

71
Candidate Num

General Certificate of Secondary Education January 2013

Construction and the Built Environment

Assessment Unit 1: The Construction Industry for the 21st Century

[GCB11]





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 ten** questions.

Questions 1, 2, 3, 7 and 9 should be answered in relation to the enclosed house drawings and specifications previously issued as pre-release material.

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 8 and 10.

A scale rule is required.

8148

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Total	
Marks	

Section A

Answer all questions

Examiner Only

Marks Remark

Use the pre-release material to assist with answering questions 1, 2, 3, 7 and 9.

a)	What is the name given to the type of roof construction used in the dwelling shown in the pre-release material?
o)	List below the type of material from which each of the following building elements is made.
	1. Roof covering
	2. Quoin stones
	3. Roof flashing
	4. Chimney pots
;)	The dwelling shown in the pre-release material has load bearing external walls. 1. What is the correct name for this type of wall construction?
	construction
	Give the names of four suitable raw materials from which these walls are constructed.

1

The type of roof construction used in the house shown in the pre-release material is a timber cut roof which can accommodate rooms in the roof	Examine Marks	er Only Remark
space.	Warks	Remark
Clearly state what you understand by the following six items that could be used in the house construction shown in the pre-release material. State what their function is and where they would be located within the roof.		
Roofing membrane or roofing felt		
[2]		
2. Fascia board		
[2]		
3. Hangers		
[2]		
4. Eaves		
[2]		
5. Valley		
[2]		
6. Gutter		
[2]	1	

3	Using the attached pre-release material, give the following internal room dimensions in millimetres . Some dimensions may need to be scaled. Examiner of Marks Ref				
	(a)	The length and width of the dining roo	om.		
		Length Wid	th [4]		
	(b)	The overall width of the dwelling.			
		Width	[2]		
	(c)	The length and width of the hall.			
		Length Wid	th [4]		
	(d)	The total number of 900 mm wide integround floor.	rnal doors which are on the		
			[2]		
	(e)	The roof pitch.			
		Pitch Degrees	[2]		

(a) What does the ab	breviation COSHH stand for?	Examiner Only Marks Remark
C	of S	
Н	to H	[3]
(b) What do the follow the COSHH regul	wing three symbols identify as being ations?	ng a hazard under
© Crown copyright		[1]
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© Crown copyright		[1]

4

5	(a)	List five performance requirements of windows.	
		1	[1]
		2	[1]
		3	[1]
		4	[1]
		5	[1]

Examiner Only

Marks Remark

- (b) Sketch in the space below a casement window with:
 - six fixed lights;
 - two side opening casements;
 - two top opening casements.

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(Questions continue overleaf)

6 Place the correct title from the list below with its matching image:

Examiner Only

Marks Remark

Farm building
Landscaped area
Steel framed rectangular structure
Timber framed structure
Modern terraced housing
Concrete bridge over a motorway
Portal Framed Structure
Cellular Construction



1. _____ [1]



2. _____ [1]



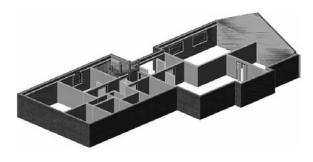
3. _____ [1]



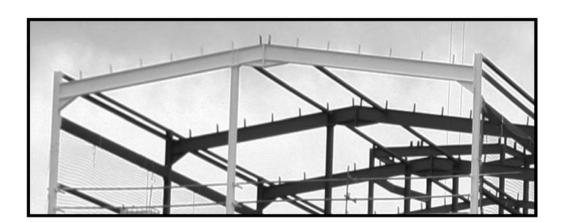
4. _____ [1]



5. _____ [1]



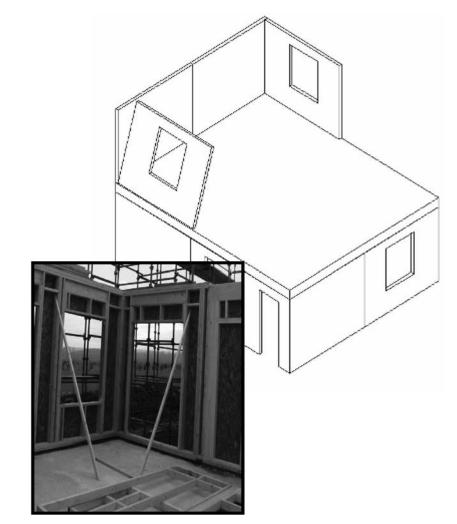
6. _____ [1]



Examiner Only

Marks Remark

7. _____



8. ______ [1]

	the house shown in the pre-release material.	Marks
	1	
	2	
	3	
	4	
	5.	
(b)	Fig. 1 shows a section through a cavity wall with wall ties joining the two skins together.	
	Fig. 1	
	What is the correct spacing of these wall ties?	
	What is the correct spacing of these wall ties?	
	What is the correct spacing of these wall ties? Horizontal spacing mm [1]	

Section B Answer all guestions

Examin	er Only
Marks	Remark

Answer all questions Sustainability has been defined as: "Meeting the needs of the present without compromising the ability of future generations to meet theirs." Discuss how the present generation can heat their buildings without using fossil fuels. Your answer should clearly show an understanding of four alternative methods of heating a building. _____ [10] Fig. 2 below shows an incomplete sill detail which is to be used for the house shown in the pre-release material.

