclosed within building complexes, providing transition between public and private domains.

Fill in the blank: The type of urban space used for civic gatherings and formal public events, typically defined by buildings on multiple sides, is called a _____.



CLASSIFICATION OF URBAN SPACES BY TYPE & FUNCTION



Short description: Diagram classifying urban spaces by type, showing examples of a street, square, park, market, and courtyard with brief notes on the primary function of each.

Figure 2.2 Types of urban space: street, square, park, market, and courtyard

2.2.2 Enclosure, scale, and proportion

Enclosure is the quality of feeling surrounded and contained within a defined space, produced by the continuous built edges of buildings, walls, and trees that bound an urban space. It is measured by the height-to-width ratio of the space: a ratio of approximately 1:1, where building height equals space width, produces strong enclosure and a sense of outdoor room. Ratios above 1:2 or 1:3 feel progressively more open and exposed, reducing the sense of containment and comfort. Scale refers to the relationship between the dimensions of urban spaces and the human body: spaces too large feel exposed and hostile; spaces proportionate to human scale feel comfortable and usable. Proportion describes the relationship between the length and width of a space: a long narrow street and a broad roughly square plaza create very different spatial experiences. In the hot climate of Nigerian cities, enclosure also performs an environmental function: streets with continuous building edges and tree canopy provide shade and create more comfortable microclimates for pedestrians.

Fill in the blank: A height-to-width ratio of approximately _____ produces strong enclosure in an urban space, creating a sense of outdoor room.

2.2.3 Vitality and activity in public space

Green infrastructure refers to the network of natural and semi-natural areas, features, and green spaces in urban areas, including street trees, parks, green roofs, rain gardens, wetlands, and urban forests. It performs a wide range of environmental functions: it supports biodiversity by providing habitat and ecological connectivity; it reduces the urban heat island effect by shading surfaces and cooling the air through evapotranspiration; it manages stormwater by intercepting



rainfall, reducing run-off, and recharging groundwater; it improves air quality by filtering particulates and absorbing pollutants; and it provides spaces for recreation, social interaction, and mental health recovery. In Nigerian cities, existing tree cover, wetlands, and peri-urban farmland constitute important components of green infrastructure that are under severe pressure from rapid urban expansion. Urban design must integrate green infrastructure as a structural element of urban form rather than treating it as an optional amenity added after other decisions have been made.

Fill in the blank: Green infrastructure reduces the urban heat island effect by shading surfaces and cooling the air through _____.

Fill in the blank: Activities that people only undertake when conditions are comfortable and inviting are described by Jan Gehl as _____ activities.

The vitality of a public space depends on the presence of people and activity. Jan Gehl distinguished three categories of outdoor activity: necessary activities that people carry out regardless of conditions, such as walking to work; optional activities that people undertake only when conditions are comfortable and inviting, such as sitting in a square or strolling through a park; and social activities that arise from the presence of other people, such as conversation, play, and casual encounter. The design task is to create conditions that support optional and social activities, because these are most sensitive to the quality of the physical environment. Key design factors include: the provision of seating in comfortable, shaded, and visually rich locations; active ground-floor uses that animate street edges; a fine-grained mix of destinations that keeps people moving through and lingering in the space at different times of day; and clear visual connection between the space and its surroundings to support natural surveillance and a sense of safety. In Nigerian cities, informal market activity often generates intense vitality in spaces that formal design has failed to activate.

Pilot questions 2.2

1. Name four types of urban space and state the primary function of each.
2. What is enclosure in urban design and what height-to-width ratio produces strong enclosure?
3. Fill in the blank: Activities that people only undertake when conditions are comfortable and inviting are described by Jan Gehl as _____ activities.
4. State two design features that encourage people to linger in a public space rather than simply pass through.
5. What can formal urban design in Nigeria learn from the traditional market street?

2.3 Movement, Permeability, and Legibility

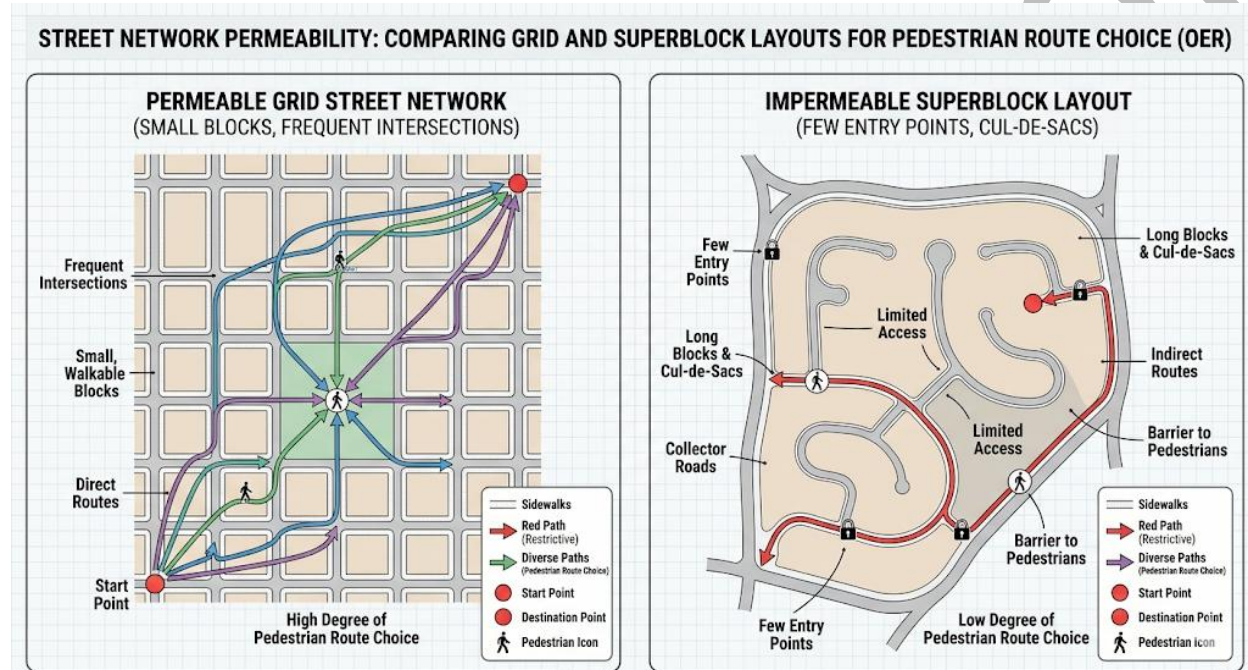
2.3.1 Movement networks and permeability

Permeability is the degree to which an urban area can be penetrated by pedestrians, cyclists, and vehicles. It is determined by the structure of the movement network: a fine-grained grid of short blocks and frequent intersections provides many route choices and produces high permeability; superblock layouts with long unbroken blocks and few entry points restrict movement,



concentrate pedestrian flows on a limited number of routes, and reduce safety. High permeability supports walking, shortens journey distances, distributes pedestrian activity, and makes streets more populated and therefore safer. A permeable street network is also more resilient: if one route is blocked, many alternatives exist. In Nigerian cities, informal settlements often achieve high permeability through dense networks of pedestrian paths; formal planning schemes have frequently produced large superblocks with poor connectivity.

Fill in the blank: A street network of short blocks with frequent intersections produces _____ permeability, supporting walking and route choice.



Short description: Diagram comparing a permeable street network of small blocks with frequent intersections against an impermeable superblock layout with few entry points, illustrating the difference in route choice available to pedestrians.

Figure 2.3 Permeable and impermeable street networks compared

2.3.2 Legibility and imageability

Legibility is the ease with which people can understand and navigate an urban area. Kevin Lynch identified five elements that contribute to the legibility and imageability of cities: paths, the routes along which people move; edges, linear boundaries such as waterfronts, railway lines, or walls that define district limits; districts, areas with a recognisable character that people mentally enter and exit; nodes, points of intensity such as busy junctions, squares, and transport interchanges; and landmarks, prominent reference objects such as towers, trees, or distinctive buildings that help people orient themselves. A city whose physical form emphasises these elements will be more legible and navigable for its users. In Nigerian cities, the distinctive character of historic quarters, markets, and landmarks provides a powerful basis for legibility that urban design should reinforce rather than erase.

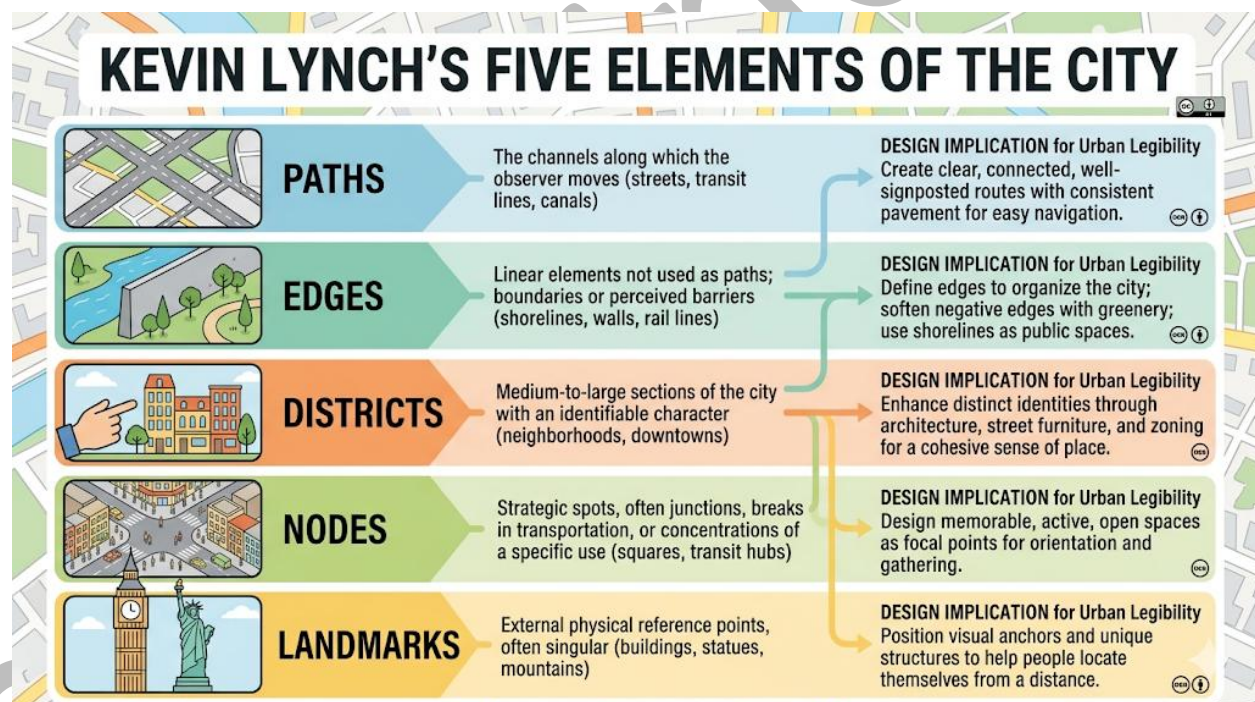


Fill in the blank: Kevin Lynch's five elements of the city are paths, edges, districts, nodes, and _____.

2.3.3 Accessibility and inclusive design

Accessibility in urban design refers to the ability of all people, regardless of age, disability, or mobility, to reach and use urban spaces, buildings, and facilities. Universal design requires that accessibility be incorporated from the outset of the design process rather than added as an afterthought. Key design requirements include level or gently graded footways free of obstructions; dropped kerbs and tactile paving at crossing points; ramps as well as steps at changes of level; adequate lighting for safety and orientation; and sufficient footway width for wheelchair users and those with pushchairs. In Nigerian cities, accessibility is severely compromised by broken and uneven surfaces, footways blocked by vendors and parked vehicles, the absence of dropped kerbs, and inadequate lighting. Inclusive urban design must address these conditions as a matter of priority, recognising that accessible streets and spaces benefit not only disabled people but all users.

Fill in the blank: The urban design principle that requires streets and spaces to be usable by people of all ages, abilities, and mobility levels from the outset of design is called _____ design.



Box 2.1 Kevin Lynch's five elements of the city: definitions and design implications
Short description: A box defining each of Kevin Lynch's five elements of the city: paths, edges, districts, nodes, and landmarks, with a brief note on the design implication of each for urban legibility.

Pilot questions 2.3



1. Define permeability and explain why high permeability is desirable in an urban neighbourhood.
2. Name Kevin Lynch's five elements of the city and give one example of each.
3. Fill in the blank: Kevin Lynch's five elements of the city are paths, edges, districts, nodes, and _____.
4. State two barriers to accessibility commonly found in Nigerian cities.
5. What does universal design require of the urban designer?

2.4 Environmental Quality in Urban Design

2.4.1 Microclimate and comfort in urban space

Microclimate refers to the local climate conditions experienced at the human scale within a specific urban space, including temperature, solar radiation, wind speed, and humidity. In hot climates such as Nigeria, microclimate is a primary design concern because thermal discomfort discourages outdoor activity and compromises the usability of public space. The main microclimate challenges include excessive solar radiation and heat gain, high air temperatures, glare from reflective surfaces, and reduced wind movement in enclosed spaces. Design measures to improve thermal comfort include providing shade through tree canopy, building overhangs, and pergolas; orienting streets and spaces to maximise shade and natural ventilation; using light-coloured or reflective surface materials to reduce heat absorption; and incorporating water features and vegetation to cool the air through evapotranspiration. Traditional Nigerian urban design, with its narrow shaded streets, courtyards, and dense compound layouts, reflects accumulated microclimate knowledge that contemporary designers can draw upon.

Fill in the blank: The process by which vegetation cools the air through the release of water vapour is called _____.



CONTRASTING URBAN STREET DESIGN: MICROCLIMATE IMPACT



KEY: Shaded Microclimate Design: Shaded and microclimate design, assigned for educational purposes so, Mediterranean climate
Exposed Urban Street: Exposed urban street, lost canopy, hot heat logicity and hndorianian climate

Short description: Image showing a shaded urban street in a hot climate with tree canopy, building overhangs, and light-coloured paving, contrasting with an exposed, unshaded street showing heat stress.

Plate 2.1 Shaded and unshaded streets in a hot climate: the importance of microclimate design

2.4.2 Noise, air quality, and sensory environment

The sensory environment of an urban space encompasses all the stimuli perceived by its users: not only visual quality but also sound, smell, texture, and thermal sensation. Noise is among the most significant sensory factors affecting the quality of pedestrian spaces in Nigerian cities, where traffic, generators, and commercial activity produce high ambient noise levels. Design measures to reduce noise in pedestrian spaces include separation of pedestrian areas from high-speed roads; soft landscaping and earth bunding as acoustic barriers; building orientation to screen sensitive spaces from noise sources; and the use of water features whose sound can mask traffic noise. Air quality is affected by vehicle emissions, dust, and industrial activity; street trees, setbacks from carriageways, and reduced traffic speeds all contribute to improved air quality in pedestrian environments. A rich and varied sensory environment that engages multiple senses contributes to the vitality and memorability of an urban place.

Fill in the blank: The urban heat island effect results from the replacement of vegetation with _____ surfaces that absorb and re-emit heat.

Series 2 Summary

We explored the evolution of urban planning ideas and their practical applications. Beginning with the City Beautiful movement, learners examined how Beaux-Arts traditions shaped civic design through boulevards, monumental buildings, and ceremonial spaces, and how these principles influenced colonial planning in Nigeria. The Garden City concept was then introduced as a response to industrial urban problems, emphasising self-contained communities, greenbelts,



and social reform. This was followed by Jacobs's critique of modernist planning, highlighting the loss of mixed uses, permeability, and community life, and concluding with New Urbanism's revival of compact, walkable, and mixed-use neighbourhoods.

By engaging with these themes, learners have met the Series Learning Outcomes. They can now identify and explain the principles of major planning traditions, critically assess their strengths and limitations, and connect historical theories to contemporary practice. In doing so, they are equipped to evaluate how design philosophies from City Beautiful to New Urbanism—continue to shape planning responses to urban challenges today.

Glossary of Terms

- **Active frontage** : A building frontage at ground level that has doors, windows, shops, or other openings creating visual interest, natural surveillance, and pedestrian activity along the street edge.
- **Enclosure** : The quality of feeling surrounded and contained within a defined urban space, produced by continuous built edges and measured by the height-to-width ratio of the space.
- **Evapotranspiration** : The process by which vegetation releases water vapour, cooling the surrounding air and contributing to microclimate comfort in urban spaces.
- **Green infrastructure** : The network of natural and semi-natural areas, trees, parks, green roofs, and water features in urban areas that perform ecological, environmental, and social functions.
- **Imageability** : The quality of a city that makes it vivid, distinctive, and memorable to its users, supporting orientation, place attachment, and civic identity.
- **Inclusive design** : An approach to urban design that ensures streets, spaces, and buildings are accessible and usable by people of all ages, abilities, and mobility levels from the outset.
- **Legibility** : The ease with which people can understand and navigate an urban area, supported by clearly identifiable paths, edges, districts, nodes, and landmarks.
- **Microclimate** : The local climate conditions experienced at the human scale within a specific urban space, including temperature, solar radiation, wind speed, and humidity.
- **Permeability** : The degree to which an urban area can be penetrated by pedestrians, cyclists, and vehicles, determined by the density and connectivity of the street network.
- **Urban grain** : The texture of the built environment determined by the size and pattern of plots and blocks; fine grain has small varied plots, coarse grain has large uniform plots.
- **Urban heat island** : The warming of densely built urban areas relative to surrounding rural land, caused by the replacement of vegetation with heat-absorbing paved and built surfaces.
- **Urban space** : The outdoor voids of the city, including streets, squares, parks, markets, and courtyards, which serve as settings for movement, commerce, social interaction, and recreation.

