

NQF Level 1/2 Firsts in Construction Examiner Report 1906

Summer 2019

Construction Technology Unit 1

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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 Technology

Grade	Unclassified	Level 2			
		N	P	M	D
Boundary Mark	0	13	22	31	41

Introduction

This report has been written by the Lead Examiner for BTEC Construction and the Built Environment Unit 1 – Construction Technology. It is designed to help you understand how learners performed overall in the exam. For each question, there is a brief analysis of learner responses. You will also find some example learner responses at Level 2 Pass, Merit and Distinction. We hope this will help you to prepare your learners for future examination series.

Introduction to the Overall Performance of the Unit

Overall, the paper produced a suitable range of responses. Lower ability learners often gave inaccurate or simplistic responses to questions and therefore gained limited marks. The more demanding questions provided learners with an opportunity to apply their knowledge in relation to construction scenarios and it was pleasing to see some extended answers that focused on the vocational context. In some cases, learners continued to provide responses which repeated information from the question stem or from previous question stems. In a number of other cases, candidates gave answers that appeared to reflect general knowledge rather than any detailed understanding of construction components or methods under consideration.

Individual Questions

Question 1

This question was aimed at the understanding of the performance requirements required in buildings.

Targeted Specification Area: Learning Aim A.1

1a) Most learners were able to match each component/material to their intended performance requirement.

The correct responses were:

Guttering- Weather resistance
Sheep's wool- Thermal insulation

1b) Learners were required to identify two types of thermal insulation. Most learners were able to identify at least one type of thermal insulation correctly with more able learners able to correctly identify two correct responses.

The correct responses were:

B- Glass fibre
E- Cellulose

1c) Learners were required to state one purpose of sound insulation. Many learners were able to identify one purpose of sound insulation correctly.

Correct responses included:

- The need to protect privacy
- Keep sound in
- Keep sounds out
- Prevent the transfer of noise to adjacent properties

Question 2

This question was aimed at the understanding of sustainability and the importance of building orientatation.

Targeted Specification Area: Learning Aim A.1

Most learners were able to state one way that new houses can be designed to maximise natural light.

Correct responses included:

- Provision of windows
- Orientate the building to face south

- Provision of skylights in the building

Question 3

This question was aimed at the understanding of sub-structures groundworks and associated hazards.

Targeted Specification Area: Learning Aim B.2

3a) Learners were required to name two methods of earthwork support used to prevent the sides of an excavation collapsing.

Learner responses were mixed. More able learners were able to name at least one method of earthwork support, however, many learners left the question blank or included incorrect responses.

Example correct responses are included in the marking scheme:

2 mark response example:

1 Struts around the edge of the trench

2 Timbering

2 marks awarded:

First response is an acceptable answer.

Second response is a correct answer-refer to Bullet Point (BP) 1 in the marking scheme.

2 mark response example:

(2)

1 Timber restraint wall

2 Steel sheets

2 marks awarded:

First response is a correct answer-refer to BP1 in the marking scheme.

Second response is an acceptable answer.

3b) Learners were required to identify two underground services that require locating and protecting before work can begin on a construction site. This was a well answered question by most learners.

The correct responses were:

- B -Water
- D- Electricity

Question 4

This question was aimed at the understanding of the superstructure aspect of foundations.

Targeted Specification Area: Learning Aim B.2

Learners were required to identify two types of foundation. This was a well answered question by learners.

The correct response was:

- A- Pile
- D-Strip

Question 5

This question was aimed at the understanding of superstructure of roofs.

