

Examiners' Report June 2010

Principal Learning

Construction Level 2 Controlled Assessments

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Contents

1.	Level 2 General Comments	1
2.	Level 2 Unit 1 Report	3
3.	Level 2 Unit 2 Report	5
4.	Level 2 Unit 3 Report	7
5.	Level 2 Unit 5 Report	9
6.	Level 2 Unit 6 Report	11
7.	Level 2 Unit 7 Report	13
8.	Statistics	15

Principal Examiners' Report

Principal Learning - Construction and the Built Environment - Level 2

General Comments

This second year summer series saw an increase in the amount of coursework submitted for moderation in June by centres, from a range of work submitted across all six moderated units. The standards appeared to have improved in the quality of learners' work but not in the application of marks by centres to the principle of best fit within the mark bands. Units 6 and 7 were again the units that lacked any depth of coursework and range of assessed work.

A number of centres failed to meet the submission deadline. Centres must ensure that they refer to the Information Manual for details of the mark and sample submission deadlines and submit work by the date given.

The majority of centres that submitted work for moderation this series supplied the correct moderation sample however centres are reminded that they must follow the instructions on the submission of coursework evidence given in the Guidance for Principal Learning, and include the highest and lowest with their coursework sample.

Centres made full use of the Candidate Record Sheets attached to each piece of coursework, but many centres neglected to include the candidate number.

Centres are reminded that 'any assignment briefs the learner used must be included with the evidence', as indicated on the Candidate Record Sheets. This is especially useful for the moderator when trying to interpret where marks have been awarded.

Centres are reminded that learners' work must be their own. Any work that has been downloaded and pasted into an evidence portfolio should have its source acknowledged but carry no merit for marks.

Several learners work showed evidence of extensive guidance by the delivery centre with titles and subtitles appearing in the same learners work and in the same sequence. Learners need to develop an independent method of learning and producing evidence.

It is recommended that centres make use of the Tutor Support Materials which provide supplementary guidance for the units when devising learning activities for learners to accrue evidence to meet the Learning Outcomes more closely. Copies are available to download at www.edexcel.com. Tutors should specifically refer to the extended marking guidance which will assist with the setting and marking of assignments. Assignments written in line with this guide would enable learners to get a much clearer understanding of what evidence is required in order to achieve a higher banding.

There was limited or no evidence of internal moderation processes where work could have been moderated by Domain Assessors prior to submission.

Level 2 Unit 1 - Design the Built Environment: The Design Process

General Comments

As with the previous examination series in January 2010, several centres used the assignment brief contained within the Tutor Support Material available on the Edexcel website. This is a good method of using the support that has been provided for this line of learning, however Centres are advised that this may limit responses to some outcomes and that to achieve higher band 3 marks it is expected that learners move beyond a given brief and discuss, justify and evaluate further aspects in relation to individual learning outcomes. Centres could also develop their own assessment materials and link this to a local project/scenario. Should this be the case, centres are reminded that Edexcel has in place an assignment brief moderating team to assist and offer advice.

Learning Outcome 1

Knowing the factors that influence the design processes is the key to meeting the requirements of this Learning Outcome. Many learners covered the first area of local factors and legislation well, generally offering responses in relation to planning, building regulations and infrastructure, but fell short on the elements that cover the CDM regulations and the socio-economic impact of the development. Sustainable design factors were less well answered. The Tutor Support Material provides a list of sustainable factors that assessors could cover with their learners. Very few centres covered this element to the level of detail required, for example few learners demonstrated an understanding of the concept of embodied or embedded energy, or energy efficient materials linked to reduced carbon footprint. Also, to achieve mark band 3 learners are required to justify their range of sustainable design features; this was rarely seen in the work submitted for moderation.

Learning Outcome 2

This Learning Outcome covers the element of infrastructure and utilities. Learners could name the services of water, gas, electricity, drainage and data, and many provided relevant colour identification of the services, but did not explain in any detail the importance of the depth of services which would have afforded greater marks. Learners need to expand on the disruption to infrastructure caused during installation and would also benefit from expansion on issues such as eg road closure, traffic delays and diversions. Some of these aspects could be explained more clearly by visiting site locations where utility work is taking place. Centres need to ensure learners have an understanding of concept at the initial point of the service, at its production at the source eg a power station, and then its eventual reduction in supply down to the domestic consumer eg transformers. Isolation points eg water valves, stopcocks etc were also lacking in the responses provided. Perhaps Centres could invite guest speakers from the maintenance sector or utility experts and link discussions to the school or college with which they are being taught in. The impact of the utility on the environment was again a missed opportunity to achieve further marks, with many offering only simple descriptions of the effects of emissions from power stations. Other issues for example, water treatment and sewage treatment, and plastics used in the manufacture of ducting for utility apparatus could be explored.

