

External Assessment 2023

# HOUSING AND DESIGN

HDS315118

Pages: 12

Questions: 4

Answer Sheets: 2

Information Sheet: 1

**Preparation time for this exam:** 15 minutes

**Suggested working time:** 2 hours

## Instructions:

- There are **two (2) sections** to this exam paper.
- You must answer **one (1) question** from each section:
  - **Section A** – answer **one (1) question** on the supplied **Section A Answer Sheet**
  - **Section B** – answer **one (1) question** on the supplied **Section B Answer Sheet**.
- The exam is **two (2) hours** in length. The suggested working time for each section is approximately **60 minutes**.
- All answers must be written in **English**.
- You **must** make sure your answers address the listed criteria.

Marker use	
C3	/ Alpha
C4	/ Alpha

# Guide to Exam Structure

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		Questions available	Questions to answer	Suggested working time	Marks available
Section	<b>A</b>	2	1	60 minutes	Assessed using extended ratings of A+ to z
Section	<b>B</b>	2	1	60 minutes	
<b>Totals</b>		<b>4</b>	<b>2</b>	<b>120 minutes (2 hours)</b>	

## Criteria

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You **must** make sure your answers address:

- Criterion 3 analyse and apply features and principles which contribute to environmental sustainability within design decisions
- Criterion 4 apply architectural design principles relating to functional use of space.

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# Section A

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- Answer **one (1)** question in this section.
  - Answer on the A3 answer sheet labelled **Section A** and tick the question number you are answering.
  - It is suggested that you spend **approximately 60 minutes** on this section.
  - This section assesses **Criterion 3**.
- 

## Question 1

Chloe is a mother with three (3) children, aged three, five, and eight years old. She has decided to build a house that accommodates her family. They live in Townsville and have purchased a 700 square metre block. Chloe's goal is to design a house that provides the children with separate rooms and access to a leafy garden. To reduce costs, Chloe wants to design with thermal comfort in mind, minimising the use of energy for cooling, and minimising heat gain by capitalising on the cooling breezes.

Their house requires the following:

- a separate bedroom to fit a Queen-sized bed
- three (3) separate bedrooms for the children
- wet area for a toilet, shower and laundry
- a space for preparing and storing food
- a lounge / entertainment and play area that opens up to an external deck.

Chloe would like to keep the overall floor area to a maximum of 140 square metres within the potential build area. She would also like the ability to collect rainwater and harness solar energy.

