

# **Level 3 Lead Examiner Report 1906**

Summer 2019

**Level 3 National in Construction  
and the Built Environment**

**Construction design (20076K)**

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## Grade Boundaries

### What is a grade boundary?

A grade boundary is where we set the level of achievement required to obtain a certain grade for the externally assessed unit. We set grade boundaries for each grade, at Distinction, Merit and Pass.

### Setting grade boundaries

When we set grade boundaries, we look at the performance of every learner who took the external assessment. When we can see the full picture of performance, our experts are then able to decide where best to place the grade boundaries – this means that they decide what the lowest possible mark is for a particular grade.

When our experts set the grade boundaries, they make sure that learners receive grades which reflect their ability. Awarding grade boundaries is conducted to ensure learners achieve the grade they deserve to achieve, irrespective of variation in the external assessment.

### Variations in external assessments

Each external assessment we set asks different questions and may assess different parts of the unit content outlined in the specification. It would be unfair to learners if we set the same grade boundaries for each assessment, because then it would not take accessibility into account.

Grade boundaries for this, and all other papers, are on the website via this link:

<http://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html>

### Construction and the Built Environment

Grade	Unclassified	Level 3			
		N	P	M	D
<b>Boundary Mark</b>	0	16	25	34	44

## Introduction

- This was the second series for this unit with the theme this year being based around the scenario of a sports hall and swimming pool for a school which required learners to complete a series of activities related to;
  - design factors and constraints for the project
  - the production of an initial project brief
  - recommendations and justification for the building size, form and type of construction
  - the production of initial ideas for the building and
  - virtual modeling of the design.
- The unit involved the release of Part A which required learners to undertake some research in response to the given topic and scenario. Task A was to be completed during the two weeks prior to the supervised assessment period

## Introduction to the Overall Performance of the Unit

- Though many candidates coped well with the style of the exam given that this is the second series now, the content, requirements and degree of difficulty, it would appear that a number were not ready for assessment either being not fully prepared in relation to Part A, without the necessary skills to access the tasks, or to prepare the evidence.
- In terms of administration it was pleasing to see that most candidates submitted only the evidence requested. However, at times, learners also submitted what appeared to be the work they completed in response to Part A which is not necessary.
- Most centres printed the required documents generated for Activity 5 and sent it attached to the paper with treasury tags. On occasion centres had not attached work which made it difficult to work out which prints outs belonged to which learner. It should be noted that the print outs should really be in colour because it is very difficult to make an assessment in some instances when the images are printed out in black where there is little colour differentiation.
- It is important to define what is deemed acceptable with regards to help and assistance before and during the assessment window. The teacher should prepare the learners for the examination by developing the technical skills necessary to analyse the task and to generate appropriate responses in relation to the 5 activities. At no point should the teacher be giving specific advice, solutions and direction to learners as would appear to be the case in some centres where the work submitted suggested that specific teaching or guidance had been given.
- At times it would appear that some solutions were centre led as opposed to being the learners individual work. This is not appropriate. The work should clearly be the learners own.

## Individual Activities

### Activity 1: -

Learners who did not achieve well on this activity did so because of the following common reasons;

- The comments they made were often generic, they did not relate to the scenario of the sports hall, swimming pool and other stated requirements.
- Learners often identified impacts from the client information, but did not link them to possible influences
- Learners who identified impacts from the scenario, then followed up with generic influences. For example, restricted access to the site, due to the working hours of the school without offering suitable suggestions to enable delivery of materials. Solutions such as, arranging deliveries before/after the teaching hours or during holiday periods were not considered or suggested.

