



Higher National Unit Specification

General information for centres

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

Unit code: F4MX 35

Unit purpose: This Unit is designed to enable candidates to develop an understanding and knowledge of repair techniques for traditional building materials and construction methods used in traditional buildings. It is primarily intended for candidates who expect to work in the building surveying and building control areas of the construction industry.

On completion of the Unit the candidate should be able to:

- 1 Appraise repair techniques for defective walls and floors.
- 2 Appraise repair techniques for defective roofs.
- 3 Explain the installation of modern services in traditional buildings.

Credit points and level: 1 HN credit at SCQF level 8: (8 SCQF credit points at SCQF level 8*)

**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.*

Recommended prior knowledge and skills: It would be beneficial if candidates had some knowledge and understanding of the construction industry. This could be demonstrated by possession of the HN Unit *Architectural Conservation: Construction of Walls, Floors and Roofs*.

Core Skills: There are opportunities to develop the Core Skills of *Communication* (Written), *Information Technology* (Using IT) and *Problem Solving* (Critical Thinking and Planning and Organising) all at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Assessment: It is possible to assess candidates either on an individual Outcome basis, combinations of Outcomes or by a single holistic assessment combining all Outcomes.

A single holistic assessment covering all Outcomes should not exceed three hours in duration. Candidates must achieve all the minimum evidence specified for each Outcome in order to pass this Unit.

Higher National Unit specification: statement of standards

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

Unit code: F4MX 35

The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Appraise repair techniques for defective walls and floors

Knowledge and/or Skills

- ◆ Wall and floor defects
 - Walls:
 - Cracks
 - Bulging
 - Flaking
 - Floor:
 - Collapse
 - Timber failure
 - Cracks in concrete
 - Lifting of tiles
- ◆ Repair techniques for walls:
 - Replace
 - Repoint
 - Roughcast
- ◆ Repair techniques for floors:
 - Timber treatment
 - Underpinning
 - Dampness eradication

Higher National Unit specification: statement of standards (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ appraise three wall and three floor defects commonly found in traditional constructions.
- ◆ appraise repair techniques used for defective walls. The appraisal should incorporate one technique for each of the following: stone, brick and concrete.
- ◆ appraise repair techniques used for defective floors. The appraisal should incorporate one technique for each of the following: timber, tiled, concrete.

Assessment Guidelines

The assessment could be carried out under supervised, open-book conditions where candidates have access to their own materials gathered as a result of investigating defects in walls and floors.

The assessment could be by extended response questions. Alternatively, the assessment could be combined with Outcomes 2 and 3 in a single holistic assessment in the form of a case study.

Outcome 2

Appraise repair techniques for defective roofs

Knowledge and/or Skills

- ◆ Flat roof defects:
 - Metal sheet failure
 - Fixings
 - Cracking
- ◆ Pitched roof defects:
 - Sagging
 - Sarking failure
 - Timber failure
 - Overloading
- ◆ Repair techniques for roofs:
 - Replacement
 - Timber treatments
 - Timber strengthening

Higher National Unit specification: statement of standards (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ appraise repair techniques for defective roofs. The appraisal should incorporate one technique for each of the following: flat and pitched roofs.

Assessment Guidelines

The assessment could be extended response questions presented under supervised, open-book conditions where candidates have access to their own materials gathered as a result of investigating repair techniques for defective roofs. Alternatively the assessment of this Outcome could be combined with Outcomes 1 and 3 as part of a single assessment for the Unit in the form of a case study.

Outcome 3

Explain the installation of modern services in traditional buildings

Knowledge and/or Skills

- ◆ Services used in traditional buildings and how they are installed
 - Heating
 - Lighting
 - Gas
 - Electricity
 - Water
 - Sewerage
 - Insulation

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ appraise a minimum of six modern services required in traditional buildings
- ◆ explain how these six modern services are installed; this must include taking into account design, technology and concealment

Assessment Guidelines

The assessment could be extended response questions presented under supervised, open-book conditions where candidates have access to their own materials gathered as a result of investigating services required in traditional buildings and their installation. The assessment of this Outcome can be combined with Outcomes 1 and 2 and could be assessed by a case study.