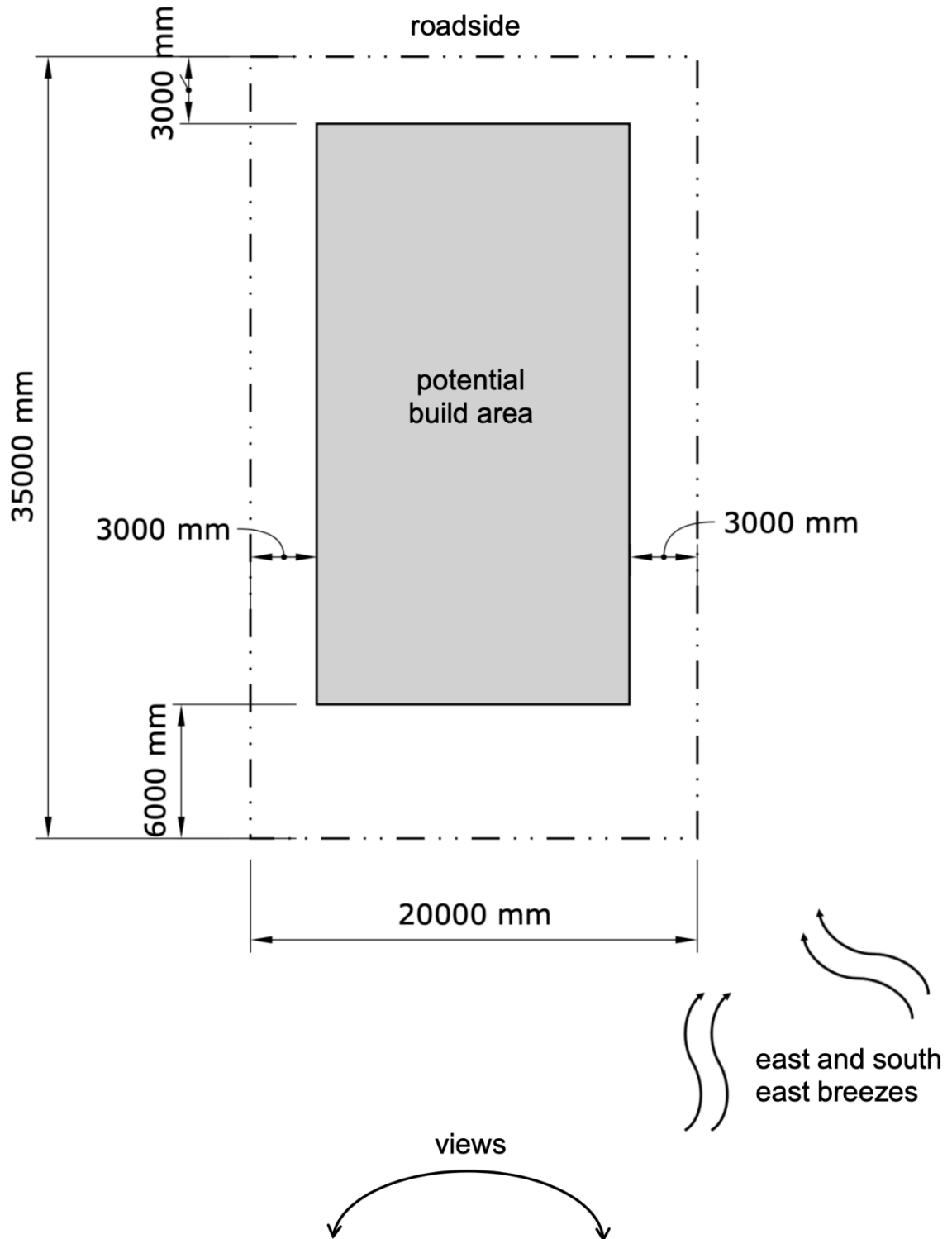
## Response

Use the **A3 Answer Sheet – Section A** provided to answer this question. You may use both sides of the answer sheet.

- At the scale of 1:100, draw a floor plan on the site.
- Divide the floor plan into different rooms or spaces with thin lines. With dotted lines, indicate the position of solar panels and a water tank.
- Annotate drawings to support design decisions.
- Provide extra detail showing how the house uses passive design in relation to: planning the layout of spaces, materials, and openings through additional small diagrams off the plan.

**Question 1 continues**

Question 1 – Site Plan  
(Not to scale)



## Section A continued

### Question 2

Leslie has been planning to build a house on a 700 square metre block in a suburb outside Hobart. The site is flat, and has unobstructed seaside views from which breezes flow.

Leslie's goal is to design a house to fit his needs to work from home. He is motivated to design with thermal comfort in mind, minimising the use of energy for heating, and consideration of passive design principles.

The dwelling requires the following:

- a room for working from home
- a separate bedroom to fit a Queen-sized bed
- wet area for a toilet, shower and laundry
- a space for preparing and storing food
- a lounge / entertainment area that opens to an external deck.

Leslie would like to keep the overall floor area to a maximum of 80 square metres within the potential build area. He would also like the ability to collect rainwater and harness solar energy.