Learners who did well did so because of the following common reasons;

- The constraints and impacts identified were relevant to the scenario with the links between the constraints and scenario being clear.
- The constraints identified were followed up with detail on how it might influence the design. For example, the soft ground condition and high-water level would affect the choice of foundation. Uneven surfaces and a high ground water table could damage concrete and weaken or cause movement of some types of foundation such as strip or raft, therefore suggesting these methods should not be used. Pile foundation could be considered as they could reach the stiff brown boulder clay and provide solid support of the superstructure.
- Learners who identified constraints from the scenario offered solutions to the problems. For example, identifying the narrow and time restricted access a constraint, linking it to issues with delivery of building materials and requiring limited amounts of small size carefully time deliveries, and then linking this to the idea of using modular and prefabrication construction techniques to reduce the frequency of deliveries, and therefore disruption to teaching taking place.

## Activity 2

Learners who did not achieve well on this activity did so because of the following common reasons;

- They recited the information from the client information without development
- *Spatial requirements*
  - Did not give information about the location of different facilities within the overall space allocated
  - Only offered information on the swimming pool and gym, but did not offer information of the other facilities
  - Did not attempt any calculation of room size, floor space or use any data from research in Task A
  - Did not consider the end user requirements of a disabled, or person of limited mobility when justifying the spatial requirement
- *Desired project outcome*
  - Recited the information from the client information
  - Did not expand on the client information to state how the requirements might be achieved. For example, modular construction to reduce disruption and sustainability features such as the inclusion of energy capture systems.
- *Site information*
  - Recited the information from the client information
  - Did not expand on the client information to state how the requirements might be achieved
  - Did not provide information about how the site level could be address, issues of using a greenfield site, lack of services, explaining what the borehole report meant, discussing the restricted site access
- *Budget*
  - Made no attempt to calculate the cost/m<sup>2</sup> of the project
  - Did not identify the need for a quantity surveyor to keep track of the project
  - Had not completed prior research to establish suitable prices for a build of this type

Learners who did achieve well on this activity did so because of the following common reasons;

- They used the client brief as a starting point
- They had clearly researched the topics before the exam
  
- *Spatial requirements*
  - They give information about the location of different facilities, including the swimming pool, and gym, as well as teaching rooms, changing rooms, reception, dance studio, and plant room
  - They considered circulation space around the whole site, building and pool
  - They offered details on suitable room size, and location, based on calculations of space available, including circulation area, especially around the swimming pool and inside changing rooms.
  - They considered the end user requirements of a disabled, or person of limited modality when justifying the spatial requirement
  
- *Desired project outcome*
  - They expanded on the client information to state how the requirements might be achieved. For example, meeting the needs of a 9 month turn around by using prefabricated modular construction techniques, also identifying that this would benefit the clients vision of sustainable features including within the design, while also expanding in this by offering possible examples.
  
- *Site information*
  - They provided information about how the site level could be addressed, issues of using a greenfield site, and explaining what the borehole report meant and how this might limit the sub and superstructure choice, then offered suitable solutions.
  
- *Budget*
  - They calculated the cost/m<sup>2</sup> of the project
  - Had used prior research to make a comparison between the cost of this and other similar sites
  - They broke down the costs required for different elements of the projects
  - They recognised the need for a quantity surveyor
  - They understood the concept of performance related bonus and penalties which would be written into to supplier contracts



### Activity 3

Learners who did not achieve well on this activity did so because of the following common reasons;

- They did not give information on the building size and shape, including a room by room breakdown, or the information they did give did not provide a workable solution
- They either only identified a construction method, or did not justify to an acceptable level of depth or detail, the reasons for their choice of size, shape or construction methods
- They only selected some construction elements. For example, they only discussed foundations, but did not discuss superstructure, walls, roofs, suitable types of finish linked to each room function.

Learners who did achieve well on this activity did so because of the following common reasons;

- They gave full information on the building overall, and room by room size and shape, the information was based on justified reasoning, including the use of calculations
- They justified, in depth, the reasons for their choice of size, shape or construction methods
- They justified a range of elements within the project, including, foundation, superstructure frame choice, walls, level of finish and aspects of sustainability
- The justifications they gave included links to meeting the client vision and the local area
- They identified and explained that different construction methods would be required to meet the needs of the different room types.