Concept Check Questions 2



Objective questions

1. Define urban design. (Linked to SLO 2.1)
2. Identify two goals of urban design. (Linked to SLO 2.1)
3. Fill in the blank: Urbanization measures the shift in the proportion of the population living in _____ relative to rural areas. (Linked to SLO 2.2)
4. State one core competency of the urban designer. (Linked to SLO 2.4)

Short-answer questions

5. Explain the distinction between urban design, urban planning, and architecture, and explain why effective urban design requires collaboration between these disciplines. (Linked to SLO 2.1)
6. Describe the concept of urbanization, explain what distinguishes it from urban growth, and identify its two main drivers in developing countries. (Linked to SLO 2.2)
7. Compare the push and pull factors driving rural-to-urban migration in Nigeria, giving two examples of each. (Linked to SLO 2.3)
8. Describe the stages of the typical urban design process and explain what each stage involves. (Linked to SLO 2.4)

Long-answer questions

9. Describe the nature and process of urbanization in Nigeria, identifying the principal drivers of urban growth, the pattern of urban primacy, the role of informality, and the main consequences of rapid and unmanaged urbanization. (Linked to SLO 2.2)
10. Evaluate urban design as a field of study and professional practice, describing its theoretical foundations, the competencies required of the urban designer, the stages of the urban design process, and the particular challenges urban design faces in the Green context. (Linked to SLO 2.4)

Answers to Concept Check Questions 2

Objective questions

1. Urban grain is the texture of the built environment determined by the size and pattern of plots and blocks. Fine grain, with small plots and frequent subdivision, accommodates greater variety of use and building type; coarse grain, with large plots and infrequent subdivision, is typically associated with large single-use buildings.
2. Any two of: streets for movement; squares or plazas for civic and ceremonial functions; parks or gardens for recreation and ecology; markets for exchange and social interaction; courtyards for transition between public and private domains.
3. Legibility.
4. Any one of: supports biodiversity; reduces urban heat island effect; intercepts rainfall and reduces flooding; provides recreation and social interaction space; benefits mental and physical health.

Short-answer questions



5. Enclosure is the quality of being surrounded and defined by built edges. It is measured by the height-to-width ratio of the space: a ratio of 1:1 produces strong enclosure, while ratios above 1:2 or 1:3 feel progressively more open. Enclosure matters because a well-enclosed space feels contained, comfortable, and usable, supporting the social and economic activities that give public space its value.

6. Permeability is the degree to which an urban area can be penetrated by pedestrians, cyclists, and vehicles. It is determined by the density and connectivity of the street network: fine-grained networks of short blocks and frequent intersections produce high permeability; superblock layouts with few entry points produce low permeability. High permeability supports walking, reduces journey distances, distributes pedestrian activity, and improves safety.

7. Push factors driving rural-to-urban migration in Nigeria include agricultural decline and limited rural employment and rural poverty and limited access to education and healthcare. Pull factors include the concentration of formal employment and higher wages in Lagos, Abuja, and other major centres, and access to better schools, hospitals, and public services.

8. The main microclimate challenges in hot climates include excessive solar radiation, high air temperatures, and glare. Design measures to improve thermal comfort include: providing shade through tree canopy and building overhangs; orienting streets and spaces to minimize direct solar gain at peak hours; using light-coloured or reflective surface materials to reduce heat absorption; and incorporating water features and vegetation to cool the air through evapotranspiration.

Long-answer questions

9. *Basic response:* Cutting tools include the craft knife for card and thin materials, the snap-off cutter for thicker materials, scissors for thin paper, and saws for wood and hard plastics. Safety requires sharp blades, metal rulers, cutting mats, and careful posture.

Value-added response: Outstanding learners may explain how the choice of cutting tool depends on the material, the thickness, and the cut required distinguishing, for example, between the scoring cut for fold lines, the full cut for separation, and the saw cut for structural wood and may discuss how maintaining sharp blades and using a mitre box for angled cuts directly affects the quality of joints and therefore the overall finish of the model.

10. *Basic response:* Board and paper are versatile and inexpensive for walls and roofs; foam board is ideal for clean rigid elements; polystyrene foam is used for terrain; balsa and basswood provide structural elements; supplementary materials add landscape, scale, and detail.

Fill in the blank: Urban designers must treat green infrastructure as a _____ element of urban form rather than an optional amenity added after other decisions.

Answers to Pilot Questions 2

Part 2.1

1. Urban grain is the texture of the built environment determined by the size and pattern of plots and blocks; fine grain has small plots and frequent subdivision; coarse grain has large plots and infrequent subdivision
2. The face of a building addressing the street; active frontages with doors and windows at ground level create pedestrian interest, natural surveillance, and street vitality



3. The cross-sectional profile of carriageway, footways, cycle lanes, verges, and building lines; it determines the character and comfort of the street for pedestrians, cyclists, and drivers
4. Street

Part 2.2

1. A street for movement; a square or plaza for civic or ceremonial functions; a park or garden for recreation; a market for exchange; a courtyard for transition between public and private
2. A ratio of approximately 1:1 where building height equals space width
3. Optional
4. Seating and shade or shelter
5. The model of continuous active frontages, overhead shade structures, and intense social interaction that the formal urban design can adopt and build upon

Part 2.3

1. The degree to which an urban area can be penetrated by pedestrians, cyclists, and vehicles; high permeability supports walking, reduces journey distances, and improves safety by keeping streets populated
2. Paths are routes along which people move; edges are linear boundaries defining district limits; districts are recognizable areas with distinct character; nodes are points of intensity such as junctions and squares; landmarks are prominent reference objects
3. Landmarks
4. Steps without ramps, narrow footways blocked by vendors or parked vehicles, uneven surfaces, absence of dropped kerbs, and inadequate lighting
5. That accessibility be incorporated from the outset of the design process for people of all ages, abilities, and mobility levels

Part 2.4

1. Microclimate refers to local climate conditions including temperature, solar radiation, wind, and humidity at the human scale; in hot climates it is a primary concern because thermal discomfort discourages outdoor activity and compromises public space quality
2. Separation of pedestrian spaces from high-speed roads; soft landscaping and earth bunding as acoustic barriers; building orientation to screen sensitive spaces from noise sources
3. Any three of: supports biodiversity; reduces urban heat island effect; intercepts rainfall and reduces flooding; cools air through evapotranspiration; provides recreation and health benefits
4. The urban heat island effect is the warming of densely built urban areas relative to surrounding rural land due to replacement of vegetation with heat-absorbing surfaces; it can be mitigated through green infrastructure, tree planting, light-coloured surface materials, and green roofs
5. Green



References and Attributions [Series 2]

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- Microsoft Copilot. (2026). *Grand boulevards with monumental civic buildings*. [AI-generated image]. Prompt: "illustration of grand boulevards with monumental civic buildings."
- Microsoft Copilot. (2026). *Garden City surrounded by greenbelt*. [AI-generated image]. Prompt: "diagram showing Garden City surrounded by greenbelt."
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Open Educational Resources (OERs)

- All OERs referenced are acknowledged in line with institutional guidelines and used to support learner engagement with planning traditions and design principles.

Course code: URP 308

Course title: Introduction to Urban Design and Planning

Course credit load: 2 Units

List of Series:

- Series 1: Introduction to Urban Design and Urbanization
- Series 2: Elements of Urban Design and Environmental Quality
- **Series 3: Historical Evolution of Human Settlements**
- Series 4: Civic Design Movements and Town Planning
- Series 5: Traditional Urban Design in Nigerian Cities

3 Historical Evolution of Human Settlements



Series outline

- **Part 1 (3.1): The Origins of Human Settlements**
 - Sub-Part 3.1.1: From nomadic life to permanent settlement
 - Sub-Part 3.1.2: The first towns and early urban characteristics
 - Sub-Part 3.1.3: Conditions and drivers of early urbanization
- **Part 2 (3.2): Ancient and Classical Cities**
 - Sub-Part 3.2.1: Cities of the ancient world
 - Sub-Part 3.2.2: Greek and Roman urbanism
 - Sub-Part 3.2.3: Planning principles of the classical city
- **Part 3 (3.3): Medieval, Renaissance, and Pre-Industrial Settlements**
 - Sub-Part 3.3.1: The medieval city: form and structure
 - Sub-Part 3.3.2: Renaissance urbanism and ideal city planning
 - Sub-Part 3.3.3: Pre-industrial settlements in West Africa
- **Part 4 (3.4): The Industrial City and its Legacy**
 - Sub-Part 3.4.1: Industrialization and the transformation of cities
 - Sub-Part 3.4.2: Urban problems of the industrial city
 - Sub-Part 3.4.3: Responses to the industrial city and early planning reform

Introduction

The city is not a modern invention. For thousands of years, people have built permanent settlements, organised land, and shaped public spaces, with each form reflecting the social, economic, political, and environmental conditions of its time. Many ancient and pre-industrial design principles remain relevant today, making the study of urban history essential for understanding why cities take certain forms and how past experience can guide better design.

The aim of this Series is to trace the evolution of settlements from the earliest towns through ancient, classical, medieval, Renaissance, and pre-industrial traditions, including West Africa, to the industrial city and its reform movements. It begins with the origins of settlement, then examines Greek and Roman urbanism, medieval and Renaissance towns, and concludes with industrialisation and early planning responses.

We shall also introduce planning models, their purposes, and the tools and materials used in model making. This includes cutting and shaping equipment, measuring and fixing tools, adhesives, and finishing techniques. The Series ends with an overview of boards, foam, wood, and supplementary materials, highlighting how these support effective planning model construction.

Series Learning Outcomes

Upon completing this Series, you should be able to:



- **SLO 3.1** describe the transition from nomadic life to permanent settlement and identify the conditions that gave rise to the first towns,
- **SLO 3.2** explain the concept of urbanization and describe its nature, stages, and process in the Abuja context,
- **SLO 3.3** describe the form and structure of medieval, Renaissance, and pre-industrial settlements including those of West Africa,
- **SLO 3.4** explain how industrialization transformed cities, describe the urban problems it created, and identify the early planning responses it generated.

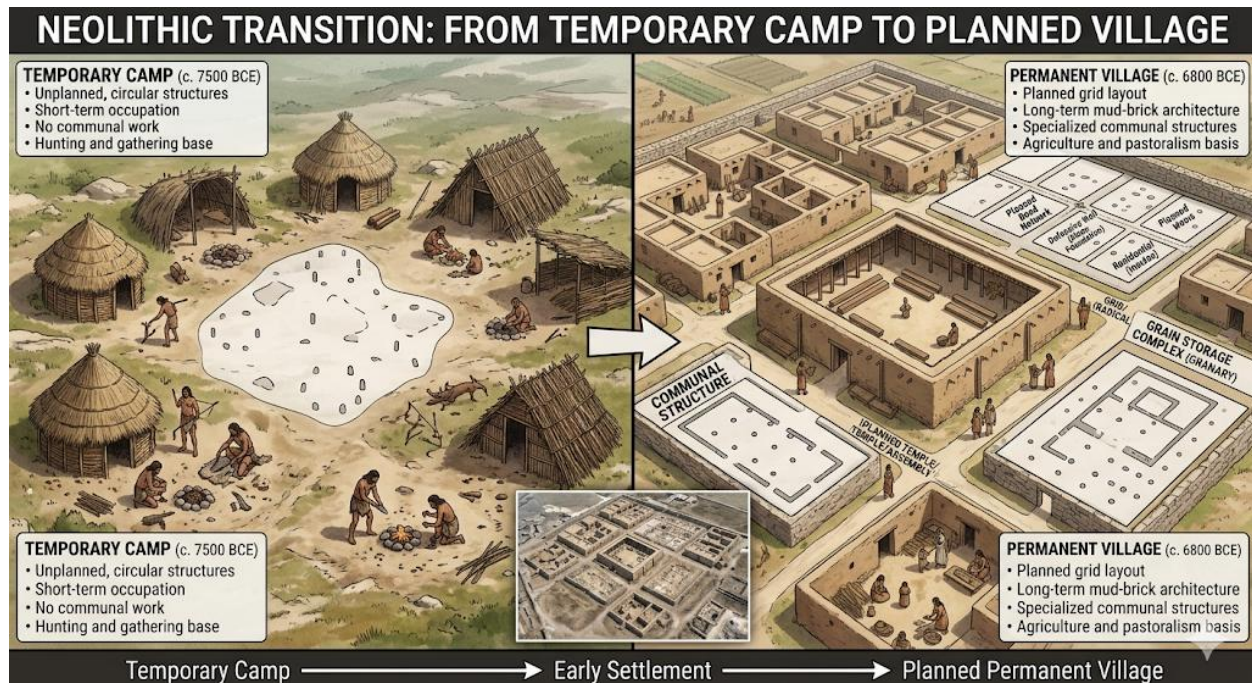
3.1 The Origins of Human Settlements

3.1.1 From nomadic life to permanent settlement

For most of human prehistory, people lived as nomadic hunters and gatherers, moving seasonally in search of food, water, and shelter. The transition to permanent settlement began with the Neolithic revolution, the shift from hunting and gathering to settled agriculture that began independently in several regions of the world from around 10,000 BCE. The cultivation of crops and the domestication of animals created food surpluses that could sustain populations in fixed locations and freed part of the community from direct food production, enabling specialisation of labour. Early permanent settlements were typically small agricultural villages, but over centuries some grew into larger and more complex communities with specialised functions, monumental buildings, and systems of governance and exchange. The archaeological evidence of sites such as Jericho in the Jordan Valley, Catalhoyuk in Anatolia, and the settlements of the Indus Valley shows that permanent occupation left traces of planned layouts, communal structures, and organised land use that anticipate many of the features of later urban centres.

Fill in the blank: The transition from nomadic hunting and gathering to settled agriculture, which created the conditions for permanent settlement, is known as the _____ revolution.





Short description: Image showing an archaeological reconstruction or aerial photograph of an early Neolithic settlement, illustrating the transition from temporary camp to permanent village with evidence of planned layout and communal structures.

Plate 3.1 Reconstruction of an early Neolithic settlement illustrating the transition to permanent occupation

3.1.2 The first towns and early urban characteristics

The first towns emerged in the fourth and third millennia BCE in the river valleys of Mesopotamia, Egypt, the Indus, and China. Cities such as Uruk, Ur, and Babylon in Mesopotamia; Memphis and Thebes in Egypt; and Mohenjo-daro and Harappa in the Indus Valley shared several defining characteristics. They supported dense permanent populations with specialised occupations: craftspeople, merchants, priests, administrators, and soldiers. They contained monumental public buildings serving religious and administrative functions: temples, palaces, granaries, and fortifications that expressed the power of the ruling elite and the importance of the city. They developed systems of writing for administration, trade, and record keeping. And they were surrounded by an agricultural hinterland whose surplus fed the urban population. The regularity found in Indus Valley cities, including straight streets, standardised brick sizes, and sophisticated drainage systems, suggests a degree of planned urban order that is remarkable for its period and anticipates later traditions of planned urbanism.

Fill in the blank: Early towns contained monumental public buildings serving religious and _____ functions, expressing the power of the ruling elite and the importance of the settlement.

3.1.3 Conditions and drivers of early urbanization

The emergence of cities required a combination of conditions that came together in specific geographical and social contexts. Agricultural surplus was essential: without a food surplus,



every member of the community had to devote their labour to food production, leaving no capacity for the specialisation that urban life requires. Geographical advantage concentrated people at locations offering fertile land, reliable water, navigable rivers, natural harbours, or defensible high ground. Trade and exchange concentrated people and goods at accessible nodes, generating the wealth and diversity that sustained urban life. Political and religious authority provided the organisational capacity to coordinate large populations, mobilise labour for monumental construction, and maintain order across growing and complex communities. The fact that cities emerged independently in geographically separate regions, including Mesopotamia, Egypt, the Indus Valley, China, Mesoamerica, and West Africa, suggests that urbanisation is a recurrent human response to specific conditions rather than a phenomenon that diffused from a single point of origin.

Fill in the blank: The emergence of cities in geographically separate regions suggests that urbanisation is a _____ human response to specific conditions rather than a phenomenon that diffused from a single origin.

