



## National Unit Specification: general information

**UNIT** Building Design and Technology (SCQF level 6)

**CODE** F3JE 12

### SUMMARY

This Unit is suitable for candidates who have limited knowledge of the various factors which affect the design of a house. On completion of this Unit the candidate will be able to demonstrate a sound understanding of the prime factors which influence the way in which a design evolves. Allied to this will be an awareness of the technical constraints on house construction. It should be emphasised that through the undertaking of this Unit the candidate should be equipped with an embedded understanding of the fundamentals of house design and house construction. This will allow meaningful progression to a more advanced level and skills to undertake integrated assignments such as the Architectural Project.

### OUTCOMES

- 1 Demonstrate knowledge and understanding of a design brief.
- 2 Explain how functional requirements affect house design.
- 3 Explain the effects of design factors and design constraints.
- 4 Identify substructure and superstructure elements.

### RECOMMENDED ENTRY

Entry is at the discretion of the centre.

### CREDIT VALUE

1 credit at Higher (6 SCQF credit points at SCQF level 6\*).

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

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### Administrative Information

**Superclass:** TD

**Publication date:** April 2008

**Source:** Scottish Qualifications Authority

**Version:** 01

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## **National Unit Specification: general information (cont)**

**UNIT**      Building Design and Technology (SCQF level 6)

### **CORE SKILLS**

There is no automatic certification of Core Skills or Core Skill components in this Unit. Opportunities for developing aspects of Core Skills are highlighted in *Guidance on Learning and Teaching Approaches*.

## **National Unit Specification: statement of standards**

### **UNIT Building Design and Technology (SCQF level 6)**

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

#### **OUTCOME 1**

Demonstrate knowledge and understanding of a design brief.

##### **Performance Criteria**

- (a) Explain the importance of producing a design brief for a building project.
- (b) Explain the importance of information gathering during the design phase.
- (c) Identify the main contents of the design brief correctly.

#### **OUTCOME 2**

Explain how functional requirements affect house design.

##### **Performance Criteria**

- (a) Identify and explain the functional requirements of primary elements in house design.
- (b) Identify and explain the functional requirements of internal planning in house design.
- (c) Describe functional requirements responding to environmental issues in house design.

#### **OUTCOME 3**

Explain the effects of design factors and constraints.

##### **Performance Criteria**

- (a) Identify design factors and constraints for a given development site.
- (b) Explain consequences as a result of these factors.
- (c) Explain forms of statutory, legal and technological constraint.

#### **OUTCOME 4**

Identify substructure and superstructure elements.

##### **Performance Criteria**

- (a) Identify and explain examples of common forms of domestic substructure correctly.
- (b) Identify and explain examples of common forms of domestic superstructure correctly.
- (c) Identify and explain and size the main elements of substructure and superstructures correctly.

## **National Unit Specification: statement of standards (cont)**

### **UNIT        Building Design and Technology (SCQF level 6)**

#### **EVIDENCE REQUIREMENTS FOR THIS UNIT**

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

Written and/or recorded oral evidence is required to demonstrate that the candidate has achieved all Outcomes to the standard specified in the Performance Criteria

Evidence must be produced in controlled, supervised closed-book conditions. In this Unit an appropriate instrument of assessment would be a question paper consisting of a balance of short answer, restricted response and structured questions based on case study materials. Candidates must not bring notes, textbooks or handouts to the assessment.

Evidence will be gathered at appropriate points throughout the delivery of the Unit. Assessment must be manageable and practicable for centres and assessment of all Outcomes should not exceed two hours.

The Assessment Support Pack for this Unit provides appropriate sample assessment materials. Where centres wish to develop their own assessment materials they should refer to the Assessment Support Pack to ensure a comparable standard.

