

Higher National Unit Specification

General information for centres

Unit title: Quantitative Building Studies: Floors and Roofs

Unit code: DW3L 34

Unit purpose: This Unit is designed to enable candidates of quantity surveying to gain skills in the measurement and description of work. It requires candidates to draft item descriptions and take off quantities for floors and roofs.

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

- 1 Prepare quantified item descriptions for flat and pitched roof coverings.
- 2 Prepare quantified item descriptions for woodwork members of timber floors and flat and pitched roofs.
- 3 Prepare quantified item descriptions for reinforced in-situ concrete upper floors and roofs.

Credit points and level: 1 HN Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*).

**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 an advantage for candidates to have a basic knowledge and understanding of flat and pitched roof finishes technology, timber upper floor and flat and pitched roof technology and reinforced in-situ concrete upper floor and roof technology. It would also be of benefit for candidates to have experience in interpreting construction drawings. Prior experience in taking off quantities would be useful.

Provision of basic knowledge and understanding of flat and pitched roof finishes technology, timber upper floor and flat and pitched roof technology and reinforced in-situ concrete upper floor and roof technology would be evidences by possession of a Unit or Units in construction technology at Higher or HN level. Experience in the interpretation of construction drawings may be demonstrated by possession of a Unit or Units in construction technology or construction drawing at Higher or HN level. Prior experience in taking off quantities might be demonstrated by possession of any one of the suite of quantitative building studies units at HN or Higher.

Core Skills: There are opportunities to develop the Core Skill(s) of Communication, Numeracy, Problem Solving, in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

General information for centres (cont)

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: The assessment instruments for this Unit may employ a single case study for take off purposes. The drawings provided for assessment purposes must be detailed and include plans, elevations, cross sections and details of the building. In addition specification notes must be provided to the candidate.

It is possible to assess candidates either on an individual Outcome basis, combinations of Outcomes or by a single holistic assessment combining all Outcomes. Assessment should be conducted under supervised, controlled conditions “Open Book” with current Standard Method of Measurement of Building Work provided. The candidate will have access to their own notes. It should be noted that candidates must achieve all the minimum evidence specified for each outcome in order to pass the Unit.

It should be noted that candidates must achieve all the minimum evidence specified for each Outcome in order to pass this Unit.

An exemplar instrument of assessment and marking guidelines has been produced to provide examples 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 7.

Higher National 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.

Outcome 1

Prepare quantified item descriptions for flat and pitched roof coverings.

Knowledge and/or skills

- ◆ Quantified items for lead flat roof covering
- ◆ Quantified items for mastic asphalt flat roof covering
- ◆ Quantified items for bitumen felt or thermoplastic sheet flat roof covering
- ◆ Quantified items for tile pitched roof covering
- ◆ Quantified items for slate pitched roof covering

Evidence Requirements

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

- ◆ produce comprehensive lists of items
- ◆ draft comprehensive item descriptions
- ◆ express quantities in the correct unit of measurement
- ◆ take off quantities accurately
- ◆ produce accurate waste calculations
- ◆ correctly interpret the technology
- ◆ correctly analyse drawings

Evidence for the knowledge/skills for this Outcome will be provided on a sample basis. In any assessment for this Outcome a minimum of **one out of five** knowledge/skills items should be sampled. In order to ensure that candidates will not be able to foresee what item they will be questioned on, a different sample of knowledge/skills item is required each time the Outcome is assessed. Candidates must provide a satisfactory response to the item.

Evidence should be generated through assessment undertaken in controlled, supervised conditions “Open Book” with current Standard Method of Measurement of Builders Work provided. The candidate will have access to their own notes.

Higher National Unit specification: statement of standards (cont)

Unit title: Quantitative Building Studies: Floors and Roofs

Assessment guidelines

Drawings and specification notes provided to elicit candidate evidence should be based on a single building of straightforward construction and maximum two stories height. The drawings must be accurate and detailed as regards the roof coverings. Specification notes must accompany the drawing. Detailed drawings must be provided to clarify details and sizes.

The assessment for this outcome might be combined with that for Outcomes 2 and 3 to form a single assessment paper.

Outcome 2

Prepare quantified item descriptions for woodwork members of timber floors and flat and pitched roofs.

Knowledge and/or skills

- ◆ Quantified items for woodwork members of a timber upper floor
- ◆ Quantified items for woodwork members of a timber flat roof
- ◆ Quantified items for woodwork members of a timber pitched roof

Evidence Requirements

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

- produce comprehensive lists of items for the installation
- draft comprehensive item descriptions for each item
- express quantities in the correct unit of measurement
- take off quantities accurately
- produce accurate waste calculations for each item as applicable
- correctly interpret the technology
- correctly analyse drawings

Evidence for the knowledge/skills for this Outcome will be provided on a sample basis. In any assessment for this Outcome a minimum of **one out of three** knowledge/skills items should be sampled. In order to ensure that candidates will not be able to foresee what item they will be questioned on, a different sample of knowledge/skills item is required each time the Outcome is assessed. Candidates must provide a satisfactory response to the item.

Evidence should be generated through assessment undertaken in controlled, supervised conditions “Open Book” with current Standard Method of Measurement of Building Work provided. The candidate will have access to their own notes.

Higher National Unit specification: statement of standards (cont)

Unit title: Quantitative Building Studies: Floors and Roofs

Assessment guidelines

Drawings and specification notes provided to elicit candidate evidence should be based on a single building of straightforward construction and maximum two stories height. The drawings must be accurate and detailed as regards the woodwork members. Specification notes must accompany the drawing.

The assessment of this Outcome should be separate from that of Outcomes 1 and 3, but it is recommended that a common set of drawings is used for all of the Outcomes.

