

Centre Number		
71		
Cano	didate Number	

General Certificate of Secondary Education 2014

Construction and the Built Environment

Unit 1: The Construction Industry for the 21st Century

[GCB11]

WEDNESDAY 4 JUNE, 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 eleven** questions.

Questions **1**, **3**, **5** 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.

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 ruler is required.

For Examiner's use only		
Question Number	Marks	
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

Total	
Marks	

Section A

Answer all questions

Examiner Only Marks Remark

Use the Pre-Release Material to assist with answering Questions 1, 3, 5 and 9.

1 The external walls of the houses shown in the Pre-Release Material constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the constructed from two skins of blockwork with a space between the construction of the construction o				
	(a)	What is the name given to this type of wall of	construction?	
				[1]
		e two skins of blockwork are joined at regular ctural stability.	intervals to increase	
(b) What is the material used to make the components that join skins of blockwork together?			ponents that join the two)
				[1]
	(c)	What is the correct name for these compon	ents?	
				[1]
(d) What is the correct spacing of these components in walls?		nents in walls?		
		Horizontal Spacing	mm	[2]
		Vertical Spacing	mm	[2]
		Vertical Spacing at window or door jambs	mm	[2]

2 Domestic accommodation requires many different types of buildings, which must be specifically designed to meet the client's brief.

Examiner Only

Marks Remark

Identify the types of residential accommodation shown in this question and briefly state the distinguishing characteristics of each.



Fig. 1

[1]
[1]

[2]



Fig. 2

(b)	(i)	The type of dwelling shown in Fig. 2 is a	
			[1]
	(ii)	The distinguishing characteristics of this type of dwelling are:	
			[2]
			. [4]

_		
	12th floor	
	11th floor	
	10th floor	
	9th floor	
	8th floor	
	7th floor	
	6th floor	
	5th floor	
	4th floor	
	3rd floor	
	2nd floor	
ground level	1st floor	
	Ground floor	
	Basement	

Fig. 3

(c)	(i)	The type of accommodation illustrated in Fig. 3 is a
		[1]
	(ii)	The distinguishing characteristics of this type of accommodation are:
		[2]



Fig. 4

(d)	(i)	The type of accommodation illustrated in Fig. 4 is a	
		[^	1]
	(ii)	The distinguishing characteristics of this type of accommodation are:	
			_
		[2	2]

	ng the attached Pre-Re ensions in millimetres		erial give the follow	ving internal ro	om	Examiner Marks R	Only Remark
Sor	me dimensions may ne	ed to be so	caled.				
(a)	The length and width	of the living	g room for house D) .			
	Length	mm	Width	mm	[4]		
(b)	The length and width	of the kitch	en in house E .				
	Length	mm	Width	mm	[4]		
(c)	The overall width of h	ouse A.					
	Width	_ mm			[2]		
(d)	Ignoring internal walls Show your working or		the total ground flo	or area of hou	se E.		
				_ square metre	es [2]		
(e)	How many 1000 mm v houses shown in the			elevation of the	e five		
			_		_ [2]		

4 As fuel costs continue to rise home owners are looking at alternative sources of sustainable energy.



Fig. 5

(a)	What type of renewable energy source is shown in Fig. 5?	
		[1]
(b)	List three alternative sources of renewable energy other than the o shown in Fig. 5 .	ne
		[1]
		[1]
		[1]
(c)	List the names of two materials commonly used to insulate building	JS.
		[1]
		[1]

(a)	List the main role of an estimator in relation to the housing shown the Pre-Release Material.	Mark	miner (S F
		_ [3]	
(b)	Identify three of the main roles that the following members of the construction team would carry out on site.		
	Site Manager		
	1		
	2		
	3	_ [3]	
	Plumber		
	1		
	2		
	3	_ [3]	

