

# **Pearson BTEC Level 3 Diploma in Town Planning Technical Support**

## **Specification**

BTEC specialist qualification

First teaching March 2013

Issue 2

## **Edexcel, BTEC and LCCI qualifications**

Edexcel, BTEC and LCCI qualifications are awarded by Pearson, the UK's largest awarding body offering academic and vocational qualifications that are globally recognised and benchmarked. For further information, please visit our qualifications website at [qualifications.pearson.com](http://qualifications.pearson.com). Alternatively, you can get in touch with us using the details on our contact us page at [qualifications.pearson.com/contactus](http://qualifications.pearson.com/contactus)

## **About Pearson**

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This specification is Issue 2. Key changes are listed in the summary table on the next page. We will inform centres of any changes to this issue. The latest issue can be found on the Pearson website: [qualifications.pearson.com](http://qualifications.pearson.com)

This qualification was previously known as:

Pearson BTEC Level 3 Diploma in Town Planning Technical Support (QCF)

The QN remains the same.

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*All information in this specification is correct at time of publication.*

ISBN 978 1 446 95615 1

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## Summary of Pearson BTEC Level 3 Diploma in Town Planning Technical Support specification Issue 2 changes

<b>Summary of changes made between previous issue and this current issue</b>	<b>Page/section number</b>
All references to QCF have been removed throughout the specification	
Definition of TQT added	Section 1
Definition of sizes of qualifications aligned to TQT	Section 1
TQT value added	Section 2
Reference to credit transfer within the QCF removed	Section 6
QCF references removed from unit titles and unit levels in all units	Section 12
Guided learning definition updated	Section 12

Earlier issue(s) show(s) previous changes.

If you need further information on these changes or what they mean, contact us via our website at: [qualifications.pearson.com/en/support/contact-us.html](http://qualifications.pearson.com/en/support/contact-us.html).



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## Purpose of this specification

The purpose of a specification as defined by Ofqual is to set out:

- the qualification's objective
- any other qualification which a learner must have completed before taking the qualification
- any prior knowledge, skills or understanding which the learner is required to have before taking the qualification
- units that a learner must have completed before the qualification will be awarded and any optional routes
- any other requirements which a learner must have satisfied before the learner will be assessed or before the qualification will be awarded
- the knowledge, skills and understanding which will be assessed as part of the qualification (giving a clear indication of their coverage and depth)
- the method of any assessment and any associated requirements relating to it
- the criteria against which learners' level of attainment will be measured (such as assessment criteria)
- any specimen materials
- any specified levels of attainment.





# 1 Introducing BTEC Specialist qualifications

BTEC Specialist qualifications are work-related qualifications available from Entry to Level 3 in a range of sectors. They give learners the knowledge, understanding and skills they need to prepare for employment in a specific occupational area. The qualifications also provide career development opportunities for those already in work. The qualifications may be offered as full-time or part-time courses in schools or colleges. Training centres and employers may also offer these qualifications.

## Sizes of Specialist qualifications

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For all regulated qualifications, Pearson specify a total number of hours that it is estimated learners will require to complete and show achievement for the qualification – this is the Total Qualification Time (TQT). The TQT value indicates the size of a qualification.

Within the TQT, Pearson identifies the number of Guided Learning Hours (GLH) that we estimate a centre delivering the qualification might provide. Guided learning means activities, such as lessons, tutorials, online instruction, supervised study and giving feedback on performance, that directly involve tutors and assessors in teaching, supervising and invigilating learners. Guided learning includes the time required for learners to complete external assessment under examination or supervised conditions.

In addition to guided learning, other required learning directed by tutors or assessors will include private study, preparation for assessment and undertaking assessment when not under supervision, such as preparatory reading, revision and independent research.

As well as TQT and GLH, qualifications can also have a credit value – equal to one tenth of TQT, rounded to the nearest whole number.

TQT and credit values are assigned after consultation with users of the qualifications.

BTEC Specialist qualifications are generally available in the following sizes:

- Award – a qualification with a TQT value of 120 or less (equivalent to a range of 1–12 credits)
- Certificate – a qualification with a TQT value in the range of 121–369 (equivalent to a range of 13–36 credits)
- Diploma – a qualification with a TQT value of 370 or more (equivalent to 37 credits and above).

## 2 Qualification summary and key information

Qualification title	Pearson BTEC Level 3 Diploma in Town Planning Technical Support
Qualification Number (QN)	600/7906/X
Date registrations can be made	01/03/2013
Age range that the qualification is approved for	16-18 19+
Credit value	120
Assessment	Centre-devised assessment (internal assessment)
Total Qualification Time (TQT)	1200
Guided learning hours	720
Grading information	The qualification and units are at pass grade.
Entry requirements	No prior knowledge, understanding, skills or qualifications are required before learners register for this qualification. However, centres must follow the <i>Pearson Access and Recruitment Policy</i> (see Section 10, Access and recruitment).

## Qualification title and Qualification Number

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Centres will need to use the Qualification Number (QN) when they seek public funding for their learners. The qualification title, unit titles and QN are given on each learner's final certificate. You should tell your learners this when your centre recruits them and registers them with us. There is more information about certification in our *UK Information Manual*, available on our website, [qualifications.pearson.com](http://qualifications.pearson.com)

## Objective of the qualification

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The Pearson BTEC Level 3 Diploma in Town Planning Technical Support is for learners who work in, or want to work in a town planning technical support role.

It gives learners the opportunity to:

- develop knowledge of town planning technical support
- develop skills in town Planning technical support
- learn about policy, procedures, building regulations and controls affecting the town planning role and about professional development and employment for those new to the sector
- achieve a nationally-recognised level 3 qualification
- develop their own personal growth and engagement in learning.

## Apprenticeships

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The Sector Skills Council, Construction Skills, has approved the Pearson BTEC Level 3 Diploma in Town Planning Technical Support as a knowledge component for the Advanced Apprenticeship in Town Planning Technical Support. This qualification provides underpinning knowledge and a range of technical skills to complement the NVQ in Town Planning Technical Support.

## Progression opportunities through Pearson qualifications

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Learners who have achieved the Pearson BTEC Level 3 Diploma in Town Planning Technical Support can progress to higher-level construction qualifications in the Pearson suite. The knowledge and competence gained from certain units within this qualification are relevant to higher-level construction qualifications; these units include Unit 1 – Health, Safety and Welfare in the Built Environment and Sustainable Construction. Progression opportunities are available to Pearson NVQ Diplomas in Construction at levels 3 to 7 and Pearson BTECs at levels 3, 4 and 5.

## Industry support and recognition

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The Construction Industry Council and The Royal Town Planning Institute support this qualification.

### 3 Centre resource requirements

As part of the approval process, centres must make sure that the resources requirements below are in place before offering the qualification.

- Centres must have appropriate physical resources (for example equipment, IT, learning materials, teaching rooms) to support the delivery and assessment of the qualification.
- Staff involved in the assessment process must have relevant expertise and occupational experience.
- There must be systems in place to make sure continuing professional development for staff delivering the qualification.
- Centres must have appropriate health and safety policies in place relating to the use of equipment by learners.
- Centres must deliver the qualifications in accordance with current equality legislation.

## 4 Qualification structure

### Pearson BTEC Level 3 Diploma in Town Planning Technical Support

The learner will need to meet the requirements outlined in the table below before Pearson can award the qualification.

Minimum number of credits that must be achieved	120
Minimum number of credits that must be achieved at level 3 or above	110

Unit	Unit Reference Number	Mandatory units	Level	Credit	Guided Learning Hours
1	L/600/0211	Health, Safety and Welfare in Construction and the Built Environment	3	10	60
2	R/600/0212	Sustainable Construction	3	10	60
3	K/504//6442	Town Planning Framework and Processes	3	10	60
4	H/600/0344	Employment Framework in the Built Environment	3	10	60
5	K/600/0443	Information and Communication Technology for Construction and the Built Environment	2	10	60
6	H/502/5413	Business Communication	3	10	60
7	T/600/0283	Construction Technology and Design in Construction and Civil Engineering	3	10	60
8	A/600/0222	Graphical Detailing in Construction and the Built Environment	3	10	60
9	D/600/0441	Building Regulations and Control in Construction	3	10	60
10	J/504/6433	Town Planning Policy and Implementation	3	10	60
11	K/600/0426	Topographical Surveying in Construction and Civil Engineering	3	10	60
12	D/600/0360	Personal and Professional Development in the Built Environment	3	10	60

## 5 Assessment

### **Centre-devised assessment (internal assessment)**

Each unit has specified learning outcomes and assessment criteria. To pass an internally assessed unit, learners must meet all the learning outcomes. Centres may find it helpful if learners index and reference their evidence to the relevant learning outcomes and assessment criteria.

Centres need to write assignment briefs for the learners to show what evidence is required. Assignment briefs should indicate clearly, which assessment criteria are being targeted.

Assignment briefs and evidence produced by learners must also meet any additional requirements in the *Information for tutors* section of the unit.

Unless otherwise indicated in *Information for tutors*, the centre can decide the form of assessment evidence (eg performance observation, presentations, projects, tests, extended writing) as long as the methods chosen allow learners to produce valid, sufficient and reliable evidence of meeting the assessment criteria.

Centres are encouraged to provide learners with realistic scenarios and maximise the use of practical activities in delivery and assessment.

To avoid over assessment, centres are encouraged to link delivery and assessment across units.

There is more guidance about internal assessment on our website.

## 6 Recognising prior learning and achievement

### Recognition of Prior Learning

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Recognition of Prior Learning (RPL) is a method of assessment (leading to the award of credit) that considers whether a learner can demonstrate that they can meet the assessment requirements for a unit through knowledge, understanding or skills they already possess and so do not need to develop through a course of learning.

Pearson encourages centres to recognise learners' previous achievements and experiences in and outside the workplace, as well as in the classroom. RPL provides a route for the recognition of the achievements resulting from continuous learning.

RPL enables recognition of achievement from a range of activities using any valid assessment methodology. If the assessment requirements of a given unit or qualification have been met, the use of RPL is acceptable for accrediting a unit, units or a whole qualification. Evidence of learning must be sufficient, reliable and valid.

Further guidance is available in our policy document *Recognition of Prior Learning Policy and Process*, available on our website, [qualifications.pearson.com](http://qualifications.pearson.com)

## 7 Centre recognition and approval centre recognition

Centres that have not previously offered Pearson qualifications need to apply for, and be granted, centre recognition as part of the process for approval to offer individual qualifications. New centres must complete a *Pearson Vocational Centre & Qualification Approval Form (VCQA)*.

Existing centres get 'automatic approval' for a new qualification if they are already approved for a qualification that is being replaced by the new qualification and the conditions for automatic approval are met. Centres that already hold Pearson Centre approval are able to apply for qualification approval for a different level or different sector via Edexcel Online, up to and including level 3 only.

In some circumstances, qualification approval using Edexcel Online may not be possible. In such cases, guidance is available as to how an approval application may be made.

### Approvals agreement

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All centres are required to enter into an approval agreement that is a formal commitment by the head or principal of a centre to meet all the requirements of the specification and any associated codes, conditions or regulations. Pearson will act to protect the integrity of the awarding of qualifications. If centres do not comply with the agreement, this could result in the suspension of certification or withdrawal of approval.



## 8 Quality assurance of centres

Quality assurance is at the heart of vocational qualifications. The centre assesses Pearson BTEC qualifications. The centre will use quality assurance to make sure that their managers, internal verifiers and assessors are standardised and supported. Pearson use quality assurance to check that all centres are working to national standards. It gives us the opportunity to identify and provide support, if needed, to safeguard certification. It also allows us to recognise and support good practice.

For the qualifications in this specification, the Pearson quality assurance model will follow one of the processes listed below.

- 1 Delivery of the qualification as part of a BTEC apprenticeship ('single click' registration):
  - an annual visit by a Standards Verifier to review centre-wide quality assurance systems and sampling of internal verification and assessor decisions.
- 2 Delivery of the qualification outside the apprenticeship:
  - an annual visit to the centre by a Centre Quality Reviewer to review centre-wide quality assurance systems
  - Lead Internal Verifier accreditation. This involves online training and standardisation of Lead Internal Verifiers using our OSCA platform, accessed via Edexcel Online. Please note that not all qualifications will include Lead Internal Verifier accreditation. Where this is the case, we will annually allocate annually a Standards Verifier to conduct postal sampling of internal verification and assessor decisions for the Principal Subject Area.

For further details, please go to the *UK BTEC Quality Assurance Handbook* on our website.

## 9 Programme delivery

Centres are free to offer the qualifications using any mode of delivery (for example full time, part time, evening only, distance learning) that meets their learners' needs.

Whichever mode of delivery is used, centres must make sure that learners have access to the resources identified in the specification and to the subject specialists delivering the units.

Those planning the programme should aim to enhance the vocational nature of the qualification by:

- liaising with employers to make sure a course is relevant to learners' specific needs
- accessing and using non-confidential data and documents from learners' workplaces
- developing up-to-date and relevant teaching materials that make use of scenarios that are relevant to the sector
- giving learners the opportunity to apply their learning in practical activities
- including sponsoring employers in the delivery of the programme and, where appropriate, in the assessment
- making full use of the variety of experience of work and life that learners bring to the programme.