Pilot questions 3.1

1. What was the Neolithic revolution and why was it important for the development of permanent settlements?
2. Name two of the earliest known urban centres and state where they were located.
3. State three characteristics shared by the earliest towns.
4. Fill in the blank: The emergence of cities in geographically separate regions suggests that urbanization is a _____ human response to specific conditions rather than a phenomenon that diffused from a single origin.

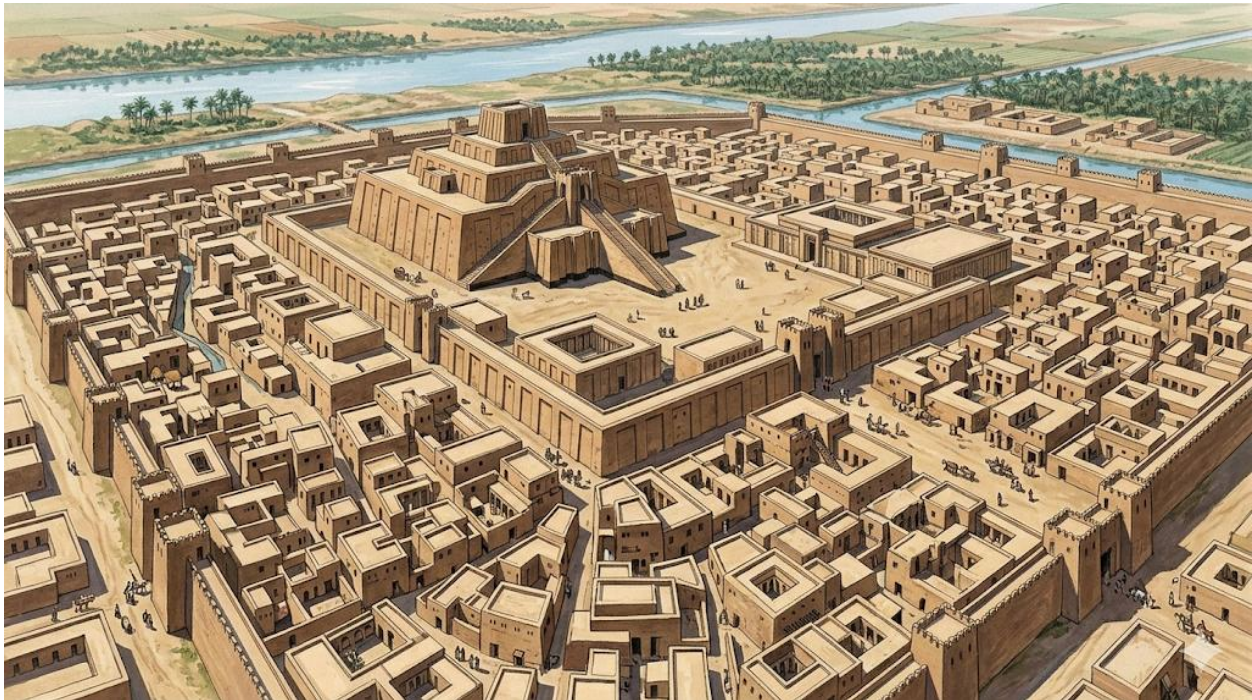
3.2 Ancient and Classical Cities

3.2.1 Cities of the ancient world

The cities of the ancient world achieved remarkable levels of urban sophistication. In Mesopotamia, the Sumerian city of Uruk, one of the earliest known cities, had a population estimated at between 25,000 and 50,000 by 3000 BCE and was dominated by a great ziggurat, a stepped temple platform that served as the physical and symbolic centre of the city. In ancient Egypt, cities were planned around the requirements of pharaonic authority and religious life, with temples, palaces, and administrative quarters forming a monumental core. In the Indus Valley, cities such as Mohenjo-daro showed a high degree of rational planning: a grid of streets, standardised brick construction, and an elaborate underground drainage system that surpassed anything seen in contemporary Mesopotamia or Egypt. In China, cities were planned according to cosmological principles, with the imperial palace at the centre oriented to the cardinal points, surrounded by concentric zones of administration, commerce, and residence. Each of these traditions produced distinctive urban forms shaped by the particular values, resources, and social structures of their civilisations.

Fill in the blank: The stepped temple platform that served as the physical and symbolic centre of the Mesopotamian city is known as a _____.





Short description: Image or reconstruction of the ancient Mesopotamian city of Ur or Babylon showing the ziggurat as the dominant central element, surrounded by irregular streets and residential quarters.

Plate 3.2 Reconstruction of an ancient Mesopotamian city showing the ziggurat as the dominant urban element

3.2.2 Greek and Roman urbanism

Greek urbanism made two enduring contributions to the history of urban design. The first was the agora, the central open public space of the Greek city, which served simultaneously as a market, a place of political assembly, a law court, and a social meeting place. The agora gave physical form to the Greek ideal of civic life as something conducted in public, among equals, in a shared space belonging to the whole community. The second contribution was the Hippodamian grid, the regular block plan for new colonial settlements attributed to Hippodamus of Miletus, placing public buildings at focal intersections and providing a rational, egalitarian framework for land division. Roman urbanism extended these precedents across a vast empire. The Roman town plan was organised around two principal streets: the cardo, running north to south, and the decumanus, running east to west, intersecting at the forum. Roman cities were also equipped with aqueducts, sewers, public baths, theatres, and amphitheatres, demonstrating a commitment to urban infrastructure and public amenity that remains influential.

Fill in the blank: The regular grid plan for new Greek colonial settlements is attributed to _____ of Miletus.

3.2.3 Planning principles of the classical city

The planning principles of the classical city established precedents that recur throughout the history of urban design. The primacy of the public realm, expressed in the Greek agora and



Roman forum, established the principle that a city needs a shared civic space where the community gathers and where the most important public functions take place. The grid plan demonstrated that rational, regular organisation of streets and blocks facilitates land allocation, navigation, and equitable distribution of urban land. The integration of infrastructure, including aqueducts, sewers, and paved streets, showed that urban life at scale requires engineered systems to deliver water, remove waste, and manage movement. The placement of public buildings at prominent locations in the street grid established the principle of landmark buildings as orientating elements in the urban structure. These classical principles were transmitted through Renaissance architectural theory, colonial urban planning, and the City Beautiful movement to influence urban design traditions around the world.

Fill in the blank: The Roman town plan was organised around two principal streets: the cardo running north to south and the _____ running east to west, intersecting at the forum.

Pilot questions 3.2

1. What was the agora and what functions did it serve in the Greek city?
2. Name the two principal streets of the Roman town plan and describe their orientation.
3. Fill in the blank: The regular grid plan introduced for new Greek colonial settlements is attributed to _____ of Miletus.
4. What is the Hippodamian plan and why was it significant in the history of urban design?
5. State two planning principles of classical urbanism that remain relevant to contemporary urban design.

3.3 Medieval, Renaissance, and Pre-Industrial Settlements

3.3.1 The medieval city: form and structure

The medieval European city grew from the conditions of feudal society: the need for defence, the power of the Church, the growth of long-distance trade, and the development of craft and merchant guilds. Unlike the planned cities of classical antiquity, most medieval towns grew organically, their forms determined by topography, the location of the cathedral and market, and the gradual accretion of streets and buildings over centuries. The characteristic features of the medieval town include an irregular, winding street pattern; a market square at the commercial heart of the town; a cathedral or major church as the dominant building; and a defensive wall enclosing the settlement. Despite apparent disorder, these towns often possess a strong spatial logic: streets lead to the market or cathedral, public buildings occupy prominent positions, and the scale of streets and spaces is closely related to human activity and movement.

Fill in the blank: The characteristic central space of the medieval European town, serving commercial and civic functions, was the _____ square.





Short description: Plan or aerial image of a medieval European town showing the irregular street pattern, market square, and cathedral at the centre, surrounded by city walls.

Figure 3.1 Plan of a medieval European town showing irregular street pattern, market square, and enclosing walls

3.3.2 Renaissance urbanism and ideal city planning

Renaissance urbanism, emerging in Italy from the fifteenth century, sought to apply the rational principles of classical antiquity to the design of new cities. Renaissance theorists and architects, including Leon Battista Alberti, developed the concept of the ideal city: a perfectly ordered urban form expressing rational principles of symmetry, proportion, and geometry. Ideal city plans typically took a polygonal or radial form, with straight streets radiating from a central civic space dominated by a cathedral or palace, surrounded by regular blocks of buildings and enclosed by geometrically designed defensive walls. Few ideal cities were actually built in their pure form, but the Renaissance theoretical tradition profoundly influenced the design of new towns and capital cities across Europe and the European colonial world in subsequent centuries. The Renaissance emphasis on symmetry, vista, and the visual relationship between buildings and spaces also established the principles of civic design that informed the Baroque transformations of cities such as Rome and Paris and later the City Beautiful movement.

Fill in the blank: Renaissance ideal city plans typically took a _____ or radial form, with straight streets radiating from a central civic space.

3.3.3 Pre-industrial settlements in West Africa

The pre-colonial urban traditions of West Africa produced cities of considerable size, complexity, and sophistication. Ile-Ife, spiritual and political capital of the Yoruba, was organised around the palace of the Ooni, with compounds housing extended family groups and a network of shrines and sacred groves. Benin City was renowned for its large royal palace,



straight streets radiating from the palace precinct, and an extensive system of earthwork defences. Kano, in northern Nigeria, was a major commercial and manufacturing centre enclosed within walls and organised around a central emir's palace and a great market. Timbuktu, on the southern edge of the Sahara, was a centre of Saharan trade and Islamic scholarship, organised around its three great mosques. These cities demonstrate that urban design traditions of considerable sophistication existed in West Africa long before European colonisation, providing important precedents for contemporary Nigerian urban design.

Fill in the blank: Benin City was organised around a large royal _____ and an extensive system of earthwork defences.

KEY PRE-COLONIAL URBAN CENTRES OF WEST AFRICA	
TIMBUKTU  Period: 14th-16th Centuries (Mali & Songhai Empires) Functions: Trans-Saharan Trade, Islamic Learning (Sankore University) Urban Form: Mud-brick architecture, mosques with minarets (<IMAGE 0>, <IMAGE 1>), clustered scholars' quarters	KANO  Period: 15th-19th Centuries (Hausa City-States) Functions: Manufacturing (textiles, leather), Regional Trade Hub Urban Form: Massive mud walls (Dala Hill), distinctive Hausa architecture with facade decoration (<IMAGE 2, 3>)
ILE-IFE  Period: 11th-15th Centuries (Yoruba Kingdom) Functions: Spiritual Capital, Royal Residence, Art Production Urban Form: Concentric walls, prominent palace (Afin), paved sacred areas, associated with terracotta and bronze heads (<IMAGE 5>)	BENIN CITY  Period: 13th-19th Centuries (Kingdom of Benin) Functions: Imperial Capital, Military Power, Administrative Hub Urban Form: Extensive system of earthworks (Benin Walls - <IMAGE 6>), planned grid, enormous royal palace

Box 3.1 Pre-colonial urban centres of West Africa: key examples and characteristics
Short description: A box summarising key pre-colonial urban centres of West Africa including Timbuktu, Kano, Ile-Ife, and Benin City, noting the period of greatest development, principal functions, and distinctive urban form characteristics of each.

Pilot questions 3.3

1. What forces shaped the form of the medieval European city?
2. What was the ideal city in Renaissance urban design theory?
3. Fill in the blank: Benin City was organized around a large royal _____ and an extensive system of earthwork defences.
4. Name two pre-colonial urban centres of West Africa and state the principal function of each.
5. How does the urban form of the Yoruba city state differ from that of a typical medieval European town?

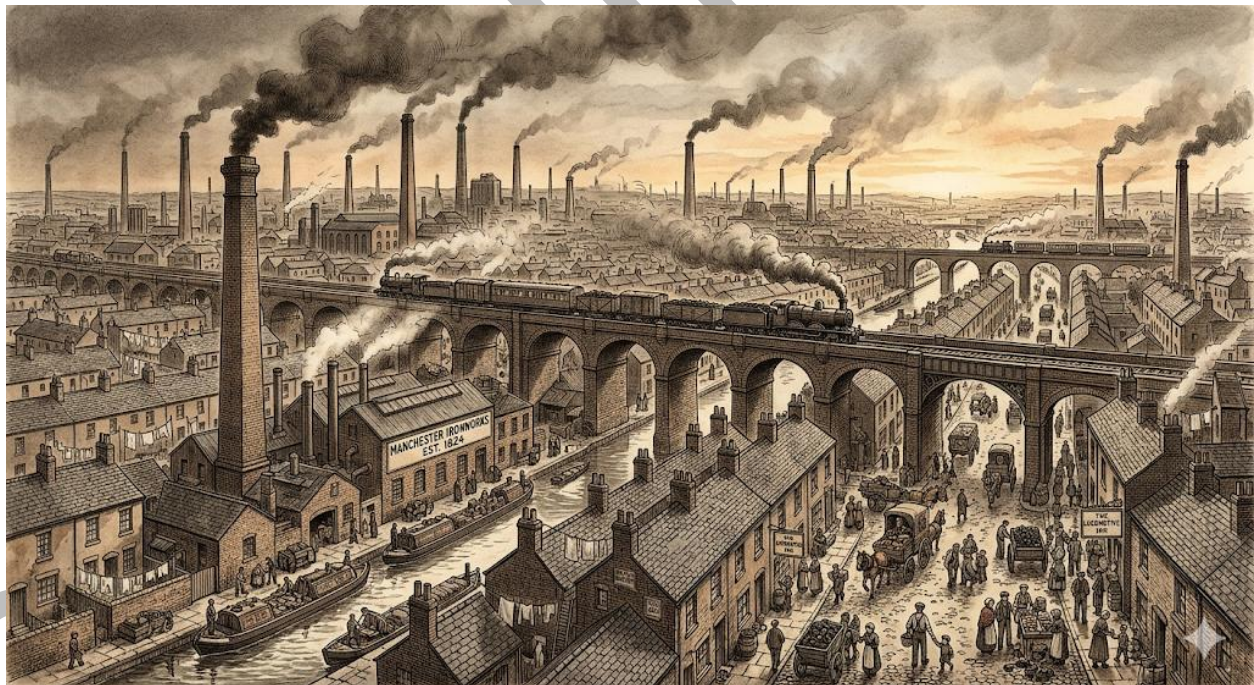


3.4 The Industrial City and its Legacy

3.4.1 Industrialization and the transformation of cities

The industrial revolution transformed the nature and scale of cities more profoundly than any previous period of history. From the late eighteenth century, the mechanisation of production and the development of the factory system concentrated workers in cities near coalfields, rivers, and later railways. Cities such as Manchester, Birmingham, Leeds, and Liverpool in England grew from small market towns to industrial metropolises of hundreds of thousands of people within a few decades. The physical form of the industrial city was shaped by the requirements of production and profit: factories and railway infrastructure dominated central areas; dense working-class housing was packed into the interstices between them; and the emerging middle class retreated to new residential suburbs on the urban fringe. Land use separation, which would later become a formal principle of twentieth-century planning, was already evident in the industrial city in the spatial divide between working-class and middle-class areas. Growth was largely unregulated: speculative builders constructed housing with little concern for light, air, sanitation, or space, producing conditions of squalor that shocked contemporary observers.

Fill in the blank: The concentration of factories, railway infrastructure, and dense working-class housing in the industrial city produced conditions of largely _____ urban growth.



Short description: Historical image or illustration of a nineteenth-century industrial city showing factories with smoking chimneys, dense working-class housing, railway viaducts, and crowded streets.

Plate 3.3 A nineteenth-century industrial city: factories, dense housing, and railway infrastructure



3.4.2 Urban problems of the industrial city

The urban problems of the industrial city were severe and well-documented. Overcrowding produced housing of appalling quality: cellars and single rooms occupied by entire families, courts and alleys with no ventilation, and back-to-back terraces with no through air flow. The absence of clean water and sanitation meant that human waste contaminated water supplies, spreading waterborne diseases. Cholera epidemics struck British cities in 1831, 1848, 1853, and 1866, killing tens of thousands and demonstrating with lethal force the consequences of unregulated urban growth. Typhoid, typhus, and tuberculosis were also endemic in overcrowded working-class districts. Air pollution from coal-burning factories and domestic fires created persistent smogs that damaged health and reduced life expectancy. Spatial inequality was stark: the wealthy occupied spacious villas in leafy suburbs while the poor were crowded into insanitary districts without parks, gardens, or open space. These conditions generated a moral and political crisis that demanded a response from government and reformers.