Learning Outcome 3

This Learning Outcome covers the building envelope, its requirements for the local climate, and to be able to understand and apply technical information. Many learners identified materials and gave general specification information. Some aspects described did not relate to the building envelope eg the laying of roads and drains. Aspects in relation to shelter, insulation and the transfer of sound were often attempted, however the requirement of the aesthetics of the structure, structural stability and fire or security elements needed to be expanded upon.

Focusing the learner within their own environment either at home or at the location in which they are being taught would enable them to consider in a 'real life' context issues in relation to vandalism, security and how aesthetics plays an important part in the value of property and achieving the right teaching or living environment.

Limited responses were included to consider the structural integrity of a building's envelope and its resistance to external forces. This is an area that centres could develop to incorporate live, dead, wind and rain loading conditions as linked to their chosen building/structure.

The external aesthetics and appearance of the building envelope was considered by many but could have been expanded into much more detail. For example, the way in which rain is kept away from the inside of a building, the methods used to slow down heat loss, how we ventilate a building, how elements work together, how colour is used in buildings, geographical use of materials eg slate, stone, brick, flint.

The linking of technical information, British Standards, relevant Codes of Practice etc were often poorly linked to many responses and should be expanded upon in relation to the material or specification determined by learners to meet the needs of local climatic conditions.

Level 2 Unit 2 - Design the Built Environment: Materials and Structures

Learning Outcome 1

This Learning Outcome covers knowledge about construction materials, their function within structures and the use of different structural forms.

Learners' work often identified materials, but often failed to describe their characteristics or specific function.

Learners continue to offer only limited responses in relation to the examination of a range of construction elements or how to evaluate how different materials work together to perform different functions. Note, for higher Mark Bands a greater range of materials have to be identified, described and then as applicable as to how they may work together to perform a function. The learners often covered a range of materials that were not related to the brief eg tarmac in relation to road laying. Centres are advised to consult the Tutor Support Material before future submissions. For learners to obtain marks within the higher bands answers should be structured so they clearly describe and justify all of the key materials forming the major structural elements and external envelope of the proposed structure. This should include; fill materials, concrete, steel (including reinforcement), materials providing shelter and security, including materials that allow the passage of natural light, materials that provide insulation and reduce heat transfer, materials and components providing access to the building. In addition, learners need to continue to develop their skills to evaluate how different materials work together to perform different functions.

Learning Outcome 2

There was generally an improvement in the responses and marks achieved for this Learning Outcome. Learners attempted or showed some understanding of aspects including the local sourcing of materials, recycling and obtaining materials from sustainable sources. Learners should be encouraged to further develop their understanding and future responses to include:

- examine whether a material can be sourced locally thus saving on transport costs, etc
- examine whether a material can be obtained from a sustainable source, for example a managed forestry commission certified source
- use alternatives that are not derived from fossil fuel sources or other finite supply
- identify whether the material has the ability to be recycled after its life has finished into another useful product, or if the material can be produced from recycled materials for example plastic lumber
- consider the amount of energy that has been put into manufacturing, transporting and fixing the material.

To access the higher Mark Bands, as stated in previous Examiner Reports, learners need to justify the use of a range of sustainable materials and analyse more clearly, in sustainability terms, the benefits and drawbacks of all of the key materials used on the project, considering their effects on the environment.

Learning Outcome 3

Most learners were able to identify the structural form that was used on drawings in their design assignment brief, which was in general a structural steel portal frame, and identified or described different structural forms as stated in the unit specification. To achieve higher band marks though learners need to describe more clearly the benefits or advantages of the different alternative forms and ideally link these back to the project brief. Higher marks are also awarded for the evaluation of the suitability of alternative structural forms.

The Learning Outcome also requires learners to examine construction details, for higher marks this should include a range of details. As in previous series this was generally poorly attempted by learners. Details could include, for example, the junction of the roof and wall or the junction of the wall and foundation. Marks were awarded where learners 'identified', where the Marking Grid requires a brief description to enter the marks in Mark Band 1. Consequently learners were unable to access the higher Mark Bands with this approach as much of the work was brief and lacking depth.

To gain merit in the higher mark bands the learners need to develop their descriptive and evaluative skills regarding the structural form of the project. Learners then need to continue to describe clearly a range of suitable alternative structural forms that could have been used for the project scenario, considering the advantages and disadvantages of each form and then link these to some suitable construction details.