Centres must make sure that any legislation is up to date and current.

## 10 Access and recruitment

Pearson's policy regarding access to our qualifications is that:

- they should be available to everyone who is capable of reaching the required standards
- they should be free from any barriers that restrict access and progression
- there should be equal opportunities for all those wishing to access the qualifications.

Centres are required to recruit learners to BTEC specialist qualifications with integrity.

Applicants will need relevant information and advice about the qualification to make sure it meets their needs.

Centres should review the applicant's prior qualifications and/or experience, considering whether this profile shows that they have the potential to achieve the qualification.

For learners with disabilities and specific needs, this review will need to take account of the support available to the learner during teaching and assessment of the qualification. The review must take account of the information and guidance in *Section 11 Access to qualifications for learners with disabilities or specific needs*.

Learners may be aged between 14 and 16 and therefore potentially vulnerable. Where learners are required to spend time and be assessed in work settings, it is the centre's responsibility to ensure that the work environment they go into is safe.

## 11 Access to qualifications for learners with disabilities or specific needs

Equality and fairness are central to our work. Pearson's Equality Policy requires all learners to have equal opportunity to access our qualifications and assessments and that our qualifications are awarded in a way that is fair to every learner.

We are committed to making sure that:

- learners with a protected characteristic (as defined by the Equality Act 2010) are not, when they are undertaking one of our qualifications, disadvantaged in comparison to learners who do not share that characteristic
- all learners achieve the recognition they deserve from undertaking a qualification and that this achievement can be compared fairly to the achievement of their peers.

For learners with disabilities and specific needs, the assessment of their potential to achieve the qualification must identify, where appropriate, the support that will be made available to them during delivery and assessment of the qualification. Please see the information on reasonable adjustments and special consideration in *Section 4, Assessment*.

Learners taking a qualification may be assessed in British sign language or Irish sign language where it is permitted for the purpose of reasonable adjustments.

# 12 Units

Units have the following sections.

## Unit title

This is the formal title of the unit that will appear on the learner's certificate.

## Unit reference number

Each unit is assigned a unit reference number that appears with the unit title on the Register of Regulated Qualifications.

## Level

All units and qualifications have a level assigned to them. The level assigned is informed by the level descriptors defined by Ofqual, the qualifications regulator.

## Credit value

When a learner achieves a unit, they gain the specified number of credits.

## Guided learning hours

Guided Learning Hours (GLH) is the number of hours that a centre delivering the qualification needs to provide. Guided learning means activities that directly or immediately involve tutors and assessors in teaching, supervising, and invigilating learners, for example lectures, tutorials, online instruction and supervised study.

## Unit aim

This gives a summary of what the unit aims to do.

## Essential resources

This section lists any specialist resources needed to deliver the unit. The centre will be asked to make sure that these resources are in place when it seeks approval from Pearson to offer the qualification.

## Learning outcomes

Learning outcomes of a unit set out what a learner knows, understands or is able to do as the result of a process of learning.

## Assessment criteria

Assessment criteria specify the standard required by the learner to achieve each learning outcome.

## Unit amplification

This section clarifies what a learner needs to know to achieve a learning outcome.

## Information for tutors

This section gives tutors information on delivery and assessment. It contains the following subsections.

- *Delivery* – explains the content’s relationship to the learning outcomes and offers guidance on possible approaches to delivery.
- *Assessment* – gives information about the evidence that learners must produce, together with any additional guidance if appropriate. This section should be read in conjunction with the assessment criteria.
- *Indicative resource materials* – lists resource materials that can be used to support the teaching of the unit, for example books, journals and websites.

# **Unit 1: Health, Safety and Welfare in Construction and the Built Environment**

**Unit reference number: L/600/0211**

**Level: 3**

**Credit value: 10**

**Guided learning hours: 60**

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## **Unit aim**

This unit enables learners to undertake the responsibilities of employees and the control measures used to reduce risk and meet legal requirements. They will gain knowledge of how to undertake risk assessments and accident reporting procedures.

## **Unit introduction**

The construction industry is complex, dynamic and diverse. It is essential that high standards of health, safety and welfare are maintained during all stages of a construction project. This should be a major priority and dedicated resources must be made available to ensure consistently high standards of safety. This unit encourages learners to explore the health, safety and welfare procedures used to mitigate and control risks on site. The unit gives learners knowledge and understanding of the legal framework relating to the responsibilities of employers, employees, site visitors and the general public.

Learners will investigate common accidents and dangerous occurrences and learn how to report an accident. They will explore the importance of planning for health and safety and the consequences of technical, engineering and human failures for themselves and others. Learners will become familiar with enforcement routes for breaches of health and safety, including prosecution costs and fines.

Learners will explore risk assessment methods and the legislation used to identify and report workplace hazards, risks and control measures in construction. Hazards covered include physical, environmental, psychosocial, chemical and biological. Learners will explore control strategies and risk control hierarchies. Learners will produce risk assessments in a format that can be understood by everyone who needs to read or review the risk assessment, or comply with its contents.

Learners will become familiar with the legal terminology and the required content of a health and safety policy, including organisational sections and safe systems of work. They must be able to identify and implement adequate monitoring and review arrangements for all identified control measures. Learners will also become familiar with components of health and safety management systems and understand the importance of training, information, instruction and supervision, along with techniques which can be used to aid understanding and adherence on site.



## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Know the responsibilities of employers and employees under current health, safety and welfare legislation	1.1	Outline the roles and responsibilities of people assigned specific health and safety duties at work
		1.2	Outline the legal duties of employees and employers in relation to three pieces of health, safety and welfare legislation relevant to the construction and built environment sector
2	Know how to undertake risk assessments using appropriate principles and formats	2.1	Describe how to identify the hazards present in a given workplace situation, the people who may be at risk, and the possible consequences
		2.2	Describe the main principles and features of a typical risk assessment for a given workplace situation
3	Understand the control measures used to reduce risk and meet legal requirements	3.1	Select control measures for a given workplace situation to reduce risks and meet legal requirements, using workplace health and safety policies
4	Know their own role in accident recording and reporting procedures	4.1	Describe the role of the individual in accident recording and reporting procedures

## Information for tutors

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### Delivery

Tutors can use a wide range of techniques to deliver this unit. Lectures, discussions, case studies, DVDs or video material and footage, seminar presentations, site visits, supervised practicals, research using the internet and/or library resources and 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.

Early in the delivery of the unit, learners should be made aware of the importance of good health, safety and welfare practice, from the inception to completion of every construction project. It is essential to embed health, safety and welfare in the delivery of all construction design and production units. Study of this unit depends on knowledge and understanding of construction methods to enable learners to be able to identify and appraise safety hazards. Learners also need to appreciate the importance of effective communication between members of the site construction team in minimising safety risks.

Centres will benefit from developing a working relationship with a local construction contractor or learners' employers. This can be a valuable delivery vehicle for providing factual evidence in support of the grading criteria and a source of useful material. It will allow opportunities for site visits to broaden learners' experience and place learning in a real-world context. The use of real-life experiences, as opposed to virtual scenarios, will reinforce the human cost of an accident and make learners more aware of the dangers inherent in the construction industry. Giving learners industry-standard examples of health, safety and welfare practice and documentation will help them with the risk assessment process.

Examples from learners' employers could be used to enhance vocational relevance. Health and safety videos and DVDs are a valuable source of visual information, particularly for hazard identification and risk assessment. Enhancement of the learning process could be achieved by using specialised input from current practitioners. Group working may be of some value in analysing health, safety and welfare policies to identify responsibilities and roles, enabling those learners working in construction to share resources.

Valuable guidance is given in the Association of Colleges *Best Practice Guide to Incorporating Health and Safety into the Construction Curriculum*, which is available online and this should form the basis of the teaching strategy adopted for health, safety and welfare in this unit and in the qualification as a whole.

Group activities are allowed but tutors will need to ensure that individual learners have equal experiential and assessment opportunities.

**Health, safety and welfare issues are paramount and should be reinforced through close supervision of all workshops and activity areas. Risk assessments must be undertaken before practical activities are undertaken. Centres are advised to read the Provision and Use of Work Equipment Regulations 1998 (PUWER).**

## Assessment

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

Learners must meet all of the assessment criteria to pass the unit.

Some criteria could be assessed directly by the tutor during practical activities. If this approach is used, observation records or witness statements can be used as evidence. Guidance on using them is available on the Pearson website.

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite:

Level 1	Level 2	Level 3
Health, Safety and Welfare in Construction	Exploring Health, Safety and Welfare in Construction	Construction Technology and Design in Construction and Civil Engineering
		Building Technology in Construction

This unit links to the Pearson Edexcel Level 3 NVQ in Technical Design (Construction Environment), the Pearson Edexcel Level 3 NVQ in Construction, Plant and Equipment Supervision, the Pearson Edexcel Level 4 NVQ in Site Inspection and the Pearson Edexcel Level 4 NVQ in Construction, Plant and Equipment Management.

The unit links to the following Level 3 National Occupational Standards:

- Built Environment Design
- Transportation
- Spatial Data Management
- Construction Contracting Operations
- Construction Plant and Equipment Supervision
- Construction Site Supervision
- Surveying, Property and Maintenance
- Town Planning, Conservation and Building Control.

## Essential resources

The Health and Safety Executive (HSE) provides excellent resources for all matters concerning health, safety and welfare, as do CITB-Construction Skills and the IOSH website discussion forums. These websites are excellent teaching and learning resources and can be used to research a wide range of health, safety and welfare matters. The HSE website is particularly useful for statistics, downloadable material and footage. The best resource is access to a construction site and ongoing construction work. Learners can find information using books, case studies, journals, magazines, suggested websites and newspapers. A broad range of personal protective equipment should be available, as referred to in the delivery guidance.

Learners should have access to a range of practical construction activity resources/workshops or a construction site.

Access to a range of information resources to complete assignments and case studies will be essential, including relevant CD ROMs and the internet.

## Employer engagement and vocational contexts

Visits to construction sites and from employers are extremely useful for this unit.

The organisations listed below offer support to enable centres to initiate and establish links to industry:

- Learning and Skills Network — [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- National Education and Business Partnership Network — [www.nebpn.org](http://www.nebpn.org)
- The Royal Institution of Chartered Surveyors — [www.rics.org](http://www.rics.org)

## Suggested resources

### Textbooks and guidance materials

Barber J – *Health and Safety in Construction* (Thomas Telford, 2002)  
ISBN 0727731181

CITB – *Construction Site Safety – Health, Safety and Environmental Information* (CITB, 2009) ISBN 9781857512991

Griffith A and Howarth T – *Construction Health and Safety Management* (Pearson Higher Education, 2001) ISBN 0582414423

HSC – *Health and Safety Statistics 2000/2001* (HSE Books, 2001)  
ISBN 0717621103

HSE – *Control of Substances Hazardous to Health* (HSE Books, 2002)  
ISBN 0717625346

HSE – *Essentials of Health and Safety at Work* (HSE Books, 2006)  
ISBN 9780717661794

HSE – *Investigating Accidents and Incidents HSG 245* (HSE, 2004)  
ISBN 9780717628278

HSE – *Management of Health and Safety at Work L21* (HSE, 2000)  
ISBN 9780717624881

HSE – *Managing Health and Safety in Construction L144* (HSE Books, 2007)  
ISBN 9780717662234

HSE – *Managing Health and Safety: Your Role* (HSE Books, 1996)  
ISBN 0717611531

HSE – *Successful Health and Safety Management HSG65, 2nd Edition* (HSE Books, 1997) ISBN 978 0717612765

Hughes P and Ferret E – *Introduction to Health and Safety in the Construction Industry, 2nd Edition* (Butterworth Heinemann, 2007) ISBN 978075068117

Perry P – *CDM 2007 Questions and Answers* (Butterworth Heinemann Elsevier, 2008) ISBN 9780750687089

St John Holt A – *Principles of Construction Safety* (Blackwell Publishing, 2005)  
ISBN 9781405134460

Topliss S, Hurst M and Skarratt G – *BTEC Level 3 National Construction and the Built Environment Student Book* (Pearson, 2010) ISBN 9781846906565

Topliss S, Hurst M and Skarratt G – *BTEC Level 3 National Construction and the Built Environment Teaching Resource Pack* (Pearson, 2010) ISBN 9781846906558

### **Websites**

<http://www.cskills.org/supportbusiness/healthsafety/index.aspx> Construction Skills

[www.hse.gov.uk/construction/](http://www.hse.gov.uk/construction/) – Health and Safety Executive, Construction

<http://forum.iosh.co.uk/> Institute of Occupational Health and Safety

<http://www.workplacelaw.net/> – Workplace Law Network

# Unit 2: Sustainable Construction

**Unit reference number:** R/600/0212

**Level:** 3

**Credit value:** 10

**Guided learning hours:** 60

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## Unit aim

The aim of this unit is to enable learners to know which features of the natural environment need to be protected and understand how the activities of the construction and built environment sector impact on the natural environment. Learners will also find out about how the natural environment can be protected against these activities, including how sustainable construction techniques are used.

## Unit introduction

The construction industry poses a major potential pollution threat to our environment and is responsible for many pollution incidents. The implications of this must include possible, less-evident, longer-term or indirect effects on succeeding generations, other species and biodiversity in general.