Series Summary

The purpose of this is to trace the historical evolution of human settlements and show how their forms reflected the social, economic, political, and environmental conditions of their time. It begins with the origins of settlement, explaining the Neolithic revolution and the rise of the first towns, before examining the conditions that drove early urbanisation. The Series then explores ancient and classical cities, highlighting Mesopotamian, Egyptian, Indus, and Chinese traditions, alongside the contributions of Greek and Roman urbanism such as the agora, forum, and grid plans. This is followed by medieval and Renaissance settlements, including the concept of the ideal city, and the distinctive pre-industrial urban traditions of West Africa. Finally, it considers the industrial city, its rapid growth, severe urban problems, and the reform movements that laid the foundations of modern planning.

By engaging with these themes, learners achieve the Series Learning Outcomes. You should now be able to describe the transition from nomadic life to permanent settlement, explain the nature and process of urbanisation, analyse the form and structure of medieval, Renaissance, and West African settlements, and evaluate how industrialisation transformed cities and provoked early planning responses. This knowledge provides a strong foundation for understanding contemporary urban design and planning practice.

Glossary of Terms

- **Agora** : The central open public space of the Greek city, serving simultaneously as a market, place of political assembly, law court, and social meeting place.
- **Cardo** : The principal north-south street of the Roman town plan, intersecting with the decumanus at the forum.
- **Decumanus** : The principal east-west street of the Roman town plan, intersecting with the cardo at the forum.
- **Forum** : The central civic space of the Roman city, equivalent in function to the Greek agora, serving as a market, administrative centre, and place of public assembly.



- **Garden City** : A planned settlement concept developed by Ebenezer Howard, combining urban economic advantages with rural space and greenery, surrounded by a permanent agricultural greenbelt.
- **Hippodamian plan** : The regular grid layout for new Greek colonial settlements attributed to Hippodamus of Miletus, providing a rational and egalitarian framework for land division.
- **Ideal city** : A Renaissance theoretical concept of a perfectly ordered urban form expressing rational principles of symmetry, proportion, and geometry, typically organised on a polygonal or radial plan.
- **Neolithic revolution** : The transition from nomadic hunting and gathering to settled agriculture that began around 10,000 BCE, creating the food surpluses and social complexity necessary for permanent settlement.
- **Public Health Act** : British legislation of 1848 establishing minimum standards for sanitation, water supply, and housing construction, marking the beginning of state responsibility for urban conditions.
- **Urban primacy** : A pattern in which one city dominates the urban system and concentrates a disproportionate share of population, economic activity, and political power.
- **Ziggurat** : A stepped temple platform serving as the physical and symbolic centre of the Mesopotamian city, expressing the authority of the priesthood and the importance of the city as a religious centre.

Concept Check Questions 3

Objective questions

1. Name two conditions that were necessary for the emergence of the first permanent urban settlements. (Linked to SLO 3.1)
2. State two characteristics shared by the earliest known towns. (Linked to SLO 3.1)
3. Fill in the blank: The central public space of the Greek city, serving as market, civic assembly, and social centre, was the _____. (Linked to SLO 3.2)
4. State two urban problems of the industrial city that led to calls for planning reform. (Linked to SLO 3.4)

Short-answer questions

5. Explain the conditions that gave rise to permanent human settlements, identifying the role of agricultural surplus, trade, geographical advantage, and political and religious authority. (Linked to SLO 3.1)
6. Describe the key planning contributions of Greek and Roman urbanism, explaining what each contributed to the history of urban design. (Linked to SLO 3.2)
7. Describe the urban form of two pre-colonial West African cities, explaining how each was organised and what functions it served. (Linked to SLO 3.3)
8. Describe the main urban problems of the industrial city and explain the responses that established the foundations of modern urban planning. (Linked to SLO 3.4)



Long-answer questions

9. Analyse the planning principles of the classical city, explaining how the legacies of Greek and Roman urbanism influenced later urban design traditions including colonial planning in Nigeria. (Linked to SLOs 3.2 and 3.3)

10. Evaluate the significance of pre-colonial West African urban traditions for contemporary Nigerian urban design, explaining what lessons their spatial organisation, land use patterns, and civic design offer for cities today. (Linked to SLOs 3.3 and 3.4)

Answers to Concept Check Questions 3

Objective Questions

1. Any two: surplus enabling non-farmers; fertile land/water; trade nodes; political/religious authority.
2. Any two: dense specialised population; monumental public buildings; writing system; agricultural hinterland.
3. Agora.
4. Any two: overcrowded housing; contaminated water; coal pollution; lack of open space; spatial inequality.

Short-Answer Questions

5. Surplus freed labour for specialisation; trade concentrated people; defence clustered settlements; religion attracted populations; power built centres. These reinforced each other to form urban settlements.
6. Agora: civic/market space. Acropolis: fortified temple focus. Hippodamian grid: rational block layout with agora/public buildings central.
7. Push: rural decline, poverty, poor services. Pull: jobs, higher wages, better schools, hospitals, services in cities.
8. Industrial city: overcrowding, poor housing, polluted water/air, inequality. Cholera epidemics showed risks. Responses: Public Health Act (1848), model housing/villages, Howard's Garden City. Established state responsibility and modern planning foundations.

Long-Answer Questions

9. **Basic:** Craft knife (card), snap-off cutter (thicker), scissors (paper), saws (wood/plastic). Safety: sharp blades, rulers, mats, posture.

Value-added: Tool choice depends on material/cut. Scoring vs full vs saw. Sharp blades and mitre box improve joints/finish.

10. **Basic:** Board/paper (walls/roofs); foam board (rigid); polystyrene (terrain); balsa/basswood (structure); extras (landscape/detail).

Value-added: Material choice affects clarity/communication. White foam board shows massing; coloured finished models show character/liveability. Engaging indigenous traditions grounds Nigerian design.



Answers to Pilot Questions 3

Part 3.1

1. The Neolithic revolution was the transition from hunting and gathering to settled agriculture; it was important because it created the food surplus and social complexity necessary for permanent settlement
2. Uruk and Ur in Mesopotamia; Mohenjo-daro and Harappa in the Indus Valley; cities of ancient Egypt and ancient China
3. Dense permanent population with specialized occupations; monumental public buildings serving religious and administrative functions; a system of writing for administration; surrounding agricultural hinterland
4. Recurrent

Part 3.2

1. The agora served as market, place of assembly, and civic centre; a square for movement; a park for recreation; a courtyard for transition
2. The cardo ran north-south and the decumanus ran east-west, with the forum at their intersection
3. Hippodamus of Miletus
4. The Hippodamian plan was a regular grid layout for new Greek colonial settlements with public buildings at focal points; it was significant as one of the earliest systematic approaches to planned urban design
5. Suburbanization is growth on the outer edges of existing urban areas as people and businesses decentralize from the city core; counter-urbanization is the movement of population from urban to rural areas

Part 3.3

1. Defensive requirements of feudal society; growth of long-distance trade; organizational power of the Church; development of merchant and craft guilds
2. A perfectly ordered city expressing rational principles of symmetry and proportion, typically organized on a polygonal or radial plan with straight streets radiating from a central civic space
3. Palace
4. Any two of: Timbuktu as a centre of Saharan trade and Islamic scholarship; Kano as a commercial and manufacturing centre; Ile-Ife as the spiritual and political capital of the Yoruba; Benin City as the capital of the Benin Kingdom with large palace and straight streets
5. Both were enclosed within walls and organized around a dominant civic and religious centre. The medieval city centred on the cathedral and market square with an irregular street pattern; the Yoruba city was centred on the oba's palace and market with compounds of extended families forming the residential fabric

Part 3.4



1. Concentration of factories and railway infrastructure; rapid construction of dense working-class housing; growth of middle-class residential suburbs; beginnings of land use separation; largely unregulated growth producing overcrowding and squalor
2. Cholera and typhoid
3. Howard envisioned new planned towns combining urban economic and social advantages with rural space and greenery; it was significant because it directly led to the first Garden Cities at Letchworth and Welwyn and profoundly influenced twentieth-century new town planning including Abuja
4. Any two of: Public Health Act of 1848 establishing sanitation standards; model housing schemes by philanthropic industrialists; planned model villages such as Saltaire and Bournville; Ebenezer Howard's Garden City concept
5. Abuja

References and Attributions 3

Course content references

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Illustrations

Plate 3.1 Reconstruction of an early Neolithic settlement illustrating the transition to permanent occupation AI-generated suggestion: "Archaeological reconstruction or aerial photograph of an early Neolithic settlement illustrating the transition from temporary camp to permanent village, with evidence of planned layout and communal structures." Suggested OER search string: "Neolithic settlement reconstruction permanent village archaeological OER photo."

Plate 3.2 Reconstruction of an ancient Mesopotamian city showing the ziggurat as the dominant urban element AI-generated suggestion: "Reconstruction or diagram of the ancient Mesopotamian city of Ur or Babylon showing the ziggurat as the dominant central element, surrounded by streets and residential quarters." Suggested OER search string: "ancient Mesopotamian city Ur Babylon ziggurat reconstruction diagram OER."

Figure 3.1 Plan of a medieval European town showing irregular street pattern, market square, and enclosing walls AI-generated suggestion: "Plan or aerial image of a medieval European town showing the irregular street pattern, market square, and cathedral at the centre, surrounded by city walls." Suggested OER search string: "medieval European town plan irregular streets market square cathedral walls OER."

Box 3.1 Pre-colonial urban centres of West Africa: key examples and characteristics AI-generated suggestion: "Infographic text box summarising key pre-colonial urban centres of West



Africa including Timbuktu, Kano, Ile-Ife, and Benin City, noting the period of greatest development, principal functions, and distinctive urban form of each." Suggested OER search string: "pre-colonial West African cities Timbuktu Kano Ile-Ife Benin City urban form OER."

Plate 3.3 A nineteenth-century industrial city: factories, dense housing, and railway infrastructure
AI-generated suggestion: "Historical image or illustration of a nineteenth-century industrial city showing factories with smoking chimneys, dense working-class housing, railway viaducts, and crowded streets." Suggested OER search string: "nineteenth century industrial city factory housing railway Victorian OER photo."

Attributions All AI prompts are intended for use with generative tools to create original illustrations. Suggested search strings are provided to locate open educational resources (OER) for non-commercial academic use.

Course code: URP 308

Course title: Introduction to Urban Design and Planning

Course credit load: 2 Units

List of Series:

- Series 1: Introduction to Urban Design and Urbanization
- Series 2: Elements of Urban Design and Environmental Quality
- Series 3: Historical Evolution of Human Settlements
- **Series 4: Civic Design Movements and Town Planning**
- Series 5: Traditional Urban Design in Nigerian Cities

4 Civic Design Movements and Town Planning

Series outline

- **Part 1 (4.1): The City Beautiful and Civic Design Movement**
 - Sub-Part 4.1.1: Origins and principles of the City Beautiful movement
 - Sub-Part 4.1.2: Key projects and practitioners
 - Sub-Part 4.1.3: Civic design and colonial planning in Nigeria
- **Part 2 (4.2): The Garden City and New Town Movement**
 - Sub-Part 4.2.1: Ebenezer Howard and the Garden City concept
 - Sub-Part 4.2.2: New town planning in Britain and beyond
 - Sub-Part 4.2.3: Abuja and the new town tradition in Nigeria
- **Part 3 (4.3): Modernist Planning and Urban Renewal**
 - Sub-Part 4.3.1: CIAM and the principles of modernist planning
 - Sub-Part 4.3.2: Urban renewal and slum clearance



- Sub-Part 4.3.3: Critiques of modernist planning
- **Part 4 (4.4): Post-Modernism and the Return to Urban Design**
 - Sub-Part 4.4.1: The reaction against modernism
 - Sub-Part 4.4.2: New Urbanism and traditional neighbourhood design
 - Sub-Part 4.4.3: Contemporary urban design frameworks

Introduction

The design of cities is not a neutral technical exercise: it reflects the values, ideologies, and social priorities of its time. The great planning movements of the modern period, from the City Beautiful to the Garden City, from CIAM modernism to New Urbanism, each arose as a conscious response to the perceived failures of the existing city and each proposed a distinctive vision of how the urban environment should be organised, designed, and inhabited.

Understanding these movements is essential for any urban designer or planner, both because their physical legacies shape the cities we work in today and because the debates they generated continue to frame the choices available to contemporary practitioners.

The aim of this Series is to trace the principal civic design movements and town planning traditions of the modern period, from the City Beautiful movement of the late nineteenth century to the contemporary urban design frameworks that guide practice today. We shall commence this Series by examining the City Beautiful and civic design movement, its origins, principles, key projects, and influence on colonial planning in Nigeria. Next, we will explore the Garden City and new town movement, tracing Howard's concept through the British new towns to the planning of Abuja. Following that, we will study modernist planning and urban renewal, examining CIAM principles and the critiques that led to their rejection. Finally, we will consider the post-modernist reaction and the emergence of New Urbanism and contemporary urban design frameworks.

We shall commence this Series by examining the City Beautiful movement: its origins, principles, key projects, and its significant influence on colonial planning in Nigeria. Next, we will explore the Garden City concept and the new town tradition it inspired, including the design of Abuja as Nigeria's planned federal capital. Following that, we will study modernist planning and urban renewal, examining both the ambitions of CIAM and the powerful critiques that led to modernism's rejection. Finally, we will consider the post-modernist reaction and the emergence of New Urbanism and contemporary urban design frameworks.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 4.1** describe the origins, principles, and key projects of the City Beautiful and civic design movement,
- **SLO 4.2** explain the concept of urbanization and describe its nature, stages, and process in the Public context,
- **SLO 4.3** describe the principles of modernist planning and urban renewal and explain the critiques that led to their rejection,



- **SLO 4.4** describe the post-modernist reaction to modernism and outline the key principles of New Urbanism and contemporary urban design frameworks.

4.1 The City Beautiful and Civic Design Movement

4.1.1 Origins and principles of the City Beautiful movement

The City Beautiful movement emerged in the United States in the 1890s as a conscious response to the ugliness and disorder of the industrial city. Its central argument was that beautiful, monumental, and well-ordered civic environments would instil civic pride, social order, and moral uplift in urban populations. The movement drew on the Beaux-Arts architectural tradition and the example of Haussmann's transformation of Paris, advocating grand boulevards and formal axes, monumental civic buildings in classical styles, large ceremonial public spaces and ornamental parkways, and the grouping of civic buildings in formal compositions that expressed the dignity of civic institutions. The City Beautiful was not primarily concerned with housing, sanitation, or social reform: it focused on the aesthetic quality of civic space and the symbolic power of monumental architecture. Its influence spread rapidly across the United States and to British colonial territories, where its formal vocabulary of wide avenues, classical buildings, and ceremonial spaces was applied in the layout of administrative capitals and government quarters.

Fill in the blank: The City Beautiful movement drew on the Beaux-Arts tradition and the example of Haussmann's transformation of _____ to advocate grand boulevards and monumental civic buildings.



Short description: Image of a City Beautiful civic centre or boulevard showing monumental classical buildings arranged on a formal axis with wide ceremonial spaces and ornamental landscaping.



Plate 4.1 A City Beautiful civic centre: monumental architecture, formal axes, and ceremonial public space

4.1.2 Key projects and practitioners

The World's Columbian Exposition, held in Chicago in 1893 and planned by Daniel Burnham and Frederick Law Olmsted, was a pivotal event in the City Beautiful movement. The Exposition created a temporary model city of gleaming classical buildings arranged around formal waterways and axes, demonstrating the visual power of coordinated civic design and inspiring a wave of City Beautiful planning across the United States and beyond. Daniel Burnham went on to produce the 1909 Plan of Chicago, one of the most ambitious civic design plans ever produced for an American city, proposing a system of lakefront parks, diagonal boulevards, and a monumental civic centre. In Britain, civic design found expression in the work of Raymond Unwin and Barry Parker at Letchworth and in the design of New Delhi by Edwin Lutyens and Herbert Baker, which combined City Beautiful formality with Mughal and classical references. These projects established the City Beautiful as a global planning movement whose formal vocabulary shaped capital cities and civic centres across the colonial world.

Fill in the blank: The World's Columbian Exposition was planned by Daniel Burnham and Frederick Law _____, demonstrating the visual power of coordinated civic design.

4.1.3 Civic design and colonial planning in Nigeria

In Nigeria, British colonial planners applied City Beautiful principles in the layout of Government Reservation Areas, or GRAs, in cities including Lagos, Ibadan, Kano, and Enugu. GRAs featured wide tree-lined avenues, large residential plots, prominent government buildings, and carefully maintained gardens, expressing the authority and permanence of colonial administration. Crucially, the GRA was spatially separated from the indigenous town by a buffer zone or railway line, enforcing racial and administrative segregation through the physical organisation of urban space. This spatial separation left a legacy that persists in Nigerian cities today, where former GRAs remain among the most well-served and desirable residential areas while the older indigenous quarters often lack comparable infrastructure. Colonial civic design also influenced the layout of government buildings, courts, and administrative offices in many Nigerian cities, where formal axes, ceremonial approaches, and classical facades expressed the authority of the colonial state in architectural terms.

Fill in the blank: The spatial separation of the colonial GRA from the indigenous town enforced racial and administrative _____ through the physical organisation of urban space.

