

Surname	Centre Number	Candidate Number
First name(s)		0



GCSE

3509U10-1



THURSDAY, 12 JUNE 2025 – AFTERNOON

BUILT ENVIRONMENT

Unit 1: Introduction to the Built Environment

Paper version of on-screen assessment

1 hour 30 minutes

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	5	
2.	3	
3.	7	
4.	6	
5.	9	
6.	8	
7.	10	
8.	6	
9.	6	
10.	10	
Total	70	

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question. You are advised to divide your time accordingly.

The total number of marks available is 70.

You are reminded of the need for good English and orderly, clear presentation in your answers. The quality of your written communication, including appropriate use of punctuation and grammar, will be assessed in your answer to question 10.



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Answer **all** questions.

1. Non-residential buildings are common structures within the built environment sector.

(a) Name **two** types of non-residential building.

[2]

(i)

(ii)

(b) Name **three** electrical services that are installed in non-residential buildings.

[3]

(i)

(ii)

(iii)

2. A pre-demolition plan is required before demolition work is carried out.

State **three** important details that should be included in a pre-demolition plan.

[3]

(i)

.....

(ii)

.....

(iii)

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3. (a) (i) Give an example of an Engineered Wood product (EWP). [1]

.....

(ii) Describe **one** benefit of EWPs when compared with sawn timber. [2]

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(b) Mortar is a material used in building construction.

(i) State **two** ingredients of mortar. [2]

I.

II.

(ii) Describe the function of mortar in building construction. [2]

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4. All buildings have a substructure and a superstructure.

(a) Explain the function of a building's substructure.

[3]

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(b) Explain the function of a building's superstructure.

[3]

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5. (a) Complete the table by naming the correct type of building to match the description given (an example has been provided). [3]

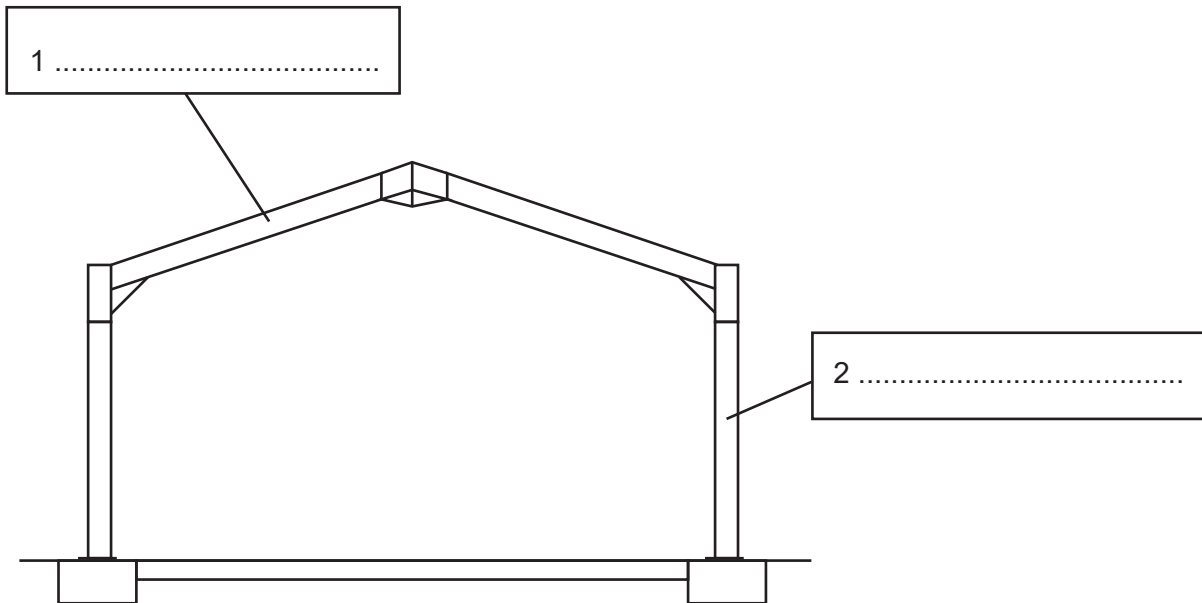
	Type of building	Description
	Religious	usually serve as places of worship.
(i)		are used to provide services or retail products to customers.
(ii)		are associated with the farming industry.
(iii)		are used for storing, processing, engineering or manufacturing.

- (b) A sports stadium is to be developed on a greenfield site near a large town. Explain the main infrastructure requirements of this project. [6]



6. A portal frame is a common building structure.

- (a) (i) Identify components 1 and 2 of the portal frame shown. [2]



- (ii) Name **two** materials suitable for use in the construction of portal frames. [2]

Material 1:

Material 2:

- (iii) A warehouse is to be constructed on an industrial estate.
State **two** benefits of portal frame construction for this project. [2]

Benefit 1:

.....

Benefit 2:

.....

- (b) Thatched roofing is a traditional construction method used in the conservation of the historic built environment.

Outline **one** other traditional construction method. [2]

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7. Heat pumps are an increasingly common method of heating buildings using energy generated from renewable sources.

(a) (i) Describe the main principles of the technology involved in heat pumps. [3]

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(ii) Describe **one** benefit and **one** limitation of heat pump technology. [4]

Benefit:

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Limitation:

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- (b) (i) Describe the use of grey water in domestic water systems.

[2]

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- (ii) State **one** benefit of using grey water.

[1]

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8. (a) Identify **two** construction activities carried out by a carpenter. [2]

(i) Activity 1

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(ii) Activity 2

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(b) Describe the responsibilities of the following professional roles.

(i) Architect [2]

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(ii) Civil and Structural Engineer [2]

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9. A hazardous wood preservative is to be used as part of a renovation project.

- (a) Explain **two** measures that are required to prevent injury and illness when working with hazardous substances. [4]

(i)

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.....

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(ii)

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.....

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- (b) State **two** safety procedures to be followed when working with electricity. [2]

(i)

.....

(ii)

.....



- Recommend measures that can be taken to reduce the environmental impact during the construction phase of the development.

[10]

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only

