

# Unit 15: Building Surveying in Construction

NQF Level 3: BTEC National

Guided learning hours: 60

---

## Unit abstract

Building surveys are used to identify the aspects of a building that need attention, maintenance or repair prior to purchase, and form part of the financial negotiations between parties to a contract. They are also used by building owners to identify maintenance needs.

The Building Surveyor uses a range of equipment from a tape for measured surveys to sophisticated CCTV drainage cameras and boroscopes to identify the particular building defects being examined.

The Building Surveyor is required to have a thorough understanding of construction methods and building defects. Essential skills include the ability to collect data, measure accurately, take photographs, use electronic surveying devices, produce drawings, investigate thoroughly the causes of building defects, and to produce a clear written report of the findings of a survey. The survey usually includes the building structure together with the electrical, plumbing and other services within the property being surveyed.

The unit will provide learners with an understanding of the role and responsibilities of Building Surveyors, including their interactions with other professionals. They will be able to apply the understanding gained to carry out building surveys, and be capable of producing survey reports and associated schedules for low-rise domestic and commercial buildings.

## Learning outcomes

On completion of this unit a learner should:

- 1 Be able to demonstrate knowledge and understanding of the role of the building surveyor, interaction with other professionals and the professional qualifications required
- 2 Understand the reasons for, and the processes involved, in surveying buildings
- 3 Be able to carry out simple building surveys, including, measured, dilapidation and condition, for low-rise domestic and commercial buildings
- 4 Be able to produce a survey report and schedule of maintenance and repair and distinguish between planned and unplanned maintenance for low-rise domestic and commercial buildings.

## Unit content

---

### 1 Be able to demonstrate knowledge and understanding of the role of the building surveyor, interaction with other professionals and the professional qualifications required

*Role of the building surveyor:* completion of measured, dilapidation and condition surveys; production of survey reports and schedules of maintenance and repair

*Interaction with other members of the building team:* including client, building owner, architect, architectural technologist; quantity surveyor, structural engineer, clerk of works, main and sub-contractors, local authorities, health and safety executive

*Qualifications:* the qualification route to professional status eg secondary education, A levels, National Certificate/Diploma, Higher National Certificate/Diploma, honours degree accredited by professional body, professional membership of the Royal Institution of Chartered Surveyors and/or the Chartered Institute of Building.

### 2 Understand the reasons for, and the processes involved, in surveying buildings

*Types of building survey:* measured surveys; bank or building society surveys; house buyer's reports and valuations, dilapidation and condition surveys

*Purposes of, and processes involved in, surveys:* measured survey to produce accurate plans prior to alteration; condition survey for prospective lenders and purchasers; advice on maintenance, repair and conservation; assessment of dangerous structures; structural appraisal; detailed examination of the building's condition using general and specialised techniques and equipment

*Equipment:* steel and fibre tape; folding rule; electronic distance measurement device; moisture meter; camera; inspection chamber keys; binoculars; boroscope; thermal imaging equipment; sectional ladder; spirit level; electric torch; optical levels; basic land surveying equipment; personal protective equipment

*Procedures:* preliminary surveys; site location; building location; elemental surveys (external, internal, building services, external works)

*Checklists for surveys:* use of standardised checklists to ensure coverage of all aspects

*Legislative considerations:* health, safety and welfare; contractual obligations; legal constraints

**3 Be able to carry out simple building surveys, including, measured, dilapidation and condition, for low-rise domestic and commercial buildings**

*Measured survey:* application of knowledge and understanding of surveying methods in the execution of simple measured survey of case-study building

*Dilapidation survey:* application of knowledge and understanding of surveying methods in the execution of simple dilapidation survey of case-study building

*Condition survey:* application of knowledge and understanding of surveying methods in the execution of simple condition survey of case-study building

**4 Be able to produce a survey report and schedule of maintenance and repair and distinguish between planned and unplanned maintenance for low-rise domestic and commercial buildings**

*Survey report:* use of data obtained from execution of simple survey, and application of report writing skills to produce a final survey report

*Maintenance and repair schedules:* use of data obtained from execution of simple survey, and application of scheduling methods to produce schedules of maintenance and repair including planned maintenance

## Grading grid

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describe the level of achievement required to pass this unit.

Grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 describe the roles and responsibilities of the building surveyor, training and qualifications required, and identify the other members of the building team with whom the building surveyor interacts	M1 prepare a typical job description for a building surveyor and explain the building surveyor's interaction with other members of the building team	
P2 demonstrate basic understanding of the reasons for surveying buildings and identify the procedures, equipment and techniques used	M2 identify, and explain the uses of, the surveying equipment required for different surveying tasks M3 identify and evaluate the ways in which survey data is recorded and presented	D1 explain the implications of health and safety legislation, contractual obligations and legal constraints in the context of survey work
P3 execute simple measured, dilapidation and condition surveys for a low-rise domestic or commercial building	M4 collect and compile survey data using standard techniques and record and present the data in appropriate formats.	D2 evaluate key surveying operations in terms of health, safety and welfare
P4 produce final measured, dilapidation and condition survey reports for a low-rise domestic or commercial building		D3 discriminate between, and explain the applications of, the various types of building survey.
P5 produce schedules of maintenance and repair including planned maintenance.		

## Essential guidance for tutors

---

### Delivery

Tutors delivering this unit have opportunities to use a wide range of technique. Lectures, discussion, seminar presentations, site visits, supervised practicals, research using internet and/or library resources and the use of personal and/or industrial experience are all suitable. Delivery should stimulate, motivate, educate and enthuse learners. Visiting expert speakers could add to the relevance of the subject for learners.

The role of the building surveyor and interaction with other members of the construction team should be explored at an early stage in the delivery of the unit. The delivery should encompass the purpose of building surveys within the contexts of building maintenance, repair, refurbishment and conversion. The principal areas of surveying practice should be addressed focusing on procedures, equipment required, health and safety implications and the preparation of reports and schedules.

A significant proportion of the unit involves the completion of practical building surveys and the preparation of reports and schedules in a suitable format. This involves the selection of, and access to, suitable premises which the learners can survey and the provision of appropriate surveying equipment. Binoculars, tape measures and a digital camera are the minimum requirement.

Overall delivery of the unit should be supported by the use of case-studies and visual media where appropriate including photographs, videos, DVDs, and drawings to demonstrate surveying methods and applications.

Group activities are permissible, but tutors will need to ensure that individual learners are provided with equal experiential and assessment opportunities.

**Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken prior to practical activities. Centres are advised to read the *Delivery approach* section on page 24, and *Annexe G: Provision and Use of Work Equipment Regulations 1998 (PUWER)*.**

### Assessment

Evidence for this unit may be gathered from a variety of sources, including well-planned investigative assignments, case studies or reports of practical assignments.

There are many suitable forms of assessment that could be employed, and tutors are encouraged to consider and adopt these where appropriate. Some examples of possible assessment approaches are suggested below. However, these are not intended to be either prescriptive or restrictive, and are provided as an illustration of the alternative forms of assessment evidence that would be acceptable. General guidance on the design of suitable assignments is available on page 19 of this specification.

Some criteria could be assessed directly by the tutor during practical activities. If this approach is used then suitable evidence from guided activities would be observation records or witness statements. Guidance on the use of these is provided on the Edexcel website.

The structure of the unit suggests that the grading criteria may be fully addressed by using three assignments. The first assignment would cover P1 and M1. The second assignment would cover P2, M2, M3 and D1 and the third assignment would cover P3, P4, P5, M4, D2 and D3.

To achieve a pass grade learners must meet the five pass criteria listed in the grading grid.

For P1, learners must describe the roles and responsibilities of the building surveyor, and the training and qualifications required, and identify the other members of the building team with whom the building surveyor interacts. This requires a clear understanding of the building surveyor's work, the education and training required and the wider team context within which the surveyor functions.

