

New  
Specification

Rewarding Learning

General Certificate of Secondary Education  
2011

Centre Number

71

Candidate Number

**Construction and the Built Environment**  
Assessment Unit 1: The Construction Industry  
for the 21st Century

*assessing***The Construction Industry****[GCB11]****MONDAY 16 MAY, AFTERNOON****TIME**

1 hour 30 minutes.

**INSTRUCTIONS TO CANDIDATES**

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.  
Answer **all nine** questions.

Questions 1, 2, 3, 8 and 9 should be answered in relation to the enclosed Barn conversion drawings and specifications previously issued as Pre-release materials.

You should not bring any of the material previously issued into this examination.

You will be provided with a clean copy of the pre-release material.

**INFORMATION FOR CANDIDATES**

The total mark for this paper is 120.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question. Quality of written communication will be assessed in questions 7 and 9.

**A scale rule is required.**

For Examiner's  
use only

| Question Number | Marks |
|-----------------|-------|
| 1               |       |
| 2               |       |
| 3               |       |
| 4               |       |
| 5               |       |
| 6               |       |
| 7               |       |
| 8               |       |
| 9               |       |

Total  
Marks

**Section A**

Answer **all** questions

Use the pre-release materials (Barn conversion drawings and specifications) to assist with answering questions 1, 2 and 3.

**1 (a)** Label the cross section in **Fig. 1** below using the following terms:

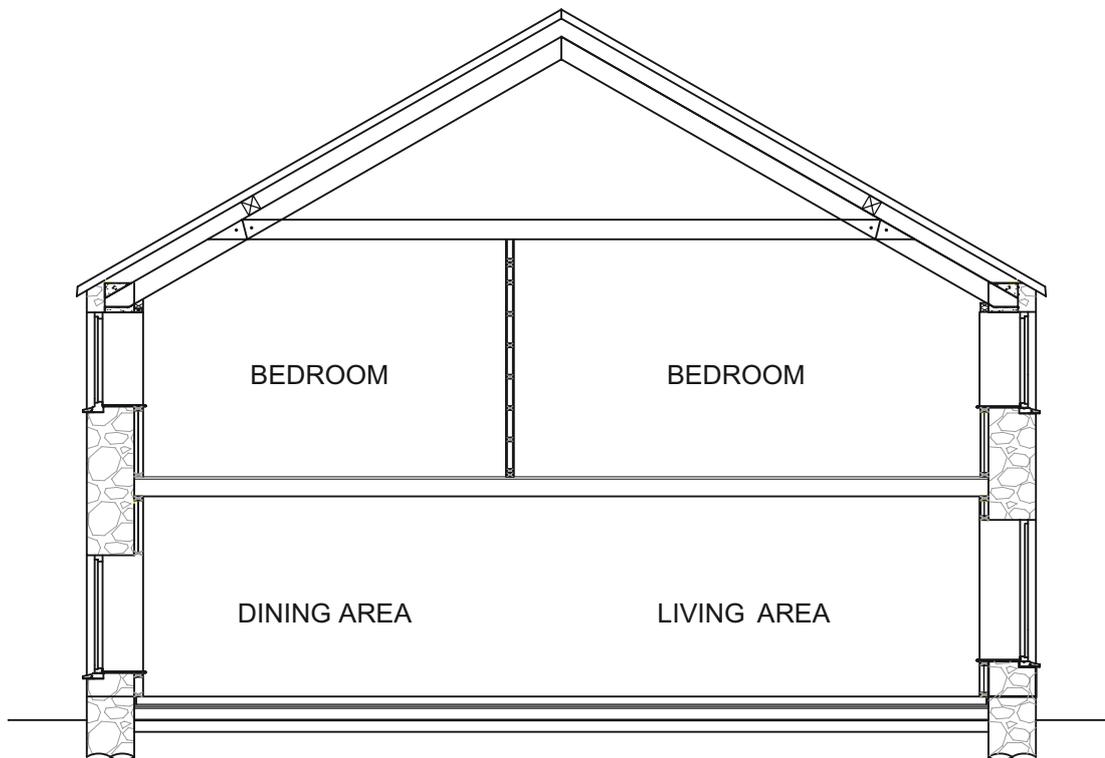
**220 mm x 50mm floor joists**

**Rafters**

**External stone walling**

**Window sill**

**Ceiling constructed from 9.5 mm plasterboard**



**Fig. 1**

[5]

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |



- 2 (a) Explain **three** of the main roles that a Client would have in relation to the barn conversion shown in the pre-release material.

