

# Examiners' Report

## January 2010

Principal Learning

## Construction Level 1 Controlled Assessments

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# Principal Examiners' Report

## Principal Learning - Construction and the Built Environment - Level 1

### General Comments

This is the second moderation series where all the available units for the Level 1 Principal Learning in Construction and the Built Environment, whether internally or externally assessed, have been offered for moderation and awarded. However, the number of entries for some units is still very small, for example units CB105, 106 and 107 each having only 24 learners entered.

Whilst there is evidence that the quality of learners' work, the quality of assessment and the quality of internal moderation have all improved from the last series to this, centres clearly still have much to learn about the specification and what learners are required to do in order to meet the learning outcomes.

It is recommended that centres make use of the Tutor Support Materials, which provide supplementary guidance on how learners can meet the learning outcomes. However, centres should note that the Tutor Support Materials are provided to support tutors and should not be provided to learners as part of their assessment brief. Copies are available to download at [www.edexcel.com](http://www.edexcel.com).

Centres are also reminded that test papers following each exam session can be used as practice tests after results publication. Copies and corresponding mark schemes will be made available for centres to download from [www.edexcel.org.uk](http://www.edexcel.org.uk).



# Level 1 Unit 1 - Design the Built Environment: Design Influences

## General Comments

This is a 30GLH unit that requires learners to consider human and physical factors that affect the design of the built environment. Learners are required to produce a word-processed technical report for assessment purposes that addresses each of the four learning outcomes. The report should be produced in the context of the learner acting in the role of an advisor to a local planning consultancy. Centres will provide learners with the details of a simple building or structural project including a brief description of the proposals, plans, elevations and a site layout drawing.

Marks are awarded using a principal of best fit against a single marking grid that contains three mark bands with a total of 60 available marks.

## Learning Outcome 1

Learners should demonstrate that they know how designs are influenced by human and physical factors. This includes identifying key local human and physical factors that influence the design of the built environment and describing these factors and how they impact on the design process and on final designs.

This learning outcome was generally not well addressed by learners across all centres. Whilst most learners identified a reasonable range of factors including existing/proposed use of land, public consultation and some environmental factors, the evidence consisted mainly of identification with only very limited description. Furthermore, there was insufficient focus on how these factors actually affect the design process. Describing human and physical factors and their impacts is essential in achieving marks in the highest mark band.

## Learning Outcome 2

Learners are required to demonstrate that they understand the basic need for planning. This includes identifying the key stages of the planning process and demonstrating an understanding of the purposes of these stages. Most learners provided some evidence for this learning outcome. However, this was mostly limited to identification with very little description. Furthermore, very few learners demonstrated any understanding of the purposes of the various stages of planning.

Many learners had the Benchmark Statements from the Tutor Support Materials included in the assessment briefs. The intended use of these materials is to provide additional guidance for tutors and the Benchmark Statements should not be provided to learners prior to assessment. Doing so limits learners' ability to secure marks for identification of the major stages of planning.

## Learning Outcome 3

For this learning outcome learners must demonstrate that they understand the basic need for sustainability and environmental protection. This includes identifying and describing all of the major influences on sustainability and environmental protection and describing how these impact on the design of the built environment.

Evidence for this learning outcome was generally weak across all centres. Where influences on sustainability and environmental protection were identified, there was insufficient description and the impacts of these on the design of the built environment were mostly not identified.

#### **Learning Outcome 4**

Learners should be able to describe the properties and uses of typical construction materials. This includes describing materials and their properties in relation to specific applications.

Most learners, across all centres, identified a reasonable range of materials commonly used in construction. Furthermore, some learners gave very brief descriptions of some of these materials. However, there was generally a lack of identification and description of the properties of materials and why they are used for specific applications.



## Level 1 Unit 2 - Design the Built Environment: Applying Design Principles

### General Comments

This is a 30GLH unit that requires learners to apply design principles. Learners are required to complete two tasks.

