



General Certificate of Secondary Education
2018

Centre Number

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Candidate Number

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Construction and the Built Environment

Assessment Unit 1
The Construction Industry for the 21st Century



GCB11

[GCB11]

WEDNESDAY 13 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** questions.

Questions **1, 2, 3, 5, 6, 7** and **8** 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 **7** and **9**.

A scale ruler is required.

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

Total Marks	
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Section A

Answer **all** questions

Use the pre-release material to assist with answering questions 1, 2, 3, 5, 6, 7 and 8.

- 1 (a) What **type of external wall construction** is used for the house shown in the pre-release material?
 _____ [1]
- (b) What **form** of construction will be used to construct this house?
 _____ [1]
- (c) The house shown in the pre-release material has been built using concrete blocks. List below **four** different **materials** used in the manufacture of these blocks.
- Material 1 _____ [1]
- Material 2 _____ [1]
- Material 3 _____ [1]
- Material 4 _____ [1]
- (d) What is the correct name given to the components used to join the inside and outside skins of the concrete block walls?
 _____ [1]
- (e) What are these components made from?
 _____ [1]
- (f) Are the external walls of this house load bearing or non load bearing?
 _____ [1]
- (g) What is the correct name given to the horizontal timber member secured to the top of the external wall?
 _____ [1]

Examiner Only

Marks	Remark

- 2 (a) Identify **three** of the main roles that a Contracts Manager would have in relation to the dwelling shown in the pre-release material.

Contracts Manager

1. _____

2. _____

3. _____
 _____ [3]

- (b) Identify **three** of the main roles that the following personnel would have for the project shown in the pre-release material.

Joiner

1. _____

2. _____

3. _____
 _____ [3]

Plumber

1. _____

2. _____

3. _____
 _____ [3]

Examiner Only	
Marks	Remark

- 3 (a) Using the attached pre-release material give the following internal room dimensions in millimetres.

Some dimensions may need to be scaled.

- (i) The length and width of the lounge.

Length _____ mm Width _____ mm [4]

- (ii) The overall width of the dwelling.

Width _____ mm [2]

- (iii) The length and width of the study.

Length _____ mm Width _____ mm [4]

- (b) Calculate the total floor area of the kitchen/living area including the area under the wood burning stove and the kitchen units.

_____ square metres [3]

- (c) What is the width of the largest front window?

_____ mm [1]

Examiner Only	
Marks	Remark

4 The following questions relate to a private stairway.

(a) Define the term private stairway.

 [3]

(b) How would you measure the total rise of a flight of stairs?

 [2]

(c) What is the maximum spacing in mm between spindles (as shown in **Fig. 1**) according to the Building Regulations?

 [1]

Maximum space between spindles

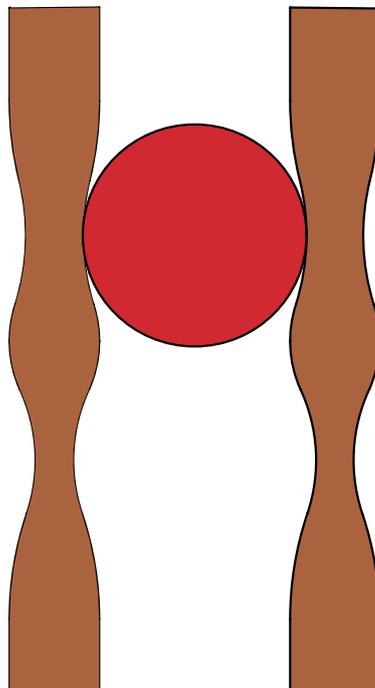


Fig. 1

Examiner Only	
Marks	Remark

5 (a) List **six** different performance requirements of the double glazed windows that will be installed in the house shown in the pre-release material.

(i) _____ [1]

(ii) _____ [1]

(iii) _____ [1]

(iv) _____ [1]

(v) _____ [1]

(vi) _____ [1]

(b) State where you would find the following parts of a window as shown in **Fig. 3** or label the parts appropriately in **Fig. 3**.

