

Unit 23: Urban Environment

Unit code:	J/602/5995
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

This unit enables learners to develop a knowledge and understanding of the essential characteristics and processes shaping urban environments and the implications of these processes. Learners will also develop an understanding of the morphology of urban settlements, urban land use, the impact of urban settlement and the effects of change.

● Unit introduction

Urban environments present a unique and intense interaction between humans and the natural environment. Cities and urban landscapes usually cover a small proportion of most nations and usually support most of their populations. This intense interaction is shaped by various factors – social, economic, political, technological and environmental. The population of urban settlements is more likely to continue to grow. Therefore, a better understanding of this landscape is vital to ensure a sustainable environment for living.

As this dynamic and intense interaction continues to grow, there is a need to consider:

- functions and characteristics of urban settlements
- the process of urbanisation
- land use changes taking place within urban landscapes
- factors shaping the urban landscape
- the relationship between urban settlements and the neighbouring environment
- the impact of urban settlements.

An understanding of these issues is essential not only for people working in the environment and conservation sector, but also for different sectors across the economy due to interaction and relationships with urban environments.

This unit will provide learners with knowledge and understanding of functions and patterns of urban environments and the processes shaping the urban landscape. This, in turn, will enable learners to study the characteristics and value of urban environments, together with the processes that affect them. They will also gain knowledge of the impact of urban development on the environment, and of the strategies used to counter the associated problems.

● Learning outcomes

On completion of this unit a learner should:

- 1 Know the roles and characteristics of urban settlement
- 2 Understand patterns of urban environment
- 3 Understand processes involved in changing urban environment
- 4 Understand the issues associated with urban development.

Unit content

1 Know the roles and characteristics of urban settlement

Settlements: origins and definition; hierarchies; characteristics

Urban environment: types; physical characteristics; location, area and population; difference between rural and urban settlements

Roles: relevance of urban environments (seat of power and concentration of economic activities); urban environment activity group eg power and influence, finance and business, creative, cultural and tourism related activity groups

2 Understand patterns of urban environment

Structure: layout; transport networks; land use; Central Business District (CBD) and old inner city area; measuring settlement pattern

Urban forms: urban land use models; models of urban structure; housing types and residential environments; spatial patterns in urban settlements eg evolving urban forms (privatopia, cultured heteropolis, theme park-city, fortified unit, interdictory spaces), sustainability and urban forms (technopolis, ecunomopolis, anthropopolis)

Relating forms to function: interrelationships between urban forms and functions; historical development; changes in urban form and function

3 Understand processes involved in changing urban environment

Relationships across urban environment: interrelationships – function, structure and change in urban landscape

Urbanisation: urban development; suburbanisation; centralisation; decentralisation; model of urban growth; changes in inner city areas and CBD; changes in rural-urban fringe; trends in urban growth and distribution

Urban development corporations: enterprise zones; aims eg urban renewal, redevelopment, improvement, regeneration; impact of development corporations eg job creation, crime reduction, economic revitalisation, rebranding, improving access

4 Understand the issues associated with urban development

Impacts of urban ecosystem: urban ecology; urban metabolism eg linear and circular metabolism; urban ecological footprints eg material consumption, water usage, food, waste generation and disposal, pollution; countryside as a supplier

Inner city issues: problems eg deprivation, crime, delinquency; gentrification; gender and equality; movement and transportation; causes; effects; management strategies (infrastructure development, regeneration and renewal, rebranding)

Impacts of global processes on urban structure: counterurbanisation; digital city; global processes and urban structure; delocalisation

Ecological hazards and urban environments: input and output analysis; natural hazards; pollution; health; leisure and recreation; competition and conflicts; environmental change; achieving sustainability (new model of urban planning)