In the first task, learners are provided with a brief for the design of a proposed simple building or structural project, including a site layout. Acting in the role of a design technician, learners should make notes and produce simple sketches for the design of the external appearance of the structure and make a 3D model of their design.

For the second task, learners are required to take part in a role play. They will continue to act in the role of a design technician, with a partner or the tutor acting in the role of the client. The learners will introduce themselves and describe the roles and responsibilities of the design technician within the design team. They will also outline what qualifications are needed to become a design technician and describe appropriate career paths, progression routes and relevant professional bodies and the roles that they play.

Marks are awarded against two marking grids; Marking Grid A for the moderated work and Marking Grid B for the 3D model of their design. The total number of marks available for the moderated Grid A is 48. Grid B is not moderated.

### Learning Outcome 1

Learners must demonstrate that they know why structures are designed as they are. This includes extracting key information from a client brief and describing all of the appropriate reasons behind their final design.

This learning outcome was generally not well addressed by learners across all centres. Whilst many learners provided some generic evidence relating to the basic layout of the building and aesthetics, there was very little from any learner in terms of the reasoning behind their designs. Also, much of what was produced was not focussed on the specific task.

### Learning Outcome 2

For this learning outcome learners must be able to sketch and model a simple structure from a brief and describe it to a client. Marks are awarded in part against the quality of the sketches produced.

Most learners, across all centres, produced some simple sketches. Some used computer based drawing packages whilst others demonstrated manual drawing techniques. In general terms, those that were drawn manually were of a limited quality and lacked appropriate annotation.

### Learning Outcome 3

Learners must demonstrate that they understand the job roles, career opportunities and progression routes, and the importance of teamwork, within the construction

design sector. This includes describing the main elements of the role of the design technician and describing the roles of relevant professional bodies.

Most learners, across all centres, did not focus on the role of the design technician. Some did attempt to identify career paths but these were often generic and lacked detail. To achieve marks in the highest mark band, learners must focus on the role, the career opportunities and the progression routes of the design technician. Furthermore, they must describe the roles of relevant professional bodies

### **Marking Grid B**

There is one learning outcome in Marking Grid B for which learners are required to produce sketches and a model of a simple structure from a design brief and describe to a client. Marks awarded in Grid B should be awarded specifically for the model and for taking part in a role play where learners describe the principles of their design.

Most centres provided some photographic evidence of the models produced and witness testimonies and observation records for the role play. Centres are reminded that this is a minimum requirement for Marking Grid B

## **Level 1 Unit 3 - Create the Built Environment: Using Tools**

### **General Comments**

This is a 30GLH unit in which learners learn about and use tools. The unit consists of two assessment tasks.

For the first task, learners are required to complete a practical activity in one of five craft areas; brickwork, carpentry and joinery, painting and decorating, electrical installation or plumbing.

The second task requires the learners to take part in a short discussion with their peers on the topic of health and safety and environmental protection in relation to their chosen craft area.

Marks are awarded against two marking grids. Marking Grid A is moderated and has a total mark allocation of 14 marks. Marking Grid B is not moderated and has a total mark allocation of 46 marks.

### **Learning Outcome 1**

Learners should demonstrate that they know about and can describe the basic requirements for health and safety and environmental protection. This includes preparing for participation in a group discussion on health and safety in relation to a chosen craft area and describing the basic requirements for environmental protection, including COSHH and identifying all of the people at risk.

Learners from some centres provided PowerPoint slides of their presentations, all of which were generic and did not relate to a specific chosen craft area. However, they mostly did cover some key points around general health and safety. Some centres chose to address this learning outcome by providing their learners with gapped handouts on general health and safety. This approach is considered limiting for learners as it prevents them from gaining marks for identification. Consequently, learners at these centres were unable to achieve marks beyond Mark Band 1.