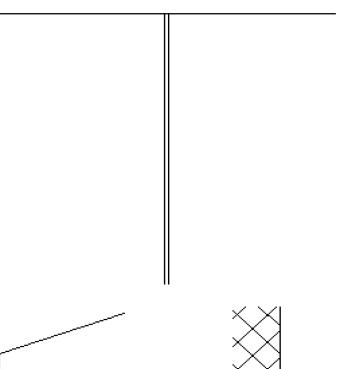
Examiner Only Marks Remark

Complete the drawing and include labels from the list below:

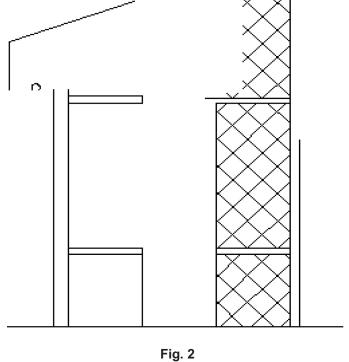
Concrete sill Inner skin of block work Damp Proof course Insulation behind sill **Cavity Insulation**

Outer skin of block work Anti-capillary groove Timber window frame Double glazing Sill board

10 marks for labels and 10 for drawings.



[10]



[10]

10 Fig. 3 shows a steel Portal Framed structure that has been used to construct a new retail warehouse which will accommodate a large DIY superstore.

Examiner Only		
Marks	Remark	

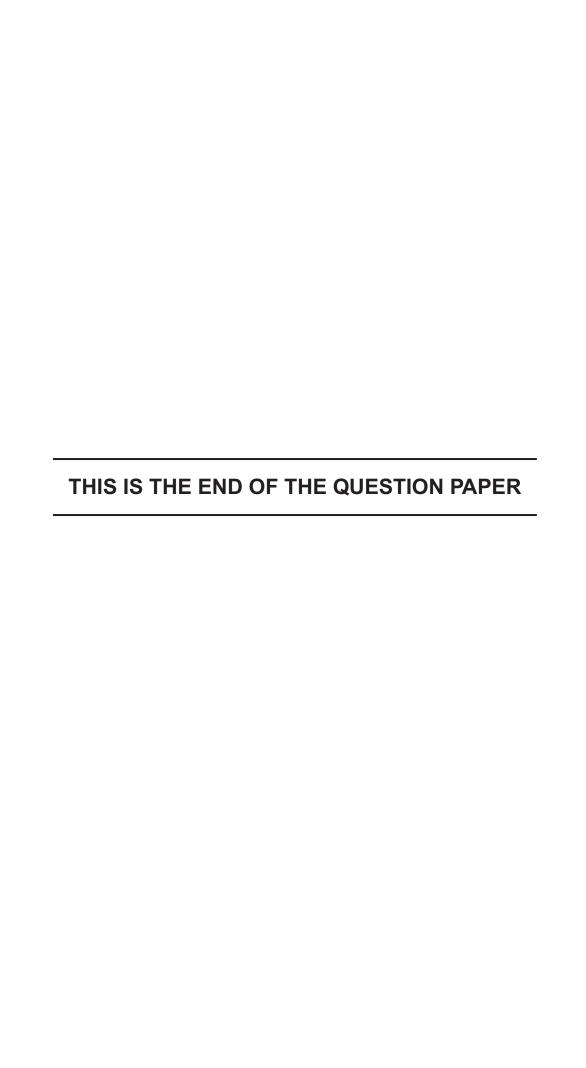


Fig. 3

What are the advantages and disadvantages of using this type of structure to build a large retail warehouse?			

Examiner	
 Marks F	Remarl
[10]	

How would you advise the client to increase the structural stability of a portal framed structure using three different approaches?	this structure transfer its load to the foundations?
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How would you advise the client to increase the structural stability of a portal framed structure using three different approaches?	[3]
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How would you advise the client to increase the structural stability of a portal framed structure using three different approaches?	
portal framed structure using three different approaches?	d you advise the client to increase the structural stability of a
	ned structure using three different approaches?
[7]	[71
[7]	[']







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