Pilot questions 4.1

1. What was the central argument of the City Beautiful movement?
2. Name two key figures associated with the City Beautiful movement and state one contribution of each.
3. What was the World's Columbian Exposition and why was it significant for urban design?



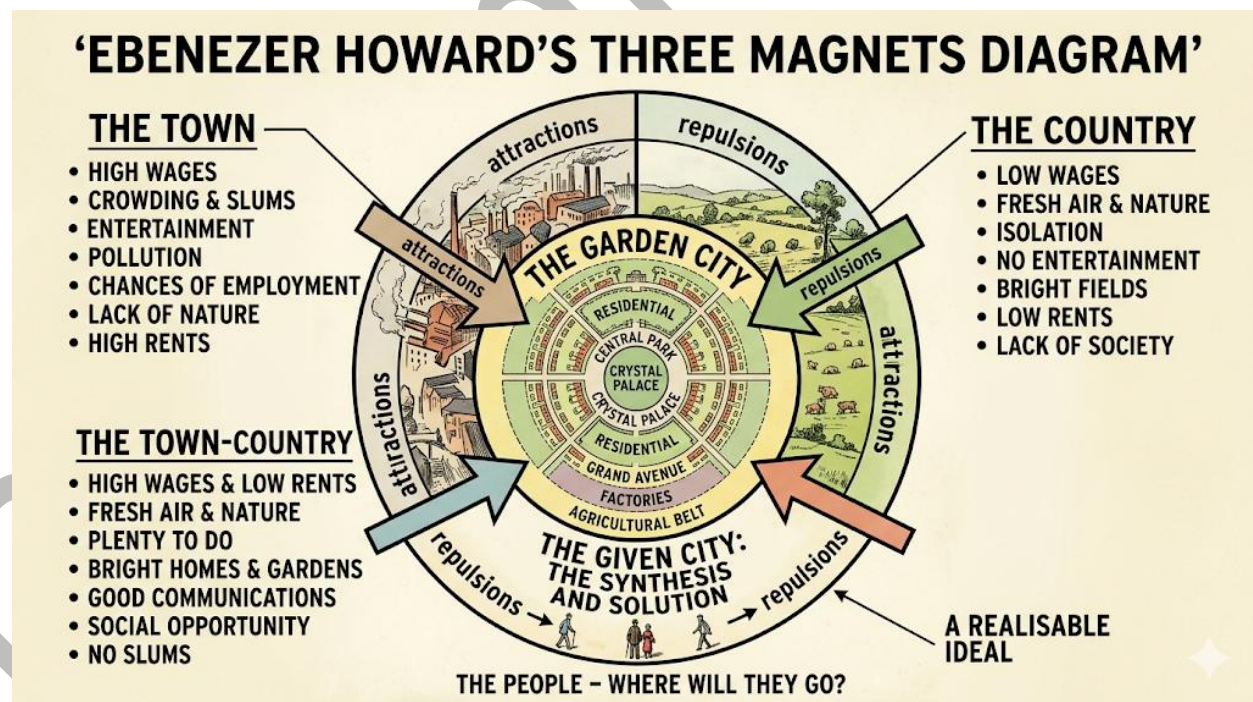
4. Fill in the blank: The spatial separation of the colonial GRA from the indigenous town enforced racial and administrative _____ through planning.

4.2 The Garden City and New Town Movement

4.2.1 Ebenezer Howard and the Garden City concept

Ebenezer Howard published his Garden City concept in 1898 in *To-morrow: A Peaceful Path to Real Reform*, later republished as *Garden Cities of To-morrow*. Howard proposed a new type of planned settlement that would combine the economic and social advantages of urban life with the space, greenery, and healthfulness of the countryside, overcoming the disadvantages of both. The Garden City was to be a self-contained community of limited size, typically around 32,000 residents, surrounded by a permanent agricultural greenbelt that would prevent urban sprawl and provide food and recreational space for residents. Land was to be held in common ownership to prevent speculative profit and ensure that rising land values benefited the community rather than private landlords. Industries and employment would be located within the town to eliminate long commutes. Howard's Three Magnets diagram illustrated his concept by comparing the attractions of Town and Country and arguing that the Garden City, as a Town-Country synthesis, offered the best of both. The Garden City concept was driven by a social vision: to provide workers with decent housing, access to nature, and community facilities that the industrial city had denied them.

Fill in the blank: Howard's Garden City was to be surrounded by a permanent agricultural _____ to prevent urban sprawl and provide food and recreational space for residents.



Short description: Reproduction or diagram of Ebenezer Howard's Three Magnets diagram comparing the attractions of Town, Country, and Town-Country, with the Garden City as the synthesis.



Figure 4.1 Ebenezer Howard's Three Magnets diagram: Town, Country, and Town-Country

4.2.2 New town planning in Britain and beyond

Fill in the blank: Abuja was built as a new federal capital to symbolise national _____ and to replace Lagos, which was seen as regionally associated and overcrowded.

4.2.3 Abuja and the new town tradition in Nigeria

Abuja was designated as Nigeria's new federal capital in 1976 and the Master Plan was produced by International Planning Associates in 1979. The stated motivations for building a new capital were to escape the congestion and ethnic associations of Lagos, to create a capital symbolising national unity on a neutral central site accessible to all regions, and to provide a planned environment worthy of a modern nation-state. The Abuja Master Plan drew on new town planning traditions: a defined city boundary; residential areas organised into superblocks of neighbourhood units; a civic spine connecting the Presidential Complex, National Assembly, and Supreme Court on a formal axis inspired by L'Enfant's plan for Washington DC and the grand civic axes of City Beautiful planning. The Three Arms Zone of government, the Central Business District, and the residential districts were each planned as self-contained zones with their own internal hierarchy of roads and uses. The reality of Abuja's growth has diverged significantly from the Master Plan, with rapid informal expansion into satellite towns beyond the formal city boundary and persistent challenges in delivering infrastructure and services to the planned districts.

Fill in the blank: The civic spine of Abuja's Master Plan, connecting the Presidential Complex, National Assembly, and Supreme Court on a formal axis, drew on the grand civic axis tradition of _____ planning.

Pilot questions 4.2

1. State the three main components of Howard's Garden City concept.
2. Name the two Garden Cities built in England and state the date each was begun.
3. Fill in the blank: The residential areas of Abuja were organized in superblocks of neighbourhood units drawing on the neighbourhood unit concept developed by Clarence _____.
4. What were the stated motivations for building a new federal capital at Abuja rather than developing Lagos?
5. What planning precedents influenced the design of the Abuja Master Plan civic spine?

4.3 Modernist Planning and Urban Renewal

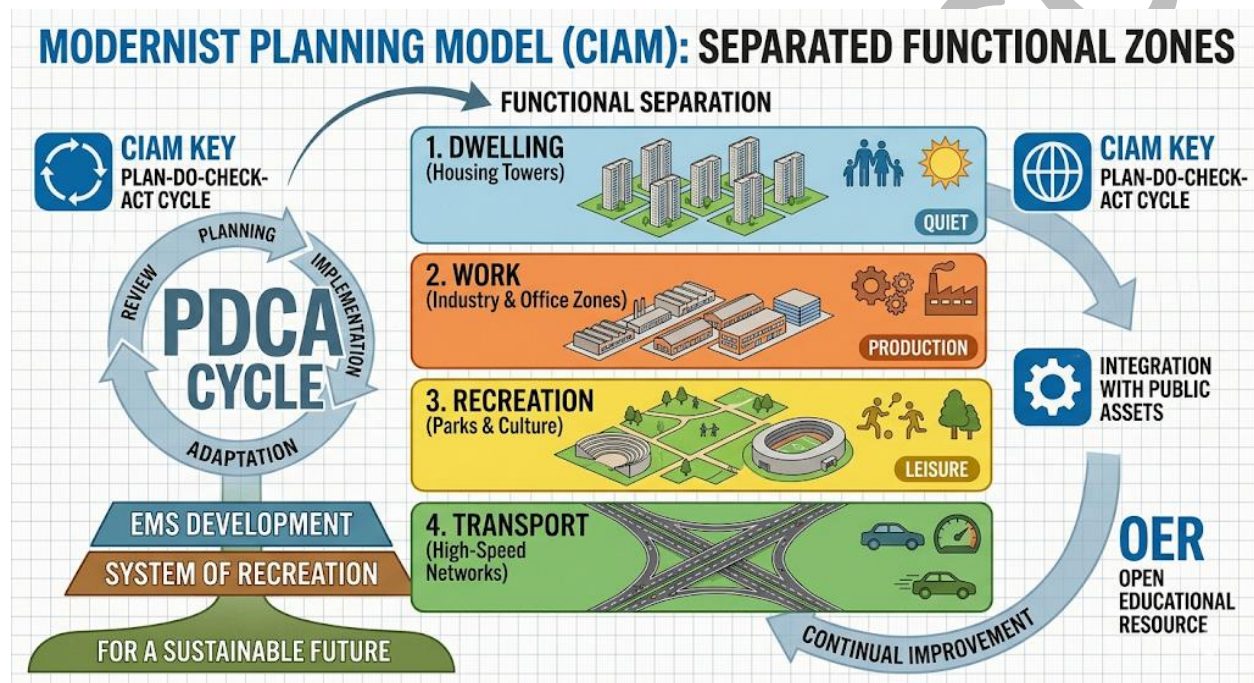
4.3.1 CIAM and the principles of modernist planning

The Congrès Internationaux d'Architecture Moderne, or CIAM, was an international organisation of modernist architects founded in 1928, which became the primary vehicle for promoting a new approach to urban planning based on the principles of the Modern Movement. CIAM's most influential document was the Athens Charter of 1933, which articulated the principles of



functional zoning: the separation of the city into distinct zones for dwelling, work, recreation, and circulation, connected by high-speed roads rather than traditional streets. In the CIAM vision, the congested mixed-use city would be replaced by towers set in open parkland, surrounded by sunlight, fresh air, and greenery, with motor traffic flowing freely on dedicated arterials. These principles were hugely influential in postwar urban reconstruction and new town design, shaping mass housing programmes across Europe and beyond. In Nigeria, modernist planning principles influenced the design of government housing estates and the zoning frameworks adopted in master plans of cities including Lagos and Abuja.

Fill in the blank: The Athens Charter of 1933 identified four key urban functions: dwelling, work, recreation, and _____.



Short description: Diagram or image illustrating the CIAM modernist planning model showing separated functional zones for dwelling, work, and recreation connected by high-speed roads, with towers set in open parkland.

Figure 4.2 The CIAM modernist planning model: functional zoning and towers in parkland

4.3.2 Urban renewal and slum clearance

Urban renewal and slum clearance programmes, implemented across the industrialised world from the 1950s to the 1970s, applied modernist planning principles to the perceived problem of substandard inner-city housing. Vast areas of older housing were demolished and replaced with modernist housing estates: towers and slabs set in open space, organised according to the principles of the Athens Charter. In the United States, the Pruitt-Igoe housing project in St Louis, completed in 1956 and demolished in 1972, became the defining symbol of the failure of modernist public housing: its demolition, broadcast on television, was later described as the symbolic death of modern architecture. In Britain, the comprehensive redevelopment of inner-city areas produced similar results: communities were broken up, street life was destroyed, and



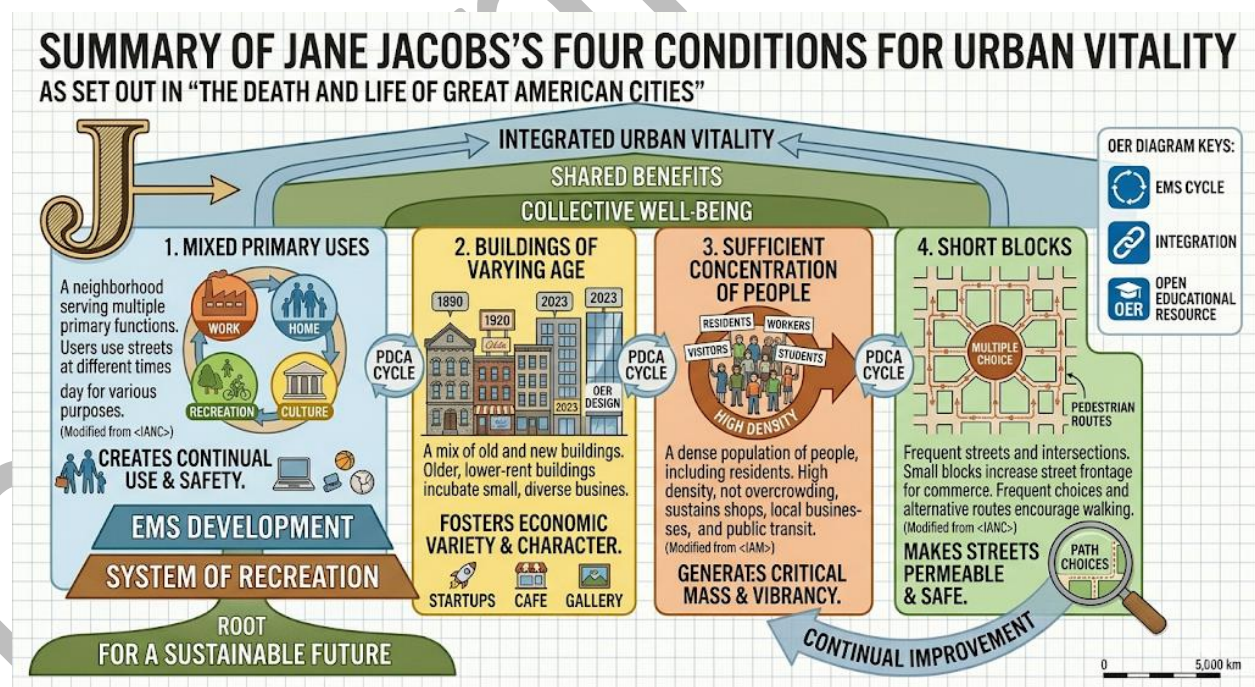
the new estates quickly developed the social problems they had been intended to solve. In Nigeria, modernist planning principles influenced the design of government housing estates and university campuses, where towers, separated functions, and superblock layouts can be found in cities across the country.

Fill in the blank: The modernist housing project in St Louis whose demolition in 1972 became a symbol of the failure of modernist planning was called _____.

4.3.3 Critiques of modernist planning

The critique of modernist planning gathered force from the 1960s and produced a comprehensive demolition of the CIAM vision. Jane Jacobs, in *The Death and Life of Great American Cities*, argued that modernist planning was destroying the mixed uses, fine grain, active streets, and overlapping community life that made cities safe and liveable. She identified four conditions for urban vitality: mixed primary uses generating activity at different times of day; buildings of varying age providing a range of rental levels; sufficient concentration of people; and short blocks allowing movement in multiple directions. Kevin Lynch demonstrated that legible cities depend on recognisable paths, edges, districts, nodes, and landmarks, which modernist tower estates systematically destroyed. The physical demolition of the Pruitt-Igoe housing project in St Louis in 1972 became the iconic symbol of the failure of modernist planning. These critiques shifted the profession decisively away from the CIAM model and toward a renewed engagement with the traditional urban street and mixed-use neighbourhood.

Fill in the blank: Jane Jacobs argued that a fine-grained mix of primary uses, buildings of varying age, sufficient concentration of people, and short _____ were the four conditions for urban vitality.



Box 4.1 Jane Jacobs's conditions for urban vitality: a summary



Short description: A box summarising Jane Jacobs's four conditions for urban vitality as set out in The Death and Life of Great American Cities: mixed primary uses, buildings of varying age, sufficient concentration of people, and short blocks.

Pilot questions 4.3

1. What was CIAM and what was its most influential document?
2. State the four key urban functions identified in the Athens Charter.
3. Fill in the blank: The modernist housing project in St Louis whose demolition in 1972 became a symbol of the failure of modernist planning was called _____.
4. What was Jane Jacobs's central criticism of modernist urban planning?
5. State two physical characteristics of a modernist housing estate that Jacobs and others criticized.