### Response

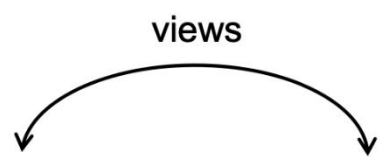
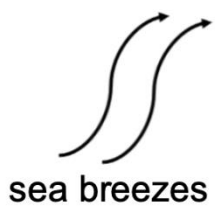
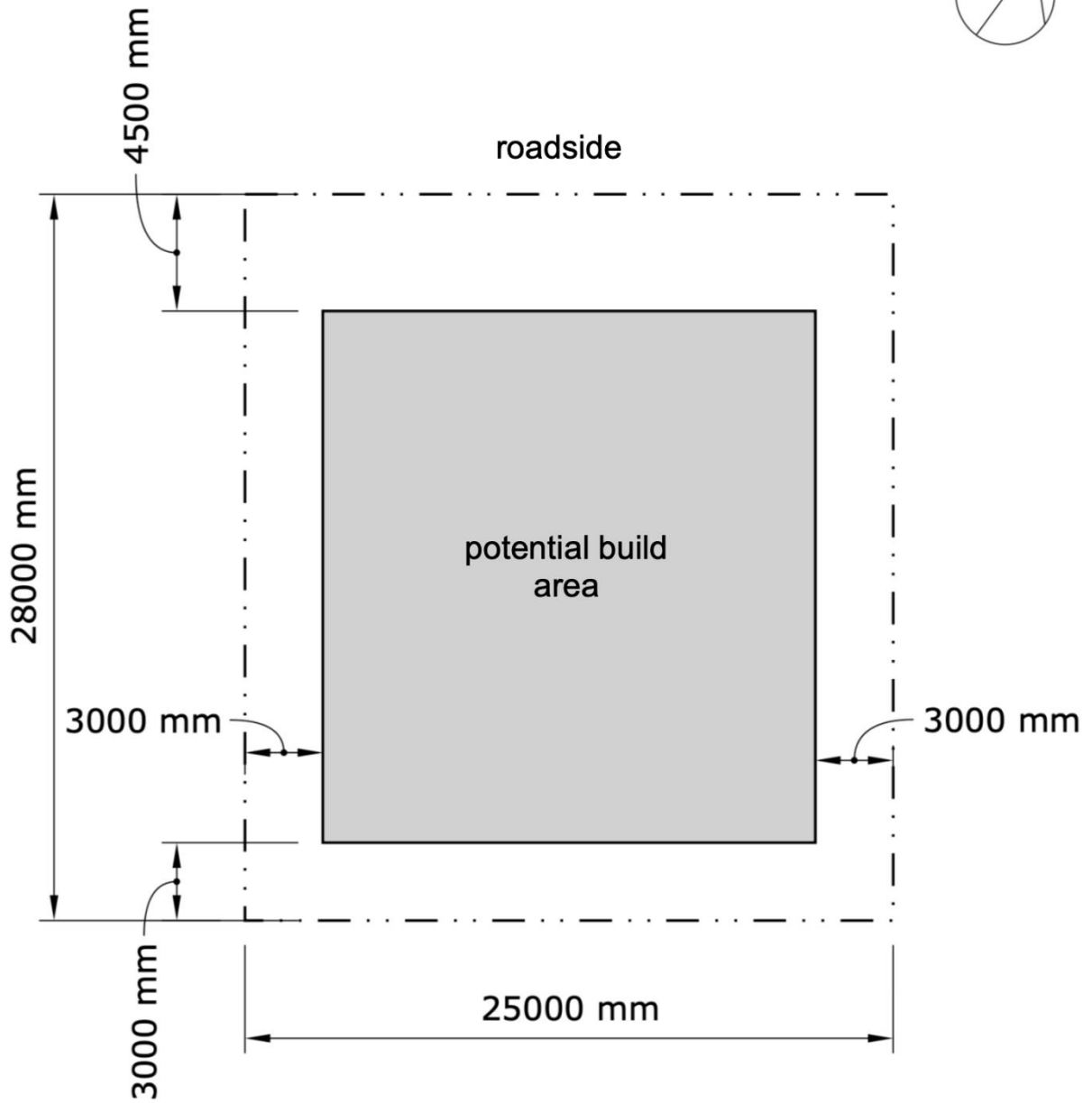
Use the **A3 Answer Sheet – Section A** provided to answer this question. You may use both sides of the answer sheet.

- At the scale of 1:100, draw a floor plan on the site.
- Divide the floor plan into different rooms with thin lines. With dotted lines, indicate the position of solar panels and a water tank.
- Annotate drawings to support design decisions.
- Provide extra detail showing how the house uses passive design in relation to: planning the layout of spaces, materials, and openings through additional small diagrams off the plan.

