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## Overview

This unit is concerned with managing tests which will be carried out by other people. It is about deciding what tests need commissioning, and drafting test specifications. You must have a deep knowledge of the categories of tests which may be needed, and be competent at drafting specifications and commissioning the tests.

It is about getting the tests carried out, and being responsible for them. You must be able to prepare a plan for the testing, and ensure that the tests are carried out to programme and within budget.

It is about presenting the test results and sharing the information. You must be able to evaluate the test results, integrate them into a competent report and present the report to the stakeholders.

# COSBEDMO11 - SQA Unit Code FM74 04

## Specify, manage and analyse tests in built environment design management

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### Performance criteria

#### Identify, specify and commission tests

*You must be able to:*

- P1 identify factors which may be significant to the object, purpose and nature of the test by desk study
- P2 analyse and assess how accurate, up to date and complete the existing information is
- P3 identify what data is needed, how accurate the data needs to be and what data outputs are required
- P4 make a preliminary investigation to identify any access requirements and equipment which will be needed, and assess and summarise the implications
- P5 develop a clear and accurate specification, and criteria, a programme and assessment of resources for the testing programme, and agree them with the stakeholders
- P6 commission tests and select competent people and organisations to do the work

#### Plan and manage tests

*You must be able to:*

- P7 select relevant processes and methods which are reliable, valid consistent with the tests object, purpose and nature and the location, contract and legal requirements and which recognise concerns raised by the public
- P8 estimate and justify the resources which will be involved in conducting and reporting on the tests
- P9 ask for and obtain permission to carry out the test from people who might be affected and from any legal authorities who have to be notified
- P10 choose suitable quality assurance standards and specify health and safety requirements
- P11 prepare a plan for the test and schedule it to meet the requirements of the test
- P12 manage and monitor tests and recommend modifications to maintain compliance with test requirements

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### **Analyse and present test results**

*You must be able to:*

- P13 collect and verify the results from tests
- P14 process the results using the most appropriate methods of analysis and chart them in a format which will help people to interpret them
- P15 produce a clear and accurate commentary and interpretation of the results
- P16 use the test results, analysis and commentary findings to produce an accurate report which identifies the development constraints, opportunities and feasibility, and circulate the report to stakeholders
- P17 present the report clearly and in a format which is suitable for the stakeholders who need to use the findings

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### Knowledge and understanding

*You need to know and understand:*

#### Identify, specify and commission tests

- K1 what to identify as factors which may be significant to the object, purpose and nature of the test by desk study (understanding)
- K2 how and why to analyse and assess how accurate, up to date and complete the existing information is (analysis)
- K3 what to identify as data that is needed and how accurate it needs to be and what data outputs are required (understanding)
- K4 how and why to make a preliminary investigation to identify access requirements and equipment (analysis)
- K5 how and why to assess the implications of access and equipment requirements (analysis)
- K6 how to summarise the implications of access and equipment requirements (application)
- K7 how and why to develop a clear and accurate specification and criteria, a programme and assessment of resources for the testing programme (synthesis)
- K8 how and why to agree a clear and accurate specification and criteria, a programme and an assessment of resources for the testing programme with the stakeholders (evaluation)
- K9 how and why to commission tests (evaluation)
- K10 how and why to select competent people and organisations to do the work (evaluation)

#### Plan and manage tests

*You need to know and understand:*

- K11 how and why to select relevant processes and methods which are reliable, valid, consistent with the test's object, purpose and nature and the location, contract and legal requirements and which recognise concerns raised by the public (evaluation)
- K12 how and why to estimate the resources which will be involved in conducting and reporting on the tests (analysis)
- K13 how and why to justify the resources which will be involved in conducting and reporting on the tests (evaluation)

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- K14 how to ask for and obtain permission to carry out the test from people who might be affected and from any legal authorities who have to be notified (application)
- K15 how and why to choose suitable standards of quality assurance (evaluation)
- K16 how to specify health and safety requirements (evaluation)
- K17 how and why to prepare a plan for the test (synthesis)
- K18 how and why to schedule a plan for the test (analysis)
- K19 how and why to manage tests (evaluate)
- K20 how and why to monitor tests (analysis)
- K21 how and why to recommend modifications to tests to maintain compliance with test requirements (synthesis)