### **Learning Outcome 2**

For this learning outcome learners must demonstrate that they know about safe working practices and are able to demonstrate how ongoing experience and reflection is used to self-manage improvements in their skills and knowledge.

Several centres chose to adopt the same approach for this learning outcome as that described for Learning Outcome 1. Again, the use of gapped handouts limits learners' opportunities to access marks in the higher mark bands.

### **Marking Grid B**

There are four learning outcomes for Marking Grid B providing learners with the opportunity to access a maximum of 46 marks.

### **Learning Outcome 1**

Marks for this learning outcome should be awarded on the basis of learners' contributions to a group discussion on health and safety and environmental protection in relation to a specific craft area.

### **Learning Outcome 2**

Marks for this learning outcome should be awarded for the demonstration by learners of safe working practices and appropriate use of personal protective equipment (PPE) whilst carrying out basic operations.

### **Learning Outcome 3**

Marks for this learning outcome should be awarded for demonstrating the evaluation and use of technical information to produce and use a suitable range of quality control checks when producing a practical outcome.

### **Learning Outcome 4**

Marks for this learning outcome should be awarded for the demonstration of skill and the use of safe working practices in the production of a practical outcome to a high standard and with a high level of attention to detail.

Most centres provided some photographic evidence of the practical outcomes and witness testimonies and observation records for the group discussion. Centres are reminded that this is a minimum requirement for Marking Grid B

## Level 1 Unit 5 - Value and Use of the Built Environment

### General Comments

This is the largest level one unit at 60GLH, which is double the size of the other units. The learners have two tasks to complete.

In the first task they act as a researcher and carry out an investigation to consider the suitability of the proposed design and likely effects upon the local community and in addition should suggest a possible site location. Learners have to produce a portfolio of evidence which includes their own word processed notes on: the suitability of the proposed project design for its intended purpose and use; the impact the development is likely to have on the communities and on properties in the area; the effects on the natural environment, including the ways in which the design will help to protect the environment and ensure sustainability; the ways in which the health, safety, security, social integration and general wellbeing of the community can be improved by changes to the built environment.

In the second task they have to take on the role of a recruitment consultant and have to produce some advertising materials to encourage young people to consider a career in the 'value and use' sector of the built environment. The outcomes could be paper-based materials such as posters or leaflets, a CD recording for a radio promotional feature, a DVD recording for a television promotional feature or a website.

There was only a very small cohort for this unit in this series and it is anticipated that the entry will be substantially higher in the June 2010 series because most centres appear to have left the 'Value and Use the Built Environment' units to the latter part of the course. More detailed generic feedback of learner performance will be possible with a larger entry.

The work is marked and moderated using a single assessment grid with a total of 60 marks.

### Learning Outcome 1

For this Learning Outcome learners should demonstrate an understanding of the basic function and use of a simple structure. They should identify and describe the major factors relating to the suitability and impact of a simple structure.

Generally learners identified some factors that related to the proposed facility and its impact upon the local community, however the work commonly lacked descriptive qualities therefore limiting the learners to mark band one.

In order to achieve marks at the highest grade learners need to describe most of the major factors relating to the project's suitability. Learners may have described; the function of the building, the aesthetics, size, location, life expectancy, community issues and economic and social impact (or other equally relevant and valid responses).

### Learning Outcome 2

Learners should demonstrate an understanding of how the built environment provides a feeling of society and wellbeing.

The quality of learners' work for this Learning Outcome was generally very poor with very little appropriate evidence to support the awarding of marks using the assessment grids.

In order to achieve marks at the highest grade learners need to describe most of the major factors that affect how the built environment provides a feeling of society and wellbeing. Learners may have described; the provision of shelter, safety and security; improved quality of life; provision of social, leisure, residential, industrial or commercial space; provision of employment through use of the built environment and through creation of the built environment and the generation and maintenance of wealth (or other equally relevant and valid responses).