(i) Head _____ [1]

(ii) Stile _____ [1]

(iii) Sill _____ [1]

(iv) Transom _____ [1]

(v) Mullion _____ [1]



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Fig. 3

Examiner Only	
Marks	Remark

(c) What do you understand by the term dry finishes? Give **two** examples relating to the pre-release material.

_____ [1]

Example 1 _____ [1]

Example 2 _____ [1]

(d) What do you understand by the term wet finishes? Give **two** examples relating to the pre-release material.

_____ [1]

Example 1 _____ [1]

Example 2 _____ [1]

Examiner Only	
Marks	Remark

8 (a) Complete the drawing in **Fig. 4** of the junction between a concrete sill, cavity wall and a double glazed window as used in the house shown in the pre-release material. [10]

(b) Add the annotations from the list below.

Timber window frame

Double glazing

100 mm lightweight block inner leaf

D.P.C. placed below and behind concrete sill

100 mm blockwork outer leaf

Anti-capillary groove

140 mm reinforced concrete sill

uPVC sill board bedded in silicon sealant

Insulation behind sill

150 mm of insulation to fill cavity

[10]

Examiner Only	
Marks	Remark

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(Questions continue overleaf)

10 Fig. 5 shows a typical rectangular framed building under construction.



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Fig. 5

(a) What material is used to make the rectangular frame shown in Fig. 5?

_____ [1]

(b) How will the load of the roof and walls of this building be transferred to the foundation?

_____ [1]

(c) Give **four** advantages of a rectangular framed building.

(i) _____

_____ [1]

Examiner Only	
Marks	Remark

(ii) _____

_____ [1]

(iii) _____

_____ [1]

(iv) _____

_____ [1]

(d) Explain what you understand by wind loads and discuss how a rectangular framed building can be designed to resist wind loads.

_____ [4]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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Rewarding Learning

General Certificate of Secondary Education
2018

Construction and the Built Environment

**Pre-Release Material
EXAMINATION COPY**

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



GCB11

[GCB11]

WEDNESDAY 13 JUNE, AFTERNOON

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

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

Introduction

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

Relate your answer to a small development of 8 houses with an expected tender sum of £2.1 million. The house shown in the pre-release material is one of the houses in this development.

This small development has been located on the edge of a provincial town, just inside the Green Belt. As part of the Area Plan the site has been designated as residential use. The site is in close proximity to a Conservation Area. Your client has strict planning guidelines with which he or she must comply. The Planning Department will be guided by the Town and Country Planning Act 1990.

The pre-release material contains three drawings and specifications.

The Client has employed the following people to oversee the design of his development:

- Architect
- Civil Engineer
- Quantity Surveyor

The Contractor will employ the following team:

- Contracts Manager
- Plasterers
- Joiners
- Plumbers

Specification

Cavity Wall Construction

Outer leaf: 100 mm concrete block, 150 mm cavity, stainless steel retaining wall ties to BS 1243. 150 mm cavity to be filled with cavity fill insulation.

Inner leaf: 100 mm lightweight block work. Provide sand/cement plaster and carlite finish to inner face. Wall ties to be spaced at 750 mm horizontally, and 450 mm vertically, and ties for unbonded jambs to be spaced 300 mm vertically. 30 mm thick insulation to all jambs, between lintels and behind sill. D.P.C. in front of insulation in each case.

External finishes walls

Rendered wall painted cream.

External finishes roofs

Concrete interlocking black roof tiles.

Black uPVC fascia board.

Black powder coated aluminium gutter.

Windows

Black powder coated aluminium window frames.

K Glass.

Solid floor construction

Seal all floors with two coats of penetrating liquid dust proofer, 100 mm fine aggregate screed, 150 mm high density floor insulation. Visqueen 1200 grade D.P.M., 100 mm concrete sub-floor, 150 mm consolidated hard-core.

Damp proof course

Vertical D.P.C.s to all window and external door jambs, horizontal D.P.C. behind and under sills and stepped lintels. Wall D.P.C.s to external skin, layers at 150 mm minimum above finished ground levels.