Pollution incidents may arise out of ignorance, apathy, neglect, accident, vandalism or theft, and all of these causes must be addressed. This is a challenge, but responding to them should not be looked on as a burden. The cost of non-compliance with increasingly demanding environmental legislation is high. The construction industry must carry with it the public and the institutions that provide its financial backing if it is to prosper.

Learners will understand the important features of the natural environment and the relationship between the natural and the built environment. The unit gives learners a fundamental understanding of how the activities of the construction sector impact on the natural environment. The techniques, processes and procedures used to protect the natural environment are investigated and the advantages of adopting a sustainable approach to construction work are explored in the contexts of energy, materials and waste supervision, along with techniques that can be used to aid understanding and adherence on site.

## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Know the important features of the natural environment that need to be protected	1.1	Describe six different features of the natural environment that must be considered at the planning stage of a construction project
2	Understand how the activities of the construction and built environment sector impact on the natural environment	2.1	Explain four different forms of global pollution arising from construction projects
		2.2	Explain how four different forms of local pollution arising from construction projects may harm the local environment
3	Understand how the natural environment can be protected against the activities of the construction and built environment sector	3.1	Explain four key methods used to protect the natural environment from the impact of the construction and built environment sector
4	Understand sustainable construction techniques that are fit for purpose	4.1	Explain three different, fit-for-purpose sustainable construction techniques

## Information for tutors

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### Delivery

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

The intention of this unit is that, early on, learners should become aware that, although the provision of buildings and the built environment is essential to our quality of life and to local and national economies, there is a high price to be paid in terms of environmental damage and the use of large quantities of resources. Delivery should clearly address these issues and the established and emerging sustainable construction techniques used to minimise the environmental impact of the sector.

Delivery should be broad rather than deep, and the unit contextualised as appropriate. For example, learners should be made aware of relevant environmental and building control legislation but an in-depth treatment is not required at this point. The same approach should inform the rest of the unit.

As this unit is designed to be undertaken at an early stage of a programme, it is unlikely that learners will have had the time to develop an in-depth knowledge and understanding of construction technology. This should be taken into account when introducing sustainable construction techniques.

Wherever possible, links should be made to the practical aspects of construction, using photographs, drawings, plans, videos, CD ROMs and DVDs to give learners the opportunity to explore and contextualise environmental and sustainability issues. This can be supported by site visits or by studying schemes in progress or after completion. Links with house-building companies would be useful as they can give learners opportunities to explore the planning, design and construction of buildings they are familiar with and to which they have easy access.

Tutors should use these links to encourage learners to:

- perform simple environmental assessments at the planning, design and construction phases of projects
- discuss the importance of controlling and disposing of ground water safely
- consider the various ways that waste can be controlled
- explore recycling issues using catalogues from local architectural salvage and reclamation companies
- suggest locally sourced and low-energy materials
- recognise that building sites generate high levels of noise, dust and fumes
- relate the use of insulation to improvements in energy efficiency
- recognise typical examples of contaminated land, such as petrol stations and landfill sites.



are other links with the school curriculum, particularly in subjects such as Personal, Social and Health Education (PSHE), geography, design and technology, religious education and the sciences. Other useful links can be made with *Design Quality Indicators* (DQIs) at [www.ogc.gov.uk](http://www.ogc.gov.uk) and with *Education for Sustainable Development* (ESD). The latter proposes seven interrelated concepts that clarify the interaction between environment, society and economics: interdependence, citizenship and stewardship, needs and rights of future generations, diversity, quality of life, sustainable change and uncertainty and precaution. This can be found at [www.nc.uk.net/esd/gq2.htm](http://www.nc.uk.net/esd/gq2.htm) and will give tutors a useful perspective.

**Health, safety and welfare issues are paramount and should be reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken before practical activities are taken. Centres are advised to read the Provision and Use of Work Equipment Regulations 1998 (PUWER).**

### Assessment

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

Some criteria can be assessed directly by the tutor during practical activities. If this approach is used, observation records or witness statements are suitable as evidence. Guidance on using them is available on the Pearson website.

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite:

<b>Level 3</b>
Science and Materials in Construction and the Built Environment
Construction Technology and Design in Construction and Civil Engineering
The Underpinning Science for the Provision of Human Comfort in Buildings
Construction in Civil Engineering

This unit links to the Pearson Edexcel Level 3 NVQ in Technical Design (Construction Environment), the Pearson Edexcel Level 3 NVQ in Construction, Plant and Equipment Supervision, the Pearson Edexcel Level 4 NVQ in Site Inspection and the Pearson Edexcel Level 4 NVQ in Construction, Plant and Equipment Management.

This unit links to the following National Occupational Standards:

- Built Environment Design
- Town Planning, Conservation and Building Control
- Transportation.

## Essential resources

The unit deals with some global issues for which the relevant measuring equipment is not readily available. However, relatively inexpensive and accurate equipment is available to measure the parameters associated with local environmental issues such as air and water pollution.

Local authority environmental services departments might be able to offer guest lecturers or loan equipment. Copies of the *Building Research Establishment Environmental Assessment Method* (BREEAM) and other environmental assessment methods, should be made available for reference purposes. A great deal of useful source material is available, in bulk and at a reasonable cost, from the National Society for Clean Air and Environmental Protection. Greenpeace and Friends of the Earth offer similar resources.

## Employer engagement and vocational contexts

The organisations listed below offer support to enable centres to initiate and establish links to industry:

- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- National Education and Business Partnership Network – [www.nebpn.org](http://www.nebpn.org)
- The Royal Institution of Chartered Surveyors – [www.rics.org](http://www.rics.org)

## Suggested resources

### Textbooks and guidance materials

Anderson and Howard – *Green Guide to Housing Specification* (BRE Publications, 2000) ISBN 1860813763

Beggs C – *Energy Management and Conservation* (Architectural Press, 2002) ISBN 0750650966

Brownhill and Rao – *Sustainability Checklist for Developments: A Common Framework for Developers and Local Authorities* (BRE Publications, 2002) ISBN 1860815332

Chen Z and Li H – *Environmental Management in Construction* (Taylor & Francis, 2006) ISBN 0415370558

Graham P – *Building Ecology: First Principles for a Sustainable Built Environment* (Blackwell Science (UK), 2002) ISBN 0632064137

HSE – *How to Deal With Sick Building Syndrome Guidance for Employers, Building Owners and Building Managers* (Health and Safety Executive (HSE), 1995) ISBN 0717608611

Hall K – *Green Building Bible* (The Green Building Press, 2003) ISBN 1898130019

Harrison P – *Green Building Handbook Volumes 1 and 2* (Spons, 2000) ISBN 0419261508

NSCAEP – *Pollution Handbook* (National Society for Clean Air and Environmental Protection, 2006) ISBN 0903474492

Park C – *The Environment* (Routledge, 2001) ISBN 0415217717

Shorter B – *Waste Minimisation in Construction – Training Pack, C555TP* (Construction Industry Research and Information Association, 2001) ISBN 0860175553

Smith P – *Eco-refurbishment* (Architectural Press, 2004) ISBN 0750659734

Topliss S, Hurst M and Skarratt G – *BTEC Level 3 National Construction and the Built Environment Student Book* (Pearson, 2010) ISBN 9781846906565

Topliss S, Hurst M and Skarratt G – *BTEC Level 3 National Construction and the Built Environment Teaching Resource Pack* (Pearson, 2010) ISBN 9781846906558

Waters J R A – *Energy Conservation in Buildings Guide to Part L of the Building Regulations* (Blackwell Science (UK), 2003) ISBN 1405112530

### **Journals and magazines**

*The Architects' Journal* – Emap

*Building Engineer* – Association of Building Engineers

*Conservation Bulletin* – English Heritage

*RIBA Journal* – Royal Institute of British Architects (RIBA)

*RICS Building Control* – RICS

# **Unit 3: Town Planning Framework and Processes**

**Unit reference number: K/504/6442**

**Level: 3**

**Credit value: 10**

**Guided learning hours: 60**

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## **Unit aim**

This unit gives learners an opportunity to develop knowledge and understanding of planning frameworks and legislation. They will gain an understanding of the decision-making process in town planning.

## **Unit introduction**

This unit has three main components. The first explores the framework within which town planning management and control operates. Learners will find out about planning application procedures and the associated administrative processes involved. They will also learn about the roles and responsibilities of the different parties in the planning system and the decision-making process.

## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Know the framework within which town planning development and control operates	1.1	Describe the principles of the statutory framework for planning development, application, protection and control
		1.2	Describe the principles of development plans and planning guidance
		1.3	Describe the types of environmental protection that operate in planning
		1.4	Describe the forms of development management that operate in planning
2	Understand planning application procedures and their supporting administrative and information processes	2.1	Explain the procedures for submitting and reviewing planning applications
		2.2	Describe the different forms of information required to support planning applications
		2.3	Explain the processes for collecting, collating and presenting information relating to planning applications
		2.4	Review the different forms of graphical presentation of design information used in planning applications
3	Understand the operation of decision-making processes in planning	3.1	Explain the roles and responsibilities of the different parties to the planning system and decision making
		3.2	Describe the documentation forms and processes used in planning decision making
		3.3	Analyse the effectiveness of the decision-making process

## Information for tutors

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### Delivery

Tutors delivering this unit have opportunities to use a wide range of techniques. Lectures, discussions, seminar presentations, site visits, research using the internet and/or library resources and use of personal and/or practitioner experience are all suitable. Visiting planning officer speakers could add to the relevance of the subject. Delivery should stimulate, motivate, educate and enthuse learners.

The historical development of the town planning legislative framework should be investigated at the beginning of the unit. Learners should apply their knowledge and understanding to a planning application based on a real or hypothetical case study.

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 application of planning and related legislation.

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

### Assessment

Evidence for this unit can be gathered from a variety of sources, including well-planned investigative assignments, case studies and reports of practical assignments. Some criteria can be assessed directly by the tutor during practical activities. If this approach is used, observation records or witness statements are suitable as evidence. Guidance on using them is available on the Pearson website.

### Assessment guidance

1. Statutory framework
  - Town and Country Planning Acts
  - General Permitted Development Order
  - Development Manager Procedure Order
  - Use Classes Order
2. Planning policy
  - National planning policy framework
  - Guidance at national and regional level
  - Unitary development plans
  - Local plans
  - Neighbourhood plans
  - Programmes for housing, transportation and other regeneration initiatives

3. Environmental protection
  - National Parks
  - National Trust
  - English Heritage
  - Areas of outstanding national beauty
  - Green belts
  - Conservation areas and listed buildings
4. Development management
  - Statutory and policy regulations
  - Development orders
  - Community Infrastructure Levy
  - Unauthorised works
  - Public advice, guidance and consultation
5. Planning application
  - Development and use of land
  - Structures/buildings
  - Conservation and heritage
  - Environment impact
  - Energy and carbon use
  - Advertisement
  - Trees/hedgerows
  - Hazardous substances
  - Enforcement
6. Information
  - Application documentation
  - Ownership certificates
  - Plans, drawings, calculations
  - Technical/support information
  - Fees/charges
7. Graphical presentations
  - 2D/3D projections
  - Drawing conventions
  - Other graphical, photographic, model and electronic representations
8. Roles and responsibilities
  - Applicants/developers/agents/consultants
  - The public
  - Planning Officers

- Professional advisers
  - Elected representatives
  - Government
  - Government agencies
9. Documentation
- Committee reports
  - Delegated reports
  - Decision notes
  - Legal notices (S106 and CIL)
  - Appeals
  - Record system (statutory register)

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite:

<b>Level 3</b>
Planning Procedures in Construction

It also links to the following National Occupational Standards at level 3:

- Town Planning, Conservation and Building Control.

### **Employer engagement and vocational contexts**

Having a town planning officer as a guest speaker would be a valuable link to the real world and could enhance delivery. The speaker should be briefed to bring photographs and drawings with them. As a member of the Royal Town Planning Institute, they could provide information on professional development and the importance of ethics as a practitioner.

The organisations listed below offer support to enable centres to initiate and establish links to industry

- Construction Industry Council – [www.cic.org.uk](http://www.cic.org.uk)
- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- Royal Town Planning Institute – [www.rtpi.org.uk](http://www.rtpi.org.uk)

### **Essential resources**

Access to planning documentation is essential for the delivery of this unit. Copies of the Town and Country Act 1990 and other planning legislation are available via the internet and can be downloaded as printable documents. Examples of completed application pro forma and related documentation are also useful for learners.