Targeted Specification Area: Learning Aim C.3

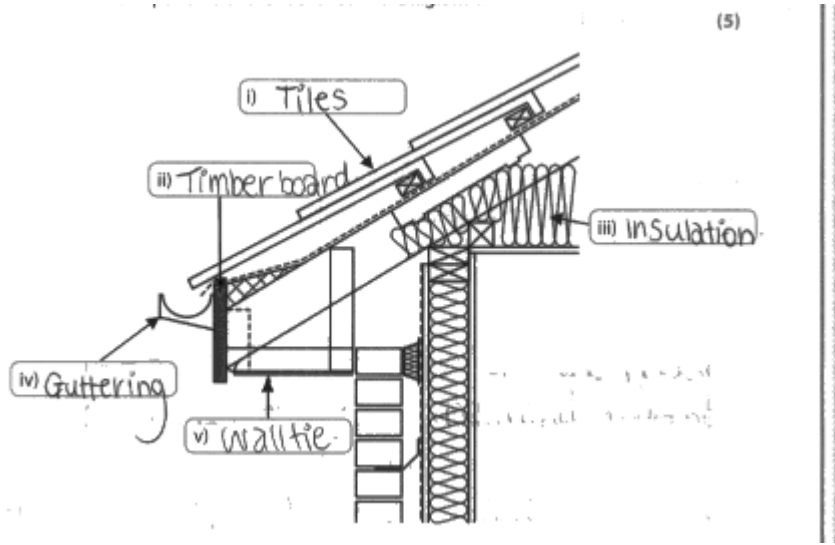
Learners were required to label the five parts of the pitched roof shown in Diagram 1. This was satisfactorily answered by learners. Many learners achieved at least two marks.

However, a proportion of learners did not answer this question or gave answers such as for (ii) board and (v) wall plate. This would indicate that some centres had not prepared their learners to detail roof types.

The correct responses were:

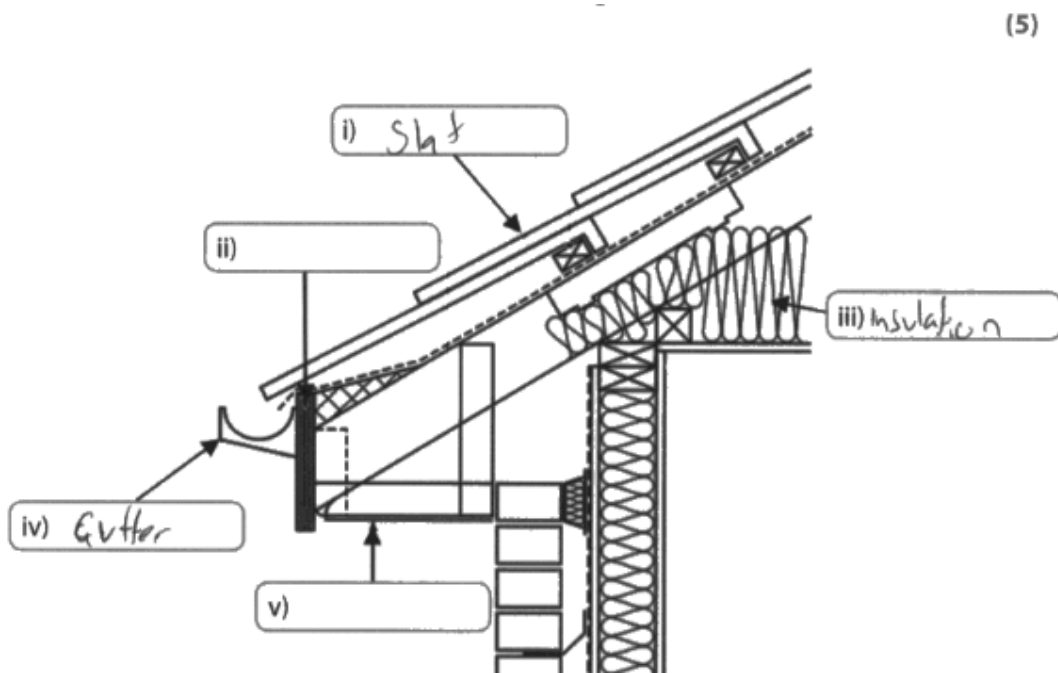
- (i) Tiles
- (ii) Fascia
- (iii) Insulation
- (iv) Gutter
- (v) Soffit

3 mark response example:



3 marks awarded for three correct components labelled.

2 marks awarded:



2 marks awarded for correctly identifying the components of gutter and insulation.

Question 6

This question was aimed at the superstructure of walls.

Targeted Specification Area: Learning Aim C.1

6a) Learners were required to identify two functions of a wall opening. This was a mostly well answered question by learners although some failed to connect the connection between a wall opening and the provision of ventilation.