D.P.C.s to internal walls to overlap and be bonded to floor D.P.M. by a minimum of 215 mm.

Foundations

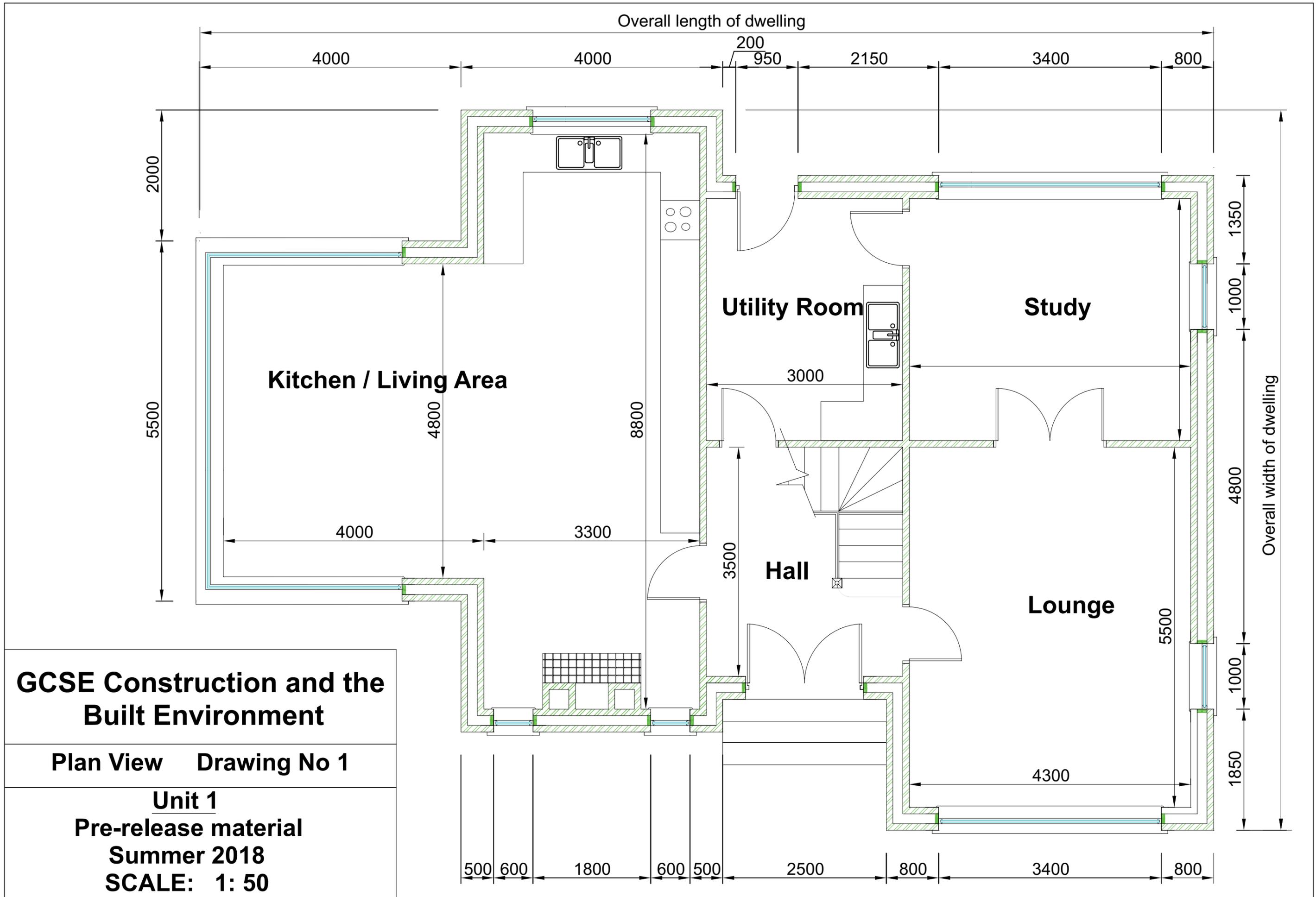
700 mm x 400 mm foundations to 350 mm walls.

