

## **SQA Advanced Unit specification**

### **General information**

**Unit title:** Civil Engineering Contract and Project Management A  
(SCQF level 7)

**Unit code:** HR5P 47

**Superclass:** TL

**Publication date:** August 2017

**Source:** Scottish Qualifications Authority

**Version:** 01

### **Unit purpose**

This Unit aims to provide the learner with knowledge of construction site management, administrative processes and legal requirements.

### **Outcomes**

On successful completion of the Unit the learner will be able to:

- 1 Explain the roles and purpose of personnel and professional bodies in the construction industry.
- 2 Determine construction Health, Safety and Environmental requirements.
- 3 Determine construction site requirements.
- 4 Prepare schedules of works for pre-tender and construction phases of work.

### **Credit points and level**

1 SQA Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7)

### **Recommended entry to the Unit**

Entry is at the discretion of the centre, however, learners would benefit from having a basic knowledge of construction industry.

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### **Core Skills**

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes for this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

### **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.

The Assessment Support Pack (ASP) for this Unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (<http://www.sqa.org.uk/sqa/46233.2769.html>).

### **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](http://www.sqa.org.uk/assessmentarrangements).

## **SQA Advanced Unit specification: Statement of standards**

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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.

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. Learners 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**

Explain the roles and purpose of personnel and professional bodies in the construction industry.

#### **Knowledge and/or Skills**

- ◆ Personnel
- ◆ Professional Bodies
- ◆ Functions and career opportunities within Civil Engineering

### **Outcome 2**

Determine construction Health, Safety and Environmental requirements.

#### **Knowledge and/or Skills**

- ◆ Provision of site welfare and accommodation
- ◆ Health and safety plan
- ◆ Environmental management

### **Outcome 3**

Determine construction site requirements.

#### **Knowledge and/or Skills**

- ◆ Requirements for site security and access
- ◆ Requirements for materials procurement and storage

### Outcome 4

Prepare schedules of works for pre-tender and construction phases of work.

#### Knowledge and/or Skills

- ◆ Pre-tender schedules
- ◆ Construction phase schedules
- ◆ Resource schedules

#### Evidence Requirements for this Unit

Learners will need to provide written and/or oral evidence to demonstrate their Knowledge and/or Skills across two out of three Knowledge and/or Skills elements by showing that they can:

- ◆ explain the roles and purposes of personnel during both pre-tender and construction phases
- ◆ explain the roles and purpose of professional bodies
- ◆ explain functions and career opportunities within Civil Engineering
- ◆ identify construction site legislation
- ◆ explain construction site requirements relating to staff, plant and materials
- ◆ prepare schedules of work for pre-tender and construction phases

In any assessment of this Unit all Knowledge and/or Skills should be included. Assessment may be carried out by combining two or more Outcomes together or all Outcomes in one holistic assessment of the Unit. Assessment should be conducted under open-book conditions and as such learners should be allowed to bring any textbooks or notes to the assessment. Such papers should be based on a case study of a construction project.

Should a second assessment attempt be required, centres might consider using evidence generated by the learner when undertaking, for example, *Standard Forms of Construction Contracts* or the *Graded Unit*, providing it fully meets the assessment criteria.

## **SQA Advanced Unit Support Notes**

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Unit Support Notes are offered as guidance and 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 learner with the knowledge and skills for the site management of common civil engineering projects.

Recommended time allocation to each Outcome is given as guidance towards the depth of treatment which might be applied to each topic.

This Unit provides underpinning knowledge to Units within SVQ (Level 3) Construction Contracting Operations and SVQ (Level 3) Built Environment Design.

Reference should be made to all current legislation relating to Health & Safety and Environmental processes.

#### **1 Explain the roles and purpose of personnel and professional bodies in the construction industry (6 Hours)**

**Personnel:** Explain the roles and purpose of personnel during both pre-tender and construction phases — consultant; structural engineer; geotechnical engineer; resident engineer; clerk of works; site agent; project manager; general foreman. This list is not exhaustive.

**Professional bodies:** Explain the roles and purpose of professional bodies — Institution of Civil Engineers (ICE); Institution of Structural Engineers (I Struct E); Civil Engineering Contractors Association (CECA); Association for Consultancy and Engineering (ACE). This list is not exhaustive.

**Functions and career opportunities within Civil Engineering:** Explain the job functions and opportunities within civil engineering, for example, planning; designing; costing; technical; advisory. This list is not exhaustive.

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### 2 Determine construction Health, Safety and Environmental requirements (12 Hours).

**Provision of site welfare and accommodation:** Health and safety legislation; welfare requirements; site monitoring and inspection; supervision and control.