The correct response was:

C- Provide ventilation

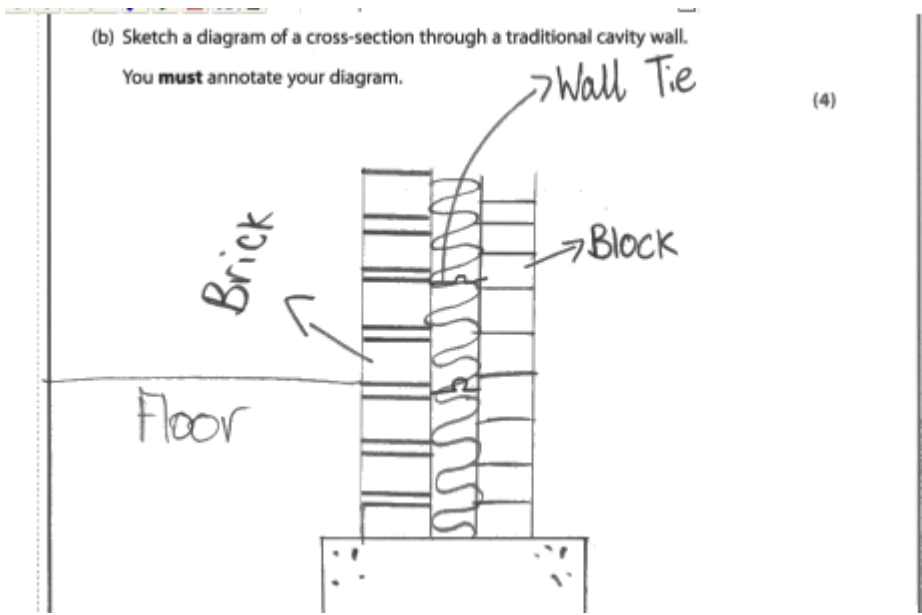
E- Provide light

6b) Learners were required to sketch a cross-section through a traditional cavity wall.

The overall responses were generally good with sketch diagrams providing sufficient detail and quality for many learners to achieve 2 or more marks. Some learners did not attempt a response or focused incorrectly on a past exam series detail such as that of a solid ground floor or strip foundation.

Centres should consult with the mark scheme to consider the detail required for a sketch question of this type. Centres also need to understand that this type of question will continue to be included in future examinations.

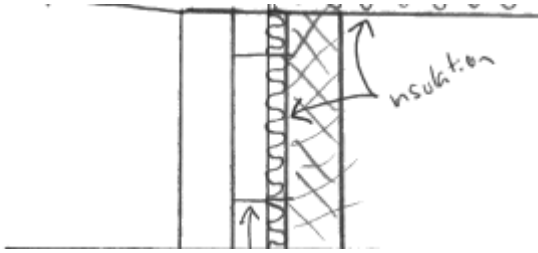
4 mark response example:



4 marks awarded:

Four marks awarded for the cross-section through a traditional cavity wall.

3 marks awarded:



3 marks awarded:

Three marks awarded for the cross-section through a traditional cavity wall. Although an outer leaf appears to be shown it is not labelled and does not have an appropriate fill pattern and no mark can be awarded for this.

Question 7

This question was aimed at the understanding of the performance requirements of the sub-structure of floors.

Targeted Specification Area: Learning Aim B.2/C.2

7a) Most learners were able to name one type of internal floor finish.

Correct responses included:

- Tiles
- Concrete
- Marble
- Timber

Please see the marking scheme for the extensive list of correct responses accepted for this question.

7b) Learners were required to explain two advantages of a solid ground floor.

The command verb used for this question is explain, therefore 1 mark was allocated to the identification of a reason and 1 mark for a linked explanation of the stated reason. Learners were able to achieve 1 mark for the identification of a reason but then often failed to understand the need to develop a linked explanation from it. This question was generally poorly answered by many learners. More able learners were often able to achieve 2 marks.