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 describe the role of urban environment for society [IE4]	M1 discuss the importance of urban environment in relation to different activity groups	D1 discuss how structure and function influence the development of a selected urban environment
P2 describe the structure of a named urban environment using relevant terminology [IE6]	M2 explain the structure and functions of a selected urban environment	
P3 explain using relevant terminology, the types of urban forms, including their characteristics [IE4]		
P4 explain urbanisation processes and their interaction within the urban environment [IE6]	M3 explain the processes or activities that could influence changes within urban environments	D2 evaluate management strategies to reduce impact and enhance the value of a given urban environment.
P5 explain the aims of a named urban development corporation [IE3]		
P6 explain the impact of a named urban development corporation [IE3]		
P7 explain the impact of urban settlements on neighbouring environments [IE6]		
P8 summarise, using relevant terminology, issues associated with urban environments [IE1]	M4 assess the impact of linear and circular urban metabolism on people, including the environment.	
P9 explain the impact of global processes on urban structure. [IE3]		

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

Tutors delivering this unit have opportunities to use a wide range of techniques. Lectures, seminar presentations, site visits, discussions, guest speakers, internet and/or library-based research and personal and/or industrial experience can all be used to motivate and maintain learners' interest.

Health and safety issues must be addressed by tutors concerning outdoor aspects of this unit, especially when undertaking site visits.

Learning outcome 1 should be delivered in the context of providing 'the whole picture' in relation to the benefits and role of urban environment and the types and characteristics of urban settlements. Learners should appreciate how physical characteristics of the environment relate to the characteristics of urban settlement and understand the different groups of activities offered by urban environment. Links can then be made to the roles of different cities across the globe.

Simple pattern analysis can produce a range of information, which then provides essential evidence for learning outcome 2. The effect of land use zoning, transport networks and housing types on spatial pattern of the urban environment can be studied using case studies from different regions around the world. Examples of different urban forms could be examined in class (using visual aids or ICT facilities) and working individually or in groups, learners could analyse patterns of urban environment (this will include identification and description). The use of ICT facilities (for example Google Earth, digital maps and GIS applications) would be beneficial for the delivery of this learning outcome. Practical study can be incorporated into the topics to good effect.

Formal lectures, discussions, guest speakers and case studies of different city development agencies/corporations can be used to deliver learning outcome 3. Processes in the development and growth of urban environment should be explained and consequently linked with the work of urban development corporations/agencies as well as the three themes – change, structure and function of urban environment. There should be an effort to help learners examine these processes with the aid of historical documents, data and information.

Learning outcome 4 addresses the problems associated with urban environment and their linkages to sustainability. There are many audiovisual materials, case studies, databases and maps on the impact of humans on the environment, all of which can be linked to the demand of city dwellers. Tutors should focus not only on environmental impacts but also on the social and economic impacts of urban environment within the immediate, neighbouring and distant environments. Investigation could be carried out to examine different problems across different urban environments and across different regions of the world. Effort should also be made to give learners an understanding of attempts being made to achieve sustainability (ie strategies used in management) within urban environment (how to plan, shape and deal with changes in urban environments).

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and assessment
Introduction and overview of the unit and relevance to different sectors of the economy.
Assignment 1: Urban Environment (P1, M1)
Tutor introduces the assignment brief.
Theory sessions: tutor introduces settlements and their characteristics. Activities could include group/individual identification of settlement types and their characteristics using Google images of settlements from different regions across the globe.
Theory sessions: discussion on the types of urban environments and their characteristics as well as differences to rural environments. The roles/functions and benefits of urban environments. Class activity could include research and presentation on major cities across the world – their roles/functions and characters. Activity could also include the exploration of a different part of the city to classify it by its function to the whole city (functional zones identification).
Personal study and research activities.
Individual tutorial support.
Assignment 2: Form and Function in Urban Environment (P2, P3, M2, D1)
Tutor introduces the assignment brief.
Theory sessions: introduction of urban layout and land uses in urban environments. Discussion on spatial patterns of urban settlements. Tutor explains the urban land use models and their relevance in land use zoning, transport network and urban structure. Further research into different segments of urban environment and their characteristics could also be used to help learners understand land uses, zoning and function. (This could be in the form of a field study or ICT-based research using GIS facilities.)
Theory sessions: introduction of urban structure models, discussion on the relationship between these forms and human dwellings as well as function. Tutor explains how urban forms/growth and development can influence sustainable development.
Theory sessions: tutor explains the evolution of urban environments using different case studies. Group/individual research activity could help learners gain ownership of how urban structure changes in relation to the function it serves.
Personal study.
Individual tutorial support.
Assignment 3: Urban Processes (P4, P5, P6, M3)
Tutor introduces the assignment brief.
Theory sessions: discussion on process within landscapes focusing on relationships between structure, function and change. Tutor explains urban growth model and introduces processes such as centralisation, decentralisation and suburbanisation.
Theory sessions: tutor explains the process of urbanisation and highlights urban planning and the role of urban development corporations/agencies within urban environment. Discussion on urban renewal as well as the relevance of redevelopment, regeneration and improvement in changing urban environments. Exploration of the changes in inner city landscape as well as trends and distribution of urban growth. Brief discussion on changes in rural-urban interface.
Class activity could include group/individual class presentation of research on evaluation of urban development project or activities.