### **Learning Outcome 3**

For this Learning Outcome learners should demonstrate that they know how the built environment is maintained. They should describe a broad range of sustainable practices relating to the maintenance and protection of the built environment for a specified simple structure.

Most of the learners provided some very basic identification of sustainable practices relating to the maintenance and protection of the built environment. However, this was very brief and lacked descriptive qualities.

In order to achieve marks at the highest grade learners need to describe a range of appropriate sustainable practices relating to the maintenance and protection of the built environment. Learners may have described; use of recyclable / renewable materials; planned and preventative maintenance; upgrading specifications when replacing; use of energy efficient components; energy efficient use and correct disposal of redundant materials (or other equally relevant and valid responses).

### **Learning Outcome 4**

Learners should demonstrate an understanding of the job roles, career opportunities and progression routes, and the importance of teamwork for those who maintain the built environment. They should describe a broad range of job roles, teamwork aspects, career opportunities and progression routes. They should also describe relevant professional institutions.

There was some identification of different job roles, teamwork aspects, career opportunities and progression routes. However, the majority of these did not appear to be the learners' own work, mainly being work pasted from the Internet and could therefore only be considered as identification.

In order to achieve marks at the highest grade learners need to describe a range of job roles, teamwork and career opportunities of those who work in the 'value and use' sector of the built environment. Learners may have described; a range of craft, supervisory and management roles; relevant professional bodies; interaction, communication and progression. The roles will be relevant to the 'value and use' sector and not be more generic construction roles.

## Summary

Centres are reminded of the availability of the Tutor Support Material for this unit, and in particular the guidance for the assessment of each Learning Outcome. Providing learners with assessment opportunities in an appropriate brief that enables them to incorporate all of the points identified within the assessment guidance will enable them to access marks across all three Mark Bands. The 'benchmark statements' within the Tutor Support Material must not be outlined to the learners nor should they be incorporated into the assignment brief.





## Level 1 Unit 6 - Maintenance of the Built Environment

### General Comments

This unit requires learners to understand the need for building and structural maintenance and the importance of good design and workmanship and how to identify and describe a range of common building and structural defects. Learners are also required to be able to develop and use safe working practices and simple skills for undertaking routine building and structural maintenance operations.

This is a 30 GLH unit. The learners have two tasks to complete.

In the first task learners survey a local 'facility' and produce word processed notes that include: a planned maintenance list; appropriate maintenance notes which include the cause of defects, details of the work required, consequences of not maintaining, materials required, workforce skills, equipment needed, waste disposal and an estimate of time and cost plus a description of the key benefits of maintenance and good design and workmanship.

The second task is a practical maintenance item and the ephemeral skills are marked using the un-moderated grid B. However the learner is required to produce some notes outlining how they have used ongoing personal reflection to develop their understanding of skills required in maintenance work.

There was only a very small cohort for this unit in this series and it is anticipated that the entry will be substantially higher in the June 2010 series because most centres appear to have left the 'Value and Use the Built Environment' units to the latter part of the course. More detailed generic feedback of learner performance will be possible with a larger entry.

The work is marked and moderated using a 50 mark 'grid A' assessment grid. There is a 10 mark 'grid B' assessment grid for the ephemeral evidence and this is un-moderated.

### Learning Outcome 1

For this Learning Outcome learners must demonstrate an understanding of the need for building and structural maintenance and the importance of good design and workmanship. They should describe a wide range of benefits of maintenance activities and of good design and workmanship.

Most of the learners provided some brief description of some of the benefits of timely maintenance and good workmanship. Most learners used examples to back this up and were awarded marks in Mark Band 2.

In order to achieve marks at the highest grade learners need to describe a range of benefits of maintenance activities and of good design and workmanship. Learners may have described: appropriate timings of maintenance activities; use of low maintenance materials and materials from renewable sources; the importance of good quality workmanship; the impact of building design upon maintenance and how a buildings life is prolonged by regular maintenance (or other equally relevant and valid responses).