## Suggested resources

### Textbooks and guidance materials

Cullingworth B and Nadin V – *Town and Country Planning in the UK* (Routledge, 2012) ISBN 9780415358101

Moore V – *A Practical Approach to Planning Law* (Oxford University Press, 2012) ISBN 9780199640072

Rydin Y – *The Purpose of Planning* (Polity Press, 2011) ISBN 9781847424303

### Journals and magazines

*The Handy Guide to Planning 2012* – RTPi

*Planning* magazine – Royal Town Planning Institute

*Town and Country Planning* – Town and Country Planning Association

### Websites

<a href="http://www.communities.gov.uk">www.communities.gov.uk</a>	Department for Communities and Local Government
<a href="http://www.legislation.gov.uk">www.legislation.gov.uk</a>	Town and Country Planning Act and Town and Country Planning Regulations
<a href="http://www.pas.gov.uk">www.pas.gov.uk</a>	Planning Advisory Services
<a href="http://www.planningofficers.org.uk">www.planningofficers.org.uk</a>	Planning Officers Society
<a href="http://www.planningportal.gov.uk">www.planningportal.gov.uk</a>	Planning Aid
<a href="http://www.rtpi.org.uk">www.rtpi.org.uk</a>	Royal Town Planning Institute
<a href="http://www.rtpi.org.uk/knowledge">www.rtpi.org.uk/knowledge</a>	The Localism Act
<a href="http://www.rtpi.org.uk/planningaid">www.rtpi.org.uk/planningaid</a>	Planning Aid
<a href="http://www.tcpa.org.uk">www.tcpa.org.uk</a>	Town and Country Planning Association

# **Unit 4: Employment Framework in the Built Environment**

**Unit reference number: H/600/0344**

**Level: 3**

**Credit value: 10**

**Guided learning hours: 60**

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## **Unit aim**

This unit gives learners the opportunity to gain an understanding of the services and functions provided by the sector, and the structure and role of organisations within the sector. Learners will gain knowledge of the rights and responsibilities of employers and employees.

## **Unit introduction**

This unit has three main components. The first explores the scope of the built environment sector. Learners will find out about the range of services and functions carried out in the sector and explore how they contribute to the economy. Learners will consider the structure and role of the organisations, institutions and businesses that operate within the sector. The internal structure of organisations is examined, giving learners who are in employment the opportunity to examine the structure of their own organisation.

When working in the sector, it is important to know about the rights and responsibilities of both employees and employers. Learners will be able to identify relevant rights and responsibilities, employment contracts and the procedures and documentation that support employment. This requires learners to use sources of information and advice on employment rights and responsibilities, employee welfare and employee relations.

The unit also focuses on work-based education and training. Learners will gain knowledge of the purpose of work-related qualifications and the components that make up qualifications, for example learning outcomes and assessment criteria. Learners will need to undertake workplace activities to demonstrate their knowledge, understanding and competence.

## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Understand the scope of the built environment sector	1.1	Identify the services and functions of the built environment sector
		1.2	Explain the contribution of the built environment sector to the national economy
		1.3	Identify the structure and role of private and public representative industry organisations, institutions and businesses in the sector
2	Know the rights and responsibilities of employers and employees	2.1	Identify employer rights and responsibilities
		2.2	Identify the rights and responsibilities of employees
		2.3	Identify the range of sources of information and advice on employment rights and responsibilities, employee welfare and employee relations
		2.4	Identify the various types of employment contract
		2.5	Describe the benefits of the arrangements made in the built environment sector to promote employee welfare
3	Be able to compile work-based evidence to support training and development	3.1	Identify the purpose of work-related qualifications and the interrelationship of their components
		3.2	Follow guidelines to demonstrate achievement of knowledge and competence outcomes
		3.3	Plan, select and organise records and portfolios of evidence from learning and workplace activities to demonstrate achievement of knowledge, understanding and competence

## Information for tutors

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### Delivery

Tutors delivering this unit have opportunities to use a wide range of techniques, although the main techniques should take a learner-centred approach. Lectures, discussions, seminar presentations, guest speakers, research using the internet and/or library resources and use of personal and/or industrial experience are all suitable. Delivery should stimulate, motivate, educate and enthuse learners.

Wherever possible, links should be made with relevant employers who will be able to share their own experiences and enhance the subject material.

Delivery can be supported with case studies and visual media where appropriate.

Learners could work in groups to investigate the range of services and function that are carried out in the built environment sector. Groups could prepare a questionnaire that could be used with visitors to discuss the structure of their own organisation, qualifications, rights and responsibilities. A human resources officer may be able to provide a copy of an employment contract form.

When explaining the structure of an organisation, learners who are in employment should cover the structure of their own organisation.

Tutors will need to ensure that individual learners have equal experiential and assessment opportunities where group activities are used, and ensure that learners produce individual evidence for assessment purposes.

**Health, safety and welfare issues are paramount and should be reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken before practical activities are taken. Centres are advised to read the Provision and Use of Work Equipment Regulations 1998 (PUWER).**

### Assessment

Evidence for this unit can be gathered from a variety of sources, including well-planned investigative assignments, case studies or reports of practical assignments. There are many forms of assessment that can be used.

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite.

<b>Level 3</b>
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Personal and Professional Development in the Built Environment
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This unit links to the Pearson Edexcel Level 3 NVQ in Technical Design (Construction Environment), the Pearson Edexcel Level 4 NVQ in Site Inspection and the Pearson Edexcel Level 4 NVQ in Construction, Plant and Equipment Management.

## Employer engagement and vocational contexts

A local employer could give a presentation on the skills, attributes and behaviours that they require of their employees. A visit to one or more construction sites to demonstrate the range of different careers that are available within the sector would be beneficial. A presentation by a member of a professional body of professional development and the relevant code of ethics would also be useful.

The organisations listed below offer support to enable centres to initiate and establish links to industry:

- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- National Education and Business Partnership Network – [www.nebpn.org](http://www.nebpn.org)
- The Royal Institution of Chartered Surveyors – [www.rics.org](http://www.rics.org).

## Suggested resources

### Textbooks

Sargeant M and Lewis D – *Essentials of Employment Law (People & Organisations)* (Chartered Institute of Personnel and Development, 2002) ISBN 0852929854

### Websites

<a href="http://www.europa.eu.int">www.europa.eu.int</a>	Portal site of the European Union
<a href="http://www.familyfriendly.ie">www.familyfriendly.ie</a>	Irish work life balance
<a href="http://www.hrmguidance.co.uk">www.hrmguidance.co.uk</a>	UK human resource articles
<a href="http://www.worklifebalance.ie">www.worklifebalance.ie</a>	Irish work life balance

# **Unit 5: Information and Communication Technology for Construction and the Built Environment**

**Unit reference number: K/600/0443**

**Level: 2**

**Credit value: 10**

**Guided learning hours: 60**

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## **Unit aim**

This unit enables learners to develop the skills needed to use computer systems for communicating information and understand e-sources of information. Learners will learn how to produce word-processed documents and spreadsheets to meet the needs of the construction and the built environment sector.

## **Unit introduction**

In this unit, learners will gain the skills to be able to use computer systems to send, receive and process data electronically. They will find out how to manage data files securely so that, for example, important documents are not lost if a hard drive crashes. Learners will use search engine techniques to find data from websites. However, such data may not be reliable and learners will need to find out how to check its reliability.

To produce professional documentation for use in construction and the built environment, learners will have the opportunity to process and manipulate data using a word processor. Learners will create templates for documents used in the sector, implementing professional layouts and structures. They will enter text and other information into the templates that they have created and learn how to format the text using appropriate styles. Learners will also learn how to check the quality of their documents, an important step before they are published.

Learners will use spreadsheets for various applications within the construction and built environment sector, for example costing a construction project. They will enter data into a spreadsheet and learn how to use formulae and functions to manipulate raw data. They will format the spreadsheet to present the raw data in the spreadsheet clearly. Learners will be able to analyse the data and present their results in an appropriate fashion, for example by using charts and graphs.

## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Be able to use computer operations and web-based communication to send, receive and securely manage data files for construction and the built environment	1.1	Describe how to manage data files securely
		1.2	Use computer operations to send and receive data using web-based communications
2	Understand specialist e-format information sources and safeguards for their use	2.1	Describe the types and formats of specialist ICT information sources used in construction and the built environment
		2.2	Discuss safeguards for finding and using data in e-format
3	Be able to process and manipulate data in word-processing applications for construction and the built environment	3.1	Enter text and other information into a document
		3.2	Use editing tools to amend document content
		3.3	Create and modify layout and structures for word-processed documents
		3.4	Format and quality check documents for different types of audience
4	Be able to process and manipulate data in spreadsheet applications for construction and the built environment	4.1	Enter and edit spreadsheet data accurately
		4.2	Use appropriate formulae and functions to meet calculation requirements
		4.3	Analyse and manipulate the required information
		4.4	Format spreadsheet cells, rows, columns and worksheets for presenting information
		4.5	Generate, develop and format charts and graphs

### Delivery

Data file handling should be practised whenever learners save work. Examples of poorly organised files and folders will illustrate how difficult it can be to find data without structure and sensible naming. As part of file handling, routine maintenance of files and folders – deleting, backing up and archiving – can be introduced. If possible, learners should save their files on external devices, for example flash pens, and on hard drives or network drives. It may not be appropriate to use all types of storage device but learners should be aware of the alternatives and the pros and cons of using each type. Data security and integrity can be covered at the same time. Learners should be encouraged to keep backup copies of their work and learn how to protect their data from corruption using virus detectors, firewalls, passwords, etc. While data protection should be introduced, it is not necessary to go into the detail of the Data Protection Act – videos are available highlighting the different aspects of the act. Copyright and what is safe to download and store can also be illustrated using video and case study material. Learners must appreciate the necessity of checking the validity of information found on the worldwide web.

This unit recognises that every document has an implicit audience and that the appearance, structure and presentation of information are very important in achieving its purpose.

Documents created in this unit should be as realistic and purposeful as possible, with learners applying layout styles and formatting skills to communicate information effectively.

Learners should be made aware that the recipient/audience determines the style of the document content and that business information content is mainly formal while social information content is mainly informal. Many recipients have expectations of information content, structure and formatting and may feel dissatisfied when these expectations are not met.

Learners should be encouraged to use their judgement when creating content, for example formal/informal, ensuring appropriate sentence length and vocabulary, consistent terminology, appropriate use of bulleted lists, avoidance of sexist or other biased language.

Skills in creating documents from both original and combined material from other sources, are considered important in this unit. The material created by learners should be sufficient to test formatting and layout skills.

Learners should appreciate that technical and awareness skills are necessary to present information effectively and that there are many facilities available to enhance presentation. Spreadsheets are an area of expertise that can be developed best through practical activity, with regular feedback from the tutor. Examples and activities should focus on spreadsheets that can be related to a real context and which take account of user need rather than just showing an isolated set of skills.



It would be unusual if any learner came to this unit without some existing skills or experience in using spreadsheets and it is strongly advised that time is taken before the programme starts to understand each learner's existing level of understanding and skills in order to develop either an action plan or a set of targets. Because of the likelihood of a range of prior experience, it is recommended that individual, tracked activity should be a feature of lessons, allowing individuals either to develop higher skills quickly or to get the practice and support needed to build the fundamental skills required to pass the unit.

It is recommended that a large number of spreadsheets is made available as a resource. Once they are competent, learners will be able to work through spreadsheets quickly and will need a number of similar sets of spreadsheets to confirm understanding as well as a series of graded, more complex spreadsheets to stretch them.

Example spreadsheets should be provided with documentation and/or scenarios that give each some context. Prepared spreadsheets should be documented and presented in a way that sets formatting and presentation standards and provides exemplars for learners to follow when producing work for assessment.

In the early developmental stages, learners would benefit from working with incomplete spreadsheets or with spreadsheets that have unidentified problems that need fixing.

**Health, safety and welfare issues are paramount and should be reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken before practical activities are taken. Centres are advised to read the Provision and Use of Work Equipment Regulations 1998 (PUWER).**

### Assessment

Suitable scenarios can be provided that allow learners to meet all the assessment criteria. Examples should be based on contexts related to construction and the built environment.

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite:

<b>Level 3</b>
Project Management in Construction and the Built Environment
Measuring, Estimating and Tendering Processes in Construction and the Built Environment
Economies and Finance in Construction and Civil Engineering
Computer Aided Drafting and Design for Construction
Project in Construction and the Built Environment
Geographical Information Systems in Construction

This unit links to the Pearson Edexcel Level 3 NVQ in Technical Design (Construction Environment). It also relates to Level 3 National Occupational Standards in Surveying, Property and Maintenance.

### Essential resources

Centres will need computers and software, including word processing and spreadsheet packages.

### Employer engagement and vocational contexts

Construction Skills is the Sector Skills Council for the construction industry and details of their activity can be found at [www.cskills.org](http://www.cskills.org).

There is scope for employer engagement in this unit. A company would be unusual if it did not have a number of spreadsheet applications to undertake specific tasks, whether for managing expenses, tracking holiday dates and rotas, or the company or individuals, then they would be ideal to demonstrate the use of spreadsheet in a normal working environment. If possible, the employees who normally use the spreadsheets could be asked to describe the purpose and use, and invite learners to suggest refinements.

The organisations listed below offer support to enable centres to initiate and establish links to industry:

- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- National Education and Business Partnership Network – [www.nebpn.org](http://www.nebpn.org).