**Health and safety plan:** Site rules and inductions; traffic management; plant segregation; signage; services; Method Statements and Risk Assessments.

**Environmental management:** Identify environmental agencies; environmental policy; Construction Environmental Management Plan (SWMP); Construction site monitoring.

### 3 Determine construction site requirements (12 Hours).

**Requirements for site security and access:** Identify and explain the requirement for security systems — security fencing; CCTV; secured by design. Explain the requirements for site access — securing safe access and egress; site neighbours; considerate contractor's schemes.

**Requirements for materials procurement and storage:** Explain the process of procuring materials — enquire, tender, requisition, order, delivery, check and invoice. Explain the requirement to — establish material checklist; maintain documentation; ensure correct storage.

### 4 Prepare schedules of works for pre-tender and construction phases of work (10 Hours).

**Pre-tender and construction schedules:** Explain factors impacting on planning — techniques to establish schedules — thumbnail logic diagram; network precedence diagram; bar chart.

## Guidance on approaches to delivery of this Unit

This Unit should be delivered in the first year of a two-year programme and before the *Civil Engineering Contract and Project Management B* and *Civil Engineering Graded Unit 1* Units. Delivery should be in the context of a small to medium construction project.

Case studies of a variety of construction projects of differing size and scale should be used to differentiate construction activities and site requirements. Site visits, videos, photos or construction drawings can be used to appreciate construction sequence, resources and site set up. Group work and discussions allow for varying construction related expertise to enhance the learning and teaching experience.

Appropriate attention must be given to health, safety, welfare and environmental arrangements throughout the Unit and reference should be made to appropriate standards.

The centre may incorporate e-learning by encouraging learners to access available specialist information such as product catalogues through internet and other electronic media. The learners may be encouraged to access Journals and online material featuring developments in the construction industry.

### Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

The volume of evidence requires for each assessment should take into account the overall number of assessments being completed within the Unit and the design of the overall teaching programme.

The assessment for the Unit will be based on a case study project that will contain circumstances from which the learners can prepare a report covering:

- ◆ Roles and functions of personnel and professional bodies within the case study
- ◆ Requirements for provision of site welfare and accommodation
- ◆ Information required for Health and Safety plan
- ◆ Information required for Construction Environmental Management Plan
- ◆ Various stages in the materials procurement and control process
- ◆ Pre-tender or construction phase schedule

Evidence for the Knowledge and/or Skills for this Outcome may be generated through a report undertaken in unsupervised conditions. Assessment should be conducted under open-book conditions to encourage reference to be made to current legislation relating to Health and Safety and Environmental processes where appropriate.

Assessment can be separate case studies for individual Outcomes or a single case study for one holistic assessment of the Unit covering all Outcomes.

Where available, evidence from the workplace can also be incorporated providing evidence is appropriate and authenticated as the learners own work. Learner's work can be authenticated by oral questioning or professional discussion of all evidence produced.

### Opportunities for 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 Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at [www.sqa.org.uk/e-assessment](http://www.sqa.org.uk/e-assessment).

### Opportunities for developing Core and other essential skills

In this Unit learners will be:

- ◆ Evaluating the requirements of a site
- ◆ Evaluating the sequence of construction activities
- ◆ Refer to and consider current legislation

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

- ◆ *Problem Solving*
- ◆ *Communication*

Additional opportunities to develop Core Skills through suggested learning, teaching and assessment approaches:

- ◆ *Working with Others*
- ◆ *Communication*
- ◆ *Information and Communication Technology (ICT)*



## History of changes to Unit

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.

**FURTHER INFORMATION:** Call SQA's Customer Contact Centre on 44 (0) 141 500 5030 or 0345 279 1000. Alternatively, complete our [Centre Feedback Form](#).

### General information for learners

**Unit title:** Civil Engineering Contract and Project Management A  
(SCQF level 7)

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

This Unit provides the learner with the knowledge and skills for the site management of common civil engineering projects.

On successful completion of the Unit the learner will be able to:

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- 3 Determine construction site requirements.
- 4 Prepare schedules of works for pre-tender and construction phases of work.

Evidence you can satisfy the Knowledge and/or Skill elements of this Unit may be obtained by open-book coursework assessment.

The Unit will provide the opportunity to develop:

#### Core Skills

- ◆ *Problem Solving*
- ◆ *Working with Others*
- ◆ *Communication*
- ◆ *Information and Communication Technology (ICT)*

#### Skills

- ◆ Citizenship
- ◆ Employability
- ◆ Sustainable development

The Unit will provide underpinning knowledge required in Units within SVQ (Level 3) Construction Contracting Operations and SVQ (Level 3) Built Environment Design.