

SQA Advanced Unit Specification

General information for centres

Unit title: Conversion and Adaptation of Buildings

Unit code: HR3N 48

Unit purpose: This Unit should allow the candidate to provide appropriate technical support to the feasibility outline design, detailed design and production information stages of a conversion, adaptation and/or restoration project.

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

- 1 Carry out an assessment of an existing building.
- 2 Investigate and identify design constraints and options in conversion, adaptation and restoration projects.
- 3 Prepare an outline scheme for an identified change of use for a specific building.
- 4 Prepare limited production information for a conversion or adaptation project.

Credit points and level: 1 SQA 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 National 1 to Doctorates.*

Recommended prior knowledge and skills: Knowledge of CAD and/or manual drawing skills. Knowledge of ergonomics and spatial design. It would be an advantage for the candidates to have a basic knowledge in construction which may be evidenced by possession of an appropriate Higher or SQA Advanced Unit.

Core Skills: There are opportunities to develop the Core Skills of Communication, Numeracy, IT, Problem Solving, Working with Others, 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.

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Assessment: Where possible, a site/s should be selected which would allow group working and which includes an existing building. All Outcomes should be assessed in relation to the site identified.

The ideal site should have space for the building to be extended. The building should not be a historic structure. The building should be of two or fewer storeys, preferably without a basement, and be in a structurally sound condition. Safe access is required to all areas to be surveyed, ie the building should not have unprotected openings and unsafe structural elements or services installations.

Assessment for the Unit requires candidates to:

Outcome 1: Develop a technical report on the condition of the existing building with recommendations for 'making good'.

Outcome 2: Prepare drawings of the existing site, including the building, showing boundaries and existing features to identify design constraints and sketched proposals.

Outcome 3: Prepare outline scheme design drawings showing the proposed extension and/or adaptation including proposals for 'making good'.

Outcome 4: Prepare a part-set of working drawings with specifications and dimensions to show how the proposals could be implemented. (It is not necessary to produce repetitive or extensive detailed specifications.)

It is the responsibility of the centre to satisfy themselves that the portfolio of evidence submitted for assessment is entirely original and solely the respective student's work.

An exemplar instrument of assessment and marking guidelines have been produced to provide an example of the type of evidence required to demonstrate achievement of the aims of this Unit and to indicate the national standard of achievement at SCQF level 8.

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SQA Advanced Unit specification: statement of standards

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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.

Throughout the Unit emphasis will be placed where appropriate on the application of Health & Safety and Sustainability. Safe working practises 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.

Outcome 1

Carry out an assessment of an existing building

Knowledge and/or skills

In any assessment of this Unit **all** knowledge and skills will be tested.

- ◆ common building defects and deterioration of building materials
- ◆ technical reports
- ◆ measured survey and accurate drawings of the existing building
- ◆ structural loadbearing elements

Evidence Requirements

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

- ◆ measured survey of the site and building drawn to scale
- ◆ condition survey report on the building
- ◆ description of the proposed remedial works to the existing building including rainwater goods, drainage, structure fabric and finishes
- ◆ technical report on the potential for the development of the site including the building

Assessment guidelines

There is potential for the survey and drawings to be produced collaboratively in groups of three or more candidates working together depending on the size of the site and existing building.

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Outcome 2

Investigate and identify design constraints and options in conversion, adaptation and restoration projects.

Knowledge and/or skills

- ◆ repairs required to building elements and materials to make retained elements sound
- ◆ existing site survey drawings identifying options for converting or extending the building taking account of the site constraints

Evidence Requirements

In any assessment of this Unit **all** knowledge and skills will be tested.

- ◆ Sketch drawings on tracing paper drawn to scale based on the survey plans and elevations.
- ◆ Identification of repairs required to make retained elements sound.

Assessment guidelines

Each set of sketch plans should show the options for extending, converting and adapting the building for the proposed use.

Outcome 3

Prepare an outline scheme for an identified change of use for a specific building

Knowledge and/or skills

- ◆ sketch plans and elevations
- ◆ realistic dimensioning
- ◆ common building defects and appropriate repair and replacement strategies and techniques

Evidence Requirements

In any assessment of this Unit **all** knowledge and skills will be tested.

- ◆ CAD scale plan drawings based on the selected sketch and survey plans, showing the selected option for extending, converting and adapting the building for the proposed new use, including site boundaries.

Assessment guidelines

Plans should differentiate between existing walls and new work and the spaces should be titled and annotated. Key dimensions should be shown.

Outcome 4

Prepare limited production information for a conversion or adaptation project

Knowledge and/or skills

- ◆ source and utilise appropriate technical information on building products and materials appropriate to the project

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- ◆ common building materials and components used in conversion and adaptation of buildings
- ◆ correct dimensioning conventions
- ◆ correct use of specification clauses
- ◆ behaviour of ground conditions subject to loading from new buildings

Evidence Requirements

In any assessment of this Unit **all** knowledge and skills will be tested.

- ◆ prepare four details including but not limited to junctions with the existing walls and new walls, existing walls and new floors, roof junctions with new and existing walls and roofs
- ◆ prepare four outline specification clauses for key building elements: setting out dimensions to be shown on the plans

Assessment guidelines

There is no requirement to prepare extensive or repetitive details or specifications.

The key details at important junctions specific to the extension of existing buildings should be the focus of this Outcome. Similarly it is not necessary to produce repetitive or extensive specification clauses.

The NBS Intermediate or Minor Works template could be used as a basis for the selected specification clauses.