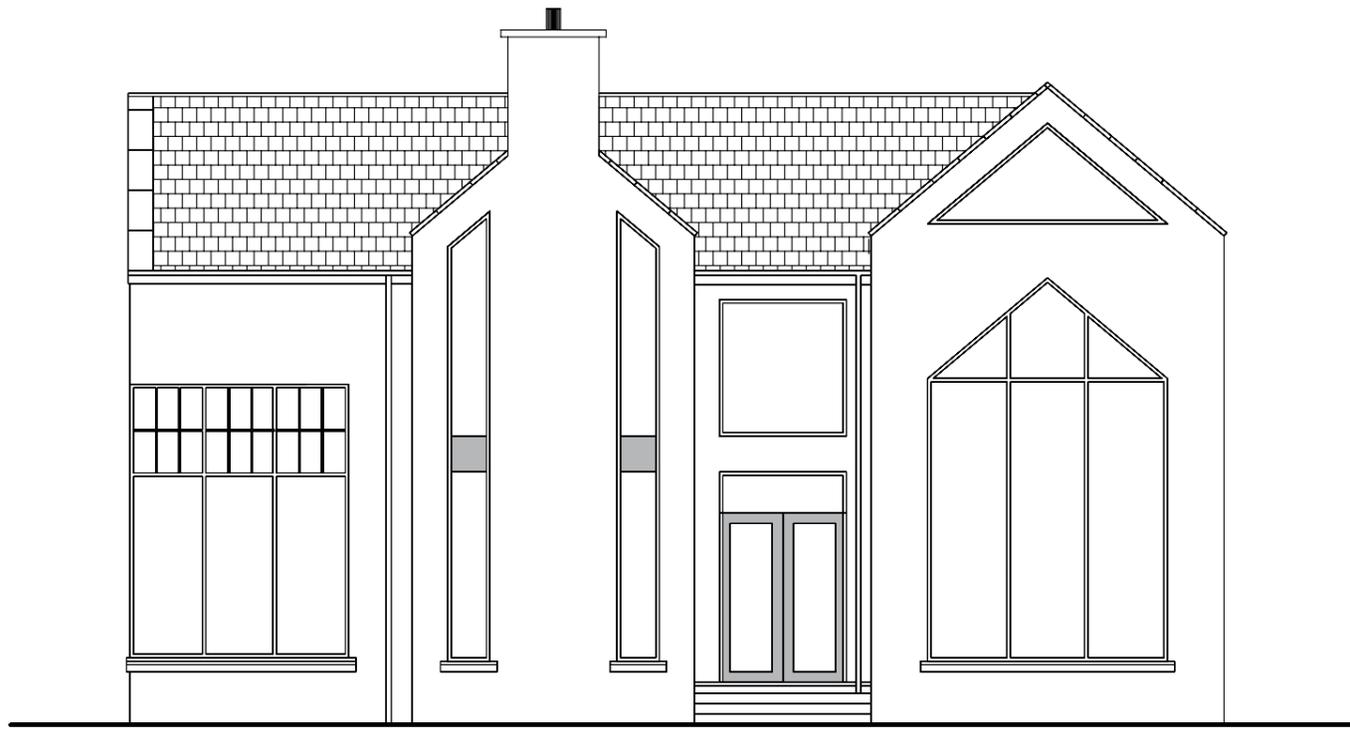
450 mm x 400 mm foundations to 100 mm walls.

The above to be concrete strip foundations. The size and depth of foundations shown to be determined and agreed with Building Control when subsoil bearing pressures are known.