## **National Unit Specification: support notes**

### **UNIT        Building Design and Technology (SCQF level 6)**

This part of the Unit Specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

#### **GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT**

This Unit has been developed as an optional Unit in the National Certificate in Civil Engineering at SCQF level 6 and a mandatory Unit in the National Certificate in Built Environment at SCQF level 6 and can also be taken as a freestanding Unit.

Outcome 1 requires the candidate to demonstrate understanding of the importance of a Design Brief. A successful building project relies on an accurate and comprehensive brief. The relevance and contextual use of the document during the design phase and the information therein should be described. Knowledge of difficulties arising out of improper briefing should be conveyed. Competency might be evidenced through candidate production of a Design Brief or through analysis of a given document.

Outcome 2 — As well as meeting Design Brief requirements, the spatial, structural and enclosing elements must perform in a fully functional manner. The candidate should be able to identify the main requirements for floors, walls and roofs. Different building forms have been developed in response and these should be identified. Internal planning will also determine the built form and factors affecting the arrangement of internal and external space should be considered. An appreciation is required of the environmental impact of construction and the long term consequences of this factor. Competency might be evidenced in the analysis of given construction drawings or the evaluation of work undertaken in other studies or in the workplace.

Outcome 3 requires an appropriate response to a range of factors constraining design and/or construction. An ability to derive information from different sources will be shown. Statutory and regulatory responsibilities and controls will be considered with the emphasis on Building Control, Planning, Environmental Protection and British / European Standards.

Outcome 4 — This Outcome is concerned with the terminology associated with domestic building construction. The candidate should be able to identify all the main components of different types of substructure and superstructure. Also, there must be some appreciation shown of size, form and interdependency within a built system. Evidence might be produced through investigation prompted by Design Brief requirements or as part of the analysis of construction drawings undertaken in the second Outcome.

#### **GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT**

The emphasis in the delivery of the Unit should be on familiarisation with the factors affecting house design and construction and the process of gathering and using information to ensure sound design.

Given the wide ranging nature of this subject it is important that the nature and extent of the study is clearly defined at the outset with the candidates working to agreed deadlines.

## National Unit Specification: support notes (cont)

### UNIT Building Design and Technology (SCQF level 6)

The use of case study material is particularly recommended for both the learning and assessment components of the Unit. For example, a package of preliminary design information might be provided for analysis and development. Based on the preliminary content of the design brief an appraisal can be made of Client requirements the candidate assisting in the evolution of the document into a fully relevant information source. Collaterally, an assessment can be made of the factors and constraints arising out of site investigation.

As the Unit progresses reference will be made to completed buildings. These should be within an environment familiar to the candidate and which can be safely accessed for survey or investigation. The use of a virtual structure may be appropriate for selected parts of the delivery. It may be found beneficial to appraise house design from a historical or social perspective in terms of internal planning, technological development or changing requirements.

Suggested teaching and learning methods for this Unit might include computer assisted learning, question and answer sessions, group work, directed investigative study, student learner guides, site/building visits, sketching and drawing.

### OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

In this Unit candidates will be:

- ◆ define the principles of building design
- ◆ explain the importance of gathering information from a wide range of sources at the start of the design process

These offer opportunities to develop aspects of the Core Skill of:

- ◆ *Problem Solving*

### GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

#### Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by information and communications technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

An appropriate instrument of assessment would be a question paper relating to an appropriate case study.

The potential scope of this subject matter is considerable. Therefore, it is important that the limits of the subject matter are clearly defined at an early stage in the programme and that the assessment events are identified.

## **National Unit Specification: support notes (cont)**

### **UNIT        Building Design and Technology (SCQF level 6)**

Recognising the potential for integrating assessment work for this Unit into project work there is obvious benefit in clarifying or reinforcing context and practical application and this should be encouraged. In addition, it may be appropriate to use project documentation and information as case study materials for the purposes of Unit assessment.

#### **CANDIDATES WITH DISABILITIES AND/OR ADDITIONAL SUPPORT NEEDS**

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* ([www.sqa.org.uk](http://www.sqa.org.uk)).