#### **Analyse and present test results**

*You need to know and understand:*

- K22 how to collect and verify the results from tests (application)
- K23 how to process the results using the most appropriate methods of analysis and chart them in a format that will help people to interpret them (application)
- K24 how to produce a clear and accurate commentary and interpretation of the results (analysis)
- K25 how to use the test results to produce an accurate report which identifies the development constraints, opportunities and feasibility and circulate the report to stakeholders (application)
- K26 how to present the report clearly and in a format which is suitable for the stakeholders who need to use the findings (application)

### Additional Information

#### Scope/range

#### Identify, specify and commission tests

##### 1. Object:

- 1.1. geological
- 1.2. structural
- 1.3. environmental
- 1.4. material

##### 2. Purpose:

- 2.1. performance
- 2.2. routine
- 2.3. contingency

##### 3. Nature:

- 3.1. physical
- 3.2. condition
- 3.3. performance
- 3.4. destructive
- 3.5. non-destructive
- 3.6. qualitative
- 3.7. quantitative

##### 4. Desk study:

- 4.1. client
- 4.2. owners
- 4.3. occupiers
- 4.4. statutory authorities
- 4.5. research institutions
- 4.6. advisory bodies
- 4.7. libraries
- 4.8. archives
- 4.9. validated research data
- 4.10. legal documents

##### 5. Data outputs:

- 5.1. visual
- 5.2. approximate estimated
- 5.3. detailed assessment of specified features

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### **6. Resources:**

- 6.1. materials
- 6.2. people
- 6.3. equipment
- 6.4. time

### **Plan and manage tests**

### **7. Processes:**

- 7.1. as defined by relevant legislation
- 7.2. code of practice as accepted by recognised authorities in the field

### **8. Methods:**

- 8.1. visual
- 8.2. approximate estimated
- 8.3. detailed assessment of specified features

### **9. Object:**

- 9.1. geographical
- 9.2. structural
- 9.3. environmental
- 9.4. material

### **10. Purpose:**

- 10.1. performance
- 10.2. routine
- 10.3. contingency

### **11. Nature**

- 11.1. physical
- 11.2. condition
- 11.3. performance
- 11.4. destructive
- 11.5. non-destructive
- 11.6. qualitative
- 11.7. quantitative

### **12. Contract and legal requirements:**

- 12.1. health and safety legislation
- 12.2. contract conditions
- 12.3. environmental legislation

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### **13. Resources:**

- 13.1. materials
- 13.2. people
- 13.3. equipment
- 13.4. time

### **14. Permission from:**

- 14.1. client
- 14.2. site owner and occupiers
- 14.3. occupiers
- 14.4. adjoining owners and occupiers
- 14.5. notifiable authorities

### **15. Health and safety requirements:**

- 15.1. personal safety equipment and clothing
- 15.2. safe use of access equipment (including ladders, tower scaffolds, hydraulic hoists - as required under health and safety legislation)
- 15.3. industry codes of practice and regulations applying to the test location and the tests being conducted
- 15.4. as identified by risk assessments

### **16. Plans - will include:**

- 16.1. risk assessment
- 16.2. arrangements for waste disposal
- 16.3. dealing with contingencies

### **17. Test requirements:**

- 17.1. physical
- 17.2. condition
- 17.3. performance

### **Analyse and present test results**

#### **18. Methods of analysis:**

- 18.1. comparison with standard test results
- 18.2. referenced to accepted scientific/engineering principles and analytical practice



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#### **19. Present:**

- 19.1. orally
- 19.2. in writing
- 19.3. graphically
- 19.4. electronically

#### **20. Stakeholders:**

- 20.1. client
- 20.2. owners
- 20.3. occupiers
- 20.4. facility/asset managers
- 20.5. regulatory authorities
- 20.6. designers

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## Specify, manage and analyse tests in built environment design management

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**Originating organisation** ConstructionSkills (CIC)

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**Relevant occupations** Architects; Civil Engineers; Graphic Designers; Architectural Technologists; Town Planning Technicians; Building Surveyors

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**Suite** Built Environment Design Management

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