Level 2 Unit 3 - Design the Built Environment: Applying Design Principles

General Comments

Learners' work for the unit was related to the exemplar work suggested in the Tutor Support Material. Portfolios ranged from hand sketches to extensive use of 3D design software

Learning Outcome 1

The majority of learners made a good attempt at this task with many producing a range of different formats describing the design team job roles. Many included the relevant professional institutions. Many centres included craft related construction roles such as a plumber and bricklayer, which are clearly not design roles. Learners could have increased their marks if they described the teamwork aspects of design, and the relevant progression pathways for each role. For learners to obtain the higher mark bands 2 and 3 they need to address progression pathways outlining the possible routes to supervisory, technical and professional roles and include the need for teamwork within the design of the built environment. In addition, the learners would benefit from including a description and justification of the role of the relevant professional institutions.

Learning Outcome 2

Centres produced a range of outcomes for this Learning Outcome from hand drawn to the use of CAD and three dimensional drawings. The quality of the work varied in its attention to detail. In order to gain higher marks learners need to start to format their drawing work using recognised annotations, dimensions, scales and title boxes etc. This would then give them access to the mark bands 2 and 3 where design work produced is of high quality with consistent attention to detail.

Several centres produced photographic evidence of the learner's models of their designs, which showed great progress from last series. Others produced 3D coloured rendered drawings

The final design evaluation produced by the learners against the design brief could have been awarded greater marks by extending its depth against each item within the design brief.

Level 2 Unit 5 - Create the Built Environment: Using Tools

General Comments

For the June 2010 series the work submitted was in line with the practical requirements of the specification and followed all the recommendations and guidance in both the specification and the Tutor Support Material. In this series there was a good selection of practical tasks undertaken including Carpentry and Joining, Painting and Decorating, and Building Services. The majority of centres included the working drawings which learners were working from.

It is important to note, the unit has two marking grids A and B, where B is ephemeral evidence and the moderators are only assessing Mark Grid A.

The learners' work was on the whole annotated to a suitable standard by assessors; however, centres should ensure that where photographs are submitted, these are of good quality further supporting the marks awarded. Larger and more detailed photographs would help to correctly identify some of the Mark Band B criteria within the witness evidence. In addition, the photographs should show hidden detail, for instance hidden joints in Carpentry and Joining, and aspects of the practical tasks that are not able to be recorded in the final outcome. This could also support marks awarded for Health and Safety and Personal Protective Equipment (PPE).

Learning Outcome 1, 2 and 3

These Learning Outcomes were attempted by many centres as a complete task and it was very difficult to distinguish between them. However, a small percentage of centres did complete the unit as Learning Outcomes and this aided the moderation process.

Grid A

Learning Outcome 5.1

This outcome was well attempted by learners who were able to describe hazards and risks, PPE, people at risk and were able to reflect on their experience for future self improvement. Some aspects were less well answered. For example COSHH, manual handling techniques and some self reflections were only briefly attempted. To achieve higher band marks learners need to relate relevant practices to the practical task undertaken and be clearer in their descriptions.

Learning Outcome 5.2

In most cases learners were able to briefly describe and showed some understanding of the working characteristics and safe use of their chosen materials. However, descriptions in relation to the safe storage of materials on site, the choice of materials selected and disadvantages of others, and manual handling techniques of their chosen materials, could have all been more clearly explained. To achieve higher band marks a greater and clearer description of the characteristics and safe use of materials needs to be addressed.

Learning Outcome 5.3

Generally, this learning outcome was over marked by centres. The photographic evidence provided was supported with annotation by the learners on good practice, and the general progress of the manufacturing process. However, reference to tolerances and detailed evaluative quality control records were only briefly indicated by learners and this was a missed opportunity. A PowerPoint presentation could be included to show how learners have used QC and evaluation skills when manufacturing by annotating images taken during the manufacturing process. Some centres produced worksheets on quality control, but this was only briefly linked to tolerances or workmanship. Hence, this was not the learners' own quality control records.

Learning Outcome 5.4

Overall, the Learning Outcome was well attempted by the learners who were able to describe a series of craft job roles, progression paths and professional institutions. Teamwork aspects required further expansion. A few centres failed to describe two craft roles as a minimum requirement. To achieve mark band 3 merits, learners should include descriptions of the interactions between technical, supervisory and professional roles, as this was only very briefly attempted. Regarding professional institutions, most learners failed to fully clearly describe and justify the role they play within the industry. This is essential to access mark band 3. There is a list provided in the specification and in the Tutor Support Material including the relevant web addresses.