Administrative Information

Unit code: F4MX 35

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

Superclass category: TC

Original date of publication: August 2008

Version: 01

History of changes:

Version	Description of change	Date

Source: SQA

© Scottish Qualifications Authority 2008

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Unit specification: support notes

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

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 is primarily intended for candidates who expect to work in the building surveying and building control areas of the construction industry. This Unit has been written in order to allow candidates to develop knowledge, understanding and skills in the following areas:

- ◆ appraising the repair techniques for defective walls and floors
- ◆ wall and floor defects
 - walls:
 - cracks
 - bulging
 - flaking
 - floor:
 - collapse
 - timber failure
 - cracks in concrete
 - lifting of tiles
- ◆ repair techniques for walls:
 - replace
 - repoint
 - roughcast
- ◆ repair techniques for floors
 - timber treatment
 - underpinning
 - dampness eradication
- ◆ appraising the repair techniques for defective roofs
- ◆ flat roofs defects
 - metal sheet failure
 - fixings
 - cracking
- ◆ pitched roofs defects
 - sagging
 - sarking failure
 - timber failure
 - overloading
- ◆ repair techniques for roofs
 - replacement
 - timber treatments
 - timber strengthening

Higher National Unit specification: support notes (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

- ◆ identifying the service required in traditional buildings and how they are installed
- ◆ Services used in traditional buildings and how they are installed
 - heating
 - lighting
 - gas
 - electricity
 - water
 - sewerage
 - insulation

This Unit is at SCQF level 8 and is a mandatory Unit within the HNC and HND Architectural Conservation.

Whilst it is not mandatory for a centre to use this list of topics it is strongly recommended that it does so to ensure continuity of teaching and learning across the Units and because the assessment exemplar pack for this Unit is based on the Knowledge and/or Skills and list of topics in each of the Outcomes.

The list of topics is given below. Lecturers are advised to study this list of topics in conjunction with the assessment exemplar pack so that they can get a clear indication of the standard of achievement expected of candidates in this Unit.

Outcome 1

Appraise the repair techniques for defective walls and floors.

The purpose of this Outcome is to enable candidates to develop an understanding of:

- ◆ the repair of stone walls
- ◆ the repair of brick walls
- ◆ the repair of concrete
- ◆ the repair of timber floors
- ◆ the repair of timber and other windows and doors
- ◆ wall and floor defects
 - walls:
 - cracks
 - bulging
 - flaking
 - floor:
 - collapse
 - timber failure
 - cracks in concrete
 - lifting of tiles

Higher National Unit specification: support notes (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

- ◆ repair techniques for walls:
 - replace
 - repoint
 - roughcast
- ◆ repair techniques for floors
 - timber treatment
 - underpinning
 - dampness eradication

Throughout this Unit tutors could encourage a conservative approach of minimal intervention, repair and disturbance to the fabric and finishes of a traditional building in line with the underlying principles and philosophy of architectural conservation.

This means that no building or part of it should be repaired before such repair is strictly necessary.

Consideration could be given to the presumption against restoration, if this is possible, sustaining sources of materials and workmanship, matching (or not) with age. This philosophy is covered in the Unit '*Architectural Conservation: Principles*'.

The following information gives further clarification regarding the content of the Unit.

The tutor could use the guidelines given in BS 7913 *Guide to the principles of the conservation of historic buildings*, 1998 and any updates.

Definitions:

Conservation: Action to secure the survival or preservation of buildings, cultural artefacts, natural resources, energy or any other thing of acknowledged value for the future. NOTE: Where buildings or artefacts are involved, such actions should avoid significant loss of authenticity or essential qualities.

Repair: Work beyond the scope of regular maintenance to remedy defects, significant decay or damage caused deliberately or by accident, neglect, normal weathering or wear and tear, the object of which is to return the building or artefact to good order, without alteration or restoration. NOTE: Most repair work should be anticipated and planned but occasionally it can be required in response to a specific event, such as a storm or accident.

Restoration: Alteration of a building, part of a building or artefact which has decayed, been lost or damaged or is thought to have been inappropriately repaired or altered in the past, the objective of which is to make it conform again to its design or appearance at a previous date. NOTE: the accuracy of any restoration depends on the extent to which the original design or appearance at a previous date is known, or can be established by research.