Topic and suggested assignments/activities and assessment

Guest speaker from an urban/city development corporation/agency: role, aims and impact of UDC.

Personal study.

Individual tutorial support.

Assignment 4: Managing Urban Environment (P7, P8, P9, M4, D2)

Tutor introduces the assignment brief.

Theory sessions: discussion on the ecology of urban environment, habitats and their importance within urban landscapes. This discussion should also include an explanation of the concept of urban metabolism. Class activity could include personal study of consumption patterns and waste generation to help learners appreciate the impact of urban environment on resource demand across the globe. Research into the resource aggregate demand of a selected urban environment could help learners gain ownership of the significance of urban metabolism.

Theory sessions: discussion on the impact of urban environments at national, regional and global scales and the significance of neighbourhood effect of urban environment on the countryside.

Theory sessions: discussion on the problems of urban environments (cause and effects), highlighting economic, social and environmental problems. Case studies can be used to help learners appreciate these problems. There should also be a discussion on the solutions and strategies for managing these problems. The use of audiovisual material as well as field studies/surveys could enable learners to explore issues such as pollution, air quality, environmental quality, crime, and transportation/accessibility. There are ICT resources to help learners gain an understanding of socio-economic and environmental problems within their neighbourhood. This could be used to start a class discussion and motivate learners to evaluate quality of urban environments and come up with solutions.

Theory sessions: tutor introduces global process affecting urban environment and highlights the impact of natural hazards and environmental changes.

Theory sessions: managing urban environment for sustainable development, future trends in urban growth and urban planning.

Personal study.

Individual tutorial support/assessment workshops.

Unit review and evaluation.

Assessment

For P1, learners need to describe the role of urban environment for society. The description should include all the relevant roles the urban environment plays in society.

For M1, learners need to discuss how the urban environment provides opportunities for different activities and human development, with examples to clarify their points. The use of city or urban settlement case studies is highly encouraged. Evidence could be in the form of an illustrated report, illustrated magazine article or information leaflet.

For P2 and P3, learners are expected to show an understanding of structure and urban forms. For P2, learners need to describe the structure of a designated urban environment, including the characteristics of the identified land uses and zones. For P3, learners need to explain the types of urban forms and their characteristics, providing evidence or reasons to support their explanation. For these two criteria, the use of relevant terminology is very important. Evidence for P2 could be a short report and, for P3, an illustrated article for *National Geographic* magazine.

For M2, learners need to give a detailed explanation of the structure and functions of a selected urban environment. A selection of case studies could be put to good use here. Tasks could start with the structures/

forms evident from the selected case study and continue with the function performed by these structures or forms. The discussion should include the site, location, area, population and other physical characteristics of the urban environment. Learners should then relate this to its functions within a region or its immediate neighbours. Evidence for this criterion could be in the form of a report or information leaflet.

For D1, a historical perspective should be explored, highlighting how changes in structure and function of the urban environment have also shaped development/growth. Case studies are useful in this respect and attention could be paid specifically to major cities.