1 mark response included:

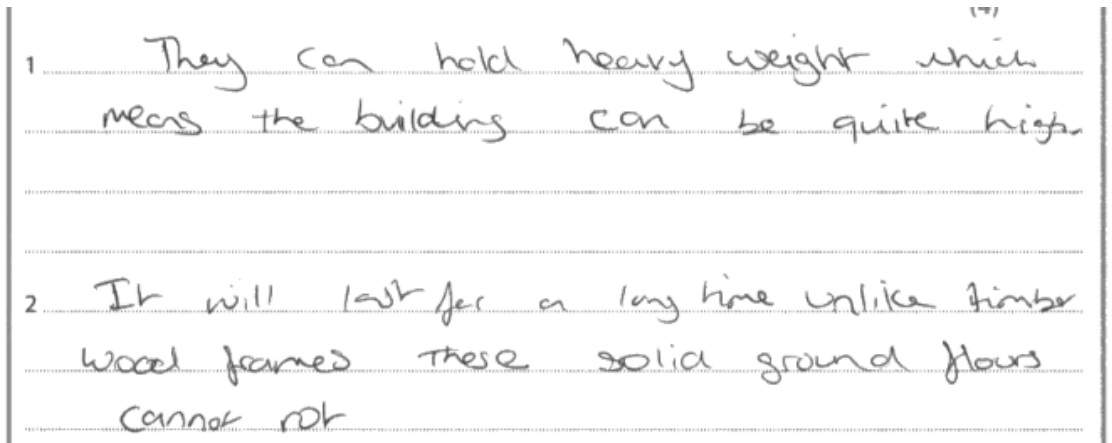
- Quicker to construct
- Provides stability
- Is more durable
- Longer lifespan

0 marks awarded for:

- Strong/stronger
- Holds more weight
- Is sustainable
- No damp penetrates the floor

Please refer to the marking scheme for all suitable responses.

2 mark response example:

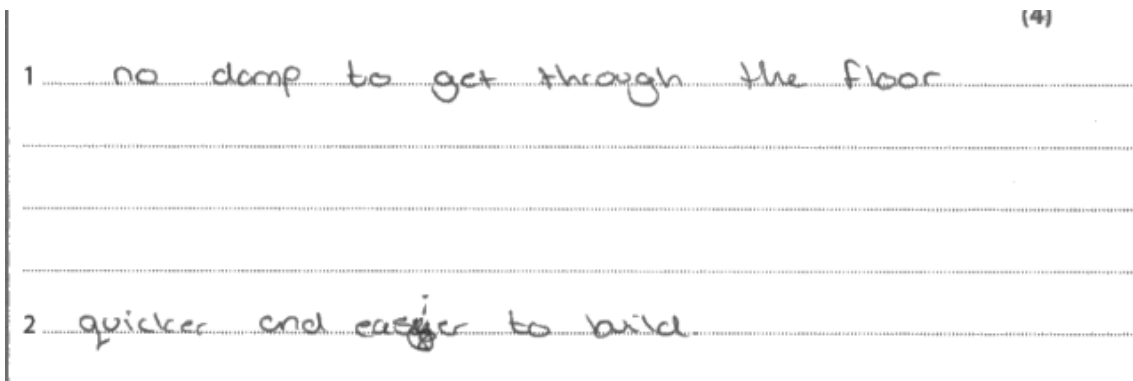


2 marks awarded:

The first response includes no rewardable content.

The second response includes a suitable linked response. See marking scheme BP2

Further 2 mark response example:



2 marks awarded:

The first response includes no rewardable content.

The second response includes two acceptable identification marks.

7c) Learners were required to explain two advantages of using a beam and block floor instead of a suspended timber ground floor in the development of a low-rise office building.

The command verb used for this question is explain, therefore 1 mark was allocated to the identification of a reason and 1 mark for a linked explanation of the stated reason.

Learners were able to achieve 1 mark for the identification of a reason but then often failed to understand the need to develop a linked explanation from it.

This question was generally poorly answered by many learners. More able learners were often able to achieve 2 marks.

1 mark response included:

- Quicker to construct
- Less maintenance
- Is more durable
- Longer lifespan

0 marks awarded for:

- Strong/stronger
- More sustainable
- Cheap/cheaper to construct

Please refer to the marking scheme for all suitable responses.