## **Learning Outcome 2**

For this Learning Outcome learners must identify and describe a range of common building and structural defects. They should also describe the maintenance requirements for defects.

Most learners attempted to identify a range of common building defects generally providing lists of maintenance items and with some very basic details of what maintenance is required. However, the evidence was limited to identification and once again lacked descriptive qualities.

In order to achieve marks at the highest grade learners need to produce a list that identifies all of the common defects describes the maintenance requirements. Learners may have described and considered a range of: electrical defects, plumbing/heating defects, defects attributable to poor workmanship, defects attributable to wear and tear, defects related to water penetration and a range of external defects (or equally valid and relevant responses).

## **Learning Outcome 3**

### **Mark Grid A**

For this Learning Outcome learners must demonstrate that they can develop and use safe working practices and simple skills for undertaking routine building and structural maintenance operations. They should describe how their experiences and reflection has been used to self-manage the development of their knowledge and skills.

Learners mainly provided a description of the tasks that they have undertaken. Unfortunately the evidence did not focus on managing development of own skills and knowledge. Centres are reminded that the specification states that marks are awarded for demonstrating how the learners' own experience and reflection has been used to self-manage the development of their knowledge and skills. The demonstration and application of practical skills is assessed using Marking Grid B.

In order to achieve marks at the highest grade learners need to describe how own experience and reflection has been used to self manage development of relevant knowledge and skills relating to maintenance activities. Learners may have described: health and safety issues, use of correct PPE, safe manual handling, use of access equipment, completing to quality standards and contextualisation to the maintenance task completed (or other equally relevant and valid responses).

## **Learning Outcome 3**

### **Mark Grid B**

For this Learning Outcome, learners must be able to develop and use safe working practices and simple skills for undertaking routine building and structural maintenance operations. They must demonstrate their skill levels whilst completing routine operations.

Centres are reminded that the learners are required, as a minimum, to include in their portfolio copies of relevant observation record sheets for the practical tasks that they undertake, and the inclusion of good quality photographic evidence would be considered good practice.

### Summary

Centres are reminded of the availability of the Tutor Support Material for this unit, and in particular the guidance for the assessment of each Learning Outcome. Providing learners with assessment opportunities in an appropriate brief that enables them to incorporate all of the points identified within the assessment guidance will enable them to access marks across all three Mark Bands. The 'benchmark statements' within the Tutor Support Material must not be outlined to the learners nor should they be incorporated into the assignment brief.



## Level 1 Unit 7 - Modern Methods of Construction

### General Comments

This unit requires the learner to know about traditional construction methods and understand alternative methods of construction. Learners are also required to be able to identify key factors influencing speed, quality, cost and sustainability of construction methods, and select a construction method.

This is a 30 GLH unit. The learners have three tasks to complete.

The first task requires learners to write a set of notes that summarise the factors that influence the design, speed of erection, quality and cost of different approaches to constructing a building.

In the second task the learners should produce two working schedules in the form of a Gantt chart. The first chart is for the construction of the building using traditional methods and the second chart is for the construction of the building using pre-fabrication techniques.

The third task requires the learner to state their preferred method of construction and explain reasons for their choice.

There was only a very small cohort for this unit in this series and it is anticipated that the entry will be substantially higher in the June 2010 series because most centres appear to have left the 'Value and Use the Built Environment' units to the latter part of the course. More detailed generic feedback of learner performance will be possible with a larger entry.

The work is marked and moderated using a 60 mark assessment grid.

### Learning Outcome 1

For this Learning Outcome learners must demonstrate that they know about traditional construction methods. They should describe the major aspects of traditional construction methods for simple low-rise buildings, and describe their impact on the design and building processes.

Most learners identified some major aspects of traditional construction methods. However, these were mainly limited to brick cavity walls, plastering methods, partitioning and the use of copper pipe fittings. Furthermore, most learners provided only identification with very little description.