**Question 2 continues**

Question 2 – Site Plan

(Not to scale)



# Section B

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- Answer **one (1)** question in this section.
  - Answer on the A3 answer sheet labelled **Section B** and tick the question number you are answering.
  - It is suggested that you spend **approximately 60 minutes** on this section.
  - This section assesses **Criterion 4**.
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## Question 3

Paul and Jian live at home with their 20-year-old son, August. August cannot afford to move out of home while studying. Paul and Jian are considering creating an addition to their house. Jian's elderly mother would like to move in with them within the next few years when August is ready to move out. Paul and Jian imagine requiring a space where August can have independence and privacy from the rest of the house. They also imagine a space where Jian's elderly mother may move about with her walking aids or wheelchair.

Paul and Jian have a site in the backyard suitable for an addition connecting to the rear of the house. The addition for the house would require the following:

- a separate bedroom to fit a Queen-sized bed
- a space for preparing and storing food
- wet area for a toilet, shower and laundry
- a lounge / entertainment area.

## Response

Use the **A3 Answer Sheet – Section B** provided to answer this question. You may use both sides of the answer sheet.

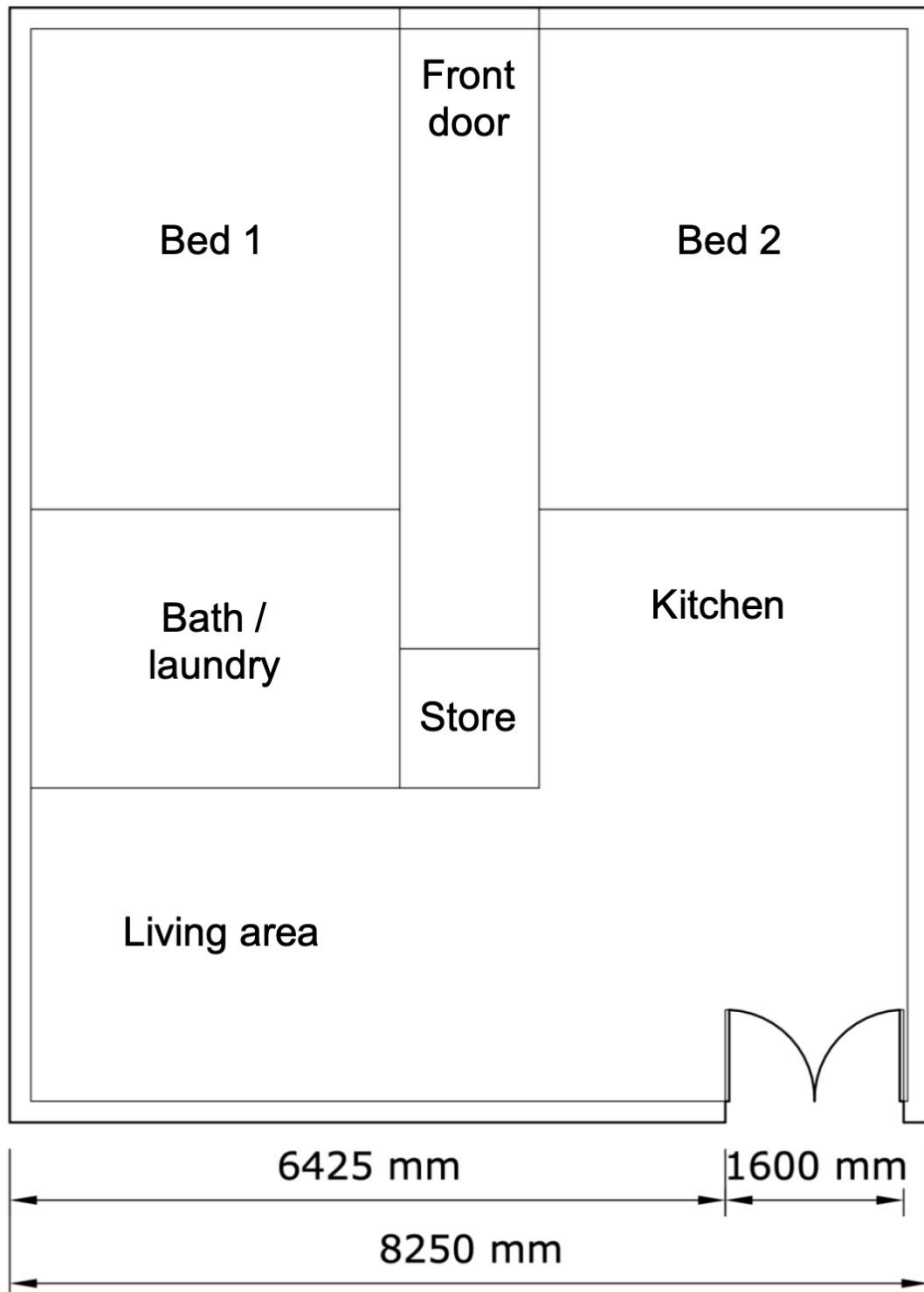
- At the scale of 1:50, draw a floor plan for the addition in relation to the existing house.
- Draw the new areas to accommodate the clients' needs.
- Annotate drawings to support design decisions.
- Provide extra detail by drawing small diagrams off the plan explaining how the addition supports functional design.

