

Examiners' Report

January 2010

Principal Learning

Construction Level 2 Controlled Assessments

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Principal Examiners' Report

Principal Learning - Construction and the Built Environment - Level 2

General Comments

This second year series saw an increase in the amount of coursework submitted for moderation in January by centres from a range of work submitted across all six moderated units. Units 6 and 7 were again the units that lacked any depth of course work and range of assessed work.

Centres were given a one week extension due to the severe weather conditions. A number of centres failed to meet this extended 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 Learner 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 Learner 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 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

Most centres, as in the June series, used the assignment brief contained within the Tutor Support Material available on the Edexcel website. This continued to be a good method of using the support that has been provided for this line of learning. Centres should continue to use these materials until they are confident with the quality systems in place to produce their own method of assessments which they can tailor to a local project scenario.

Despite Domain Assessor training events being organised by Edexcel there was little evidence of this taking place by centres. In addition there was limited evidence of any standardisation taking place across assessors completing the same unit. Annotation within learner work by assessors was variable in quality, in the better centres it was excellent, clear and well labelled to learning outcomes, in the weaker cases it often consisted of ticking of key words rather than being specific to intended outcomes.

Learning Outcome 1

Knowing the factors that influence the design process is the key to meeting the requirements of this Learning Outcome. There was a good attempt by most learners to describe factors which influence the design process. This consisted of descriptions of public consultation, infrastructure and socio-economic factors. However, the descriptions in relation to the legislation factors of the CDM, town & country planning, analysis of the RIBA plan of work and building regulations were sometimes only briefly described or were weak in content. Conversely in a small number of cases detailed information on the planning process or CDM regulations were enclosed by some learners which needed to be condensed into a summary of these key legislation requirements in relation to the planned project.

In terms of sustainable design features, there was a good attempt by learners to describe energy efficiency and alternative energy sources. However, sustainable design features including embedded energy and locally sourced material usage were often simply identified or only very briefly described. Some learners demonstrated an understanding of the concept of orientating a building to maximise the use of natural daylight to save energy.

To achieve higher band marks learners need to describe with greater clarity, relevant legislation and other aspects of sustainability.

Learning Outcome 2

This Learning Outcome covers the element of infrastructure and utilities. Learners were able to identify the key services of water, gas, electricity, drainage. Many learners provided appropriate colour identification of the services, but did not quite explain issues including why utilities are located at specific depths or their specific location ie in the highway or footpath. Learners could expand further on the visual and aesthetic impact of the installation of the main primary services, for example the impact of electricity pylons on the landscape and environment, the dangers to humans, and the problems involved in distribution.

The disruption to infrastructure during installation was only briefly covered by learners and would benefit from expansion eg road closure, traffic delays and diversions.

Centres need to ensure learners have an understanding of concept of the initial

point of the service, that is its production at the source eg a power station, and then its eventual reduction in supply down to the domestic consumer eg transformers. In a number of cases, to describe the distribution of electricity, learners simply labelled a diagram with key words identifying the reduction in size of supply from the national to the local network. The learning outcome states learners should describe this process and unfortunately there was no indication the learner had anything but the very basic understanding of this process.

Discussion of isolation points eg water valves, stopcocks were also lacking in the evidence provided. Perhaps centres could invite guest speakers from utility companies concerning the utilities into the classroom to provide detailed information and understanding of this element.

The impact of the utility on the environment was an opportunity for many learners to achieve good marks however this was only briefly explored primarily through the emissions from power stations.

Learning Outcome 3

This Learning Outcome covers the building envelope and its need for the specification to meet the local climate requirements. Many learners used the benchmark statements as a guide to indicate aspects in relation to shelter, insulation, transfer of sound, protection against fire, structural stability and aesthetical appearance in relation to the external envelope.

The reference to the application and importance of technical information in relation to the specification was only briefly answered by many learners.

To obtain higher band marks learners are required to produce a more detailed report that describes and clearly justifies all of the requirements of the external envelope linked to the project/scenario and includes comments in relation to British Standards, Codes of Practice or other aspects of technical information used to develop the specification.