Outcome 3

Prepare quantified item descriptions for reinforced in-situ concrete upper floors and roofs.

Knowledge and/or skills

- ◆ Quantified items for reinforced in-situ concrete upper floor
- ◆ Quantified items for reinforced in-situ concrete roof

Evidence Requirements

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

- ◆ produce comprehensive lists of items
- ◆ draft comprehensive item descriptions
- ◆ express quantities in the correct unit of measurement
- ◆ take off quantities accurately
- ◆ produce accurate waste calculations
- ◆ correctly interpret the technology
- ◆ correctly analyse drawings

Evidence for the knowledge/skills for this Outcome will be provided on a sample basis. In any assessment for this Outcome a minimum of **one out of two** knowledge/skills items should be sampled. In order to ensure that candidates will not be able to foresee what item they will be questioned on, a different sample of knowledge/skills item is required each time the Outcome is assessed. Candidates must provide a satisfactory response to the item.

Evidence should be generated through assessment undertaken in controlled, supervised conditions “Open Book” with current Standard Method of Measurement building work provided. The candidate will have access to their own notes.

Assessment guidelines

Drawings and specification notes provided to elicit candidate evidence should be based on a single building of straightforward construction and maximum two stories height. The drawings must be accurate and detailed as regards the in-situ concrete work. Specification notes must accompany the drawing.

Higher National Unit specification: statement of standards (cont)

Unit title: Quantitative Building Studies: Floors and Roofs

The assessment of this outcome should be separate from that of Outcomes 1 and 2, but it is recommended that a common set of drawings is used for all of the Outcomes.

Administrative Information

Unit code:	DW3L 34
Unit title:	Quantitative Building Studies: Floors and Roofs
Superclass category:	TC
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Higher National Unit specification: support notes

Unit title: Quantitative Building Studies: 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 provides the candidate with the knowledge and understanding of the measurement and description of quantities for floors and roofs. Attention should be paid in the delivery of this unit to the syllabus content of the other units in the programme, particularly the introduction to the industry.

Recommended time allocations to each Outcome are given as guidance towards the depth of treatment which might be applied to each topic. This guidance has been used in the design of the assessment exemplar material provided with the Unit.

1 Prepare quantified item descriptions for flat and pitched roof coverings (12 hours)

The preparation of quantified items for flat and pitched roof coverings:

Lead flat roof coverings

Roof covering (including allowance for drips, rolls, upstand/downst and flashings, gutters, sump/outlet and holes)

Mastic Asphalt flat roof coverings

Roof covering, skirtings, lining to gutters, internal angle fillets
fair edges and holes

Bitumen Felt or Thermoplastic sheet flat roof coverings

Roof coverings, flashings, gutters, edges and holes

Tile pitched roof coverings

Roof coverings, eaves, verges, ridges, hips, valleys, fittings and holes

Slate pitched roof coverings

Roof coverings, eaves, verges, ridges, hips, valleys, fittings and holes

2 Prepare quantified item descriptions for woodwork members of timber upper floors and flat and pitched roofs. (16 hours)

Timber upper floors

Floor joists, trimmers, strutting, joist hangers, skirting with grounds, floor boarding, nosings and cover plate

Timber flat roofs

Wallplate, roof joists, strutting, declivity pieces, tilting fillets, Insulation, fascia, framing and roof boarding

Higher National Unit specification: support notes (cont)

Unit title: Quantitative Building Studies: Floors and Roofs

Timber pitched roofs

Wallplate, rafters, ceiling joists, struts, valley rafters, hip rafters, ridge, insulation, ventilation, fascia, soffit, framing and roof boarding

3 Prepare quantified item descriptions for reinforced in-situ concrete upper floors and roofs (12 Hours)

Reinforced in-situ concrete upper floors

Floor slab, beams, formwork, reinforcement and holes

Reinforced in-situ concrete roofs

Roof slab, beams, upstands, recesses, formwork, formed finish, reinforcement and holes

Guidance on the delivery and assessment of this Unit

This Unit is a specialist quantitative building studies Unit which is recommended as a second year Unit in the HNC and HND Quantity Surveying programme. It appears in other areas of HNC and HND Built Environment awards. As a specialist Unit, it is recommended that the Unit be delivered towards the end of these awards and after candidates have acquired a knowledge of construction technology.

Where this 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.

The volume of evidence required for each assessment should take into account the overall number of assessments being contemplated within this unit and the design of the overall teaching programme.

Opportunities for developing Core Skills

This Unit provides opportunities for the development of Core Skills in Communication, Numeracy and Problem Solving. Opportunities for the development of Core Skills at the output level are more fully identified in the Core Skills Signposting Guide.

Higher National Unit specification: support notes (cont)

Unit title: Quantitative Building Studies: 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 Signposting Guide.

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

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. Arrangements would be required to be put in place to ensure that assessment/s were conducted under controlled, supervised conditions.

Candidates with additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. 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. For information on these, please refer to the SQA document *Guidance on Alternative Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on the SQA website www.sqa.org.uk.

General information for candidates

Unit title: Quantitative Building Studies: Floors and Roofs

On completion of the Unit you should be able to:

- 1 Prepare quantified item descriptions for flat and pitched roof coverings
- 2 Prepare quantified item descriptions for carpentry and joinery members of timber floors and flat and pitched roofs.
- 3 Prepare quantified item descriptions for reinforced in-situ concrete upper floors and roofs.

Evidence that you can satisfy the knowledge and skill elements of this unit will be obtained by assessment in controlled, supervised conditions “Open Book” with the current Standard Method of Measurement of Building Work provided. You will be allowed access to your own notes.