**Question 3 continues**

Question 3 – Site Plan

(Not to scale)

Existing house



Large garden with level access (rear)

## Section B continued

### Question 4

Ravi has purchased an old Tasmanian Hydro-Electric Commission substation and has plans to transform it into a tiny house. The exterior envelope of brick is still intact; however the roof has fallen in. The internal areas are currently exposed to the sky. Openings in the brick envelope include a large roller door, and high glazed windows on both sides of the building. The interior is currently empty.

Ravi is considering a design with different levels to take advantage of the full space because the walls are high.

The design would have to contain the following amenities:

- a separate bedroom to fit a Queen-sized bed
- a space for preparing and storing food
- wet area for a toilet, shower and laundry
- a lounge / entertainment area.

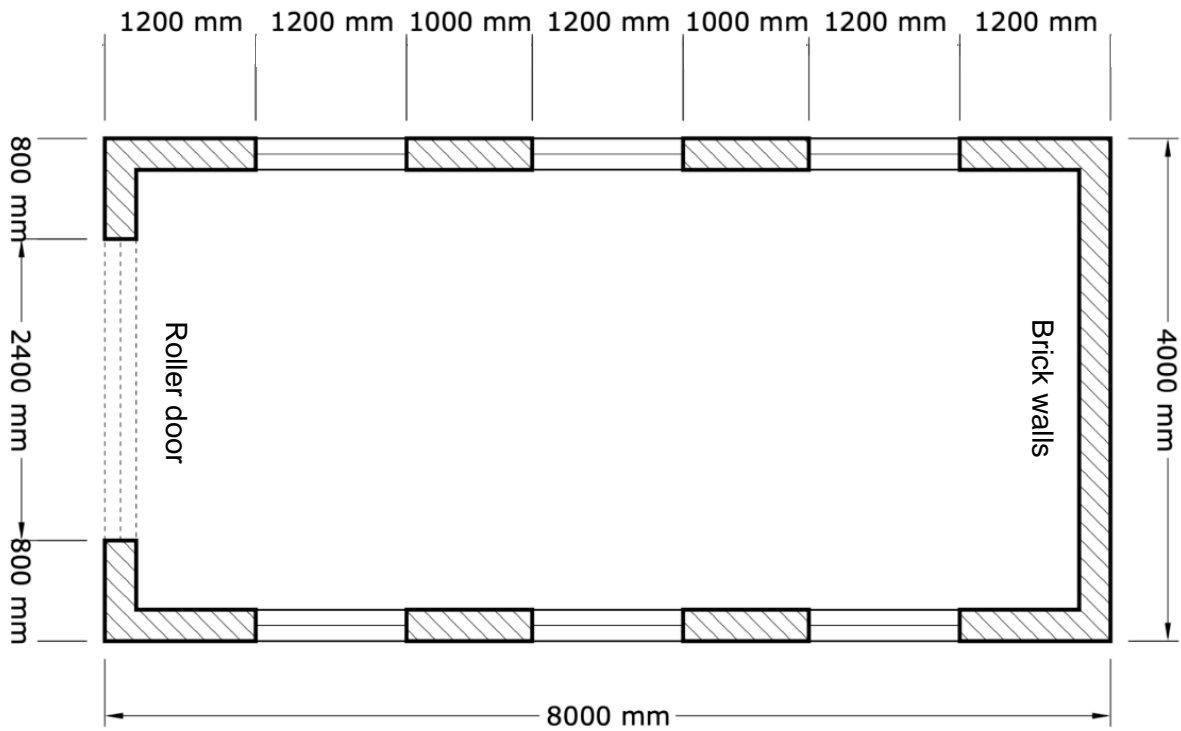