### Suggested resources

#### Textbooks

Heathcote R – *Further Excel 2000-2003* (Payne-Gallway Publishers, 2004)  
ISBN 1904467768

Heathcote R – *ICT Projects for GCSE* (Payne-Gallway Publishers, 2002)  
ISBN 1903112699  
Heathcote P – *Successful ICT Projects in Excel* (Payne-Gallway Publishers, 2002) ISBN 1903112710

#### Websites

[www.bbc.co.uk/schools/gcsebitesize/ict](http://www.bbc.co.uk/schools/gcsebitesize/ict)

BBC Bite size revision for GCSE ICT

[www.teach-ict.com](http://www.teach-ict.com)

Teach-ICT website for ICT Education

# Unit 6: Business Communication

**Unit reference number: H/502/5413**

**Level: 3**

**Credit value: 10**

**Guided learning hours: 60**

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## Unit aim

**The aim of this unit is to show learners that the collection and management of business information, and the successful communication of that information throughout a business, is critical for an organisation's prosperity.**

## Unit introduction

A business needs accurate and relevant information from internal and external sources in order to operate profitably. Proper collection of data creates an environment where informed decisions can be taken for the benefit of the business. In order to manage information effectively, there must be good communication systems within the organisation. Staff need good verbal and written skills in order to communicate and share information.

Business information can be used to obtain competitive advantage and promote efficiency. Organisations generate information internally, recording details of products manufactured, purchased and sold, and their associated costs. Businesses use information to manage not only what is currently happening in the organisation but also to plan for the future and ensure their survival. Information is collected, stored, manipulated, analysed and reported to those who need to use it. People need to become skilled manipulators and users of information to ensure organisations become more efficient and succeed in achieving their stated purposes. Since the development of the personal computer and more recently the internet, communication methods have changed significantly. Gathering relevant information from a range of sources is a skill that needs to be developed using electronic and non-electronic sources.

## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Understand different types of business information	1.1	Explain different types of business information, their sources and purposes
2	Be able to present business information effectively	2.1	Present complex internal business information using three different methods appropriate to the user's needs.
		2.2	Produce corporate communications
		2.3	Evaluate the external corporate communications of an existing product or service
3	Understand the issues and constraints in relation to the use of business information in organisations	3.1	Explain the legal and ethical issues in relation to the use of business information
		3.2	Explain the operational issues in relation to the use of business information
4	Know how to communicate business information using appropriate methods	4.1	Outline electronic and non-electronic methods for communicating business information using examples for different types of audience

## Information for tutors

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### Delivery

The unit enables learners to explore the various types of information used in business organisations, this will develop their understanding as the unit progresses. By discussing the variety of communication media available and drawing on their work experience or part-time employment, learners will gain a broad introduction to the study of business communication and information. Learners can then expand these ideas to consider the purpose and variety of sources of information.

Tutors should encourage learners to investigate how businesses communicate internally and externally. The presentation of information needs to be explored along with how careful selection of the presentation methods meets the needs of the user. Learners should examine the use of documents, style and verbal presentations as well as the range of electronic methods available. Learners should be encouraged to investigate a number of business organisations and research how their corporate communications are presented. This could involve reviewing mission statements, advertising and other methods of marketing communications, and identifying how these differ from one organisation to another. Displays could be created from learners' research to show the variety of corporate communications being used. This will provide a visual stimulus which can be used to enhance understanding of the importance that business organisations attach to their corporate communications.

Business organisations face a number of issues and constraints in relation to the use of business information and learners need to understand the legislation that controls the use of information in businesses. There are also ethical issues related to the use of email and the internet, as well as the development of codes of practice and organisational policies that give guidance on ethical issues. Similarly, there are organisational policies that cover the security of information and associated health and safety issues. Case studies and newspaper reports can be used to extend learners' understanding of issues and constraints in relation to the use of information in business organisations. Television programmes and DVDs/video can be useful formative tools, especially when followed by class discussion or written summary. The internet can also be a useful tool, as many larger organisations provide web pages specifically for learners, on how they control information and their corporate communications strategies.

Tutors may find it useful for learners, working individually or in pairs, to investigate local businesses for examples of the types of communication and information they manage. Learners will need input on how to communicate using appropriate methods and should be encouraged to explore the different types of audience. This helps in making decisions on the most appropriate method for a particular situation. Tutor input will be needed to give learners an understanding of methods of written and non-written communication. Learners can look at examples of communication to help them to appreciate the range of methods available. Finally, learners need to investigate formal and informal and verbal/non-verbal methods of communication. Role play will be useful in helping learners understand the importance of verbal communication and the use of body language.

Tutors can use this unit to convey a range of ideas about business information, for example financial accounts, stock levels or promotional messages. Tutors may, therefore, wish to deliver this unit by following given themes, for example the role of quantitative financial information or qualitative textual information. At each stage, crucial questions can be asked, such as: what is the central message of this information? What audience is it intended for? What difference should it make to business behaviour? Why is it being presented? Could it be presented more successfully? The emphasis is on developing learners' critical faculties in understanding, interpreting, selecting and applying business information.

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the business suite:

Level 2	Level 3
Business Purposes	The Business Environment
Customer Relations in Business	
Business Online	
Business Enterprise	
Starting a Small Business	

### Essential resources

For this unit, learners should have access to a suitable business-teaching environment with access to the internet to carry out research. Tutors could build a bank of resource materials to ensure there is sufficient supply of relevant information on the subjects of business communication and information management. Learners can generate evidence from a work placement or work experience.

### Employer engagement and vocational contexts

Centres should develop links with local businesses. Many businesses and chambers of commerce are willing to provide work placements, visit opportunities, information about business and visiting speakers.

### Suggested resources

#### Textbooks

Argenti P – *Corporate Communication* (Irwin McGraw-Hill, 1998) ISBN 0256217238

Bevan J, Dransfield R, Coupland-Smith H, Goymer J and Richards C – *BTEC Level 3 National Business Student Book 1* (Pearson, 2009) ISBN 9781846906343

Bevan J, Goymer J, Richards C and Richards N – *BTEC Level 3 National Business Student Book 2* (Pearson, 2009) ISBN 9781846906350

Coupland-Smith H and Mencattelli C – *BTEC Level 3 National Business Teaching Resource Pack* (Pearson, 2009) ISBN 9781846906367

Davies C – *Finding and Knowing: Psychology, Information and Computers* (Routledge, 2004) ISBN 0851424546

Lowe M – *Business Information at Work* (Europa Publications, 1999) ISBN 0851424031

Niederst J – *Web Design in a Nutshell: A Desktop Quick Reference* (O'Reilly, 2001) ISBN 0596001967

## **Websites**

[news.bbc.co.uk/1/hi/business](http://news.bbc.co.uk/1/hi/business)

BBC business pages

[www.bized.co.uk](http://www.bized.co.uk)

Business education resource site

[www.thetimes100.co.uk](http://www.thetimes100.co.uk)

The Times 100 case studies

# **Unit 7:** **Construction Technology and Design in Construction and Civil Engineering**

**Unit reference number:** T/600/0283

**Level:** 3

**Credit value:** 10

**Guided learning hours:** 60

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## **Unit aim**

The aim of the unit is to enable learners to gain knowledge of construction methods and factors that influence design. Learners will develop skills in communicating ideas between team members and in translating construction details into written and graphical instructions.

## **Unit introduction**

In recent times, we have built far bigger and far more complex buildings than before. For many years, the UK has been working among market leaders in this field and UK construction workers are taking their knowledge and expertise all over the world.

Modern developments in construction technology and materials have enabled us to create more efficient and complex structures. The ability to design, plan and communicate ideas effectively is essential if a project is to be translated from an idea into reality. Poor communication will lead to poor construction.

This unit encourages learners to develop their understanding of the design process and to recognise the contribution of other members of a design team.

Planning and organising design activities is related to the decision-making process. The likely outcomes of decisions taken by the team within a legal framework should be considered in the wider social context, rather than as simple subjective preferences.

This unit will enable learners to cope with the requirements of construction-related projects as they pass through various stages from design to construction, including the implications of changes and variations in the design. Learners will develop the ability to produce clear drawings of construction components, using both manual and CAD techniques, together with succinct and accurate explanations that specify for builders the exact characteristics of relevant construction details. Use of scale, proportion and appropriate description is expected of all successful learners.

Learners will be able to use appropriate design and planning procedures to specify for and communicate to other team members involved in a construction project, the requirements for the technical components of buildings.



## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Know the factors that influence the design process	1.1	Describe the factors that influence the design process
2	Be able to communicate ideas between various members of the design and production teams	2.1	Explain the roles and responsibilities of the design team
		2.2	Explain the roles and responsibilities of the production team
		2.3	Describe the legal implications that could arise from miscommunication
		2.4	Produce written communications between members of the design and production teams
3	Know about construction methods	3.1	Describe construction methods using relevant terminology
4	Be able to translate construction details into written and graphical instructions	4.1	Create specifications for construction details, providing suitable instructions for the construction team
		4.2	Produce sketch designs, plans, elevations, sections and details using standard conventions and symbols

## Information for tutors

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### Delivery

Tutors delivering this unit have opportunities to use a wide range of techniques. Lectures, discussions, seminar presentations, site visits, use of manual and CAD drawing, research using the internet and/or library resources and 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.

Study of this unit depends on a prior knowledge and understanding of construction technology. An overview of the role of the design process, and the wider context within which it fits, needs to be addressed at an early stage in delivery. Learners must be made aware that a wide range of professionals is involved in the design process, contributing varying amounts to the design and implementation of projects.

Learners should understand the role and importance of the *RIBA Architect's Plan of Work/Job Book* in facilitating a well-organised process for building design. An awareness and understanding of the procedures adopted, and of the implications of design change, are also essential. Learners need to appreciate the importance of effective communication between the design and production teams. Job descriptions and training needs for the design team, along with examples of relevant documentation, can provide a good basis for case study material to enhance and contextualise the learning experience.

Learners should develop an awareness and understanding of the ways in which legislative requirements, such as planning acts, building regulations and health and safety provisions, together with relevant areas of contract law impact on the design process. The effects of more recent concerns and provisions relating to environmental issues should also be addressed.

A key element of delivery should include developing an ability to produce sketch designs, plans, drawings and/or sketches of construction details using standard conventions and symbols. Learners should be encouraged to develop their ability to draw plans and details for buildings that are functional and to express themselves within a design context. This should normally be restricted to building types such as low-rise domestic and/or commercial buildings. Conversion projects would also be suitable for this purpose, whereby floor layout and accommodation arrangements may provide suitably demanding projects for learners to develop their understanding of these issues.

Learners will need to grasp the need for accurate scale drawings showing salient and important information for construction teams. The ability to translate the information contained in drawings into meaningful, written technical terminology is essential.

Where possible, links should be formed with design practices and construction firms, with visits arranged to enable learning to be contextualised. The learning process could be enhanced by specialised input from current practitioners.

The unit should be supported through the use of case studies and visual media where appropriate, including photographs, videos, DVDs and drawings, to demonstrate the role of the design process in the construction of buildings.

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

**Health, safety and welfare issues are paramount and should be reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken before practical activities are taken. Centres are advised to read the Provision and Use of Work Equipment Regulations 1998 (PUWER).**

### Assessment

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

Some criteria can be assessed directly by the tutor during practical activities. If this approach is used, observation records or witness statements are suitable as evidence. Guidance on their use is available on the Pearson website.

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite:

<b>Level 3</b>
Health, Safety and welfare in Construction and the Built Environment
Sustainable Construction
Building Technology in Construction
Project Management in Construction and the Built Environment
Graphical Detailing in Construction and the Built Environment
Building Regulations and Control for Construction
Computer Aided Drafting and Design for Construction
Project in Construction and the Built Environment
Design Procedures in Construction
Planning Procedures in Construction

This unit links to the Pearson Edexcel Level 3 NVQ in Technical Design (Construction Environment). It also links to the following National Occupational Standards at level 3:

- Built Environment Design
- Construction Contracting Operations
- Construction Site Supervision
- Surveying, Property and Maintenance
- Town Planning, Conservation and Building Control.

## Essential resources

Learners should have access to authentic general and detailed working drawings and specifications to demonstrate their format, use and application, together with drawing equipment to facilitate the preparation of assessment material. This includes both manual and CAD facilities.

Where possible, supervised visits to local authority planning and building control departments are valuable for contextualising the unit. Real examples of building materials and components are helpful.

## Employer engagement and vocational contexts

The use of vocational contexts is essential in the delivery and assessment of this unit. Much of the work can be set in the context of learners' work placements and based on case studies of local employers. Local authority planning and building control department visits will enhance this unit.