List five different materials used in the construction of a roof.		
Give one example of where each material would be found and the function of that material.	Marks Remark	
Material 1	_	
Where in the construction of the roof is it found?		
What is its function?	-	
[3	3	
Material 2	_	
Where in the construction of the roof is it found?		
What is its function?	-	
[3	3]	
Material 3	_	
Where in the construction of the roof is it found?		
What is its function?	-	
[3	3]	
Material 4	_	
Where in the construction of the roof is it found?		
What is its function?	-	
[3	ß]	

Material 5		Examiner Only Marks Remark
Where in the construction of the roof is it found?		
What is its function?		
	[3]	

[41	Marks Ren
 [1]	
 [1]	
[1]	
 [1]	
[1]	

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(Questions continue overleaf)

Section B Answer all questions

Examin	er Only
Marks	Remark

Discuss the advantages **and** disadvantages of using cellular construction when building domestic houses which are two storeys high. 8 You should include the following points in your answer: Foundations Methods of wall construction Speed of erection Structural stability

	Examin	er Only
	Marks	Remark
[10]		

9 Fig. 6 opposite shows an incomplete foundation detail with a 200 mm wide inner skin that is to be considered for the house shown in the Pre-Release Material.

Examiner Only

Marks Remark

Complete the drawing and include all labels from the list below:

Concrete foundation Outer skin of brickwork
Inner skin of blockwork Damp Proof Course
Floor screed Cavity Insulation

Ground Level Hardcore

100 mm Concrete subfloor Damp Proof Membrane

10 marks for labels and 10 for drawings.

[10]

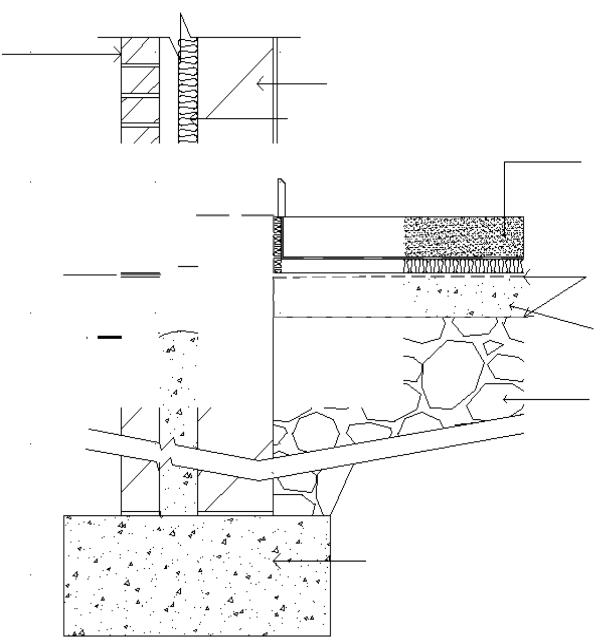


Fig. 6

[10]

Examiner Only				
	Remark			
[Tue	n 0\/0r			

10 Fig. 7 below shows a timber portal frame that has been used to construct a new retail warehouse which will accommodate a large superstore.

Examiner Only				
Marks	Remark			



Fig. 7

Discuss the advantages **and** disadvantages of using timber for the construction of this portal frame as an alternative to steel.

part of your answer.				

		iner Only
	Marks	Remark
[40]		
[10]		

Explain what you understand by the Construction Cycle using the following headings:	Exar Marks	niner Only s Remark
 Planning Design Tendering Construction Process Handover Evaluation 		
	-	
	-	
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	_	
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	_	
	-	
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	-	

		Examin	er Only
		Marks	Remark
	[40]		
	_ [10]		
	_		
THIS IS THE END OF THE QUESTION PAPER			
	_		

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General Certificate of Secondary Education

Construction and the Built Environment

Pre-Release Material

Examination Copy

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

[GCB11]

JANUARY 2014 AND SUMMER 2014



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

NOTE: Students will require the use of a scale ruler during the examination.