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Administrative information

Unit code:	HR3N 48
Unit title:	Conversion and Adaptation of Buildings
Superclass category:	TD
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History of changes

Version	Description of change	Date

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

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SQA Advanced Unit specification: support notes

Unit title: Conversion and Adaptation of Buildings

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 core to the delivery of a Unit award.

The site selected should comply with the health and safety, size and layout criteria outlined in the Unit.

It is envisaged that the site will be residential, commercial, or industrial building that will be converted to a 'new use'. New use in this sense means a building that would require consent for change of use in Planning and/or Building Regulations.

As part of the conversion an extension to the building could be required. In this case it is necessary to consider the relationship of the new building footprint to the existing site boundary and application of the Building Regulations.

Examples of appropriate sites and buildings could include but are not limited to:

- ◆ conversion and extension of adjoining shop Units to form a town's medical health centre
- ◆ conversion of former industrial building or warehouse to form residential flats
- ◆ conversion of small dwellings or farm buildings to form one larger dwelling
- ◆ conversion and extension of a shop Unit to form a licensed restaurant

Outcome 1 — (12 hours)

- ◆ Carry out an assessment of an existing building

Assessment will include condition survey, measured survey and proposed remedial works required to the existing structure and fabric of the building.

Outcome 2 — (10 hours)

- ◆ Investigate and identify design constraints and options in conversion, adaptation and restoration projects.

Investigation will include the preparation of sketch drawings to show the possible options for extension and adaptation of the existing building and any extension required.

Outcome 3 — (8 hours)

- ◆ Prepare an outline scheme for an identified change of use for a specific building

The outline scheme should be drawn to scale and should differentiate between existing walls and new walls and each room formed be annotated.

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Outcome 4 — (10 Hours)

- ◆ Prepare limited production information for a conversion or adaptation project

Four details should be prepared to show how the new work is tied into the existing structure. Details can include junctions between walls, roofs and floors.

Guidance on the delivery and assessment of this Unit

The Unit should be positioned towards the end of the delivery of the Group Award as this Unit puts into context the knowledge and skills gained in previous Units. When the Unit is mandatory in the SQA Advanced Diploma in Architectural Technology, SQA Advanced Diploma in Building Surveying and SQA Advanced Diploma in Facilities Management Group Award, it could be delivered after Statutory Building Control, Construction Technology 1, 2 and 3, CAD 1 and 2, Construction Materials Selection and Deterioration, Construction Materials and Specification, Construction Technical Communication.

There are limited opportunities in this Unit for integrated assessment with other Units.

The Outcomes in this Unit are integrated by focusing on one site and one development proposal based on the given site.

Authentication of a candidate's work can be verified in the form of oral presentation, tutor's further questions and candidate's responses.

Opportunities for developing Core Skills

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 Guide'.

Core Skill	Outcome 1	Outcome 2	Outcome 3	Outcome 4
1 Communication				
Reading				X
Writing	X			X
Oral				
2 Numeracy				
Using Number	X		X	X
Using Graphical Information				
3 IT				
Using Information Technology			X	X
4 Problem Solving				
Critical Thinking		X		X
Planning and Organising		X	X	
Reviewing and Evaluating			X	X
5 Working with Others	X			

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The following factors should be taken into account when selecting the proposed scheme:

- ◆ economic use of existing spaces in the building
- ◆ site boundary constraints
- ◆ economic use of existing openings in structural walls
- ◆ style and character of the existing building
- ◆ revised inter-relationship of spaces to suite the proposed new use of the site and building
- ◆ ergonomics and anthropometric data in relation to the new use of the building
- ◆ building Technical Standards implications for the new use

Drawings of proposed scheme should clearly show:

- ◆ existing spaces in the building with titles
- ◆ new spaces created in the building and extension with titles
- ◆ existing site boundary
- ◆ areas to be 'made good' with outline specification notes
- ◆ existing openings in structural walls to be reused
- ◆ existing openings in structural walls to be infilled
- ◆ style and character of the new and existing building
- ◆ new building work including doors and windows
- ◆ key dimensions

Open learning

Given that appropriate materials exist 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. There are opportunities for supporting candidates using Virtual Learning Environments that have the ability to facilitate tutor/candidate candidate/candidate discussion forums and a digital drop box facility.

The selection of suitable sites and buildings would be a constraint to distance learning. The suitability in this context means the size of the existing building, its condition and health and safety issues in relation to the initial survey task. For open and distance candidates there may be a case for providing a set of existing drawings and photographs to distance learners as an alternative to the survey task in Outcome 1.

Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

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General information for candidates

Unit title: Conversion and Adaptation of Buildings

The national building stock is a valuable resource. Commercial and public buildings are often designed to last in excess of 75 years. During the life of a building it can be necessary to adapt an existing building for a new use in response to economic trends and as society's needs and expectations change.

This Unit is about the application of the construction knowledge and design skills required to convert, adapt and/or extend an existing building structure for a new use. To make the new use as economical as possible it can be necessary to retain as much of the existing structure as possible. This strategy exerts constraints on the design often not present in new build work where structural elements can be placed in best locations to suite the building use. Working within the constraints of an existing structure and site boundary candidates will develop proposals for converting an existing building. Candidates will need to survey the existing site and buildings, prepare sketch proposals, select the best design in consultation with tutors and peers and prepare a selection of working drawings and specifications so that the candidates ideas can be realised.

All the Outcomes are based on the one site and there is potential for the work done in other Units to be integrated and used in this Unit. For example *CAD, surveying and architectural communication*.