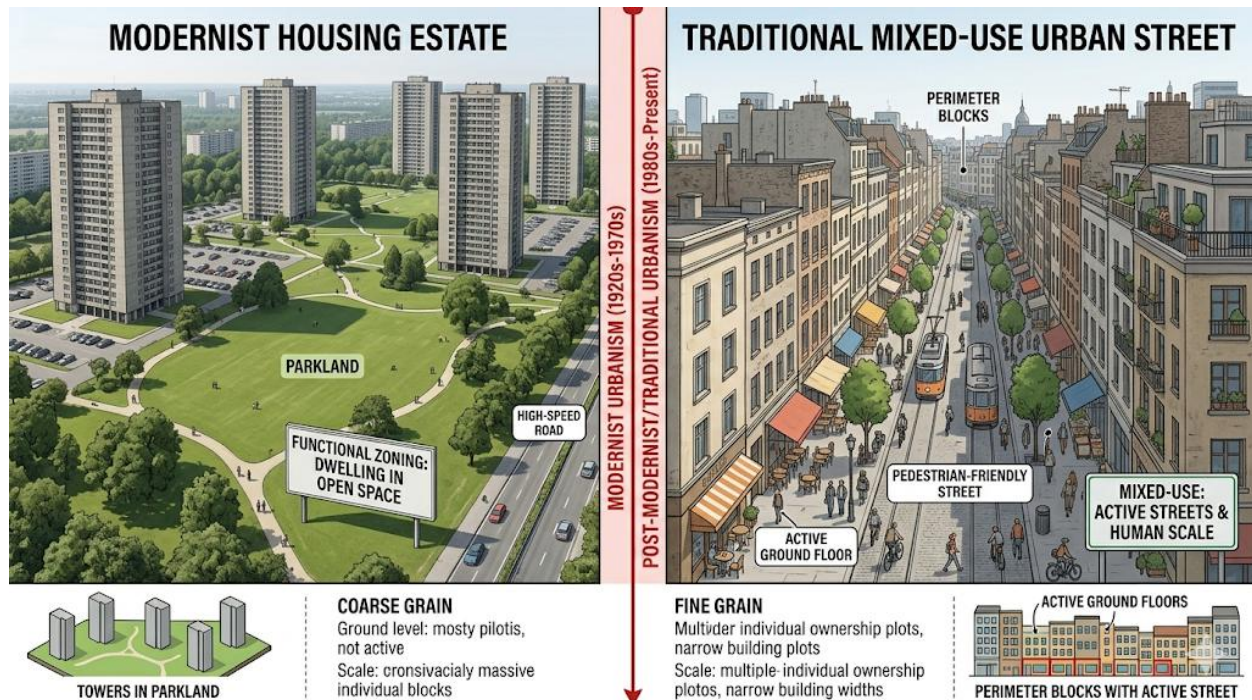
4.4 Post-Modernism and the Return to Urban Design

4.4.1 The reaction against modernism

The post-modernist reaction against modernist planning drew on a range of theorists and practitioners who sought to recover the spatial and social qualities that modernism had suppressed. Kevin Lynch's work on imageability and mental mapping argued for urban environments legible enough for people to navigate and identify with. Gordon Cullen's townscape tradition celebrated the visual richness of the traditional city and the importance of enclosure, sequence, and focal points in urban space. Colin Rowe and Fred Koetter's *Collage City* proposed the repair of the city through the selective insertion of new elements that respected and complemented existing urban fabric. Rob Krier and Leon Krier argued for the reconstruction of the European city based on the typologies of the traditional street and urban block. Christopher Alexander's *A Pattern Language* offered a catalogue of design patterns at every scale from the region to the building detail, all grounded in observation of the qualities that make places feel alive and humane. Together, these thinkers established the intellectual foundations for the return to street-based, mixed-use, fine-grained urban design that characterises contemporary practice.

Fill in the blank: Colin Rowe and Fred Koetter's _____ City proposed the repair of the city through the selective insertion of new elements that respected existing urban fabric.





Short description: Image contrasting a modernist housing estate with towers in parkland against a traditional mixed-use urban street with perimeter blocks, active ground floors, and fine grain, illustrating the shift from modernist to post-modernist urban design values.

Plate 4.2 Modernist tower estate versus traditional perimeter block street: a contrast of urban design philosophies

Series Summary

This Series has traced the principal civic design movements and town planning traditions of the modern period from the City Beautiful movement to contemporary urban design frameworks. We began with the City Beautiful movement, examining its origins in the Beaux-Arts tradition, its key projects and practitioners, and its influence on colonial planning in Nigeria through the GRA. We then explored the Garden City concept and the new town tradition, examining Howard's Three Magnets vision, the British new towns, and the planning of Abuja. We went on to study CIAM and the principles of modernist planning, urban renewal and slum clearance, and the critiques of Jacobs, Lynch, and others that led to the rejection of the modernist model. Finally, we examined the post-modernist reaction, the principles of New Urbanism, and the challenge of developing contemporary frameworks responsive to Nigerian conditions.

By engaging with these topics, you should now be able to describe the origins, principles, and key projects of the City Beautiful and civic design movement and its colonial legacy in Nigeria; explain the Garden City concept and trace its influence on new town planning including Abuja; describe the principles of CIAM modernist planning and the critiques that led to its rejection; and outline the post-modernist reaction, the key principles of New Urbanism, and the challenges facing contemporary urban design frameworks, as outlined in the Series Learning Outcomes.

Glossary



- **Athens Charter** : The 1933 document produced by CIAM that set out the principles of modernist planning, including functional separation of the city into dwelling, work, recreation, and circulation zones.
- **Beaux-Arts** : A tradition of classical architectural education and design originating at the Ecole des Beaux-Arts in Paris, emphasising formal composition, symmetry, and monumental grandeur.
- **CIAM** : Congres Internationaux d'Architecture Moderne; an international organisation of modernist architects founded in 1928 that produced the Athens Charter and dominated planning theory for three decades.
- **City Beautiful** : A planning movement originating in the United States in the 1890s that advocated grand boulevards, formal axes, monumental civic buildings, and ceremonial public spaces as a means of instilling civic pride and social order.
- **Garden City** : A planned settlement concept developed by Ebenezer Howard combining urban economic advantages with rural space and greenery, surrounded by a permanent greenbelt and with land held in common ownership.
- **Government Reservation Area** : A spatially segregated colonial residential and administrative quarter in Nigerian cities, typically featuring wide tree-lined avenues, large plots, and prominent government buildings, separated from the indigenous town.
- **Neighbourhood unit** : A concept developed by Clarence Perry organising residential areas around an elementary school, park, and local shops at a scale determined by walking distance.
- **New Urbanism** : A planning movement that emerged in the United States in the late 1980s, advocating compact, walkable, mixed-use neighbourhoods with interconnected street networks and clearly defined centres and edges.
- **Pruitt-Igoe** : A modernist public housing project in St Louis demolished in 1972, whose demolition became a symbol of the failure of modernist planning and the tower-in-parkland housing typology.
- **Three Magnets diagram** : Ebenezer Howard's diagram comparing the attractions of Town, Country, and Town-Country, used to argue that the Garden City synthesis offered the best of both environments.
- **Urban renewal** : The large-scale clearance of older urban housing and its replacement with modernist housing estates, implemented across industrialised countries from the 1950s to the 1970s.

Concept Check Questions 4

Objective questions

1. State two visual or spatial characteristics associated with the City Beautiful movement. (Linked to SLO 4.1)
2. State the three main components of Howard's Garden City concept. (Linked to SLO 4.2)
3. Fill in the blank: The Athens Charter identified four key urban functions: dwelling, work, recreation, and _____. (Linked to SLO 4.3)



4. State one principle of New Urbanism at the neighbourhood scale. (Linked to SLO 4.4)

Short-answer questions

5. Describe the City Beautiful movement, explaining its origins, its principal design characteristics, and its influence on colonial planning in Nigeria. (Linked to SLO 4.1)
6. Describe the concept of urbanization, explain what distinguishes it from urban growth, and identify its two main drivers in developing countries. (Linked to SLO 4.2)
7. Explain the central arguments of Jane Jacobs's critique of modernist planning, and describe how her four conditions for urban vitality contradicted the principles of the Athens Charter. (Linked to SLO 4.3)
8. Describe the stages of the typical urban design process and explain what each stage involves. (Linked to SLO 4.4)

Long-answer questions

9. Analyse the planning of Abuja as a new town, evaluating how far the Abuja Master Plan drew on Garden City and City Beautiful traditions and how far the reality of Abuja's development has conformed to or diverged from the original plan. (Linked to SLOs 4.1 and 4.2)
10. Evaluate the contribution of New Urbanism to contemporary urban design practice, explaining how its principles address the failures of modernist planning and assessing how far they can be applied in Nigerian urban contexts. (Linked to SLOs 4.3 and 4.4)

Answers to Concept Check Questions 4

Objective Questions

1. Any two: grand boulevards/formal axes; monumental civic buildings; ceremonial public spaces/parkways; Beaux-Arts composition; civic buildings on prominent sites.
2. Prevent sprawl, maintain greenbelt, provide food/recreation.
3. Circulation.
4. Any one: fine-grained mix; compact walkable scale; defined centre/edge; interconnected streets; civic buildings prominent.

Short-Answer Questions

5. City Beautiful (1890s US) drew on Beaux-Arts: boulevards, axes, civic buildings, public spaces. The 1893 Columbian Exposition showcased it. In Nigeria, colonial GRAs used wide avenues, government buildings, and segregation.
6. Howard's Garden City: ~32,000 residents, permanent greenbelt, common land ownership, local jobs, balance of urban and rural benefits.
7. Jacobs: modernist planning destroyed mixed uses, active streets, community life. Athens Charter's separation removed street activity; towers replaced enclosed streets; superblocks removed permeability. Her four conditions mixed uses, varied buildings, density, short blocks contradict modernism.



8. New Urbanism (1980s): response to sprawl/modernism. Principles: compact walkable scale, mixed uses/buildings/incomes, defined centre/edge, interconnected streets, civic buildings prominent.

Long-Answer Questions

9. **Basic:** Craft knife (card), snap-off cutter (thicker), scissors (paper), saws (wood/plastic).
Safety: sharp blades, rulers, mats, posture.
Value-added: Tool choice depends on material/thickness/cut. Scoring vs full cut vs saw cut.
Sharp blades and mitre box improve joints and finish.
10. **Basic:** Board/paper for walls/roofs; foam board for rigid parts; polystyrene for terrain; balsa/basswood for structure; extras for landscape/detail.

Answers to Pilot Questions 4

Part 4.1

1. That beautiful, monumental, and well-ordered civic environments would instil civic pride, social order, and moral uplift in urban populations
2. Daniel Burnham: produced the Plan of Chicago and the World's Columbian Exposition layout; Frederick Law Olmsted: landscape design for the Exposition and urban park systems
3. It was a temporary model city of gleaming classical buildings built in Chicago in 1893; it demonstrated the potential of ordered civic design and inspired a wave of City Beautiful planning projects across the United States
4. Segregation

Part 4.2

1. Limited size of around 32,000 residents; surrounded by a permanent greenbelt; land held in common ownership
2. Letchworth begun in 1903; Welwyn Garden City begun in 1920
3. Perry
4. To escape the congestion and ethnic associations of Lagos; to create a capital symbolizing national unity on a neutral central site
5. Suburbanization is growth on the outer edges of existing urban areas as people and businesses decentralize from the city core; counter-urbanization is the movement of population from urban to rural areas

Part 4.3

1. CIAM was an international organization of modernist architects founded in 1928; its most influential document was the Athens Charter of 1933
2. Push factors: agricultural decline and limited rural employment; rural poverty and limited access to services. Pull factors: concentration of formal employment and higher wages in major cities; access to better education and healthcare
3. Pruitt-Igoe



4. That modernist planning was destroying the mixed uses, fine grain, active streets, and community life that made cities safe and liveable
5. Because well-designed, well-governed, and adequately resourced cities can absorb rapid population growth while maintaining quality of life

Part 4.4

1. Any three of: Kevin Lynch on imageability and mental mapping; Gordon Cullen on townscape; Colin Rowe on urban collage; Rob Krier on urban space and the street; Leon Krier on reconstruction of the European city; Christopher Alexander on pattern language
2. Fine-grained mix of uses, building types, and incomes; walkable scale; clearly defined centre and edge; interconnected street network; civic buildings given prominent locations
3. Seaside and Celebration in Florida; Poundbury in Dorset, England
4. To develop frameworks responsive to local conditions of climate, culture, land tenure, and rapid growth rather than transplanting frameworks designed for different contexts
5. Public

References and Attributions 4

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Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Random House.

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Le Corbusier. (1943). *The Athens Charter*. Trans. A. Eardley. New York: Grossman, 1973.

Illustrations

Plate 4.1 A City Beautiful civic centre: monumental architecture, formal axes, and ceremonial public space AI-generated suggestion: "Photograph or illustration of a City Beautiful civic centre or boulevard showing monumental classical buildings arranged on a formal axis with wide ceremonial spaces and ornamental landscaping." Suggested OER search string: "City Beautiful civic centre boulevard monumental classical architecture OER photo."

Figure 4.1 Ebenezer Howard's Three Magnets diagram: Town, Country, and Town-Country AI-generated suggestion: "Reproduction or diagram of Ebenezer Howard's Three Magnets diagram comparing the attractions of Town, Country, and Town-Country, showing the Garden City as the synthesis." Suggested OER search string: "Ebenezer Howard Three Magnets diagram Garden City Town Country OER."

Figure 4.2 The CIAM modernist planning model: functional zoning and towers in parkland AI-generated suggestion: "Diagram illustrating the CIAM modernist planning model showing separated functional zones for dwelling, work, and recreation connected by high-speed roads,



with towers set in open parkland." Suggested OER search string: "CIAM modernist planning functional zoning towers parkland Athens Charter diagram OER."

Box 4.1 Jane Jacobs's conditions for urban vitality: a summary AI-generated suggestion: "Infographic text box summarising Jane Jacobs's four conditions for urban vitality: mixed primary uses, buildings of varying age, sufficient concentration of people, and short blocks." Suggested OER search string: "Jane Jacobs conditions urban vitality mixed uses short blocks concentration people OER."

Plate 4.2 Modernist tower estate versus traditional perimeter block street: a contrast of urban design philosophies AI-generated suggestion: "Image contrasting a modernist housing estate with towers in parkland against a traditional mixed-use urban street with perimeter blocks, active ground floors, and fine urban grain." Suggested OER search string: "modernist tower estate versus traditional perimeter block street urban design contrast OER photo."

Attributions All AI prompts are intended for use with generative tools to create original illustrations. Suggested search strings are provided to locate open educational resources (OER) for non-commercial academic use.

Course code: URP 308

Course title: Introduction to Urban Design and Planning

Course credit load: 2 Units

List of Series:

- Series 1: Introduction to Urban Design and Urbanization
- Series 2: Elements of Urban Design and Environmental Quality
- Series 3: Historical Evolution of Human Settlements
- Series 4: Civic Design Movements and Town Planning
- Series 5: Traditional Urban Design in Nigerian Cities

5 Traditional Urban Design in Nigerian Cities

Series outline

- **Part 1 (5.1): Yoruba Urban Traditions**
 - Sub-Part 5.1.1: Origins and structure of Yoruba cities
 - Sub-Part 5.1.2: The palace, the market, and the compound
 - Sub-Part 5.1.3: Ile-Ife, Oyo, and Ibadan as urban design cases
- **Part 2 (5.2): Hausa-Fulani Urban Traditions**
 - Sub-Part 5.2.1: Origins and structure of Hausa-Fulani cities
 - Sub-Part 5.2.2: The birni: walls, gates, and internal organization



- Sub-Part 5.2.3: Kano as an urban design case
- **Part 3 (5.3): Other Nigerian Urban Traditions**
 - Sub-Part 5.3.1: Benin City and the urban traditions of the Edo
 - Sub-Part 5.3.2: Igbo and other southeastern urban traditions
 - Sub-Part 5.3.3: Urban traditions of the Niger Delta and Middle Belt
- **Part 4 (5.4): Lessons of Traditional Urban Design for Contemporary Practice**
 - Sub-Part 5.4.1: Climate-responsive design in traditional Nigerian urbanism
 - Sub-Part 5.4.2: Density, mix, and the compound as a design typology
 - Sub-Part 5.4.3: Applying traditional principles in contemporary Nigerian urban design

The aim of this Series is to examine the traditional urban design traditions of Nigeria's major cultural regions, to describe the spatial principles they embody, and to identify the lessons they offer for contemporary urban design practice. We shall commence this Series by examining the Yoruba urban tradition, including the origins and structure of Yoruba cities and case studies of Ile-Ife, Oyo, and Ibadan. Next, we will explore the Hausa-Fulani urban tradition, examining the birni city form and Kano as a detailed case study. Following that, we will study the urban traditions of the Edo, Igbo, Niger Delta, and Middle Belt peoples. Finally, we will draw out the lessons of traditional Nigerian urbanism for contemporary practice.

We shall commence this Series by examining the origins and spatial structure of Yoruba cities, focusing on the palace, market, and compound as the organising elements of Yoruba urban form. Next, we will explore the Hausa-Fulani urban tradition, examining the birni, its walls and gates, and the case study of Kano. Following that, we will study the urban traditions of the Edo, Igbo, Niger Delta, and Middle Belt peoples. Finally, we will identify the design principles that traditional Nigerian urbanism embodies and examine their relevance and application in contemporary Nigerian urban design practice.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 5.1** describe the origins, structure, and spatial principles of Yoruba urban tradition,
- **SLO 5.2** explain the concept of urbanization and describe its nature, stages, and process in the Nigerian context,
- **SLO 5.3** describe the urban traditions of the Edo, Igbo, Niger Delta, and Middle Belt peoples,
- **SLO 5.4** identify the design principles of traditional Nigerian urbanism and explain their relevance to contemporary urban design practice.