The following offer support to enable centres to initiate and establish links to industry:

- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- National Education and Business Partnership Network – [www.nebpn.org](http://www.nebpn.org)
- The Royal Institution of Chartered Surveyors – [www.rics.org](http://www.rics.org)

## Suggested resources

### Textbooks and guidance materials

*Architects Job Book, 8th Edition* (RIBA Publishing, 2008) ISBN 9781859462522

*Metric Handbook Planning and Design Data* (Elsevier, 2007) ISBN 9780750652810

Brett P – *An Illustrated Dictionary of Building* (Elsevier, 2007)  
ISBN 9780750636841

Chudley R & Greeno R – *Building Construction Handbook* (Butterworth-Heinemann, 2008) ISBN 0750686227

Emmitt S – *Design Management for Architects* (Blackwell, 2007)  
ISBN 9781405131476

Emmitt S and Gorse C – *Barry's Introduction to Construction of Buildings* (Blackwell, 2005) ISBN 1405110554

Emmitt S and Yeomans D – *Specifying Buildings: A Design Management Perspective, 2nd Edition* (Butterworth-Heinemann, 2008) ISBN 9780750684507

Foster J and Greeno R – *Structure and Fabric: Part. 1 (Mitchells Building Series)* (Pearson Education Ltd, 2006) ISBN 9780131970946

Greeno R – *Introduction to Building (Mitchells Building Series)* (Pearson Education Ltd, 2007) ISBN 9780132325714

Phillips R – *Architect's Plan of Work* (RIBA Publishing, 2000) RIBA Order Code 21009

Riley M and Cotgrave C – *Construction Technology 1 House Construction* (Palgrave, 2008) ISBN 9780230624

Riley M and Cotgrave C – *Construction Technology 2 House Construction* (Palgrave, 2008) ISBN 9781403940957

Stephenson – *Spon's Building Regulations Explained* (Taylor and Francis, 2009)  
ISBN 9780415430678

Topliss S, Hurst M and Skarratt G – *BTEC Level 3 National Construction and the Built Environment Student Book* (Pearson, 2009) ISBN 9781846906565

Topliss S, Hurst M and Skarratt G – *BTEC Level 3 National Construction and the Built Environment Teaching Resource Pack* (Pearson, 2009) ISBN 9781846906558

## **Journals**

*The Architect's Journal* – Emap

*Construction News* – Emap

## **Websites**

[www.greenspec.co.uk](http://www.greenspec.co.uk)

Green building

[www.thenbs.com](http://www.thenbs.com)

National Building Specification

[www.planningportal.gov.uk](http://www.planningportal.gov.uk)

The complete online planning and building resource

# Unit 8: Graphical Detailing in Construction and the Built Environment

**Unit reference number:** A/600/0222

**Level:** 3

**Credit value:** 10

**Guided learning hours:** 60

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## Unit aim

This unit gives learners the opportunity to produce 2D and 3D graphical drawings using manual drafting techniques and to produce graphical information in the form of simple specifications and schedules.

## Unit introduction

Clear and appropriate communication of information is vital to the successful design and construction of building and civil engineering projects.

Drawings are used in a number of ways depending on which stage of the project is being considered. During the early stages of a design it is important to have an overview of the project. Then, as the elements or components of the design evolve, detailed drawings are required to show the individual methods of construction, shape and dimensions so that they can be fabricated or set out. It is also common practice to include written specifications for the workmanship and/or materials on the drawings.

At any stage it is crucial that graphical information is clear, accurate and correct. Drawings forming part of the contract documents for a project are legally binding. If a drawing is badly produced or presented then it is unlikely that the resulting project will be fit for purpose.

Learners will come to appreciate the layout of drawings, the choice of scale and proportion, the types of views used, the use of correct line widths, conventional graphic symbols and the appropriate use of annotation. They will be able to understand drawings, demonstrate a basic knowledge of graphical conventions, and develop the skills required to produce graphical information using manual techniques. Learners will also be able to describe the uses and benefits of computer-aided design (CAD) in producing graphical information.

## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Know the main equipment, media and techniques used in the production of manual graphical information	1.1	Identify the use of equipment and media used to produce manual graphical information
		1.2	Describe correct drawing standards and conventions
		1.3	Describe manual presentation techniques
2	Understand the use of CAD and its benefits in the production and management of graphical information	2.1	Explain techniques and uses of different types of CAD information
		2.2	Describe the benefits of using CAD for the production and management of graphical information
3	Be able to interpret graphical drawings, details, schedules and specifications	3.1	Interpret graphical drawings, details, schedules and specifications
4	Be able to produce graphical drawings, details, schedules and specifications using manual drafting techniques	4.1	Produce 2D and 3D graphical drawings using manual drafting techniques
		4.2	Produce graphical information in the form of simple specifications and schedules

## Information for tutors

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### Delivery

Tutors delivering this unit have opportunities to use a wide range of techniques. Lectures, discussions, seminar presentations, site visits, supervised practicals, research using the internet and/or library resources and 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.

The learning outcomes are split equally between knowledge of graphical detailing and the application of manual techniques and methods. Learning outcomes 1 and 2 are linked and form a sound basis for understanding manual detailing techniques. Learning outcomes 3 and 4 are also linked and relate to the interpretation of drawings and the development and use of mainly manual detailing skills.

Teaching and learning strategies designed to support delivery of learning outcomes 1 and 2 should take an integrated, learner-centred approach. This would involve learners undertaking practical activities and researching equipment, media, methods and detailing techniques. For example, learners could undertake research to produce a Beginners' Guide to Detailing booklet. Learning outcome 2 can be delivered without using CAD software or plotting routines. However, some 'hands-on' development activities would be advantageous so learners can make experiential comparisons between CAD and manual techniques.

Learning outcomes 3 and 4 are linked closely to the development and practises of using detailing skills, both in reading and understanding drawings, and in producing these using manual techniques.

It is recommended that for learning outcome 3 learners have access to a variety of current drawings that relate to their particular vocational pathway. Learners should be allowed to make comparisons between real drawings and current best practice as outlined in British and European standards. Learning outcome 4 requires sufficient time for learners to practise detailing skills during which formative feedback should be provided on the progress of the learner's graphical skill development.

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

**Health, safety and welfare issues are paramount and should be reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken before practical activities are taken. Centres are advised to read the Provision and Use of Work Equipment Regulations 1998 (PUWER).**

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite:



<b>Level 3</b>
Building Technology in Construction
Project Management in Construction and the Built Environment
Computer-aided Drafting and Design for Construction
Design Procedures in Construction

This unit links to the Pearson Edexcel Level 3 Technical and Professional NVQs for Construction and the Built Environment. It also links to the following National Occupational Standards at level 3:

- Built Environment Design
- Construction Contracting Operations
- Construction Site Supervisors
- Surveying, Property and Maintenance
- Town Planning, Conservation and Building Control.

### Essential resources

Learners should be encouraged to provide their own basic drawing equipment for use at home and in the centre. Learners will need guidance in making purchases and should be encouraged to obtain good quality equipment. Drawing facilities should also be provided by the centre, together with access to CAD facilities to enable learners to produce drawings using CAD.

There is no requirement for learners to use CAD but it would be beneficial to undertake developments activities using CAD if these facilities are available at the centre. Learners must have access to information about CAD applications and their use. Learners will also need access to a wide range of existing industry-standard graphical information sources such as drawings, details and schedules.

Local professional practices are a useful source of information, provided the necessary copyright permissions are sought. The use of design team information, procedures and documentation, for live or completed construction projects as a basis for assessment tasks would enhance the learning experience by contextualising the study of design procedures.

### Employer engagement and vocational contexts

Site visits, case studies, project documentation and visiting speakers will add relevance to this unit.

The organisations listed below offer support to enable centres to initiate and establish links to industry:

- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- National Education and Business Partnership Network – [www.nebpn.org](http://www.nebpn.org)
- The Royal Institution of Chartered Surveyors – [www.rics.org](http://www.rics.org).

## Suggested resources

### Textbooks and guidance materials

- Adler D – *Metric Handbook, 2nd Edition* (Butterworth Architecture, 1999)
- Aubin P – *Mastering AutoCAD Architecture 2008* (Delmer, 2007) ISBN 1428322629
- BSI – *Construction Drawing Practice, BS1192 Part 5* (British Standards Institute, 1999) ISBN 0580295141
- Ching F D K – *Architectural Graphics* (John Wiley & Sons Inc, 2002)  
ISBN 0471209066
- Fukai D – *Graphical Communications in Construction* (Prentice Hall, 2002)  
ISBN 0130605522
- Hill M – *Small Practices – A Guide to Drawn Information* (RIBA Publications, 1999)  
ISBN 1859460518
- Hoboken N J – *Construction Graphics: A Practical Guide to Interpreting Working Drawings* (Wiley, 2004) ISBN 0470137509
- Jenkins D et al – *Architects' Working Details Volumes 1 to 7* (EMAP Business Communications, 1989) ISBN 1870308409
- McFarlane B – *Beginning AutoCAD 2002* (Butterworth-Heinemann, 2004)  
ISBN 0750656107
- Muller, Fausett and Grau – *Architectural Drawing and Light Construction* (Prentice Hall, 2002) ISBN 0130271586
- Reekie F and McCarthy A – *Reekie's Architectural Drawing* (Architectural Press, 1995) ISBN 0340573244
- Rekit A and Langford D – *Computer Integrated Planning and Design in Construction* (Thomas Telford Ltd, 2001) ISBN 9780727730077

### Journals and magazines

- The Architects Journal* – Emap
- AT Architectural Design* – Chartered Institute of Architectural Technologists
- BRE Digests*
- Building* magazine
- Contract Journal* – Reed Business Publishing

### Websites

- |                                                      |                                                    |
|------------------------------------------------------|----------------------------------------------------|
| <a href="http://www.bre.com">www.bre.com</a>         | Building Research Establishment Ltd                |
| <a href="http://www.ciat.org.uk">www.ciat.org.uk</a> | Chartered Institute of Architectural Technologists |
| <a href="http://www.ciob.org.uk">www.ciob.org.uk</a> | Chartered Institute of Building                    |

# Unit 9: Building Regulations and Control in Construction

**Unit reference number:** D/600/0441

**Level:** 3

**Credit value:** 10

**Guided learning hours:** 60

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## Unit aim

This unit give learners an opportunity to develop a knowledge and understanding of Building Regulations for controlling the safe construction and use of a completed building. Learners will also gain skills in preparing a submission for Building Regulation approval.

## Unit introduction

The Building Regulations set out the minimum standards required for the construction of most new buildings, and many building alterations in England and Wales, to ensure that buildings are safe, hygienic, energy efficient and do not waste water.

The ongoing development and updating of building standards and regulations has taken place over many years. Many changes result from concerns related to other issues, such as public health and sustainable buildings for the future, so the provisions for building standards are scattered amongst numerous Acts of Parliament and local authority by-laws.

The Building Regulations are enforced by building control officers or approved inspectors, and enforcement initially involves approval of the proposed design and construction of a building, followed by regular inspections as the work proceeds on site.

The unit aims to develop knowledge and understanding of the Building Regulations and how they influence building design, construction and use. The unit will enable learners to gain an understanding of the specific requirements of the regulations and how they are enforced.

Learners will acquire knowledge and understanding of the Building Regulations for various aspects of low-rise domestic and commercial building design and will learn how to apply this to typical construction situations. They will also be able to assemble the necessary documentation needed to make a submission for Building Regulations approval.

## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Understand the origins and purpose of building control	1.1	Examine the factors that have influenced the historical development of the building control
		1.2	Discuss the legislation and documentation associated with building control, and their application
2	Know how to apply and enforce Building Regulations	2.1	Identify the various Approved Documents that comprise building regulations
		2.2	Describe the application and enforcement of the Building Regulations
3	Understand the procedures and documentation involved with Building Regulations approval	3.1	Explain the approval procedures used in building control
		3.2	Evaluate the documentation used to support building control
		3.3	Discuss the powers of local authority building control officers and approved inspectors
4	Be able to prepare a submission for Building Regulations approval	4.1	Produce a specimen Building Regulations application, with all necessary documentation

## Information for tutors

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### Delivery

Tutors can use a wide range of techniques to deliver this unit. Lectures, discussions, seminar presentations, site visits, research using the internet and/or library resources and use of personal and/or industrial experience are all suitable. Delivery should stimulate, motivate, educate and enthuse learners. Visiting building control speakers could add to the relevance of the subject.

The historical development of building control and the purpose, content and scope of current Building Regulations should be investigated at the beginning of the unit, followed by a contextualised study of their application to the construction and alteration of dwellings. The continuous updating and revision of regulations to reflect changes, such as the increasing need to conserve energy, should be considered. Procedures for gaining Building Regulations approval, and subsequent enforcement, should be addressed, including the organisations and professionals responsible for enforcement.

Learners' knowledge and understanding should be applied to a submission for Building Regulations approval, based on a real or hypothetical case study.

Wherever possible, links should be made with industry, in particular house builders, as this will give learners an opportunity to contextualise their learning and use it to inform their study of the various aspects of building control. Similarly, visits to local authority building control departments to view applications made for Building Regulation approval could be useful. Specialised input from current practitioners could enhance the learning process further.

Delivery of the unit should be supported with case studies and visual media where appropriate, including photographs, videos, DVDs and drawings, to demonstrate application of Building Regulations.

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

**Health, safety and welfare issues are paramount and should be reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken before practical activities are taken. Centres are advised to read the Provision and Use of Work Equipment Regulations 1998 (PUWER).**

### Assessment

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

Some criteria can be assessed directly by the tutor during practical activities. If this approach is used, observation records or witness statements are suitable as evidence. Guidance on their use is available on the Pearson website.

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite:

Level 2	Level 3
Construction Processes and Operations for Low-rise Domestic Buildings	Construction Technology and Design in Construction and Civil Engineering
Construction Methods and Techniques for Low-rise Domestic Buildings	Building Technology in Construction

This unit links to the Pearson Edexcel Level 3 NVQ in Technical Design (Construction Environment). This unit links to the following National Occupational Standards at Level 3:

- Built Environment Design
- BE Development and Control
- Surveying, Property and Maintenance.