To achieve overall higher band marks, centres are recommended to consult further with the Tutor Support Material on the Edexcel website and to consider the comments above.

Grid B

Sufficient assessor evidence to support the awarding of the centre's marks was included within samples.

Centres are reminded to ensure they provide sufficient information (ideally annotated images) to support the merits given to learners for mark grid B.

Level 2 Unit 6 Value and Use of the Built Environment: Communities

General Comments

The number of centres entering work for this unit was limited in quality and range of mark band work.

Learning Outcome 1

Most centres learners managed to describe some sustainable practices, but some did not link these to the overall maintenance of the built environment, which lowered their marks into mark band 1. Generally the reports from moderators were consistent, in that learners were able to identify but did not describe in any depth the impact upon current maintenance issues of decisions made by the original design team. Few centres included this aspect in any depth of evidence. Centres who used a centre devised assignment did not appear to have internally verified it as fit for purpose against the assessment criteria for the unit.

Learning outcome 2

Learners could briefly describe the local domestic property market, but left out commercial and industrial property markets. This limited the range of marks awarded to mark band 1, bottom mark band 2. Evidence in considering factors that lead to the development of sustainable communities was brief. Learners appeared to not be able to describe a range of ways in which construction and the built environment contributes to the creation of wealth.

Learning Outcome 3

Learners could briefly describe ways in which the built environment could be improved, but responses were limited with learners not evidencing the four areas that this could be achieved. An opportunity was missed to describe the benefits of designing for future expansion. Learners again did not grasp the concept of describing key factors that influence the development of sustainable communities.

Learning Outcome 4

The roles and responsibilities were briefly described covering, the estate agent, facilities manager, building surveyor and some craft roles within building maintenance. Teamwork aspects and progression pathways within maintenance, property services and facilities management were only briefly described. Learners did not link the roles with supervisory, technical and professional, and only managed to identify the professional institutions, not describe their roles.

Level 2 Unit 7 - Value and Use of the Built Environment: Facilities Management

General Comments

The number of centres entering work for this unit was limited in quality and range of mark band work.

Learning Outcome 1

Learners managed to describe some key processes involved in protecting and maintaining a structure by describing reactive, cyclical and preventative maintenance provision. Learners could have lifted their work into higher mark bands with a more detailed description of the three types of maintenance, examining three typical maintenance items in detail and explaining the benefits of undertaking this work, along with standard contract maintenance items in the defects liability period. Higher mark bands require a detailed justification of the purpose and benefits of maintenance.

Learning Outcome 2

Learners managed to describe a basic level description of direct labour methods but this lacked some detail. External contracted provision was weak in its description lacking any real depth of specific functions. The consideration of life cycle costing was brief in its approach. The use of high specification materials with low running costs was not really considered by learners.

How planned maintenance extends the life of a building was briefly mentioned. The weakest part of the Learning Outcome was the description of the economic and social benefits of maintenance which lacked any depth or detail.

Learning Outcome 3

Learners managed to identify four key features of a company's facilities management provision but this lacked any depth. Learners needed to describe what is managed for each and the benefits attributed to each key feature. Monitoring of performance within the facilities management function was an area which was not discussed in sufficient depth by a number of learners. The relative merit of direct and contracted services was not really evidenced by learners, along with any alternative approach to a company's facilities management provision.

Statistics

Level 2 Unit 1 Design the Built Environment: The Design Process

Grade	Max. Mark	A*	A	B	C
Raw boundary mark	60	53	43	33	23
Points score	10	8	6	4	2

Level 2 Unit 2 Design the Built Environment: Materials and Structures

Grade	Max. Mark	A*	A	B	C
Raw boundary mark	60	53	42	32	22
Points score	10	8	6	4	2

Level 2 Unit 3 Design the Built Environment: Applying Design Principles

Grade	Max. Mark	A*	A	B	C
Raw boundary mark	60	53	43	33	23
Points score	10	8	6	4	2

Level 2 Unit 5 Create the Built Environment: Using Tools

Grade	Max. Mark	A*	A	B	C
Raw boundary mark	60	52	42	33	24
Points score	10	8	6	4	2

Level 2 Unit 6 Value and Use of the Built Environment: Communities

Grade	Max. Mark	A*	A	B	C
Raw boundary mark	60	52	42	32	22
Points score	10	8	6	4	2

Level 2 Unit 7 Value and Use of the Built Environment: Facilities Management

Grade	Max. Mark	A*	A	B	C
Raw boundary mark	60	52	42	32	22
Points score	10	8	6	4	2

Notes

Maximum Mark (Raw): the mark corresponding to the sum total of the marks shown on the mark scheme or marking grid.

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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