5.1 Yoruba Urban Traditions

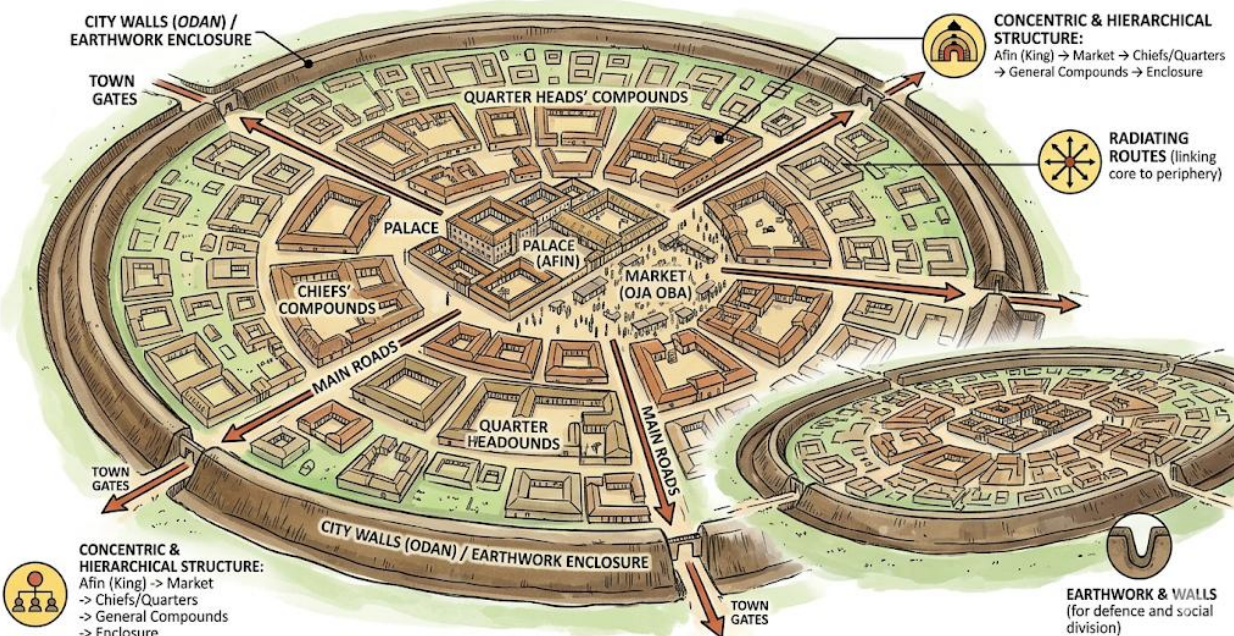


5.1.1 Origins and structure of Yoruba cities

The Yoruba people of southwestern Nigeria developed one of the most urbanised cultures in sub-Saharan Africa well before European contact. Yoruba cities, known as *ilu*, grew from sacred origin sites and political centres, typically associated with a divine king, the *oba*, whose palace stood at the physical and symbolic heart of the settlement. The structure of the traditional Yoruba city is concentric and hierarchical: the *oba*'s palace, or *afin*, occupies the centre; the *oja* or central market is located adjacent to the palace; the residential fabric of *agbo-ile*, or extended family compounds, radiates outward in zones organised by lineage and occupational quarter; and the whole city is enclosed by a defensive earthwork of ditches and ramparts. Routes radiate from the palace to the city gates, connecting the centre to the agricultural hinterland. This spatial organisation expressed the political cosmology of the Yoruba: the *oba* as the divine ruler whose authority radiates outward through layers of chiefs, lineage heads, and guild leaders to encompass the whole community.

Fill in the blank: The traditional Yoruba city is organised concentrically, with the oba's _____ at the physical and symbolic centre, surrounded by the market, residential compounds, and a defensive earthwork.

SPATIAL ORGANIZATION OF A TRADITIONAL YORUBA CITY (OER)



Short description: Plan or aerial image of a traditional Yoruba city showing the palace at the centre, surrounding chiefs' compounds, radiating routes, and the enclosing earthwork, illustrating the concentric and hierarchical spatial organization.

Figure 5.1 Spatial organization of a traditional Yoruba city: palace, compounds, and earthwork enclosure

5.1.2 The palace, the market, and the compound

Three spatial elements are central to the organisation of the traditional Yoruba city. The *afin*, or *oba*'s palace, is the largest single structure in the city, functioning as a royal residence,



administrative centre, court of justice, and sacred space. The palace is typically surrounded by the compounds of senior chiefs who serve as advisers, judges, and military commanders, forming an inner zone of political authority around the royal core. The oja, or central market, is located adjacent to the palace, reinforcing the connection between political and economic power and providing a space of intense social interaction at the heart of the city. The agbo-ile, or compound, is the basic residential unit of the Yoruba city: an extended family household of interconnected rooms arranged around one or more central courtyards, providing private outdoor space, security, and a strong sense of communal identity. The compound is a remarkably effective spatial typology: it houses large numbers of people at high density within a compact walled enclosure while providing shade, ventilation, and private open space, and it can grow incrementally as the family expands.

Fill in the blank: The _____, or central market, is located adjacent to the oba's palace in the traditional Yoruba city, reinforcing the connection between political and economic power.

5.1.3 Ile-Ife, Oyo, and Ibadan as urban design cases

Three Yoruba cities offer particularly instructive case studies for urban design analysis. Ile-Ife is regarded as the origin city of the Yoruba and the spiritual capital of the Yoruba world: it retains the most intact traditional urban core of any major Yoruba city, with the Ooni's palace and a network of shrines, sacred groves, and ceremonial spaces that express the deep integration of spiritual and civic life in Yoruba urbanism. Oyo was the capital of the Oyo Empire, the largest and most powerful of the Yoruba states: its urban form was shaped by its role as a military and administrative capital, with a vast palace complex, a distinctive council chamber, and a market of regional significance. Ibadan grew rapidly in the nineteenth century as a war camp that became a permanent city: its organic, unplanned growth on a series of hills produced a dense and intensely active urban fabric of compounds, markets, and winding lanes that contrasts with the more formally organised older Yoruba cities but demonstrates the adaptability of the compound typology under conditions of rapid growth.

Fill in the blank: Ile-Ife is regarded as the _____ city of the Yoruba and retains the most intact traditional urban core of any major Yoruba city.

Pilot questions 5.1

1. What is the role of the oba in the spatial organization of the traditional Yoruba city?
2. Name the three principal spatial elements of the traditional Yoruba city and state the function of each.
3. What is the agbo-ile and how is it organized spatially?

5.2 Hausa-Fulani Urban Traditions

5.2.1 Origins and structure of Hausa-Fulani cities



The Hausa city states of northern Nigeria developed a distinctive urban tradition shaped by Saharan trade routes, Islamic civilisation, and the political structures of the emirate system. The seven original Hausa city states, the Hausa Bakwai, were founded between the tenth and fourteenth centuries: Daura, Kano, Zazzau, Gobir, Katsina, Rano, and Biram. Each was an independent political unit organised around an emir's palace, a central Friday mosque, a major market, and a network of residential quarters. The Fulani jihad of the early nineteenth century, led by Usman dan Fodio, brought the Hausa city states under the authority of the Sokoto Caliphate and intensified the Islamic character of their urban culture. The Hausa birni, or walled city, is the characteristic form of the Hausa urban tradition: a large settlement enclosed within massive mud-brick walls, the ganuwa, pierced by gate towers that controlled entry, trade, and the movement of people and goods.

Fill in the blank: The seven original Hausa city states included Daura, Kano, Zazzau, Gobir, Katsina, Rano, and _____, collectively known as the Hausa Bakwai.



Short description: Plan or aerial image of a Hausa birni showing the palace and central mosque at the heart of the settlement, the market nearby, residential quarters organized by occupation and lineage, and the enclosing city wall with gate towers.

Figure 5.2 Spatial organization of a traditional Hausa birni: palace, mosque, market, quarters, and city wall

5.2.2 The birni: walls, gates, and internal organization

The spatial organisation of the Hausa birni reflects the social, economic, and political structure of Hausa-Fulani society. The enclosing ganuwa wall, sometimes several kilometres in circumference, defined the boundary of the city and provided defence. Gate towers, the kofar, controlled the principal entry points, each associated with a road, a weekly market, and a



residential quarter. The interior was organised into distinct residential quarters, the unguwoyi, associated with specific occupational groups or ethnic communities. At the heart of the birni, the civic core integrated political, religious, and economic authority: the sarki's palace, the Friday mosque, and the central market were grouped within the inner city, forming the spatial expression of Islamic governance. Wide ceremonial routes connected the palace to the main gates, while the residential fabric of mud-brick compounds with narrow lanes filled the areas between the civic core and the city wall.

Fill in the blank: The walls of the Hausa birni were constructed of sun-dried mud brick and are known as the _____.

5.2.3 Kano as an urban design case

Kano is the most important case study for traditional Hausa urbanism because it is one of the oldest, largest, and best-preserved of the Hausa city states. Its history as a trading and manufacturing centre dates back to the tenth century, and its dye pits, leatherwork, and textile industries made it famous across the Saharan trade network from the medieval period onward. The old walled city of Kano, the Kano Old City or Birni Kano, retains its traditional spatial structure: the Emir's palace at the centre, surrounded by the Friday mosque, the central market, and the Kurmi market, one of the oldest markets in West Africa. The residential fabric of the old city consists of dense mud-brick compounds separated by a network of narrow lanes. The city wall, portions of which survive, was originally fifteen kilometres in circumference and up to fifteen metres high in places. Kano demonstrates how a major commercial and manufacturing city could achieve high density, fine-grained mixed use, and a coherent civic identity within a distinctive architectural and urban tradition.

Fill in the blank: The Kurmi market in Kano, one of the oldest markets in West Africa, is located adjacent to the Emir's _____ at the heart of the traditional walled city.

Pilot questions 5.2

1. Name the seven original Hausa city states.
2. What role did Islam play in shaping Hausa urbanism?
3. Describe the civic core of the traditional Hausa city and explain what it reflects about Hausa society.
4. What makes Kano a particularly important case study for traditional Nigerian urbanism?

5.3 Other Nigerian Urban Traditions

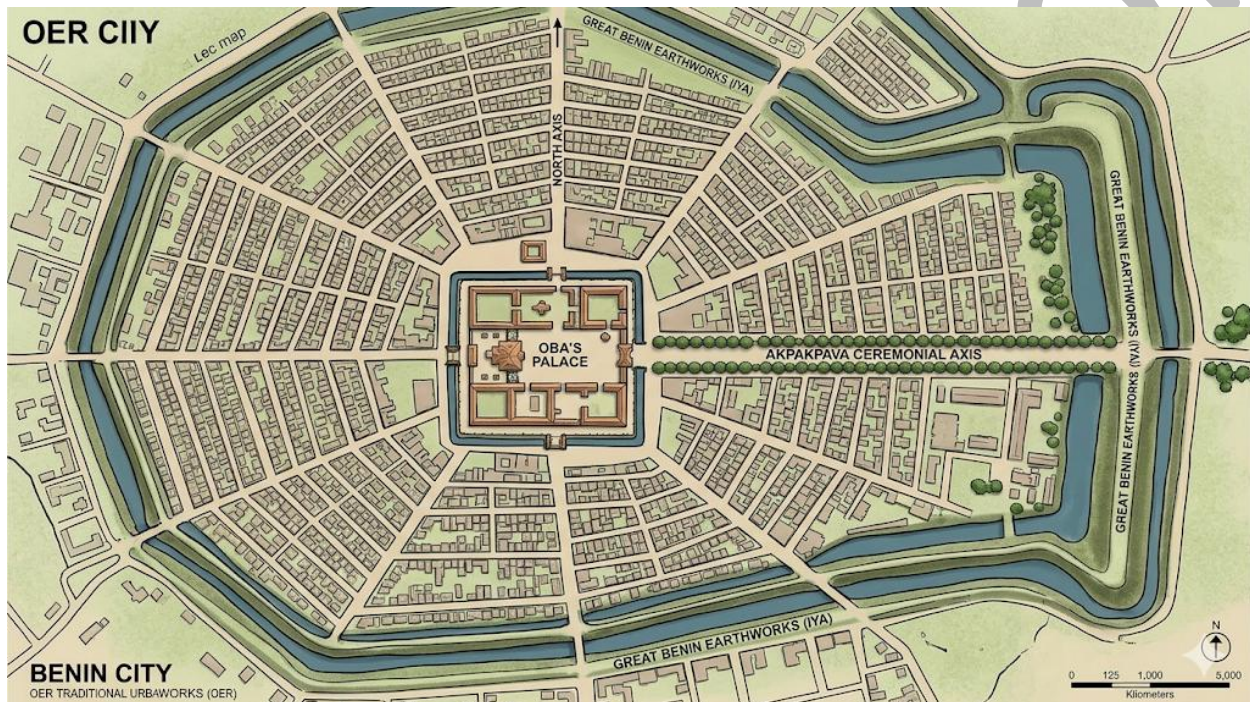
5.3.1 Benin City and the urban traditions of the Edo

The Edo Kingdom, centred on Benin City in present-day Edo State, produced one of the most distinctive urban forms in West African history. Unlike the organic street patterns of Yoruba and Hausa cities, Benin City was characterised by a more regular, planned spatial structure. The Oba's palace occupied a large compound at the heart of the city. A wide ceremonial avenue, the Akpakpava, ran from the palace through the city, serving as the principal axis of processional and civic life. Parallel and perpendicular residential streets branched from this axis, producing a



more regular urban fabric than the typical Yoruba or Hausa pattern. The city was surrounded by an extraordinary system of earthworks: a network of ditches and ramparts, the largest man-made earthworks in the world before the modern era, extending thousands of kilometres across the Benin Kingdom.

Fill in the blank: Benin City was defended by an extraordinary system of _____, a network of ditches and ramparts that represented the largest man-made earthworks in pre-modern history.



Short description: Plan or aerial image of the traditional urban core of Benin City showing the Oba's palace, the Akpakpa ceremonial axis, the parallel and perpendicular residential street pattern, and the surrounding earthwork system.

Figure 5.3 Traditional urban structure of Benin City: palace, ceremonial axis, and earthwork defences

5.3.2 Igbo and other southeastern urban traditions

The Igbo peoples of southeastern Nigeria traditionally organised themselves in dispersed settlement patterns rather than large nucleated cities, a pattern shaped by their acephalous, non-centralised political structures in which authority was distributed among age grades, title societies, and oracular institutions rather than concentrated in a single divine king. Settlement was typically in compounds of extended family groups, dispersed across the landscape at low densities, connected by paths and markets that served as meeting points for exchange and governance. The eke market, rotating among settlements on a four-day cycle, served as both the commercial hub and the principal public forum of Igbo social life. In the Igbo tradition, it is the market rather than the palace that serves as the primary generator of public space and urban identity. Other southeastern urban traditions, including those of the Ibibio and Efik peoples,



show distinctive approaches to waterfront urbanism and trade-based settlement patterns shaped by their positions on trade routes linking the interior to the coast.

Fill in the blank: The Igbo eke market, rotating among settlements on a four-day cycle, served as both the commercial hub and the principal _____ forum of Igbo social life.

5.3.3 Urban traditions of the Niger Delta and Middle Belt

The Niger Delta city states, including Bonny, Brass, Calabar, and Warri, developed a distinctive urban tradition shaped by their position as middlemen in the Atlantic trade routes. The waterfront was the dominant spatial feature of these settlements: trading houses and their wharves were oriented toward the creek or river to control access to trade goods. In the Middle Belt, the great diversity of ethnic groups and ecological zones produced an equally diverse range of settlement traditions. Hill-top settlements defended against raiding; valley settlements oriented to farming; and nucleated villages organised by clan each represent responses to specific environmental and political conditions. The Middle Belt demonstrates how settlement form is always a response to the particular geography, ecology, and social organisation of a people.

Fill in the blank: The dominant spatial feature of Niger Delta city states was the _____, with trading houses oriented toward the creek or river to control trade routes.

Tradition	Central Organising Element	Residential Unit	Street Pattern	Defensive Form
Yoruba	The Afin (Palace): Located at the center, facing the main market.	Compound (Agbo-Ile): Large rectangular structures with internal courtyards.	Radial: Major roads radiate from the palace to the city gates.	Concentric Walls: Earthen embankments and ditches surrounding the city.
Hausa-Fulani	The Emir's Palace & Central Mosque: The spiritual and political core.	Compound (Gida): High-walled, mud-brick structures with secluded inner areas.	Irregular/Organic: Maze-like alleys designed for shade and security.	Garu (Massive Walls): Thick mud walls with fortified gates (e.g., Ancient Kano).