2 mark response example:

(c) An architect is designing a low-rise office building and is considering two types of ground floor.

Explain **two** advantages of using a beam and block floor instead of a suspended timber ground floor. (4)

1 Beam and block floor are stronger, you can put heavy objects on it and not have to worry about it going through.

2 Beam and block floor is more fire resistance, so in case of a fire the floor wouldn't take as fast to catch fire than timber.

2 marks awarded:

The first response includes no rewardable content.

The second response includes a linked explanation see marking scheme BP5. 2 marks awarded.

Question 8

This question was aimed at the understanding of the superstructure activity of floors.

Targeted Specification Area: Learning Aim C.2

Learners were required to explain two advantages of using engineered timber joists instead of solid timber joist for the construction of the upper floors in a building.

Learners were able to achieve 1 mark for the identification of a reason but then often failed to understand the need to develop a linked explanation from it. This question was generally poorly answered by many learners. More able learners were often able to achieve 2 marks.

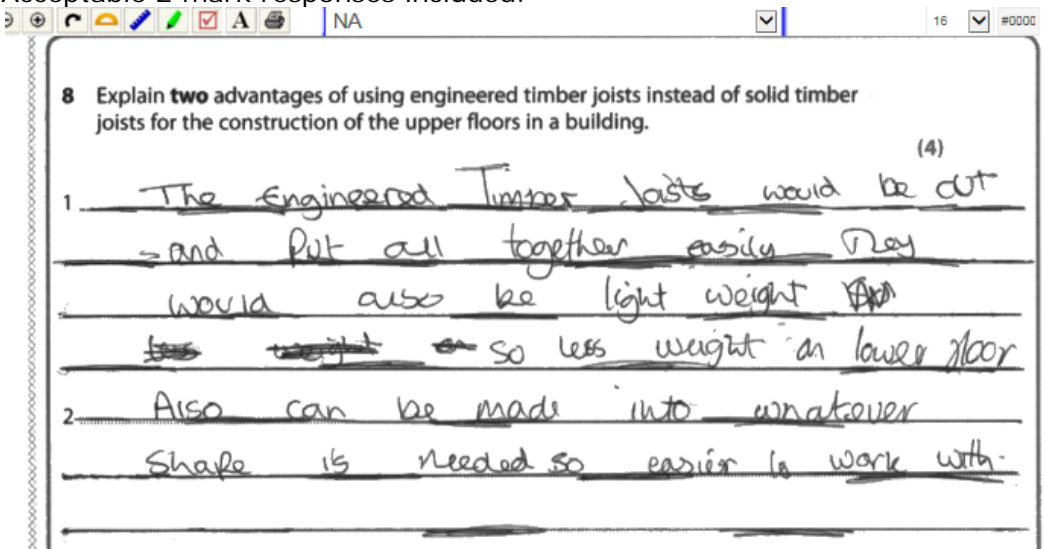
1 mark response included:

- Easier/cheaper to install
- More sustainable
- More sturdier

0 marks awarded for:

- Less susceptible to rot
- Cheap/cheaper
- Stronger

Acceptable 2 mark responses included:



2 marks awarded for identifying that engineered joists are lightweight and are made to measure.

Question 9

This question was aimed at the understanding of timber-framed construction.

Targeted Specification Area: Learning Aim A.2

Learners were required to explain one disadvantage of vertical tile hanging compared to brickwork.

Learners were able to achieve 1 mark for the identification of a reason but then often failed to understand the need to develop a linked explanation from it. This question was generally poorly answered by many learners.

More able learners were often able to achieve 2 marks. Suitable linked correct responses may be seen in the marking scheme.

1 mark response included:

- Not as strong
- Not as stable
- Less durable

0 marks awarded for:

- Aesthetically not good
- More expensive
- Sustainable
- Better weather resistance

Acceptable 2 mark response example:

9 Brickwork and vertical tile hanging are two external cladding options.

Explain **one** disadvantage of vertical tile hanging compared to brickwork.

(2)

Vertical tile hanging doesn't last
as long and ~~are~~ will need
replacing more which will cost more
money than using brick work.

