

Surname	Centre Number	Candidate Number
First name(s)		0



GCSE – NEW

3509U10-1



TUESDAY, 20 JUNE 2023 – 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.	6	
2.	9	
3.	4	
4.	4	
5.	4	
6.	6	
7.	11	
8.	7	
9.	9	
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. Our homes, places of work and transport infrastructure all form part of the built environment.

(a) State **two** load bearing elements within a house. [2]

(i)

(ii)

(b) Name **two** mechanical services used in public buildings. [2]

(i)

(ii)

(c) State **two** civil engineering products that could be part of a railway network. [2]

(i)

(ii)



2. The UK construction industry uses products manufactured from extracted raw materials.

(a) State **three** examples of engineered wood products. [3]

(i)

(ii)

(iii)

(b) Name **three** materials required to make concrete. [3]

(i)

(ii)

(iii)

(c) (i) Identify **one** material that can be combined with concrete to create 'Reinforced Concrete'. [1]

.....

(ii) Identify **two** building products that are made using reinforced concrete. [2]

I.

II.

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3. The built environment includes many different types of building.

Complete the table with an example of a building for each function.
The first row has been completed for you.

[4]

Function	Example of building
Industrial	Factory
Agricultural
Residential
Religious
Commercial

4. Renewable technologies are now used in many buildings.

(a) Identify **two** types of solar energy technology.

[2]

(i)

(ii)

(b) Using solar energy technology should reduce running costs. State **one other** benefit and **one** limitation of using solar energy technology.

[2]

(i) Benefit:

.....

.....

(ii) Limitation:

.....

.....



5. Different types of buildings are often constructed using different types of structure.

(a) Identify **one** type of building commonly constructed using a timber frame and give **one** reason why this type of structure is appropriate. [2]

.....

.....

.....

(b) Identify **one** type of building commonly constructed using a rectangular frame made of steel and give **one** reason why this type of structure is appropriate. [2]

.....

.....

.....

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6. Many different people work on a construction site.

(a) Describe the role of a **site manager**.

[3]

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.....

.....

(b) Describe the role of a **bricklayer**.

[3]

.....

.....

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.....

.....



7. Working at height is dangerous.

(a) Name **two** hazards when working at height. [2]

Hazard (i)

.....

Hazard (ii)

.....

(b) State **two** examples of people who may be put at risk from work taking place at height. [2]

Example (i)

.....

Example (ii)

.....

(c) Identify **four** measures (other than Personal Protective Equipment) that could be taken to help ensure the safety of workers working at height. [4]

(i)

(ii)

(iii)

(iv)

(d) State **three** items of Personal Protective Equipment (PPE) that should be used when working on a site. [3]

PPE1:

PPE2:

PPE3:



8. A property developer is considering the purchase of a brownfield site. Several old slate-roofed and red-brick buildings are located on the site.

(a) State **two** advantages and **one** disadvantage of using brownfield sites for development. [3]

(i) Advantages:

I.
.....

II.
.....

(ii) Disadvantage:

.....
.....

(b) Explain how the materials from the existing buildings could be reused or recycled. [4]

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9. A housing developer is refurbishing a street of houses dating from the 1960s. The project brief is to improve the sustainability of the properties and make the exteriors look more modern.

(a) Name **three** insulation materials suitable for use in the external walls. [3]

- 1.
- 2.
- 3.

(b) Suggest **three** types of external cladding, describing how each meets the requirements of the project brief. [6]

- 1.
.....
- 2.
.....
- 3.
.....



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