8784.03

Construction and the Built Environment

Introduction

A copy of the pre-release information for this examination is included in the following pages

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



FRONT ELEVATION

GCSE Construction and the Built Environment

<u>Unit 1</u>

Pre-Release materials
JANUARY 2014 - SUMMER 2014

Not to scale Drawing Number 01



Working Drawing

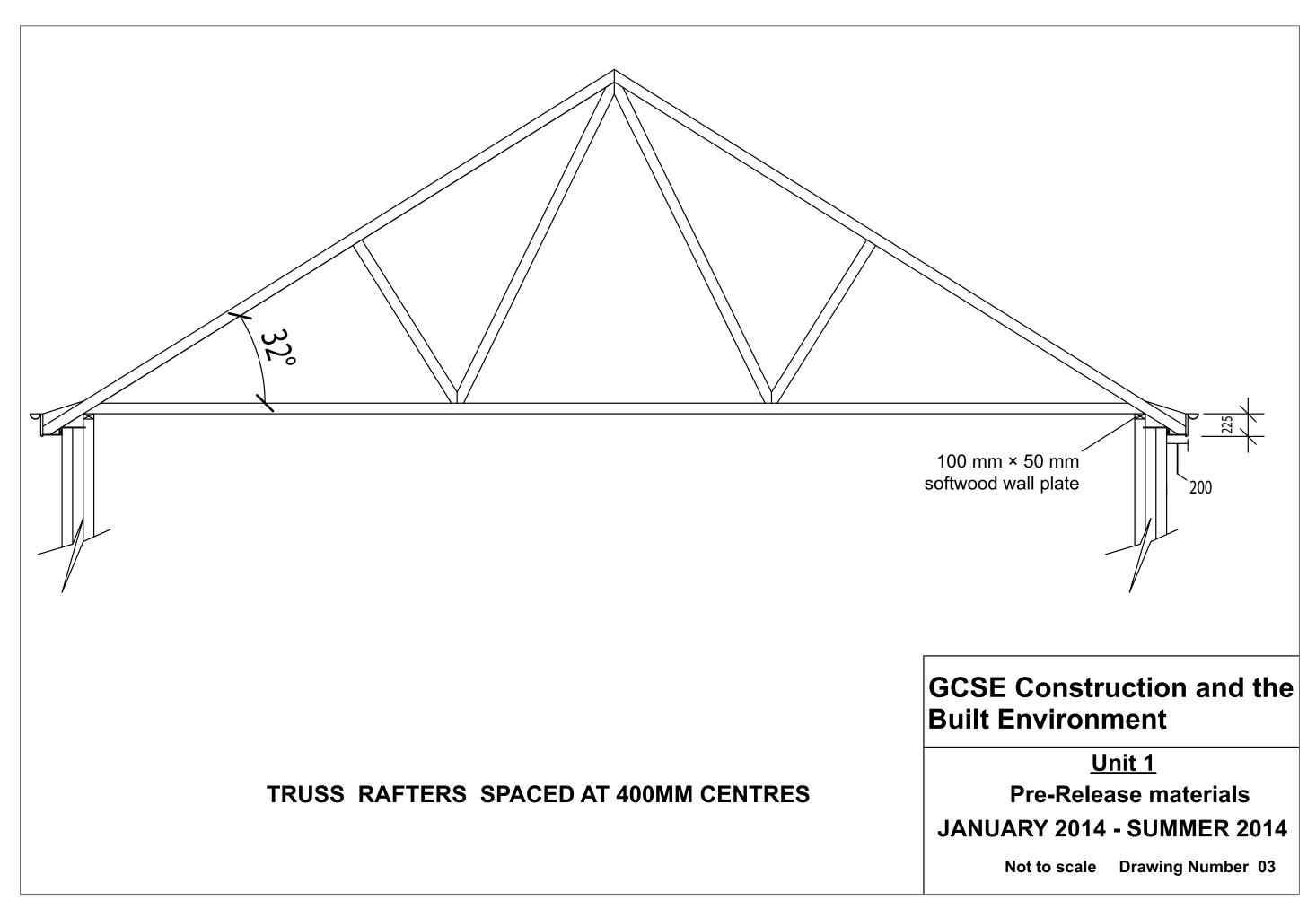
GCSE Construction and the Built Environment