### Essential resources

Access to Building Regulations documents is essential for the delivery of this unit. Copies of the Building Act 1984, amendments and current approved documents are available via the internet and can be downloaded as printable documents without charge. Examples of completed application pro forma and related documentation would facilitate the learning process.

### Employer engagement and vocational contexts

The organisations listed below offer support to enable centres to initiate and establish links to industry:

- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- National Education and Business Partnership Network – [www.nebpn.org](http://www.nebpn.org)
- The Royal Institution of Chartered Surveyors – [www.rics.org](http://www.rics.org).

Having a building control officer as a guest speaker is a valuable link to the real world. They should be briefed to bring photographs and drawings with them. Similarly, an independent inspector or the National House-Building Council (NHBC) could be invited.

## Suggested resources

### Textbooks and guidance materials

Billington M J, Simons M W and Waters J R – *The Building Regulations: Explained and Illustrated, 12th Edition* (Blackwell, 2003) ISBN 0632058374

Billington M – *Using the Building Regulations: Administrative Procedures* (Butterworth-Heinemann, 2005) ISBN 0750662573

Chudley R and Greeno R – *Building Construction Handbook: Incorporating Current Building and Construction Regulations, 6th Edition* (Butterworth-Heinemann, 2006) ISBN 0750668229

Chudley R and Greeno R – *Construction Technology, 4th Edition* (Pearson, 2005) ISBN 0131286420

Emmitt S and Gorse C – *Barry's Introduction to Construction of Buildings* (Blackwell, 2004) ISBN 1405110554

Polley S – *Understanding the Building Regulations, 3rd Edition* (Spon Press, 2005) ISBN 0415349176

Tricker R – *Building Regulations in Brief, 3rd Edition* (Butterworth-Heinemann, 2005) ISBN 0750667036

### Journal

*Building Control Journal* – Royal Institution of Chartered Surveyors

### Websites

[www.communities.gov.uk/planningandbuilding/buildingregulations](http://www.communities.gov.uk/planningandbuilding/buildingregulations) – Communities and local government

[www.thenbs.com](http://www.thenbs.com) – National Building Specification

# **Unit 10: Town Planning Policy and Implementation**

**Unit reference number: J/504/6433**

**Level: 3**

**Credit value: 10**

**Guided learning hours: 60**

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## **Unit aim**

This unit will enable learners to gain knowledge and understanding of the support needs for the development and enforcement of planning policy and the requirements that need to be taken into consideration. Learners will also gain the skills needed to process planning applications.

## **Unit introduction**

This unit aims to develop learners' understanding of the principles by which town planning policy is developed and implemented. To understand these principles learners will need to know about the legislation that drives planning policy and the functional and aesthetic aspects that need to be considered.

The unit covers the detailed processes for submitting, reviewing and deciding on planning applications. Learners will learn how to apply their written and verbal communication skills to support the implementation of planning policy. They will also acquire practical knowledge of consultation and engagement techniques appropriate for different application types.



## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Understand the principles by which town planning policy is developed	1.1	Explain how planning policy is formulated for the implementation of development plans
		1.2	Review the different forms of support and evidence required for the implementation of planning policy
2	Understand the range of requirements that need to be taken into account when developing and implementing planning policy	2.1	Explain the legislative requirements that determine planning policy
		2.2	Explain the functional requirements that need to be taken into account in planning policy
		2.3	Explain the aesthetic requirements that need to be taken into account in planning policy
3	Understand processes for planning applications and grant applications	3.1	Explain the processes and information requirements for submitting, reviewing and deciding on planning applications
		3.2	Describe the processes and information requirements for submitting, reviewing and deciding on grants
4	Be able to apply the communication skills required in the implementation of planning policy Be able to apply the communication skills required in the implementation of planning policy	4.1	Apply the written communication skills required in planning policy implementation
		4.2	Apply the graphic communication skills required in planning policy implementation
		4.3	Apply the personal communication skills required in planning policy implementation
		4.4	Review the range of methods used in consulting on matters relating to planning policy implementation

Learning outcomes		Assessment criteria	
5	Understand the planning enforcement processes required in the implementation of planning policy	5.1	Explain how to monitor compliance of authorised and unauthorised developments
		5.2	Explain how to support the processing of action on breaches of planning regulation

## Information for tutors

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### Assessment guidance

To meet learning outcome 4, evidence should be provided of the effective use of the following forms and disciplines. This evidence should be generated through work specific to the implementation of planning policy.

1. Written

- Manual and IT
- Letters and forms
- Reports and guidance

2. Graphic

- 2D/3D projections
- Drawing conventions
- Other graphical, photographic, model and electronic representations

3. Personal

- Verbal
- Listening
- Body language/appearance
- Team working
- Providing advice
- Dealing with a confrontational situation

The following assessment guidance applies to the whole unit.

1. Formulated

- Monitor and evaluate change
- Assess environmental needs and impact
- Policy options
- Public consultation
- Policy development

2. Development plans

- Local plans
- Unitary development plans
- Neighbourhood plans
- National Planning Policy Framework
- Programmes for housing, transportation and other regeneration initiatives
- Guidance at national and regional level

3. Support
  - Project management
  - Environmental surveys
  - Information collection, collation and presentation
  - Summarising and reporting
  - Checking documentation
  - Processing applications
  - Maintaining information systems
4. Legislative requirements
  - Town and country planning legislation
  - National, regional, local and organisation policy
  - Official guidance
  - Development plans
  - Environmental protection
  - Planning applications
5. Functional requirements
  - Land use
  - Social and economic need
  - Transport and infrastructure
  - Environmental protection
  - Conservation and heritage
6. Aesthetic requirements
  - Visual design concepts (eg scale, form, colour etc)
  - Spatial relationships
  - Townscape
7. Information requirements
  - Application documentation
  - Plans, drawings, calculations
  - Technical/support information
  - Fees/charges
8. Planning applications
  - Development and use of land
  - Structures/buildings
  - Conservation and heritage
  - Environmental impact
  - Energy and carbon use
  - Advertisement
  - Trees/hedgerows

## 9. Grants

- Local authorities
- Central government
- Heritage bodies
- Other sponsors
- European
- Lottery

## 10. Written

- Manual and IT
- Letters and forms
- Reports and guidance

## 11. Graphic

- 2D/3D projections
- Drawing conventions
- Other graphical, photographic, model and electronic representations

## 12. Personal

- Verbal
- Listening
- Body language/appearance
- Team working
- Providing advice
- Dealing with confrontational situations

## 13. Consulting

- Surveys
- Exhibitions
- Conferences
- Educational activities
- Launches

## 14. Developments

- Works/alterations
- Structures
- Uses

## 15. Breaches

- Appeals/determinations
- Breach of conditions
- Lack of permission

## Delivery

Tutors delivering this unit will have opportunities to use a wide range of techniques. Lectures, discussions, seminar presentations, site visits, research using the internet and/or library resources and use of personal and/or practitioner experience are all suitable. Visiting planning officer speakers will add to the relevance of the subject. Delivery should stimulate, motivate, educate and enthuse learners.

The historical development of the town planning legislative framework should be investigated at the beginning of the unit. Learners should apply their knowledge and understanding to a planning application based on a real or hypothetical case study.

Delivery should be supported by using case studies and visual media where appropriate, including photographs, videos, DVDs and drawings, to demonstrate the application of planning and related legislation.

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

## Assessment

Evidence for this unit can be gathered from a variety of sources, including well-planned investigative assignments, case studies or reports of practical assignments. Some criteria can be assessed directly by the tutor using practical activities. If this approach is used, observation records or witness statements are suitable evidence. Guidance on using them is available on the Pearson website.

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite:

<b>Level 3</b>
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Planning Procedures in Construction
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This unit links to the following National Occupational Standards at level 3:

- Town Planning, Conservation and Building Control.

## Essential resources

Access to the National Planning Policy Framework and planning documentation is essential for the delivery of this unit. Copies of the legislation and amendments, and current approved documents are available via the internet and can be downloaded as printable documents without charge.

Examples of completed application pro forma and related documentation will help the learning process.

## Employer engagement and vocational contexts

A town planning officer as a guest speaker is a valuable link to the real world and will enhance unit delivery. The speaker should be briefed to bring photographs and drawings with them. As a member of the Royal Town Planning Institute, they could provide information on professional development and the importance of ethics as a practitioner.

The organisations listed below offer support to enable centres to initiate and establish links to industry:

- Construction Industry Council – [www.cic.org.uk](http://www.cic.org.uk)
- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- The Royal Institution of Chartered Surveyors – [www.rics.org](http://www.rics.org).

## Suggested resources

### Textbooks

Cullingworth B and Nadin V – *Town and Country Planning in the UK* (Routledge, 2006) ISBN 978-0415358101

Moore V – *A Practical Approach to Planning Law* (Oxford University Press, 2012) ISBN 9780415358101

Rydin Y – *The Purpose of Planning* (Polity Press, 2011) ISBN 9781847424303

### Journals and magazines

*Handy Guide to Planning 2012* – Royal Town Planning Institute

*Planning magazine* – Royal Town Planning Institute

*Town and Country Planning Journal* – Town and Country Planning Association

### Websites

<a href="http://www.communities.gov.uk">www.communities.gov.uk</a>	Department for Communities and Local Government
<a href="http://www.communities.gov.uk/publications">www.communities.gov.uk/publications</a>	National Planning Policy Framework
<a href="http://www.pas.gov.uk">www.pas.gov.uk</a>	Planning Advisory Service
<a href="http://www.planning_officers.org.uk">www.planning_officers.org.uk</a>	Planning Officers Society
<a href="http://www.planningportal.gov.uk">www.planningportal.gov.uk</a>	Planning portal
<a href="http://www.rtpi.org.uk">www.rtpi.org.uk</a>	Royal Town Planning Institute
<a href="http://www.rtpi.org.uk/knowledge">www.rtpi.org.uk/knowledge</a>	The Localism Act
<a href="http://www.rtpi.org.uk/planningaid">www.rtpi.org.uk/planningaid</a>	Planning Aid
<a href="http://www.tcpa.org.uk">www.tcpa.org.uk</a>	Town and Country Planning Association

# **Unit 11: Topographical Surveying in Construction and Civil Engineering**

**Unit reference number: K/600/0426**

**Level: 3**

**Credit value: 10**

**Guided learning hours: 60**

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## **Unit aim**

This unit gives learners the opportunity to develop the skills needed to carry out surveys to establish the levels of points, determine coordinates of stations, and survey land and buildings. Learners will also develop knowledge of emerging technologies in control and topographic surveys.

## **Unit introduction**

Topographic surveying is the measurement of existing features of the earth's surface and the presentation of the results. Knowledge of the size, shape and position of natural and manmade features is an essential element in the planning of a wide variety of projects.

Surveyors use a variety of instruments to carry out measurements, these are normally recorded electronically. Measurement data is transferred from the instrument to suitable software for processing and production of the required drawings. Drawings in a digital format can be sent to the client electronically, and are often input directly into their own software for analysis, planning or design of the project.

Surveying is a technologically advanced discipline and is changing rapidly in terms of instruments and the presentation of results.

The professional surveyor must be confident with the underlying mathematics involved in the processing of data and calculations are therefore an important part of the unit. Learners should have an understanding of trigonometry and basic mathematical principles before starting this unit. The use of spreadsheets for calculations and software for producing drawings is an important aspect of this unit.



## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Be able to carry out control surveys to establish the levels of points	1.1	Carry out levelling surveys to establish vertical control
2	Be able to carry out control surveys to determine coordinates of stations	2.1	Carry out control surveys to determine coordinates
		2.2	Calculate coordinates of stations from data collected
3	Be able to carry out surveying of land and buildings	3.1	Carry out surveys of land and buildings
		3.2	Produce plans of land and buildings using standard software
4	Know about emerging technologies in control and topographic surveys	4.1	Describe the uses and advantages of emerging technologies in control and topographic surveying

## Information for tutors

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### Delivery

Tutors delivering this unit have opportunities to use a wide range of techniques. Lectures, discussions, seminar presentations, site visits, supervised practicals, research using the internet and/or library resources and 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 but, as this is essentially a practical unit, learners will learn more quickly by doing, rather than by listening.

The four learning outcomes are not linked but there is a natural progression through plan control, levelling and topographic surveys. Learning outcomes 1 to 3 are essentially practical. Learning outcome 4 is less practical in nature but it gives learners the opportunity to investigate new technologies and relate their use to the practical work they have already carried out.

The unit requires learners to carry out standard surveying calculations using non-programmable calculators. However, once learners have demonstrated this ability, they should be encouraged to use spreadsheets to carry out repetitive calculations.

The unit gives learners opportunities to carry out realistic surveying tasks and produce high quality results. This unit is likely to be delivered later in the programme, since a familiarity with the use of surveying equipment and an understanding of basic levelling and angle calculations is assumed. Learners should, therefore, have studied a mathematical unit before starting this unit.

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 reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken before practical activities are taken. Centres are advised to read the Provision and Use of Work Equipment Regulations 1998 (PUWER).**

### Assessment

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

Some criteria can be assessed directly by the tutor during practical activities. If this approach is used, observation records or witness statements are suitable as evidence. Guidance on their use is available on the Pearson website.

