

External Assessment 2024

# HOUSING AND DESIGN

HDS315118

Pages: 16

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.

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C3	/ Alpha
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# 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	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.

# Section A

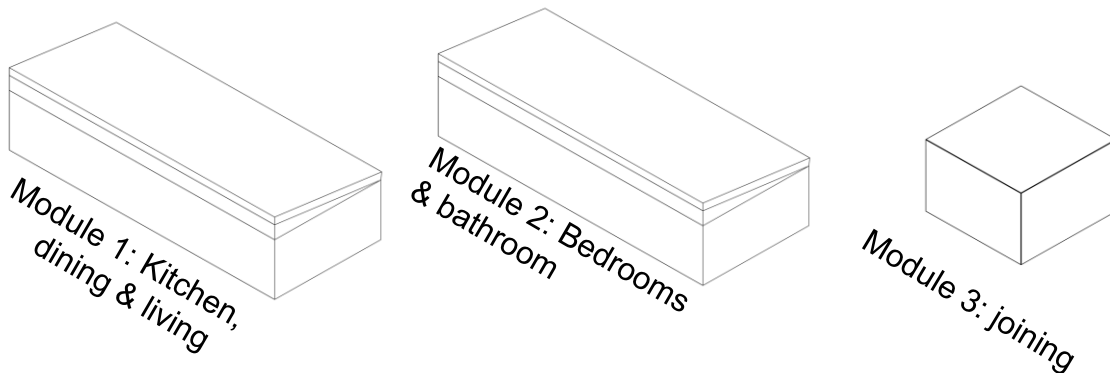
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- Answer **one (1)** question in this section.
  - Answer on the A3 answer sheet labelled **Section A** and tick the question number you are answering.
  - The suggested working time for this section is **approximately 60 minutes**.
  - This section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

## Question 1

Blake and Denise have just purchased a narrow block of land near Hobart with magnificent views. To keep building costs down, Blake and Denise are planning to construct their home using three transportable building modules that will be placed on the block by a crane. The transportable buildings are lightweight and well insulated with vertical timber boards on the outside and plywood lining on the interior. The windows and doors can be customised and placed where appropriate.

- Module 1 contains a kitchen, dining and living spaces
- Module 2 contains two bedrooms and a bathroom
- Module 3 is a joining module that can be used to connect Modules 1 and 2 together and can be any height up to 6 meters.



Blake and Denise have asked for your advice on the design and layout of the three modules on site. They would like the design to allow at least one bedroom and living space to be thermally comfortable and to include an external deck area of 16m<sup>2</sup>.

**Question 1 continues**

## Question 1 continued

### Response

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

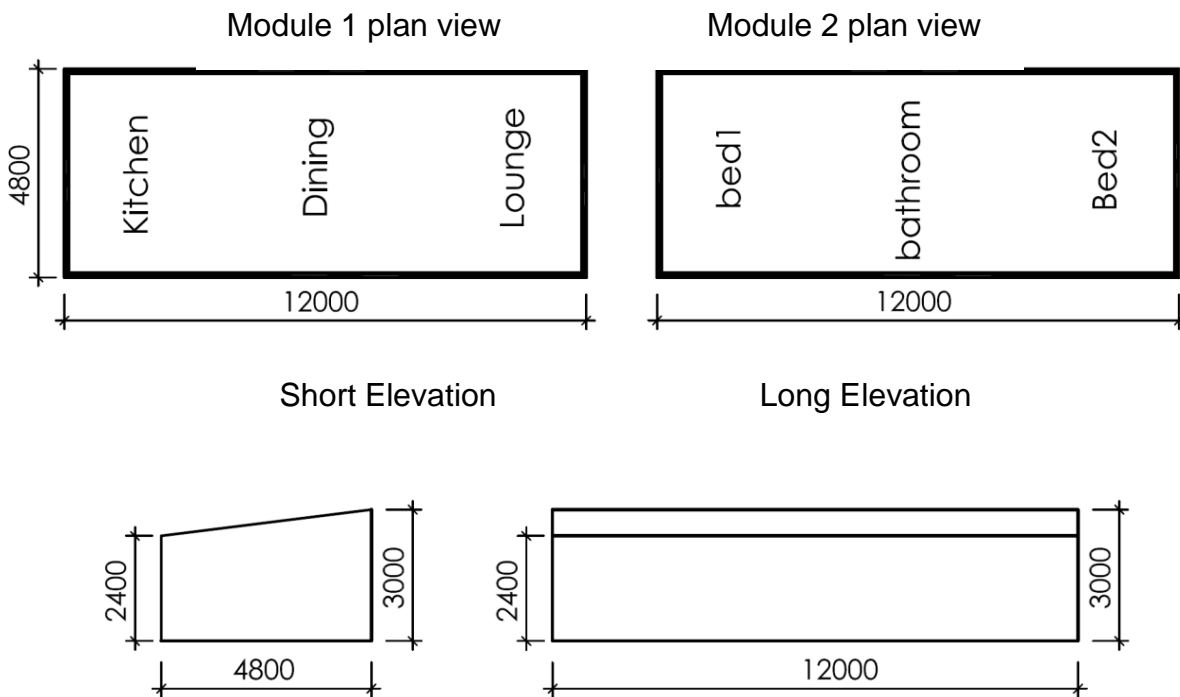
Draw your solutions and justify all key design decisions by annotating your drawings.

In plan view, draw the following at a scale of 1:100:

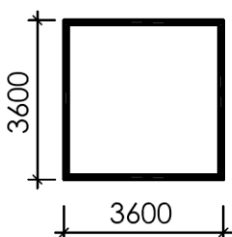
- The design layout of the three modules.
- The location and size of doors and windows.
- The location and size of eaves/roof shown with a dotted line.
- The location and size of deck areas.

