

SAMPLE ASSIGNMENT BRIEF

UNIT 2 - DESIGN THE BUILT ENVIRONMENT: APPLYING DESIGN PRINCIPLES



Construction and the Built Environment

Level 1 Unit 2 Design the built environment: applying design principles (CBE 1U2)

Sample Assignment Brief

(Approximately twelve hours under controlled conditions)

Evidence requirements

You must produce evidence of achievement of the assessment criteria. Upon completion of this unit you should:

- 1 know the factors that affect design and how designs achieve their function
- 2 understand the design cycle and the application of design principles to the design of a simple building or structure
- 3 know about career opportunities in the design of the built environment.

In order to attain a high mark in this unit, you must address all of the above. A table showing how the Assessment Criteria topics are weighted should be shown to learners in order that they understand how the final mark is determined.

You are required to complete three assessed tasks to achieve the assessment criteria which are set out in the marking grid for the unit.

Scenario

A large national developer has purchased a plot of land near to a primary and secondary school. Close to the development site are: residential housing, a large public park and sheltered housing for the elderly. The area is served well with frequent public transport to and from the city centre. The developer is going to erect 155 dwellings; these will consist of detached, semi detached, town houses, apartment block and a small number of bungalows. Services to the site are in place (water, electricity, gas and drainage) and work has been completed to form an access road to and from the construction site. The proposed development site was previously home to an old factory (now demolished) and there are plans to build a small number of retail units and a pub/restaurant.

The development site has a number of trees with Tree Protection Orders (TPOs) on them. These orders make it an offence to remove, prune or damage protected trees even if they are on private land. If you want to carry out work on a protected tree, you will need permission from the local authority.

Task 1

Factors that affect design

You can show this evidence by completing the following:

Identify and describe the main factors that influence the design process, for example consider some of the following: good transport links (roads and railways), existing waterways, lakes and ponds, community needs, area and shape of available land. Simple design sketches, drawings, photographs and other images may be used to support this unit of work.

Describe how the design of buildings and other structures can be affected by the need for them to be fit for purpose, environmentally friendly, sustainable and affordable.

Considering the scenario, what impacts do you think the increase in dwellings and additional units will have on the on the local roads, infrastructure and transport services? What can be done to minimise this impact?

Also consider the cost of land, materials and labour. How do you think the difficult financial times we face will have an affect on these factors and therefore on the overall design of the buildings?

Task 2

The design cycle and design principles

You can show this evidence by completing the following:

Consider the uses of the buildings and structures for this development; is there a good balance of types of buildings?

Consider how the following would need to be planned for:

- design solutions (style)
- materials (consider what may already be in the area)
- sustainability issues

Task 3

Career opportunities in construction design

You can show this evidence by completing the following:

There are many job roles within the construction design team. Through research, look at different careers and progression routes that are available in the design sector of construction and how the job roles and responsibilities interact.

Weighting of assessment criteria topics

Assessment criteria topic	Weighting	Marks
1 Factors that affect design	25%	12
2 The design cycle and design principles	62.5%	30
3 Career opportunities in construction design	12.5%	6
Total	100%	48

Assessment grid

Assessment criteria topic	Band 1	Band 2	Band 3
	The learner has:		
1 Factors that affect design	<p>0 – 4 marks</p> <p>Demonstrated a basic understanding of the factors that affect design by correctly identifying a limited number of factors, briefly describing the issues that should be addressed in the design cycle.</p> <p>Related these factors and issues to the design of a simple building or structure in a superficial but generally accurate fashion.</p>	<p>5 – 8 marks</p> <p>Demonstrated a partial understanding of the factors that affect design by correctly identifying many of the factors, clearly describing the issues that should be addressed in the design cycle.</p> <p>Related these factors and issues to the design of a simple building or structure in a clear and accurate fashion.</p>	<p>9 – 12 marks</p> <p>Demonstrated an in-depth understanding of the factors that affect design by correctly identifying all or nearly all of the factors, clearly and accurately describing the issues that should be addressed in the design cycle.</p> <p>Related these factors and issues to the design of a simple building or structure in a thorough and detailed fashion.</p>
2 The design cycle and design principles	<p>0 – 10 marks</p> <p>Demonstrated a basic knowledge and understanding of design principles and the stages of the design cycle by correctly identifying most of the stages of the design cycle.</p> <p>Used basic design principles to produce a limited range of elementary design options for a simple building or structure.</p> <p>Displayed limited improvements in succeeding design options.</p>	<p>11 – 20 marks</p> <p>Demonstrated a partial knowledge and understanding of design principles and the stages of the design cycle by correctly identifying all or nearly all of the stages of the design cycle.</p> <p>Used clear and relevant principles to produce a wide range of workable design options for a simple building or structure.</p> <p>Displayed clear improvements in succeeding design options.</p>	<p>21 – 30 marks</p> <p>Demonstrated an in-depth knowledge and understanding of design principles and the stages of the design cycle by correctly identifying all of the stages of the design cycle.</p> <p>Used design principles to produce a range of detailed design options for a simple building or structure.</p> <p>Displayed significant and continuous improvements in succeeding design options.</p>
3 Career opportunities in construction design	<p>0 – 2 marks</p> <p>Correctly identified two careers at different levels in construction design, produced a brief description of the associated roles and responsibilities, and provided a superficial explanation of how the two job roles interact and how individuals may progress from one job role to the other.</p>	<p>3 – 4 marks</p> <p>Correctly identified two careers at different levels in construction design, produced a full description of the associated roles and responsibilities, and provided a clear explanation of how the two job roles interact and how individuals may progress from one job role to the other.</p>	<p>5 – 6 marks</p> <p>Correctly identified two careers at different levels in construction design, produced a complete and accurate description of the associated roles and responsibilities, and provided a detailed explanation of how the two job roles interact and how individuals may progress from one job role to the other.</p>