Tradition	Central Organising Element	Residential Unit	Street Pattern	Defensive Form
Edo (Benin)	The Royal Court: An expansive complex of courtyards and galleries.	Linear Compounds: Structured around a central atrium/impluvium.	Grid-like: Wide, straight streets that were noted by early European visitors.	Benin Moat (Iya): One of the world's largest systems of earthworks.
Igbo	The Market (Oye/Afor/Eke/Nkwo): The economic and social hub.	Homestead: Dispersed family units surrounded by ancestral lands.	Dispersed/Decentralized: Connected by forest pathways rather than rigid streets.	Natural Barriers: Sacred groves, trenches, and "invisible" forest defense.

Box 5.1 Comparing traditional Nigerian urban forms: Yoruba, Hausa, Edo, and Igbo traditions
Short description: A comparison box summarising the key characteristics of four major Nigerian urban traditions: Yoruba, Hausa-Fulani, Edo, and Igbo, noting the central organizing element, residential unit, street pattern, and defensive form of each.

Pilot questions 5.3

1. What was distinctive about the urban form of Benin City compared to Yoruba and Hausa cities?
2. Why did the Igbo traditionally organize themselves in dispersed settlements rather than large nucleated cities?
3. What was the dominant spatial feature of Niger Delta city states and what function did it serve?
4. State one way in which the settlement traditions of Middle Belt peoples reflected their environmental conditions.

5.4 Lessons of Traditional Urban Design for Contemporary Practice

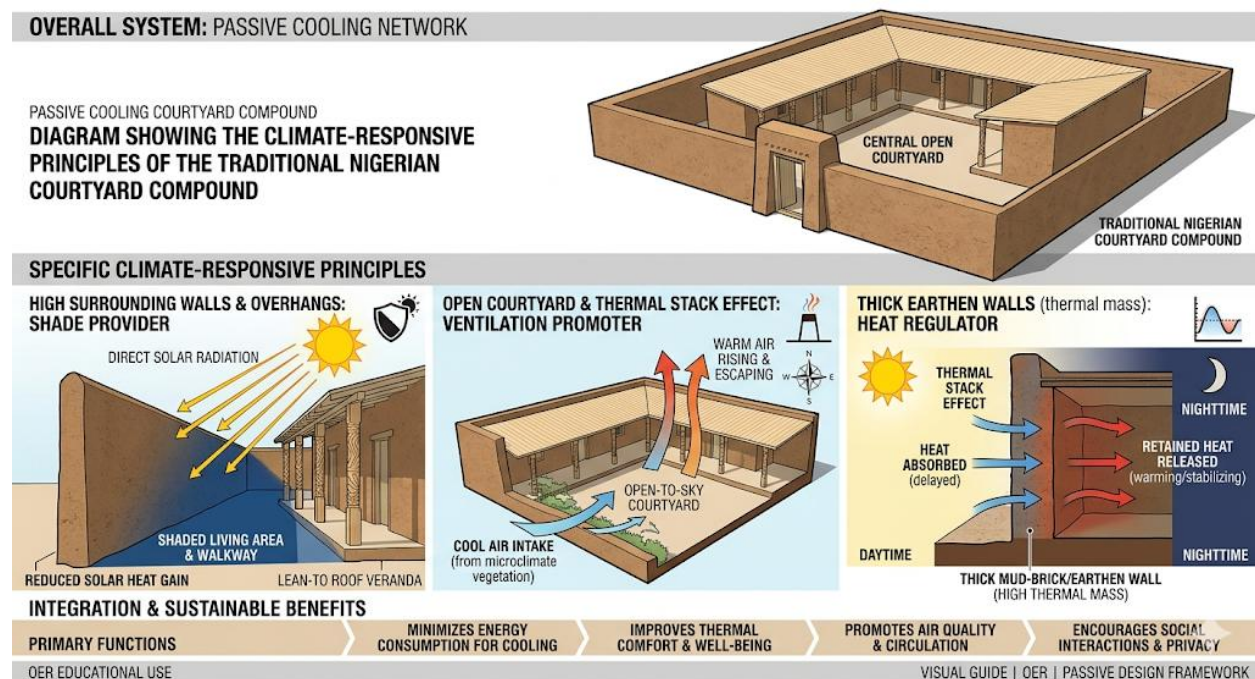
5.4.1 Climate-responsive design in traditional Nigerian urbanism

Traditional Nigerian architecture developed sophisticated responses to the demands of a hot tropical climate long before mechanical cooling was available. The courtyard compound, found across Yoruba, Hausa, and Edo urban traditions, provides a shaded microclimate within the



compound while the open courtyard promotes stack ventilation, drawing hot air upward and out through the open centre. Thick mud-brick walls provide thermal mass, absorbing heat during the day and releasing it at night, moderating the diurnal temperature swing. Deep verandas and high ceilings in Hausa domestic architecture promote cross-ventilation and shade sleeping and working areas from direct solar gain. Narrow lanes between compounds in Yoruba and Hausa cities provide shade for pedestrians throughout the day. The orientation of buildings and streets to capture prevailing winds is a consistent feature of well-adapted traditional settlement patterns. These strategies, developed through centuries of practical experience, offer directly relevant design principles for contemporary Nigerian architecture and urban design, which too often relies on energy-intensive mechanical cooling in buildings that ignore the climate-responsive lessons of indigenous traditions.

Fill in the blank: The thick mud-brick walls of traditional Nigerian buildings provide _____ mass, absorbing heat during the day and releasing it at night to moderate interior temperature.



Short description: Diagram showing the climate-responsive principles of the traditional Nigerian courtyard compound: high surrounding walls providing shade, the open courtyard promoting stack ventilation, and thick walls providing thermal mass in a hot dry climate.
Figure 5.4 Climate-responsive principles of the traditional Nigerian courtyard compound

5.4.2 Density, mix, and the compound as a design typology

The compound is one of the most adaptable and resourceful housing typologies in urban design. At its core, it achieves high residential density while preserving private outdoor space, natural light, and ventilation for every household within it. A single compound can house dozens of related families in interconnected but individually private rooms arranged around a shared courtyard, supporting the extended family structures that remain central to social life in Nigerian



cities. The compound also supports incremental growth: rooms can be added around the courtyard as the family grows and resources allow, without disrupting the existing structure. Small-scale commerce is readily integrated at the compound's street edge, with rooms opening directly to the street as shops or workshops. The fine-grained mix of residential, commercial, and craft uses within a single compound and at the scale of the neighbourhood quarter produces the street vitality and economic accessibility that contemporary planning often struggles to replicate. This combination of density, flexibility, social accommodation, climate responsiveness, and commercial integration makes the compound a highly relevant typology for contemporary low-rise, high-density housing design in Nigerian cities.

Fill in the blank: The compound achieves high residential _____ while preserving private outdoor space and supporting incremental growth as the family expands.

5.4.3 Applying traditional principles in contemporary Nigerian urban design

Contemporary Nigerian urban designers face the challenge of drawing constructively on traditional urban principles without romanticising or uncritically replicating them. Traditional urban forms developed in specific social, technological, and economic contexts that have changed profoundly: extended family structures are under pressure; building technologies have shifted from mud brick to concrete block; motor vehicles have transformed the requirements of street design; and the scale of urbanisation far exceeds anything traditional planning institutions managed. Nevertheless, a critical engagement with traditional principles offers specific insights. The compound typology can inform low-rise, high-density housing design that is both socially appropriate and climatically responsive. The fine-grained mix of uses that characterised traditional neighbourhood quarters produces the street vitality and economic accessibility that contemporary planning often fails to achieve. The civic core of palace, market, and mosque, or its contemporary equivalents, provides a model for creating neighbourhood identity and activity. And passive climate design strategies offer a path toward energy-efficient urbanism that is culturally grounded rather than imported.

Fill in the blank: Contemporary urban designers should engage _____ with traditional urban forms, drawing on their principles without simply replicating forms developed for different social and technological conditions.

Fill in the blank: The fine-grained mix of residential and commercial uses in traditional Nigerian neighbourhood quarters produces the street _____ and economic accessibility that contemporary planning often fails to achieve.

Series Summary

This Series has examined the traditional urban design traditions of Nigeria's major cultural regions and drawn out their implications for contemporary practice. We began with the Yoruba urban tradition, describing the concentric organisation of Yoruba cities around the palace, market, and compound, and examining Ile-Ife, Oyo, and Ibadan as case studies. We then explored the Hausa-Fulani urban tradition, examining the birni city form with its ganuwa wall, gate towers, civic core, and occupational quarters, and taking Kano as a detailed case study. We went on to study the urban traditions of the Edo, Igbo, Niger Delta, and Middle Belt peoples,



noting the distinctive spatial forms each produced in response to their particular social organisation, economy, and environment. Finally, we identified the key design principles of traditional Nigerian urbanism, including climate-responsive design, the compound as a density typology, and the lessons these offer for contemporary Nigerian urban design practice.

By engaging with these topics, you should now be able to describe the origins, structure, and spatial principles of the Yoruba and Hausa-Fulani urban traditions; describe the urban forms of the Edo, Igbo, Niger Delta, and Middle Belt peoples; identify the key climate-responsive and spatial design principles of traditional Nigerian urbanism; and explain how these principles can be critically applied in contemporary Nigerian urban design practice, as outlined in the Series Learning Outcomes.

Glossary of Terms

- **Afin** : The palace of the Yoruba oba, located at the physical and symbolic centre of the traditional Yoruba city around which the spatial organisation of the settlement radiates.
- **Agbo-ile** : An extended family compound in the Yoruba urban tradition, consisting of interconnected rooms and spaces arranged around one or more central courtyards, housing multiple generations of a lineage group.
- **Birni** : A walled Hausa city; the traditional form of the Hausa-Fulani urban settlement, enclosed by a mud-brick defensive wall with controlled gate points and an interior organised by occupational and residential quarters.
- **Compound** : The basic residential unit of traditional Nigerian urbanism; a walled enclosure housing an extended family group around a shared courtyard, providing private open space, security, and a setting for communal life.
- **Earthworks** : The system of ditches and ramparts constructed around Benin City and other Nigerian settlements for defensive purposes; the Benin earthwork system is one of the largest man-made structures in pre-industrial history.
- **Ganuwa** : The mud-brick defensive wall of the Hausa birni, pierced by gate towers known as kofar, each associated with a road, a market, and a residential quarter of the city.
- **Oba** : The divine king of the Yoruba or Edo city state, whose palace serves as the physical, political, and symbolic centre of the traditional urban settlement.
- **Oja** : The central market of the traditional Yoruba city, located adjacent to the oba's palace, serving as the commercial and social heart of the urban settlement.
- **Sarki** : The emir or ruler of the Hausa city state, whose palace, together with the Friday mosque and central market, forms the civic core of the traditional Hausa birni.
- **Thermal mass** : The capacity of building materials such as mud brick to absorb heat during the day and release it slowly at night, moderating interior temperatures in a hot climate.
- **Unguwoyi** : A residential quarter in the traditional Hausa city, typically organised by occupational group or ethnic community and named accordingly.

Concept Check Questions 5

Objective questions



1. Name three principal spatial elements of the traditional Yoruba city and state the function of each. (Linked to SLO 5.1)
2. State two defining spatial features of the Hausa birni. (Linked to SLO 5.2)
3. Fill in the blank: The civic core of the traditional Hausa city integrates political, religious, and economic authority through the combination of the emir's palace, the Friday mosque, and the central _____. (Linked to SLO 5.2)
4. State two climate-responsive design strategies found in traditional Nigerian architecture. (Linked to SLO 5.4)

Short-answer questions

5. Describe the spatial organisation of the traditional Yoruba city, explaining the role of the palace, the market, and the agbo-ile compound in structuring the urban fabric. (Linked to SLO 5.1)
6. Describe the spatial structure of the Hausa birni, explaining the functions of the ganuwa wall, the kofar gate towers, the civic core, and the occupational residential quarters. (Linked to SLO 5.2)
7. Explain why Igbo settlement traditions differed from Yoruba and Hausa traditions, and describe how the eke market served as the primary generator of Igbo public space and civic life. (Linked to SLO 5.3)
8. Describe how the traditional Nigerian courtyard compound can be reinterpreted as a climate-responsive, high-density housing typology for contemporary Nigerian cities. (Linked to SLO 5.4)

Long-answer questions

9. Analyse the spatial principles common to the major Nigerian urban traditions, explaining what each tradition reveals about the relationship between spatial form, social organisation, and environmental conditions in traditional Nigerian urbanism. (Linked to SLOs 5.1, 5.2, and 5.3)
10. Evaluate the relevance of traditional Nigerian urban design principles to contemporary practice, explaining which principles are most applicable, how they should be adapted, and what risks arise from romanticising traditional forms without critical engagement. (Linked to SLO 5.4)

Answers to Concept Check Questions 5

Objective Questions

1. **Afin (palace):** political/symbolic centre; **Oja (market):** commercial/social centre; **Agbo-ile (compound):** basic residential unit.
2. Civic core (palace, Friday mosque, market) integrates political, religious, and economic authority in Islamic urbanism.
3. **Agbo-ile** = compound housing extended family.
4. Climate-responsive features: courtyard microclimate, mud-brick thermal mass, verandas/high ceilings for ventilation, narrow shaded lanes.

Short-Answer Questions



5. Yoruba city: concentric around **oba's palace**; oja market adjacent; agbo-ile compounds by lineage/occupation; enclosed by earthwork; farmland outside.
6. Hausa city (birni): enclosed by **ganuwa wall**; gates (**kofar**) link to roads/markets/quarters; civic core = emir's palace, Friday mosque, central market; residential quarters by occupation/ethnicity.
7. Migration push: rural poverty, limited jobs, poor services. Pull: urban jobs, higher wages, better schools/healthcare.
8. Urban design process: site/context analysis → concept development → detailed design → consultation/engagement.

Long-Answer Questions

9. **Basic:** Yoruba = concentric, palace + market core, compounds by lineage, earthwork enclosure. Hausa = walled, palace + mosque + market core, occupational quarters. Both integrate political, religious, economic authority.
Value-added: Compare systematically—shared civic core, lineage/occupation-based quarters; Yoruba radial/organic vs Hausa walled/formal gates; each reflects distinct social/political/environmental contexts.
10. **Basic:** Traditional Nigerian urbanism offers lessons—courtyard compounds (density, climate control, incremental growth), fine-grained lanes (walkability/shade), civic core (identity).
Value-added: Critical application—avoid romanticisation; extract transferable principles (climate, spatial organisation) but adapt to modern needs (higher density, vehicles, building standards).

Answers to Pilot Questions 5

Part 5.1

1. The oba is the divine king whose palace stands at the physical and symbolic centre of the city, around which the entire spatial organization radiates
2. The afin or palace as political and symbolic centre; the oja or market as commercial and social centre; the agbo-ile or compound as the basic residential unit
3. An extended family compound of interconnected rooms arranged around one or more central courtyards, providing private outdoor space, security, and a sense of communal identity
4. Origin

Part 5.2

1. Daura, Kano, Zazzau, Gobir, Katsina, Rano, and Biram
2. Islam introduced the mosque as a major civic building type, influenced gender-segregated residential organization, and connected Hausa cities to the wider world of Islamic trade and urban culture
3. Ganuwa



4. The civic core of the sarki's palace, the Friday mosque, and the central market reflects the integration of political, religious, and economic authority characteristic of Islamic urbanism
5. Kano is important because it is one of the oldest, largest, and best-preserved Hausa city states, with a history of trade and manufacture dating back to the tenth century; it retains its traditional spatial structure of palace, mosque, market, and walled residential quarters

Part 5.3

1. Benin City had a more regular parallel and perpendicular street pattern and a wide ceremonial axis from the palace, in contrast to the organic street patterns of Yoruba and Hausa cities
2. The eke market, rotating among settlements on a four-day cycle, served as the primary commercial and civic forum of Igbo social life, substituting for the permanent centralised public space found in Yoruba and Hausa cities
3. Earthworks
4. The waterfront was the dominant spatial feature, with trading houses and their wharves and warehouses oriented toward the creek or river to control trade routes
5. The risk is that designers copy the visual appearance of traditional forms without understanding the spatial logic, social organisation, and environmental conditions that made them effective, producing pastiche that lacks the functional depth of the original

Part 5.4

1. Any two of: the courtyard providing shaded microclimate and stack ventilation; thick mud-brick walls providing thermal mass; deep verandas and high ceilings promoting cross-ventilation; narrow lanes between compounds providing shade and visual urban quality
2. It houses large extended family groups at high density within a compact walled enclosure while providing private courtyard space, supporting incremental growth, and integrating small-scale commerce at its edges
3. Any two of: the courtyard compound as a climate-appropriate density typology; the civic core as a generator of neighbourhood identity; fine-grained mixed use producing street vitality; narrow shaded lane networks; passive climate design strategies
4. Because a large proportion of urban development in Nigeria occurs outside formal planning frameworks, and urban design that ignores this reality will fail to engage with or improve the conditions of the majority of urban residents
5. Resources

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