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

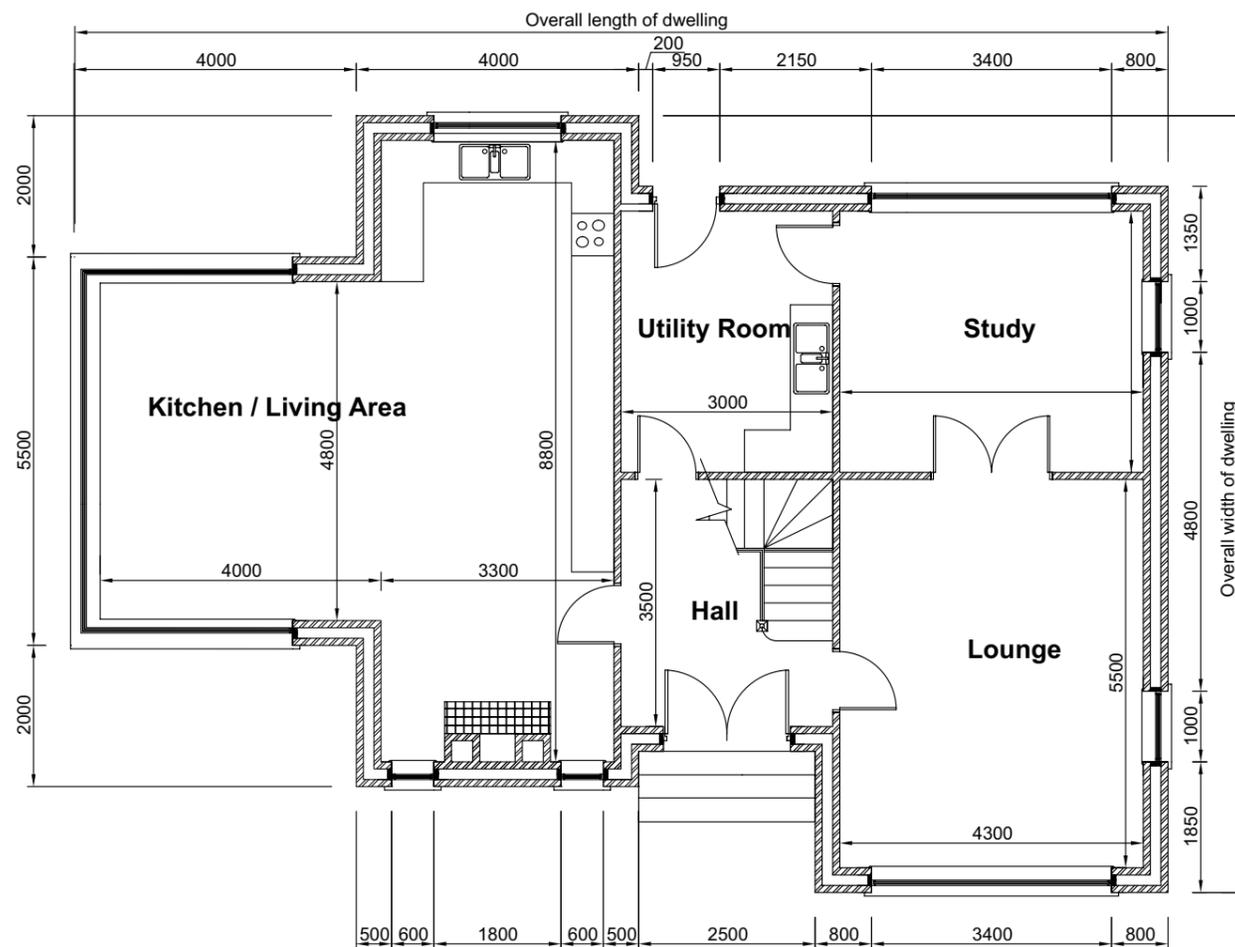
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Specification

- Concrete interlocking black roof tiles
- Concrete chimney copings
- Black uPVC fascia board
- Black powder coated aluminium gutter
- Black powder coated aluminium windows
- K Glass



GCSE Construction and the Built Environment

Working Drawing Drawing No 2

**Unit 1
Pre-release material
Summer 2018
SCALE: 1: 100**



**GCSE Construction and the
Built Environment**

Front Elevation Drawing No 3

Unit 1

Pre-release material

Summer 2018

SCALE: 1: 50