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

Learning Outcome 1

This Learning Outcome covers knowledge about construction materials and their function within structures. There was a good attempt by most learners to identify and describe a range of materials forming the structural elements although at times their link to the external envelope was not fully explained. The function(s) that the identified materials perform was also attempted but some descriptions were brief in nature.

There was limited evidence of descriptions of construction element(s) as to how different materials work together to perform a function.

To achieve higher marks learners need to describe clearly all of the key materials forming the structural elements and external envelope and evaluate the function performed by each. Functions of materials in relation to structure, shelter, fire protection and aesthetics need to be further explored. A wide range of construction elements need to be described in detail which should then be evaluated as to how different materials work together to perform different functions

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 develop skills to evaluate how different materials work together to perform different functions.

Learning Outcome 2

Some learners were able to describe a range of sustainable materials. However, the description in sustainability terms of the benefits and drawbacks of these key materials were only briefly answered. In a number of cases learners included a section on general sustainable design issues which included energy efficiency, boilers, ground source heat pumps and sustainable urban drainage, however, this does not relate to the intended learning outcome which requires learners to understand how to use materials in a sustainable way and should be linked to the materials used for the project.

Learners should be encouraged to:

- 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 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 the learners need to justify the use of a range of sustainable materials and analyse in sustainability terms the benefits and drawbacks of all of the key materials used on the project, considering their effects

on the environment. The key to this Learning Outcome remains for learners to demonstrate understanding of the meaning of the term 'a sustainable community' and what factors contribute to maintain this.

Learning Outcome 3

There was an attempt by most learners to describe structural forms. However, in many instances learners described general construction forms and did not actually identify the structural form linked to the project. Alternative structural forms were named and briefly described but these included no or limited sketch details and descriptions were brief and general in nature.

Higher marks are awarded for the evaluation of suitability of alternative structural forms. In addition, few learners attempted to examine and briefly describe a construction detail, for example the junction of the roof and wall, 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. Marks could be improved by describing clearly a range of suitable alternative structural forms that could have been used for the project scenario including consideration of the advantages and disadvantages of each form; and select and clearly describe and analyse a range of construction details.

To gain merit in the higher mark bands the learners need to develop their description skills and evaluation 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.

Structural forms need to be described with greater clarity, sketches of these details linked to any commentary may aid the learners to demonstrate their understanding. The materials used in the selected forms and methods of construction, including the degree of pre-fabrication, should be described. A series of selected details need to be described and analysed in relation to the selected form.

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

General Comments

The learners' work was related to the exemplar scenarios in the Tutor Support Material, which nearly all centres provided. It is essential that any alterations to the example scenario from the TUTOR SUPPORT MATERIAL are highlighted to aid the moderation process. However, some centres failed to include the assignment briefs and consequently it was difficult for the moderator to assess. With LO 3.2 carrying the bulk of the marks it is strongly recommended centres choose a domestic dwelling scenario as most learners can fully engage with the task due to personal experience, and are more likely to include a greater depth of detail. For example, light fittings, door paths and kitchen units. Plus some learners had a fuller understanding of the space, which was transferred into their floor layouts. In addition, if the locality can be visited by the learners prior or during the assignment period, this would further benefit the learning experience.

Learning Outcome 1

The learners' outcomes were predominately in the form of a leaflet with a few centres producing posters. Both were acceptable outcomes. Their content displayed aspects of 'cut and paste' from a range of internet sources and consequently lacked personal input which would have been rewarded with higher marks.

Many centres included craft related construction roles such as a plumber and bricklayer. These are clearly not design roles.

Learners can achieve higher marks by selecting and describing the correct job roles, and describing and justifying the roles of the relevant professional institutions.

In addition, learners could describe the teamwork aspects of design, and the relevant progression pathways for each role.

Learning Outcome 2

This Learning Outcome has three aspects; commenting on the client's brief, producing a design solution and evaluating their design proposal. In commenting on the client's brief the learners could go towards producing a specification for their design solution.

Where learners produced a design solution, they demonstrated a selection of suitable outcomes from hand drawn to CAD. On the whole, learners did not annotate their design proposals in line with the specification and the TUTOR SUPPORT MATERIAL. In many instances there was a lack of supporting information for their design proposals to accompany their drawings. Learners failed to access mark band 3 due to not adequately annotating their work to show attention to detail.