For P4, P5 and P6, learners need to demonstrate an understanding of interrelationships between processes within urban environments as well as the aims and impact of development agencies and corporations within the scope of urban landscape. For M3, learners should produce more independent work in relation to how various processes and activities interact to influence urban environment. Evidence could be in the form of a presentation with notes. For P4, learners need to explain urbanisation processes within the urban environment and how they interact. For P5, learners need to explain the aims of a named urban development corporation/agency. Evidence could be linked to that for P6, where learners need to explain the impact of the named urban development corporation/agency.

For P7, P8 and P9, learners need to explore local, national, regional and global impacts of urban settlements. Therefore, learners are expected to show knowledge of the problems and issues associated with urban development. Evidence for these criteria could be in the form of a short report, with clear examples. For P7, learners need to explain the impact of urban settlements on neighbouring environments. For P8, learners should summarise the issues associated with urban environments. Evidence could be in the form of a categorisation and brief explanation of each of the issues identified for each category. For P9, learners need to explain the impact of global processes on urban structure, ie looking at how global change is effecting local changes. Learners should give reasons and/or evidence to support their explanation.

For M4, learners need to assess the two models of urban metabolism and their impact on society and the environment. This could be linked to D2, where learners need to evaluate management strategies employed to deal with social, economic and environmental problems within a given urban environment. This should enhance learners' understanding of sustainability issues relevant to urban environments. Evidence could be in the form of extended magazine articles or illustrated reports.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, M1	Urban Environment	As a regional development officer you have been asked to produce a report on urban environment.	Report.
P2, P3, M2, D1	Form and Function in Urban Environment	You are a science reporter producing an article on forms and functions of urban environment.	Illustrated article/report.
P4, P5, P6, M3	Urban Processes	In your role as presenter at an urban development planning meeting you have to present information on urban processes and change.	Illustrated presentation with notes. Observation record.
P7, P8, P9, M4, D2	Managing Urban Environment	You are a sustainability officer presenting a report on issues in urban environment.	Report.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Environmental Sustainability sector suite. This unit has particular links with the following units in the BTEC Environmental Sustainability suite:

Level 3
Sustainable Communities
Science for Environmental Technicians
The Business Environment
Waste Management
Pollution Control and Management
Scientific Practical Techniques
Geospatial Technology and Sustainable Development

Essential resources

Learners need access to basic equipment to carry out urban environmental quality surveys, for example noise meter, water testing kit, GPS unit and identification books and keys. Generally, access to equipment for environmental monitoring and measurement will be adequate and could be adapted to meet various needs.

Digital maps, ICT (with GIS facilities) and internet access should be available to underpin learners' knowledge of the issues covered in this unit.

Tutors delivering this unit should have experience in human geography and environmental studies.

Employer engagement and vocational contexts

Learners need access to a variety of information sources (maps, data etc) on urban environments. Centres should develop good links with local urban development corporations, government agencies, and councils. Guest speakers can be invited to discuss issues particular to the locality. Visits to different sections of an urban environment should be arranged.

Indicative reading for learners

Textbooks

Boeker E and van Grondelle R – *Environmental Science: Physical Principles and Applications* (Wiley-Blackwell, 2001) ISBN 9780471495772

Carr S, Lane A and Tait J – *Urban Habitats* (Hodder Arnold, 1993) ISBN 9780340533697

Chiras D D and Reganold J P – *Natural Resource Conservation: Management for a Sustainable Future* (Pearson, 2010) ISBN 9780132251389

Fowler C W – *Systemic Management: Sustainable Human Interactions with Ecosystems and the Biosphere* (OUP Oxford, 2009) ISBN 9780199540969

Girard L F and Nijkamp P (Editors) – *Cultural Tourism and Sustainable Local Development* (Ashgate, 2009) ISBN 9780754673910

Greene R and Pick J – *Exploring the Urban Community: A GIS Approach* (Pearson, 2005) ISBN 9780130175762