For P2, learners must demonstrate a basic understanding of the reasons for surveying buildings and identify the procedures, equipment and techniques used. This demands an in-depth appreciation of why surveys are carried out and how the resulting data is used.

For P3, learners are required to execute simple measured, dilapidation and condition surveys for a low-rise domestic or commercial building. This will require access to an appropriate case-study property which could be learners' own home. Should the latter be problematical, the centre will need to provide an alternative.

For P4, learners must produce final measured, dilapidation and condition survey reports for a low-rise domestic or commercial building. Evidence could be based on the surveys of the case study property used for P3.

For P5, learners must produce schedules of maintenance and repair including planned maintenance. Evidence could include standard schedule pro-forma and examples of completed maintenance and repair schedules.

To achieve a merit grade learners must meet all of the pass grade criteria and the four merit grade criteria.

For M1, learners are required to prepare a typical job description for a building surveyor and explain the building surveyor's interaction with other members of the building team. This extends beyond a simple description of the identification and roles of other team members and requires a full explanation of their functional interdependence with the surveyor.

For M2, learners must identify, and explain the uses of, the surveying equipment required for different surveying tasks. Evidence could be based on hands-on examination and/or demonstration of modern surveying equipment.

For M3, learners are required to identify and evaluate the ways in which survey data is recorded and presented. Critical evaluation of the methods identified will give the learner a deeper understanding of this key area.

For M4, learners must collect and compile survey data using standard techniques and record and present the data in appropriate formats.

To achieve a distinction grade learners must meet all of the pass and merit grade criteria **and** the three distinction grade criteria.

For D1, learners must explain the implications of health and safety legislation, contractual obligations and legal constraints in the context of survey work. This will require an understanding of the legal duties of the employer and employee within the context of the Health and Safety at Work Act 1974 and other associated legislation, and the restraints and conditions imposed by contractual and legal requirements. This should extend to specific effects of the HSW legislation on surveying operations, the constraints it imposes and the need for risk assessments.

For D2, learners must evaluate key surveying operations in terms of health, safety and welfare. This is a further development of D1 and requires learners to consider specific surveying operations and evaluate them with regard to their health and safety implications. Operations with the highest degree of risk, for example where the use of ladders is involved, should be included.

For D3, learners must discriminate between, and explain the applications of, the various types of building survey. They should give a coherent explanation of the differences between the various types of survey and the situations in which they are required.

### **Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications**

The learning outcomes in this unit are closely linked with, for example, *Unit 1: Health Safety and Welfare in Construction and the Built Environment*, *Unit 5: Construction Technology and Design in Construction and Civil Engineering*, *Unit 6: Building Technology in Construction*, *Unit 10: Surveying in Construction and Civil Engineering* and *Unit 16: Mechanical and Electrical Services in Construction*, together with similar units at Higher National and degree level.

This unit may have links to the Edexcel Level 3 Technical and Professional NVQs for Construction and the Built Environment. Updated information on this, and a summary mapping of the unit to the CIC Occupational Standards, is available from Edexcel. See *Annexe D: National Occupational Standards/mapping with NVQs*.

This unit presents opportunities to demonstrate key skills in application of number, communication, information and communication technology, improving own learning and performance, problem solving and working with others. Opportunities for satisfying requirements for Wider Curriculum Mapping are summarised in *Annexe F: Wider curriculum mapping*.

### **Essential resources**

A suitable, safe property must be found for learners to undertake the various surveys. If no suitable property can be found, then parts of the centre could be used. The use of a scenario could also be considered.

Specialist equipment will be required to perform a range of building surveys including steel and fibre tape, folding rule, electronic distance measurement device, moisture meter, camera, inspection chamber keys, binoculars, boroscope, thermal imaging equipment, sectional ladder, spirit level, electric torch, optical levels, basic land

surveying equipment and personal protective equipment. Samples of industry-standard documentation and completed condition surveys, as well as dilapidation and maintenance schedules, will prove useful.

All practical building surveys carry some element of risk so close attention must be given to instruction in health, safety and welfare and, where applicable, supervision on site.