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

The final aspect of the learning outcome is to evaluate their design proposal which I suggest is against the specification produced initially for the learning outcome and could be paired with annotation for the design proposals.

In conclusion, centres generally over awarded learners in LO3.2 regarding the design proposals as the learners needed to support their design work with annotation to access the higher mark bands.

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

General Comments

All practical tasks were in line with the requirements of the specification and followed all the recommendations and guidance in both the specification and the Tutor Support Material. With 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.

There were a number of alleged plagiarism issues reported by the moderation team. Centres should be made aware of the importance that;

- (a) The work is the individual's and not group work and;
- (b) Where the use of the internet or other source is used then appropriate referencing and re-writing of any work is necessary to determine that learning has actually taken place.

Learning Outcome 1, 2 and 3

These Learning Outcomes were attempted by all centres as a complete task.

Some learners produced work where evidence for each of the Learning Outcomes was not in a logical order, which made it difficult for the moderator to locate where marks had been awarded. It is beneficial to the centre, learner and moderator if the Learning Outcomes are broken down. It allows all concerned to complete the tasks and understand where they are up to.

Some learners included unnecessary work in the form of work booklets and worksheets, which amounted in a mass of information that gains no merit. Learners need just to submit work directly relating to the assessed task and not a record of all of the practical experience undertaken by the learners.

Regarding LO5.3, an example could be a PowerPoint where learners show how they have used quality control and evaluation skills when manufacturing by annotating images taken during the manufacturing process.

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 4

All learners created a PowerPoint presentation as evidence of the Learning Outcomes. However, all learners did not fully focus on the specific trade they had completed for the practical activity and many were unable to discuss progression routes, teamwork and the role of professional institutions. The unit's focus is on the craft area of the industry and some learners covered job roles outside this area. The work could not be rewarded with any merit.

To access the higher mark bands the learners are required to explain progression routes from a craft role through to a project manager and also to clearly explain the teamwork and communication requirements from a craft job to a professional role. Regarding professional institutions, most learners failed to clearly describe and justify the role they play within the industry. This is essential to access the mark band 3. There is a list provided in the specification and in the Tutor Support Material including the relevant web addresses.

To conclude;

Not all centres provided evidence that the work had been internally standardised. It is essential this process occurs to avoid any misinterpretations of the marking grids and the principle of "best fit".

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 6.1

Many learners only described sustainable practices briefly, for example the benefits of replacing original fittings with energy efficient alternatives. To achieve higher marks learners need to relate the impact of maintenance issues on decisions made by the original design team. For example would it have been better to invest in solar panels, upvc windows and what is the long term impact on maintenance of the built environment? Mark band 3 requires that the evaluation of these sustainable practices are justified.

Learning outcome 6.2

This learning outcome asks learners to evaluate the contribution of the built environment to society and the community. Learners managed to describe the local property markets, but did not describe factors that lead to the development of sustainable communities. Higher mark bands could be achieved by evaluating the property market, and the range of ways in which the built environment contributes to the creation of wealth.

Learning Outcome 6.3

Learners briefly described improving the built environment and future expansion issues. Marks could have been improved by describing the benefits of future expansion along with factors that influence the development of sustainable communities. Planned and routine maintenance could also be addressed. Centres need to be aware that the benchmark statements are there as a guide and should not be given to the learners as headings.

Learning Outcome 6.4

This was a low scoring learning outcome generally due to the limited job roles described and the lack of professional institutions mentioned. If research material is used, then centres are reminded that learners should interpret the work into their own words. To access higher marks, other job roles for example, an estate agent should be included and progression paths described.

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 7.1

This learning outcome asks the learner to know about the maintenance of the built environment. Key processes were briefly described in protecting and maintaining a built structure to access higher marks a more detailed description is needed with more emphasis on managing a built structure.

Learning Outcome 7.2

Learners have to understand how services are provided. Learners described direct labour and extending the life of a building. A more detailed description covering the use of external contractors and specifying lower running cost solutions would access higher marks.

Learning Outcome 7.3

Learners must be able to analyse facilities management provision. There was limited evidence provided by some learners to meet the intended learning outcome of this unit.

The centre is advised to consult with the Tutor Support Material on the Edexcel website to assist with the delivery of this learning outcome.

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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