Jenks M and Jones C (Editors) – *Dimensions of the Sustainable City* (Springer, 2009) ISBN 9781402086458
 Lechner F J – *Globalization: The Making of World Society* (Wiley-Blackwell, 2009) ISBN 9781405169059
 Waugh D – *Geography: An Integrated Approach* (Nelson Thornes, 2009) ISBN 9781408504079
 Waugh D – *Geography: An Integrated Approach: Supplement* (Nelson Thornes, 2005) ISBN 9780748794621
 Waugh D – *The New Wider World* (Nelson Thornes, 2003) ISBN 9780748773763
 Woodfield J – *Ecosystems and Human Activity* (A-level Geography Series) (Collins Educational, 2000) ISBN 9780003266528

Websites

BBC	www.bbc.co.uk
Department for Environment, Food and Rural Affairs	www.defra.gov.uk
English Partnerships – Urban Development Corporations	www.englishpartnerships.co.uk/udcs.htm
Environment Agency – What's in your backyard?	www.environment-agency.gov.uk/homeandleisure/37793.aspx
European Environment Agency – Urban Environment	www.eea.europa.eu/themes/urban
Ordnance Survey Education Page	www.ordnancesurvey.co.uk/oswebsite/education
UK National Statistics: People and Places	www.statistics.gov.uk/hub/people-places/index.html
UNEP Urban Environment Unit	www.unep.org/urban_environment
A vision of Britain through time	www.visionofbritain.org.uk
WHO Urban Environment Directory	www.who.int/heli/risks/urban/urbanenv/en/
World Resources Institute	www.wri.org
Worldmapper – seeing the world in a different way	www.worldmapper.org/textindex/text_index.html

Journals

Dear M and Flusty S (1998) – Postmodern Urbanism. *Annals of the Association of American Geographers*, 88, 50-72
 Hall P (1999) – The future of cities. *Computers, Environment and Urban Systems*, 23, 173-185
 Sui D Z (1998) – GIS-based urban modelling: practices, problems, and prospects. *International Journal of Geographical Information Science*, 12, 651-671

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
Independent enquirers	describing the role of urban environment for society describing the structure of a named urban environment explaining, using relevant terminology, the types of urban forms and their characteristics explaining urbanisation processes and their interaction within the urban environment explaining the aims and impact of a named urban development corporation explaining the impact of urban settlements on neighbouring environments summarising, using relevant terminology, issues associated with urban environments explaining the impact of global processes on urban structure.

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Creative thinkers	participating in group work or class discussions, generating ideas and exploring possibilities and asking questions to extend their thinking in relation to urban environment and human activities
Reflective learners	carrying out field surveys to explore ecology of urban environment assessing themselves and others, identifying opportunities and achievements presenting findings from research in relevant ways
Team workers	adapting their behaviour on site visits to suit different roles and situations including leadership roles
Self-managers	working on assessments, organising their time and resources, prioritising actions and dealing with competing pressures, including personal and work-related demands
Effective participators	choosing a suitable urban environment for assessments in discussion with their tutor.

● Functional skills – Level 2

Skill	When learners are ...
ICT – using ICT	
Select, interact with and use ICT systems safely and securely for a complex task in non-routine and unfamiliar contexts	researching information on patterns of urban environment and functional zone analysis
ICT – finding and selecting information	
Use appropriate search techniques to locate and select relevant information	researching information on urban structure, pattern and functions
ICT – developing, presenting and communicating information	
Enter, develop and refine information using appropriate software to meet requirements of a complex task	producing an urban environment report
Combine and present information in ways that are fit for purpose and audience	preparing a presentation on urban processes
Mathematics – interpreting	
Interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations	carrying out input-output analysis (urban metabolism)
Draw conclusions and provide mathematical justifications	carrying out input-output analysis (urban metabolism)
English – Speaking, Listening and Communication	
Make a range of contributions to discussions in a range of contexts, including those that are unfamiliar, and make effective presentations	discussing the impact of urban environment
English – Reading	
Select, read, understand and compare texts and use them to gather information, ideas, arguments and opinions	researching major global cities, their roles and character
English – Writing	
Write a range of texts, including extended written documents, communicating information, ideas and opinions, effectively and persuasively	producing reports on managing urban environment.