Personal, Learning and Thinking Skills

The list below is indicative of the way this unit supports the development of PLTS, as opposed to the achievement of PLTS that are possible through the assessment. The unit supports the development of more PLTS than are covered through the assessment criteria alone. Alternative approaches could be selected.

The learner could develop PLTS by:

Independent enquirers

- carrying out research into principles applied in the design process and the factors that influence the way buildings and structures are designed

Creative thinkers

- asking questions of experienced designers, planners and builders to enhance their understanding of how these people contribute to the development of the final design solution

Reflective learners

- inviting feedback on their initial design solutions and dealing positively with criticism

Team workers

- making effective contributions to group discussions regarding the way to improve their initial designs in light of advice and comments received

Self-managers

- organising time and resources in the production of the final design solution
- seeking advice and support from teachers and other more experienced persons when needed

Effective participators

- proposing practical ways forward and breaking the design project into manageable steps.

Suggested learning resources:

Books

- Building Construction Handbook. 6th Edition
Published by: Butterworth-Heinemann, 2006
ISBN 0-750-66822-9
Chudley & Greeno
- Intermediate GNVQ Construction & the Built Environment
Published by: Pearson, 1998
ISBN 0-582-31565-4
Millward et al
- Building Craft Foundation
Published by: Nelson Thorne, 2002
ISBN: 0-748-76531-X
Brett, Peter
- Architecture for Beginners (For Beginners)
Published by: Writers and Readers, 1988
ISBN: 0-863-16041-7
Hellman, Peter
- Sustainable Practices in the Built Environment - 2nd Edition
Published by: Butterworth-Heinemann, 2001
ISBN 0-750-65153-9
Langston, Craig A & Ding Grace KC
- Green Building Bible
Published by: Green Building Press
ISBN: 1-898-13003-5
Hall, KD (editor)
- The Whole House Book
Ecological Building Design and Materials
Published by: Centre for Alternative Technology Publications, 2005
ISBN: 1-902-17522-0
Harris, Cindy & Borer, Pat
- Becta Teaching & Learning Resource Bank
<http://ferl.becta.org.uk>
- Building Design and Architecture
 - Collaborative Learning in Town Planning and Construction

Journals and magazines

Architects' Journal - AJ
Building Design

Videos, CDs and DVDs

The Construction of Houses – eight in series, more to follow
University of West of England Video Project

Building History and Building Conservation – five in series
University of West of England Video Project

Websites

- Royal Institute of Building Architects www.riba.org.uk
- Chartered Institutes of Architectural Technologists www.ciat.org.uk
- Chartered Institute of Building www.ciob.org.uk
- Royal Town Planning Institute www.rtpi.org.uk
- Construction Industry Training Board www.citb.co.uk
- bConstructive www.bconstructive.co.uk

- Carbon Trust www.carbontrust.co.uk
- Design Quality Indicator www.dqi.org.uk
- Construction Industry Research and Information Association
www.ciria.org.uk
- Building Connections www.buildingconnections.co.uk
- Commission for Architecture and the Built Environment
www.cabe.org.uk
- The Architecture Centre
www.architecturecentre.co.uk
- The BBC www.bbc.co.uk
- Regional Support Centre – Wales www.rsc-wales.ac.uk
- Building4jobs www.building4jobs.co.uk
- Info4study www.info4study.co.uk