In order to achieve marks at the highest grade learners need to describe most of the major aspects of traditional construction methods and their impact on the design and building process. Learners may have described: solid brick and block and cavity walls; traditional plaster finishes, slate and tile roofing; fixed partitioning; studwork and compression and capillary pipe fittings etc. and their impact on the construction process when compared to modern methods of construction (or other equally relevant and valid responses).

### Learning Outcome 2

Learners must demonstrate that they understand alternative methods of construction. They should describe the major aspects of modern methods of construction for simple low-rise structures, and describe their impact on the design and building processes.

Most learners identified a few aspects of modern construction via the Gantt chart however more descriptive written work is required.

In order to achieve marks at the highest grade learners need to describe most of the major aspects of modern construction methods and their impact on the design and building process. Learners may have described: framed structures, including their connection to foundations; shell structures; crosswall and cellular structures; prefabrication; modern components eg SIPs; and time, cost, quality and sustainability considerations of modern methods of construction (or other equally relevant and valid responses).

### **Learning Outcome 3**

For this Learning Outcome learners must be able to identify key factors influencing speed, quality, cost and sustainability of different construction methods. They should describe the major factors that influence the choice of either traditional or alternative construction methods for simple low-rise structures. They should also describe their preferred method for a specified simple low-rise building.

This was done reasonably well and learners considered a number of advantages of the chosen method of construction over more traditional construction methods. Learners could also consider waste reductions brought about by prefabrication and the reduction in the amount of skilled labour needed on site. Learners also need to describe their chosen method of construction.

In order to achieve marks at the highest grade learners need to describe most of the major factors that influence the choice of traditional or modern methods of construction and the learners' own preferred technique. Learners may have described: on site construction versus off-site pre-fabrication; build quality issues; sustainability issues; relative costs of different construction methods; and their own preferred construction method, either a traditional method or an alternative modern method of construction (or other equally relevant and valid responses).

### **Summary**

Centres are reminded of the availability of the Tutor Support Material for this unit, and in particular the guidance for the assessment of each Learning Outcome. Providing learners with assessment opportunities ie an appropriate brief that enables them to incorporate all of the points identified within the assessment guidance will enable them to access marks across all three Mark Bands. The 'benchmark statements' within the Tutor Support Material must not be outlined to the learners nor should they be incorporated into the assignment brief.

## Statistics

### Level 1 Unit 1 Design the Built Environment: Design Influences

Grade	Max. Mark	A*	A	B
Raw boundary mark	60	51	37	23
Points Score	4	3	2	1

### Level 1 Unit 2 Design the Built Environment: Applying Design Principles

Grade	Max. Mark	A*	A	B
Raw boundary mark	60	51	36	22
Points Score	4	3	2	1

### Level 1 Unit 3 Create the Built Environment: Using Tools

Grade	Max. Mark	A*	A	B
Raw boundary mark	60	53	38	24
Points Score	4	3	2	1

### Level 1 Unit 5 Value and Use of the Built Environment

Grade	Max. Mark	A*	A	B
Raw boundary mark	60	52	37	22
Points Score	8	6	4	2

### Level 1 Unit 6 Maintenance of the Built Environment

Grade	Max. Mark	A*	A	B
Raw boundary mark	60	52	37	23
Points Score	4	3	2	1

### Level 1 Unit 7 Modern Methods of Construction

Grade	Max. Mark	A*	A	B
Raw boundary mark	60	52	37	22
Points Score	4	3	2	1

## Notes

**Maximum Mark (raw):** the mark corresponding to the sum total of the marks shown on the Mark Scheme or Marking Grids.

**Raw boundary mark:** the minimum mark required by a learner to qualify for a given grade.

**Please note:** *Principal Learning qualifications are new qualifications, and grade boundaries for Controlled Assessment units should not be considered as stable. These grade boundaries may differ from series to series.*

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