#### **Indicative reading for learners**

Dickinson P and Thornton N – *Cracking and Building Movement* (RICS, 2004)  
ISBN 184219156X

Glover P – *Building Surveys, 6th Edition* (Butterworth-Heinemann, 2006)  
ISBN 0750681284

Hollis M – *Pocket Surveying Buildings, 2nd Edition* (RICS Books, 2006)  
ISBN 1842192426

Hollis M – *Surveying Buildings, 5th Edition* (RICS Books, 2005) ISBN 1842191926

Noy E and Douglas J – *Building Surveys and Reports, 3rd Edition* (Blackwell Science, 2005) ISBN 1405121475

## Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

Application of number Level 3	
When learners are:	They should be able to develop the following key skills evidence:
<ul style="list-style-type: none"> <li>producing schedules of maintenance and repair including planned maintenance.</li> </ul>	<p>N3.1 Plan an activity and get relevant information from relevant sources.</p> <p>N3.2 Use this information to carry out multi-stage calculations to do with:</p> <ul style="list-style-type: none"> <li>a amounts or sizes</li> <li>b scales or proportion</li> <li>c handling statistics</li> <li>d using formulae.</li> </ul> <p>N3.3 Interpret the results of your calculations, present your findings and justify your methods.</p>
Communication Level 3	
When learners are:	They should be able to develop the following key skills evidence:
<ul style="list-style-type: none"> <li>demonstrating a basic understanding of the reasons for surveying buildings and identifying the procedures, equipment and techniques used.</li> </ul>	<p>C3.1a Take part in a group discussion.</p> <p>C3.1b Make a formal presentation of at least eight minutes using an image or other support material.</p> <p>C3.2 Read and synthesise information from at least <b>two</b> documents about the same subject.</p> <p>Each document must be a minimum of 1000 words long.</p> <p>C3.3 Write <b>two</b> different types of documents, each one giving different information about complex subjects.</p> <p>One document must be at least 1000 words long.</p>

<b>Information and communication technology Level 3</b>	
<b>When learners are:</b>	<b>They should be able to develop the following key skills evidence:</b>
<ul style="list-style-type: none"> <li>describing the roles and responsibilities of the building surveyor, training and qualifications required, and identifying the other members of the building team with whom the building surveyor interacts.</li> </ul>	<p>ICT3.1 Search for information, using different sources, and multiple search criteria in at least one case.</p> <p>ICT3.2 Enter and develop the information and derive new information.</p> <p>ICT3.3 Present combined information such as text with image, text with number, image with number.</p>
<b>Improving own learning and performance Level 3</b>	
<b>When learners are:</b>	<b>They should be able to develop the following key skills evidence:</b>
<ul style="list-style-type: none"> <li>producing final measured, dilapidation and condition survey reports for a low-rise domestic or commercial building.</li> </ul>	<p>LP3.1 Set targets using information from appropriate people and plan how these will be met.</p> <p>LP3.2 Take responsibility for your learning, using your plan to help meet targets and improve your performance.</p> <p>LP3.3 Review progress and establish evidence of your achievements.</p>
<b>Problem solving Level 3</b>	
<b>When learners are:</b>	<b>They should be able to develop the following key skills evidence:</b>
<ul style="list-style-type: none"> <li>producing schedules of maintenance and repair including planned maintenance.</li> </ul>	<p>PS3.1 Explore a problem and identify different ways of tackling it.</p> <p>PS3.2 Plan and implement at least one way of solving the problem.</p> <p>PS3.3 Check if the problem has been solved and review your approach to problem solving.</p>

<b>Working with others Level 3</b>	
<b>When learners are:</b>	<b>They should be able to develop the following key skills evidence:</b>
<ul style="list-style-type: none"> <li>• executing simple measured, dilapidation and condition surveys for a low-rise domestic or commercial building.</li> </ul>	<p>WO3.1 Plan work with others.</p> <p>WO3.2 Seek to develop co-operation and check progress towards your agreed objectives.</p> <p>WO3.3 Review work with others and agree ways of improving collaborative work in the future.</p>