Client

1. \_\_\_\_\_  
 \_\_\_\_\_
2. \_\_\_\_\_  
 \_\_\_\_\_
3. \_\_\_\_\_  
 \_\_\_\_\_ [3]

- (b) Identify **three** of the main roles that the following craft operatives would have in relation to the barn conversion shown in the pre-release material.

Electrician

1. \_\_\_\_\_  
 \_\_\_\_\_
2. \_\_\_\_\_  
 \_\_\_\_\_
3. \_\_\_\_\_  
 \_\_\_\_\_ [3]

Plumber

1. \_\_\_\_\_  
 \_\_\_\_\_
2. \_\_\_\_\_  
 \_\_\_\_\_
3. \_\_\_\_\_  
 \_\_\_\_\_ [3]

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |

- 3 Using the attached pre-release material, give the following internal room dimensions in millimetres and the areas in square metres. Some dimensions may need to be scaled.

- (a) The length and width of the living/dining area.

Length \_\_\_\_\_ Width \_\_\_\_\_ [4]

The length and width of the toy room.

Length \_\_\_\_\_ Width \_\_\_\_\_ [4]

- (b) The overall width of the house from the outside of the walls.

Width \_\_\_\_\_ [2]

- (c) The width and height of the window in the living area at the front of the house. Take this height at the highest point of the window.

Width \_\_\_\_\_ Height \_\_\_\_\_ [4]

- (d) The total floor area of the lobby (measure to inside of walls).

Floor area \_\_\_\_\_ [2]

- (e) The floor to ceiling height of the bedrooms at their highest point.

Height \_\_\_\_\_ [2]

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |

- 4 The image shown in **Fig. 2** is typical of a specific type of framed construction.



**Fig. 2**

- (a) Name the type of building structure shown in **Fig. 2**.

\_\_\_\_\_ [2]

- (b) List **five** examples of the type of building occupancy this type of structure would be used for.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ [5]

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |



5 List **three** different materials used by a plumber and give **two** examples of where each of them could be used in the construction of a typical domestic dwelling.

(a) Material 1

1. \_\_\_\_\_

Where would this material be used in a domestic construction?

2. \_\_\_\_\_

3. \_\_\_\_\_ [3]

(b) Material 2

1. \_\_\_\_\_

Where would this material be used in a domestic construction?

2. \_\_\_\_\_

3. \_\_\_\_\_ [3]

(c) Material 3

1. \_\_\_\_\_

Where would this material be used in a domestic construction?

2. \_\_\_\_\_

3. \_\_\_\_\_ [3]

Examiner Only

Marks Remark

## Section B

Answer **all** questions

- 6 (a) List **four** main resources required to undertake any construction project whether the project is large or small.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_ [4]

- (b) Choose **two** of the resources you have listed above and explain how they could be used in the construction of the barn conversion shown in the pre-release material.

1. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [4]

2. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [4]

Examiner Only

| Marks | Remark |
|-------|--------|
|       |        |





- 9 The external walls of the barn shown in the pre-release material are constructed using solid Basalt stone.

The way in which walls are constructed for dwellings in the United Kingdom has changed considerably over the last one hundred years. Using notes and annotated sketches show some of the stages in the development of wall construction.

The following points may help you with your answer.

Stone wall  
 Solid brick walls  
 Cavity wall construction  
 Cavity walls with insulation

3 marks per sketch up to a maximum of [10]

Maximum marks for notes [10]

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |

Continue on next page.

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |

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**THIS IS THE END OF THE QUESTION PAPER**

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2011

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**Construction and the Built Environment**  
**Pre-Release Material**

Assessment Unit 1: The Construction  
Industry for the 21<sup>st</sup> Century  
*assessing*

The Construction Industry  
**[GCB11]**

**MONDAY 16 MAY, AFTERNOON**

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You must use **this** clean copy of the Pre-Release Material in the examination and **not** your own annotated copy.

## Construction and the Built Environment

The following materials contain drawings and specifications relating to a barn constructed from stone.

The drawings and specifications relate to an existing barn which is constructed near a small river. The barn is in a rural area well sheltered by mature trees. The site is fairly flat with only a gentle fall towards the river.

The client intends to live in the property once completed.

He has employed an Architect to prepare his designs.

The contractor will be appointed on the basis of selective tendering. The contractor will employ the following team:

- Site Manager

- Joiner

- Plasterers

- Plumber

- Electrician

All other trades will be sub-contractors appointed by the main contractor.

Your client is very interested in environmental issues and wants to make best use of the existing materials already used in the barn. The client also would like to use all possible sustainable resources available on site to reduce his Carbon Footprint when living in the barn.

**NOTE Students will require the use of a scale rule during the examination.**