(Definitions from BS 7913 *Guide to the principles of the conservation of historic building* 1998 and updates).

Higher National Unit specification: support notes (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

Outcome 2

Appraise the repair techniques for defective roofs.

The purpose of this Outcome is to enable candidates to develop an understanding of

- ◆ the repair of pitched roofs
- ◆ the repair of flat roofs
- ◆ flat roofs defects
 - metal sheet failure
 - fixings
 - cracking
- ◆ pitched roofs defects
 - sagging
 - sarking failure
 - timber failure
 - overloading
- ◆ repair techniques for roofs
 - replacement
 - timber treatments
 - timber strengthening

Throughout this Unit tutors could encourage a conservative approach of minimal intervention, repair and disturbance to the fabric and finishes of a traditional building in line with the underlying principles and philosophy of architectural conservation.

This means that no building or part of it should be repaired before such repair is strictly necessary.

Consideration could be given to the presumption against restoration, if this is possible, sustaining sources of materials and workmanship, matching (or not) with age. This philosophy is covered in the Unit '*Architectural Conservation: Principles*'.

The following information gives further clarification regarding the content of the Unit.

The tutor could use the guidelines given in BS 7913 *Guide to the principles of the conservation of historic buildings*, 1998 and any updates.

Definitions:

Conservation: Action to secure the survival or preservation of buildings, cultural artefacts, natural resources, energy or any other thing of acknowledged value for the future. NOTE: Where buildings or artefacts are involved, such actions should avoid significant loss of authenticity or essential qualities.

Higher National Unit specification: support notes (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

Repair: Work beyond the scope of regular maintenance to remedy defects, significant decay or damage caused deliberately or by accident, neglect, normal weathering or wear and tear, the object of which is to return the building or artefact to good order, without alteration or restoration. NOTE: Most repair work should be anticipated and planned but occasionally it can be required in response to a specific event, such as a storm or accident.

Restoration: Alteration of a building, part of a building or artefact which has decayed, been lost or damaged or is thought to have been inappropriately repaired or altered in the past, the objective of which is to make it conform again to its design or appearance at a previous date. NOTE: the accuracy of any restoration depends on the extent to which the original design or appearance at a previous date is known, or can be established by research.

(Definitions from BS 7913 *Guide to the principles of the conservation of historic building* 1998 and updates).

Outcome 3

Explain the installation of modern services in traditional buildings.

The purpose of this Outcome is to enable candidates to develop an understanding of

- ◆ the modern services that are required in traditional buildings
- ◆ different methods of installing services in traditional buildings
- ◆ services used in traditional buildings and how they are installed
 - heating
 - lighting
 - gas
 - electricity
 - water
 - sewerage
 - insulation

Throughout this Unit tutors could encourage a conservative approach of minimal intervention, repair and disturbance to the fabric and finishes of a traditional building in line with the underlying principles and philosophy of architectural conservation.

This means that no building or part of it should be repaired before such repair is strictly necessary.

Consideration could be given to the presumption against restoration, if this is possible, sustaining sources of materials and workmanship, matching (or not) with age. This philosophy is covered in the Unit '*Architectural Conservation: Principles*'.

The following information gives further clarification regarding the content of the Unit.

Higher National Unit specification: support notes (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

The tutor could use the guidelines given in BS 7913 *Guide to the principles of the conservation of historic buildings*. 1998 and any updates.

Definitions:

Conservation: Action to secure the survival or preservation of buildings, cultural artefacts, natural resources, energy or any other thing of acknowledged value for the future. NOTE: Where buildings or artefacts are involved, such actions should avoid significant loss of authenticity or essential qualities.

Repair: Work beyond the scope of regular maintenance to remedy defects, significant decay or damage caused deliberately or by accident, neglect, normal weathering or wear and tear, the object of which is to return the building or artefact to good order, without alteration or restoration. NOTE: Most repair work should be anticipated and planned but occasionally it can be required in response to a specific event, such as a storm or accident.