## Activity 4

Learners who did not achieve well on this activity did so because of the following common reasons;

- They did not attempt all three drawings
- The quality of drawing was poor
- They did not include annotation
- The annotation was superficial
- The internal room drawing did not match the external view
- The external view did not meet the client requirements of size or style.
- The concept drawings did not meet the client requirements

Learners who did achieve well on this activity did so because of the following common reasons

- They completed all three drawings and annotated in detail
- The quality of drawing was high, using a range of suitable techniques, isometric for external, planometric / perspective for the internal and orthographic for the floorplan
- The internal room drawing matched the external view
- The external view met the client requirements of size, style and client's needs, including car parking and landscaping
- The concept drawings met most of the client requirements

## Activity 5

### *External*

Learners who did not achieve on this activity well did so because of the following common reasons

- The drawing where incomplete
- The drawing lacked detail, for example, render, windows, wall finish
- The drawings did not meet the client's requirements
- There was no relationship between the external and the internal drawings
- The drawings contained unrealistic features, such windows which did not match in size, or too large to be a viable option
- The angle of projection made it difficult to see all the features of the concept

Learners who did achieve well on this activity did so because of the following common reasons

- The drawing was complete and detailed
- The drawing was of a standard which could be presented to the client as a finished concept
- The drawings met the client's requirements
- There was a relationship between the external and the internal drawings
- The angle of projection made it easy to see all the features of the concept
- They provided multiple drawing of the sample design from different angles

### *Internal*

Learners who did not achieve well on this activity did so because of the following common reasons

- The drawings were incomplete, missing features such as doors, windows, render
- The drawings lacked detail. For example, missing items required for a functioning changing room where missing, such as hand wash basins and lockers, or the lockers in an inappropriate place, such as a door way which did not allow privacy, not enough circulation space, or too small for 30 people.
- The drawings did not meet the client's requirements; the end user would not be able to use the space functionally
- There was no relationship between the external and the internal drawings
- The angle of projection made it difficult to see all the features of the concept
- The learner used real world views of only some of the room, making it difficult to establish if all the client requirements had been met
- The drawing would need considerable amendments to ensure it meet the client's vision for it was presented

Learners who did achieve well on this activity did so because of the following common reasons;

- The drawing were complete
- The drawing included detail. For example, all the features required of a changing room were present, including, showers, sinks, lockers, mirrors, benches, coat hooks, and the occupants of the changing room had privacy from customers / students walking past the doorways
- The drawings meet the client's requirements, the end user would be able to use the space functionally
- There was a relationship between the external and the internal drawings
- The angle of projection used meant that the whole of the changing room could be visualised by the client.
- The drawing was completed to a standard which could be presented to the client

## Summary

### Centre administration

- Centres are reminded that attendance registers must be completed and sent in with all scripts
- It is a requirement that the Learners and centre assessors sign the Learner Authentication sheets and attach one for each learner to their script
- Any additional sheets that learners use if they run out of space **MUST** be on exam board, approved supplementary sheets, and not the learners own paper. It is difficult to make a judgment as to whether the work submitted was done under direct supervised exam conditions or whether it was done outside.
  
- Based on the performance of learners in this series the following recommendations are made for future series:
  - Learners make more use of the time given once Part A has been released to undertake appropriate research in relation to the scenario
  - Focus on the specific scenario rather than generic concepts
  - Make greater use of their research when completing Part B
  - Ensure that all aspects of Activities are addressed rather than just one or two
  - Demonstrate greater technical knowledge when responding to building size, form and type of construction, including justifications for their decisions
  - Justify the size of rooms and buildings using maths
  - Calculate build costs and justify the project can be delivered in relation to budget
  - Make sure the sketches in Activity 4 are hand drawn originals and not traced from the CAD print outs from Activity 5 and appropriately annotated
  - Produce CAD models which are printed out in colour to show how the client's vision has been met

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Welsh Assembly Government



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