2 marks awarded:

The response is acceptable for 2 marks as it is linked to less maintenance BP4.

Acceptable 2 mark response example:

9 Brickwork and vertical tile hanging are two external cladding options.
 Explain **one** disadvantage of vertical tile hanging compared to brickwork. (2)

(2)

verticle tile hanging could be dangerous because
 they may fall and break on floor or
 injure someone

2 marks awarded:

The response is acceptable as a linked explanation-see marking scheme BP3-2 marks awarded.

Question 10

This question was aimed at the performance requirement of cross-wall construction form.

Targeted Specification Area: Learning Aim A.2

Learners were required to explain two economic benefits to the developer of adopting the use of a cross-wall structural form for a housing estate. The focus on economic benefits was often overlooked by learners with generic incorrect responses being given.

Learners were able to achieve 1 mark for the identification of a reason but then often failed to understand the need to develop a linked explanation from it. This question was generally poorly answered by many learners. More able learners were often able to achieve 2 marks. Suitable linked correct responses may be seen in the marking scheme.

1 mark response included:

- Cheaper to put up
- Quicker to build
- Cheaper to erect

0 marks awarded for:

- Easier to build
- Cheap/Cheaper on their own
- Strong
- Sustainable
- Sturdy
- Stable
- Last longer

4 mark response example:

(4)

1. No wastage on site as it is factory made so the developer won't have to transport the waste
2. Quick the developer won't have to work long and meaning he can sell the house quick

4 marks awarded:

The first response is acceptable as a linked explanation-see marking scheme BP3-2 marks awarded.

The second response is acceptable as a linked explanation-see marking scheme BP1-2 marks awarded.

Further 4 mark response example:

1. One economic benefit is that the crosswalls are pre-fabricated. This means there will be less wastage on site and will cut material costs.
2. Another economic benefit would be that they are quick and easy to put up so ~~they~~ time will be saved meaning money will also be saved.

4 marks awarded:

The first response is acceptable as a linked explanation-see marking scheme BP3-2 marks awarded.

The second response is acceptable as a linked explanation-see marking scheme BP1-2 marks awarded

Question 11

This question was aimed at the understanding of the performance requirement of sustainability and building on either a greenfield or brownfield site.

Targeted Specification Area: Learning Aim A.1

Learners were required to discuss the advantages and disadvantages of a development being built on either the greenfield or brownfield site identified.

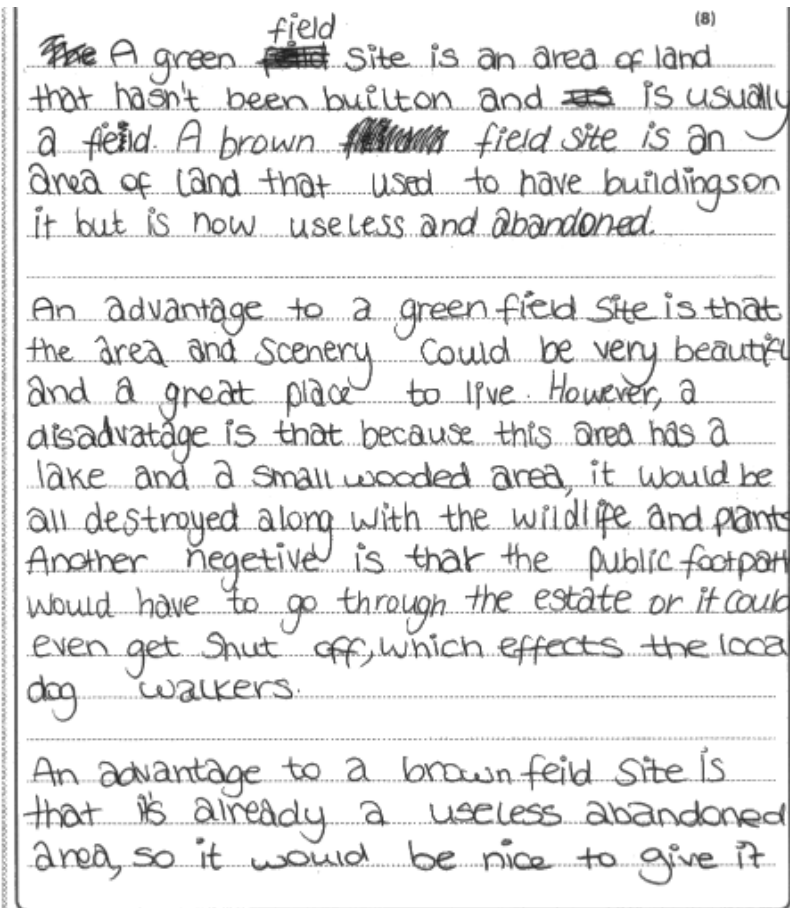
Marks were awarded dependent on the detail of points identified and described and as to whether the learner had made a balanced discussion of both construction forms.