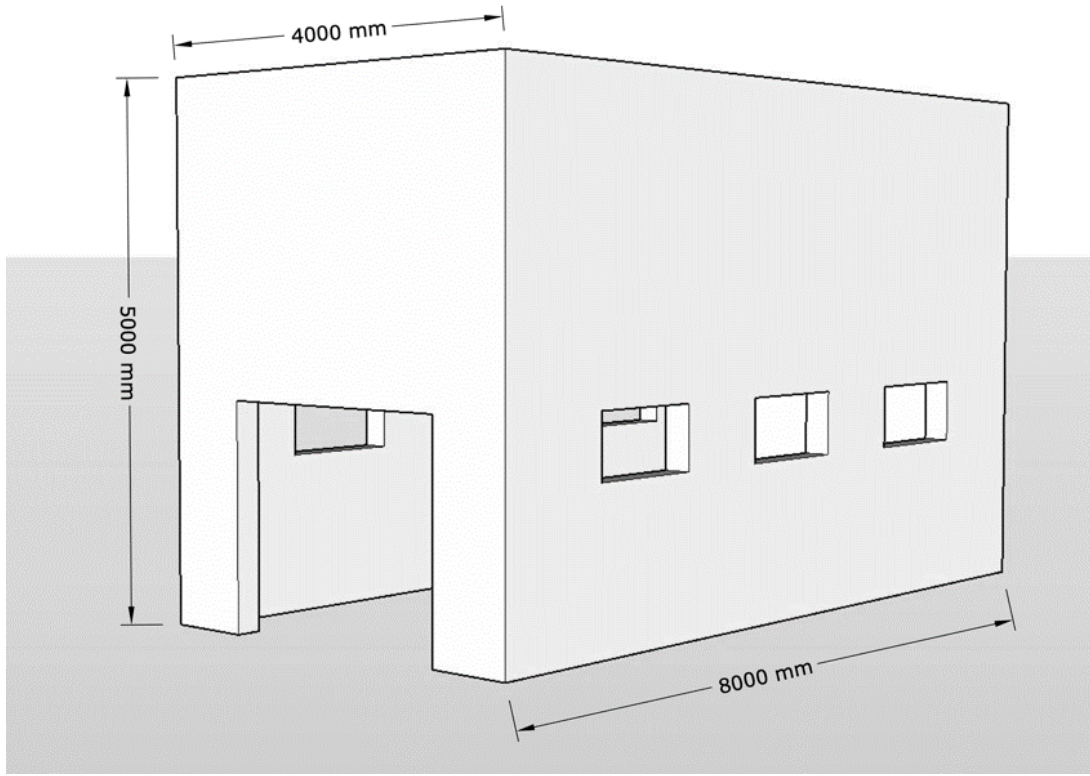
### Response

Use the **A3 Answer Sheet – Section B** provided to answer this question. You may use both sides of the answer sheet.

- At the scale of 1:50, draw a floor plan for the new interior layout in relation to the existing substation.
- Draw the new areas to accommodate the clients' needs.
- Annotate drawings to support design decisions.
- Provide extra detail by drawing small diagrams off the plan explaining how the layout supports functional design.

Question 4 – Site Plan

(Not to scale)



End of exam



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Section **A** Answer Sheet

Tick the appropriate box for the question you have chosen to answer:

**Question 1**

**OR**

**Question 2**



Attach your candidate label here

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Section **B** Answer Sheet

Tick the appropriate box for the question you have chosen to answer:

**Question 3**

**OR**

**Question 4**