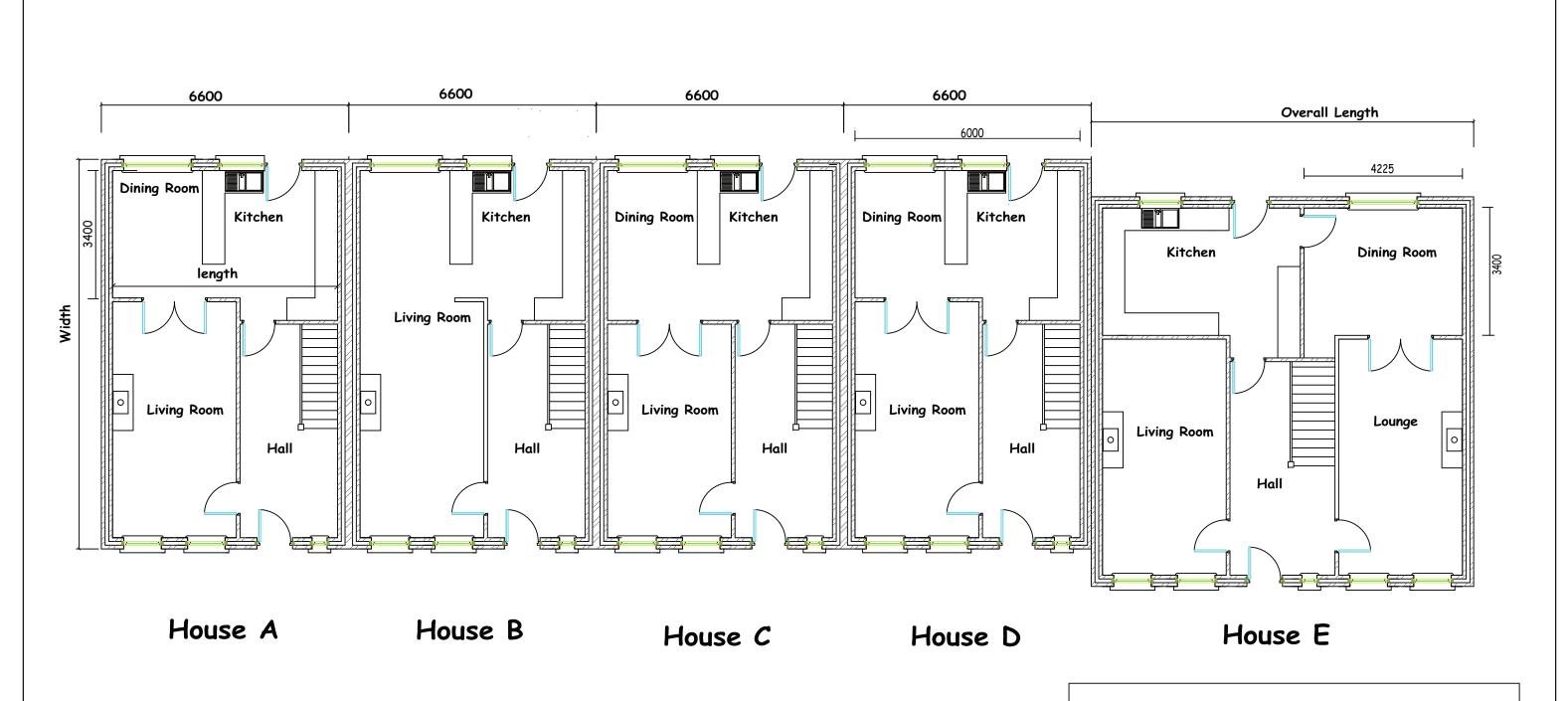
<u>Unit 1</u>

Pre-Release materials

JANUARY 2014 - SUMMER 2014

Not to scale Drawing Number 02





Plan view

GCSE Construction and the Built Environment

<u>Unit 1</u>

Pre- release materials

JANUARY 2014 - SUMMER 2014

Scale 1:100 Drawing Number 04