Most learners attempted this question. Many achieved some marks. Learner marks were mostly in mark band 1 or at the lower end of mark band 2. Some high mark band 2 and occasional mark band 3 learner work was also seen.

The marking scheme gives a detailed list of the advantages and disadvantages of each construction form. Some learners provided a balanced discussion of different structural forms, with sufficient detail, to achieve marks beyond those in mark band 2.

The mark bands and level descriptors are included in the mark scheme for question 11.

3 mark example response:



a new purpose to those that need a house
A disadvantage though would be that the area
might look very appealing. Another negative
is that lots of tests would have to be
done to check for any radio activity or mine
shafts because of what could have
been there many years ago. However it could
be fine because it says that it used to be
an industrial estate.

Another positive would be that it is next to
a city, which means the locals will be able to
go shopping and there is much more there
that they need like job opportunities,
education, health services and entertainment.

In conclusion, I think that they
should build on the brownfield site so
that they don't ruin the environment
in the greenfield site.

3 marks awarded:

Basic arguments for both types of site identified. Points made are basic in detail but linked to the situation in the question. Linked explanation responses were limited. The learner demonstrates a basic understanding of the issues building on either site location.

Further 3 mark example:

A greenfield site filled with nature and grazing grass. The advantages of a new housing development in this area: the atmosphere for this area would genuinely be very calm and relaxing, having a lake and a small wooded area could integrate the citizens who live in this area to get outside and adore the estate. As said before the site includes a lake could this lake be ~~filtered~~ filtered to provide clean fresh water. As the area is filled with greens this could provide more earth as an foundation for the concrete foundation. However the disadvantages of building settlements on a greenfield is deforestation. The main impact is deforestation removing trees and other

greens from the landscape to build more houses. Also it's far from the city.

On to brownfields: advantages of having new housing developments is the area would be located near a city centre making it easy for the ~~rest~~ residents to complete their everyday needs. On the other hand, however this brownfield would be built over an industrial estate so it would need a lot of money to firstly remove all the old construction and start with the new one. One of the downsides of housing developments in the city centre is that the area would be very populated with locals and visitors. What is conveying is that on a daily basis it would be very noisy and more cars owned by the ~~residents~~ residents could cause pollution.

3 marks awarded:

Basic arguments for both types of site identified. Points made are basic in detail but linked to the situation in the question. Linked explanation responses were limited. The learner demonstrates a basic understanding of the issues building on either site location.

Summary

This is the final year of that the 2013 Specification Construction Technology Unit 1 external assessment. A high percentage of learners achieved a minimum of a Level 1 Pass in the assessment. The percentage of learners achieving a Level 2 Pass continues to steadily improve to confirm that centres and learners are now increasingly coming to terms with the examination demands. The percentage of learners achieving at merit level also continues to steadily improve although the number of learners who achieved a distinction award was low.

Some learners continued to struggle with explain or the extended response question. The ability to recognise the demands of a question is important. Points made in these questions were often basic in detail and not linked to the situation in the question. Linked explanation responses were often limited. Candidates should understand the different responses required for different command words, for example, identify, explain or discuss.

From January 2020, future external assessments for this unit will be based on the new 2018 specification. In preparation for future series, centres should review the new SAM (Sample Assessment Material) for this unit together with its marking scheme. Learners will be required to demonstrate their understanding of the application of mathematics in the calculation of simple perimeter, area or volume questions and there is included an increased number of extended response questions.

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