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

This unit forms part of the construction and the built environment sector suite. This unit has particular links with the following unit titles in the construction and the built environment suite.

<b>Level 3</b>
Surveying in Construction and Civil Engineering
Setting Out Processes in Construction and Civil Engineering
Spatial Data Techniques in Construction and Civil Engineering
Surveying Technology in Construction and Civil Engineering
Construction in Civil Engineering

This unit links to the Pearson Edexcel Level 3 NVQ in Technical Design (Construction Environment), the Pearson Edexcel Level 3 NVQ in Construction, Plant and Equipment Supervision and the Pearson Edexcel Level 4 NVQ in Construction, Plant and Equipment Management. This unit links to the following National Occupational Standards at Level 3:

- Built Environment Design
- Construction Contracting Operations
- Spatial Data Management
- Surveying, Property and Maintenance
- Transportation.

### Essential resources

As this is a practical unit, centres will need a suitable range and quality of equipment and suitable areas for carrying out realistic tasks in safety.

As a minimum, the instruments required include tape measures, automatic optical levels and total stations (preferably with on-board data storage) but learners should be made aware of the other instruments available and wherever possible, be given the opportunity to use them. Suitable ancillary equipment, such as staffs, tripods and ranging poles, will also be required. There should be sufficient instruments available so that during fieldwork teams are small in number.

To meet the requirements of learning outcome 3, learners will need access to industry-standard surveying software; alternatively, they could use spreadsheets and a CAD package to produce the required drawings. Centres need access to areas of land with topographic and built features where practical surveying work can be carried out safely. Health, safety and welfare issues must be considered at all times and risk assessments undertaken where necessary.

### Employer engagement and vocational contexts

The use of vocational contexts is essential in the delivery and assessment of this unit. Much of the work can be set in a real work context. Learning outcome 4 lends itself well to investigating what goes on in the real world of surveying. Visits to companies, shows and exhibitions will enhance this particular part of the unit.

Companies with a surveying section are likely to be able to show how field data is manipulated and adjusted, especially the use of new technologies and software packages.

The organisations listed below offer support to enable centres to initiate and establish links to industry:

- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- National Education and Business Partnership Network – [www.nebpn.org](http://www.nebpn.org)
- The Royal Institution of Chartered Surveyors – [www.rics.org](http://www.rics.org).

## Suggested resources

### Textbooks

Bannister A and Baker R – *Solving Problems in Surveying, 2nd Edition* (Pearson Higher Education, 1994) ISBN 0582236444

Bannister A and Raymond S and Baker R – *Surveying, 7th Edition* (Pearson Higher Education, 1998) ISBN 0582302498

Irvine W and Maclennan F – *Surveying for Construction, 5th Edition* (McGraw-Hill, 2005) ISBN 0077111141

Johnson A – *Plane and Geodetic Surveying, 1st Edition* (Spon Press, 2004) ISBN 0415320046

Muskett J – *Site Surveying, 2nd Edition* (Blackwell Science, 1995) ISBN 0632038489

Uren J and Price W F – *Surveying for Engineers, 4th Edition* (Palgrave Macmillan, 2005) ISBN 1403920540

### Journals

*Civil Engineering Surveyor* – Institution of Civil Engineering Surveyors

*Geomatics World* – PV Publications

*New Civil Engineer* – Emap

*RICS Business* – Royal Institution of Chartered Surveyors

*RICS Construction Journal* – Royal Institution of Chartered Surveyors

*RICS Land Journal* – Royal Institution of Chartered Surveyors

### Websites

<a href="http://www.bconstructive.co.uk">www.bconstructive.co.uk</a>	BConstructive
<a href="http://www.ciob.org.uk">www.ciob.org.uk</a>	Chartered Institute of Building
<a href="http://www.cskills.org">www.cskills.org</a>	Construction Skills
<a href="http://www.cstt.org.uk">www.cstt.org.uk</a>	Chartered Surveyors Training Trust
<a href="http://www.ice.org.uk">www.ice.org.uk</a>	Institution of Civil Engineers
<a href="http://www.ices.org.uk">www.ices.org.uk</a>	Institution of Civil Engineering Surveyors
<a href="http://www.rics.org">www.rics.org</a>	Royal Institution of Chartered Surveyors

# **Unit 12: Personal and Professional Development in the Built Environment**

**Unit reference number: D/600/0360**

**Level: 3**

**Credit value: 10**

**Guided learning hours: 60**

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## **Unit aim**

This unit gives learners the opportunity to understand the skills and attributes needed for employment, the need for professional ethics and professional development, and current issues that impact on professional practice. Learners will develop a plan for their career within the construction and built environment.

## **Unit introduction**

A broad range of different careers is available across the built environment sector, a major employment sector in the UK. This unit gives learners the opportunity to explore the wide variety of careers available in the industry, the need for professional development and the issues that impact on professional development.

Learners will identify the skills, attributes and behaviours that employers need, including the presentation of technical information. Each learner will choose a career that interests them and produce a development plan that will enable them to embark on that career and progress along their preferred pathway.

Employees in the sector need to achieve professional status. Learners will identify the codes of ethics that govern the principles of professionalism and explore the processes stipulated by a professional body for initial professional development. Learners will investigate how to plan for their own continuing professional development (CPD) as their career progresses.

A variety of issues, for example new techniques and legislation, drive the requirements for professional development. Learners will have the opportunity to consider these issues and explore how they have an impact on their own discipline and the industry in general.

## Learning outcomes, assessment criteria and unit amplification

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes		Assessment criteria	
1	Understand the skills and attributes necessary for employment	1.1	Identify employability skills, attributes and expected behaviours in employment
		1.2	Identify their own abilities and development needs
		1.3	Explain the importance of the presentation of technical information
2	Be able to plan for career development	2.1	Identify the range of career opportunities in the built environment sector
		2.2	Produce a career development plan to include experiences, qualifications and training and development
3	Understand the need for professional ethics and professional development	3.1	Explain what is meant by professional ethics as expressed in codes required for professional practice
		3.2	Explain the principles of duty of care
		3.3	Identify the limits of working within individual expertise
		3.4	Explain the requirements of initial professional development of a relevant professional body
		3.5	Explain the need for continuing professional development
		3.6	Explain how continuing professional development can be planned
4	Understand current issues that impact on professional practice	4.1	Discuss issues of concern that affect organisations and industry
		4.2	Explain the potential impact of selected issues on their discipline and the industry generally

## Information for tutors

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### Delivery

Tutors delivering this unit have opportunities to use a wide range of techniques, although the main techniques should involve learner-centred approaches. Lectures, discussions, seminar presentations, guest speakers, research using the internet and/or library resources and use of personal and/or industrial experience are all suitable. Delivery should stimulate, motivate, educate and enthuse learners.

Wherever possible, links should be made with relevant employers who will be able to use their own experiences to enhance the subject matter.

Delivery could be supported by case studies and visual media where appropriate.

Learners could work in groups to investigate the skills, attributes and behaviours that employers in the construction sector expect. Groups could prepare a questionnaire to use with employers on site visits and then report their findings to the rest of the class.

Learners could also work in groups to investigate the range of careers available in the built environment sector. Ideally, learners with similar career interests should work together in the same group. Learners could cut and paste job adverts from trade journals to form a display and analyse them in terms of the qualifications, skills and experience required. Learners should visit a careers library to obtain detailed information about a career of interest to them. This will then inform their individual career plans.

A member of a professional body could deliver a presentation on professional development. Learners could use the internet and/or write to different professional bodies to find out about their requirements for professional development. A guest speaker who works in the industry as a human resources officer in a large company or who is the owner of a smaller business in the sector could discuss recent issues that have affected professional development.

Tutors need to ensure that individual learners have equal experiential and assessment opportunities where group activities are used, and that learners produce individual evidence for assessment purposes.

**Health, safety and welfare issues are paramount and should be reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken before practical activities are taken. Centres are advised to read the Provision and Use of Work Equipment Regulations 1998 (PUWER).**

### Assessment

Evidence for this unit can 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 can be used and tutors are encouraged and adopt them where appropriate.

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

This unit forms part of the construction and the built environment sector suite. It has particular links with the following unit in the construction and the built environment suite:

<b>Level 3</b>
Employment Framework in the Built Environment

This unit links to the Pearson Edexcel Level 3 NVQ in Technical Design (Construction Environment), the Pearson Edexcel Level 4 NVQ in Site Inspection and the Pearson Edexcel Level 4 NVQ in Construction, Plant and Equipment Management. It also links to the following National Occupational Standards at level 3:

- Built Environment Design
- Town Planning, Conservation and Building Control
- Construction Contracting Operations
- Construction Plant and Equipment Supervision
- Construction Site Supervision
- Spatial Data Management
- Surveying, Property and Maintenance
- Transportation.

### Employer engagement and vocational contexts

Delivery will be enhanced if a local employer gave a presentation on the skills, attributes and behaviours that they require of their employees. A visit to one or more construction sites to demonstrate the range of different careers available in the sector would be beneficial. A presentation by a member of a professional body on professional development and the relevant code of ethics would also be of value.

The organisations listed below offer support to enable centres to initiate and establish links to industry:

- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- The Royal Institution of Chartered Surveyors – [www.rics.org](http://www.rics.org).

### Suggested resources

#### Textbook

Moon J – *Reflection in Learning and Professional Development: Theory and Practice* (Routledge, 2000) ISBN 978-0749434526

#### Websites

<a href="http://www.cibse.org">www.cibse.org</a>	Chartered Institution of Building Services Engineers
<a href="http://www.ciob.org.uk">www.ciob.org.uk</a>	Chartered Institute of Building
<a href="http://www.cstt.org.uk">www.cstt.org.uk</a>	Chartered Surveyors Training Trust



<a href="http://www.ice.org.uk">www.ice.org.uk</a>	Institution of Civil Engineers
<a href="http://www.ices.org.uk">www.ices.org.uk</a>	Institution of Civil Engineering Surveyors
<a href="http://www.ihie.org.uk">www.ihie.org.uk</a>	Institute of Highway Incorporated Engineers
<a href="http://www.rics.org">www.rics.org</a>	Royal Institution of Chartered Surveyors

## 13 Further information and useful publications

To get in touch with us visit our 'Contact us' pages:

- Edexcel, BTEC and Pearson Work Based Learning contact details: [qualifications.pearson.com/en/support/contact-us.html](http://qualifications.pearson.com/en/support/contact-us.html)
- books, software and online resources for UK schools and colleges: [www.pearsonschoolsandfecolleges.co.uk](http://www.pearsonschoolsandfecolleges.co.uk)

Key publications:

- *Adjustments for candidates with disabilities and learning difficulties, Access and Arrangements and Reasonable Adjustments, General and Vocational qualifications* (Joint Council for Qualifications (JCQ))
- *Supplementary guidance for reasonable adjustments and special consideration in vocational internally assessed units* (Pearson)
- *General and Vocational qualifications, Suspected Malpractice in Examination and Assessments: Policies and Procedures* (JCQ)
- *Equality Policy* (Pearson)
- *Recognition of Prior Learning Policy and Process* (Pearson)
- *UK Information Manual* (Pearson)
- *BTEC UK Quality Assurance Centre Handbook*

All of these publications are available on our website.

Publications on the quality assurance of BTEC qualifications are also available on our website.

Our publications catalogue lists all the material available to support our qualifications. To access the catalogue and order publications, please visit our website.

### Additional resources

If you need further learning and teaching materials to support planning and delivery for your learners, there is a wide range of BTEC resources available.

Any publisher can seek endorsement for their resources and, if they are successful, we will list their BTEC resources on our website.

## 14 Professional development and training

Pearson supports UK and international customers with training related to BTEC qualifications. This support is available through a choice of training options offered on our website.

The support we offer focuses on a range of issues, such as:

- planning for the delivery of a new programme
- planning for assessment and grading
- developing effective assignments
- building your team and teamwork skills
- developing learner-centred learning and teaching approaches
- building in effective and efficient quality assurance systems.

The national programme of training we offer is on our website. You can request centre-based training through the website or you can contact one of our advisers in the Training from Pearson UK team via Customer Services to discuss your training needs.

### BTEC training and support for the lifetime of the qualifications

**Training and networks:** our training programme ranges from free introductory events through sector-specific opportunities to detailed training on all aspects of delivery, assignments and assessment. We also host some regional network events to allow you to share your experiences, ideas and best practice with other BTEC colleagues in your region.

**Regional support:** our team of Curriculum Development Managers and Curriculum Support Consultants, based around the country, are responsible for providing advice and support in centres. They can help you with planning and curriculum developments.

To get in touch with our dedicated support teams please visit our website.

### Your Pearson support team

Whether you want to talk to a sector specialist, browse online or submit your query for an individual response, there's someone in our Pearson support team to help you whenever – and however – you need:

- **Subject Advisors:** find out more about our subject advisor team – immediate, reliable support from a fellow subject expert
- **Ask the Expert:** submit your question online to our Ask the Expert online service and we will make sure your query is handled by a subject specialist.

Please visit our website at [qualifications.pearson.com/en/support/contact-us.html](http://qualifications.pearson.com/en/support/contact-us.html)

**December 2017**

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