Restoration: Alteration of a building, part of a building or artefact which has decayed, been lost or damaged or is thought to have been inappropriately repaired or altered in the past, the objective of which is to make it conform again to its design or appearance at a previous date. NOTE: the accuracy of any restoration depends on the extent to which the original design or appearance at a previous date is known, or can be established by research.

(Definitions from BS 7913 *Guide to the principles of the conservation of historic building* 1998 and updates).

Guidance on the delivery and assessment of this Unit

This Unit is likely to form part of a Group Award designed to provide candidates with knowledge and skills for employment within the building surveying and building control areas of the construction industry. Where the Unit is incorporated into other Group Awards it is recommended that it be delivered in the context of the specific occupational area(s) that the award is designed to cover.

Details on approaches to assessment are given under Evidence Requirements and Assessment Guidelines under each Outcome in the Higher National Unit specification: statement of standards section. It is recommended that these sections be read carefully before proceeding with assessment of candidates.

Throughout the Unit emphasis will be placed where appropriate on the application of Health and Safety and Sustainability. Safe working practices should be looked at in accordance with current safety codes of practise and regulations. Sustainability should include reference to criteria affecting sustainability, impact of not implementing sustainability on the environment and the legislation promoting sustainability.

Higher National Unit specification: support notes (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

Opportunities for developing Core Skills

There are opportunities to develop aspects of the following Core Skills.

Communication at SCQF level 5. Candidates will be required to read materials relating to the construction and repair of conservation work and the provision of services in traditional buildings. If candidates produce written reports or essays this will provide opportunities to develop Written Communication. Lecturers might use class discussions to deliver parts of the Unit and this would provide opportunities to develop oral Communication.

Information Technology at SCQF level 5. This Unit offers candidates the opportunity to research, source information, and produce evidence using ICT.

Problem Solving. Candidates will be required to carry out descriptions of repair techniques of conservation work and the provision of services in traditional buildings, which will provide opportunities to develop the Core Skill of Critical Thinking.

Higher National Unit specification: support notes (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

The following grid provides a general guide to opportunities for the development of Core Skills in this Unit. Opportunities for the development of Core Skills at the output level are more fully identified in the Core Skills Sign Posting Grid.

Core Skill		Outcome 1	Outcome 2	Outcome 3
1. Communication				
Written Communication	(Reading) (Writing)	SCQF level 5	SCQF level 5	SCQF level 5
Oral Communication				
2. Numeracy				
Using Number				
Using Graphical Information				
3. Information Technology				
Using Information Technology		SCQF level 5	SCQF level 5	SCQF level 5
4. Problem Solving				
Critical Thinking		SCQF level 5	SCQF level 5	SCQF level 5
Planning and Organising		SCQF level 5	SCQF level 5	SCQF level 5
Reviewing and Evaluating				
5. Working with Others				
Working with Others				

Higher National Unit specification: support notes (cont)

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

Open learning

This Unit could be delivered by distance learning, which may incorporate some degree of on-line support. However, with regard to assessment, planning would be required by the centre concerned to ensure the sufficiency and authenticity of candidate evidence.

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).

General information for candidates

Unit title: Architectural Conservation: Repair of Walls, Floors and Roofs

This Unit is designed to prepare you for a career in the building surveying or building control area of the construction industry where conserving buildings correctly is important. This Unit is suited to building surveyors and building control officers, architects and client advisers, who are involved in building conservation projects from their inception through to completion on site and long term use.

In Outcome 1 you will look at the repair techniques for defective walls and floors underpinned by BS 7913 *Guide to the principles of the conservation of historic building* 1998 and updates.

In Outcome 2 you will look at the repair techniques for defective roofs.

In Outcome 3 you will identify the services required for traditional buildings and how they are installed.

It is possible to assess you either on an individual Outcome basis, combinations of Outcomes or by a single holistic assessment combining all Outcomes such as a single case study.

A single holistic assessment covering all Outcomes should not exceed three hours in duration. You must achieve all the minimum evidence specified for each Outcome in order to pass this Unit.

There may be opportunities for you to develop the Core Skills of *Communication* (Written), *Information Technology* (Using IT) and *Problem Solving* (Critical Thinking and Planning and Organising) all at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components .