Draw an elevation that will show all modules and demonstrate the solar gain and shading at a scale of 1:100.

Include both of the modules shown below:



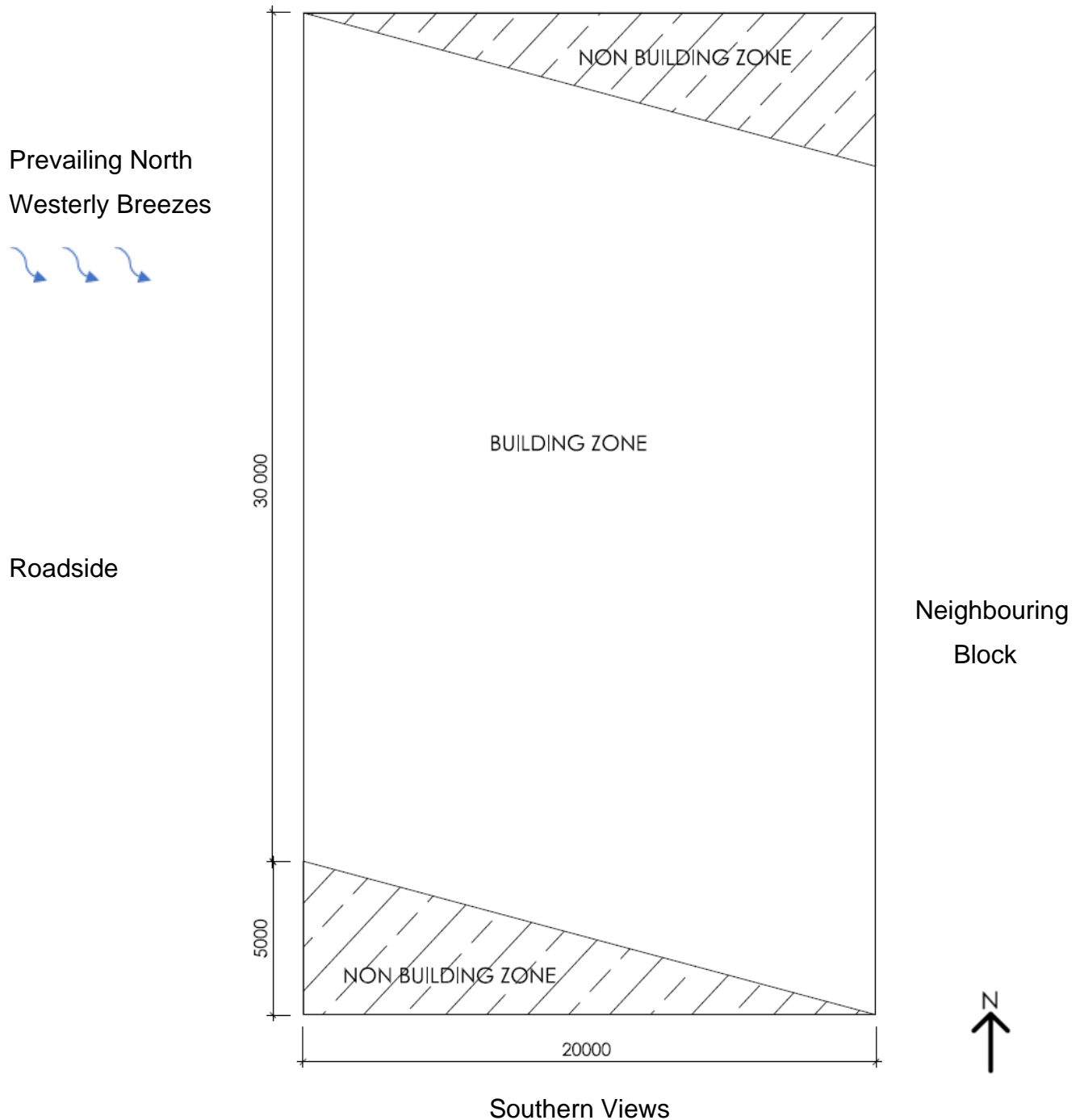
Joining module in plan view



**Question 1 continues**

Question 1 continued

The block of land near Hobart showing the area available for construction.



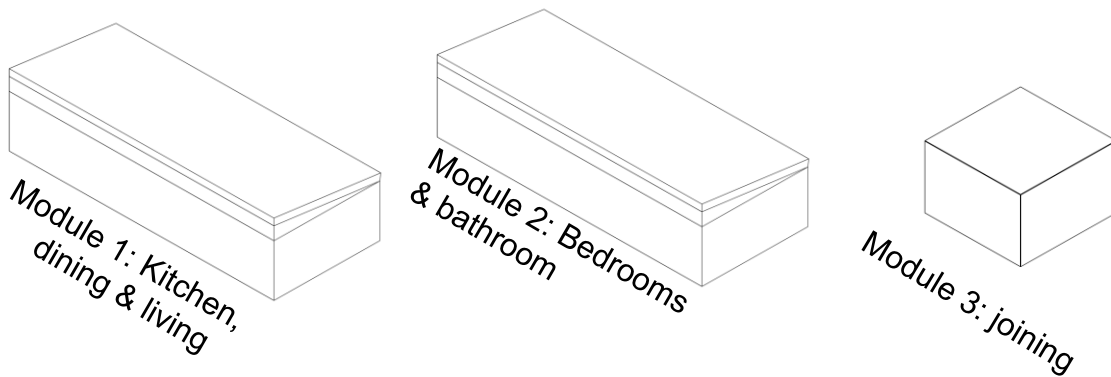
Site diagram is not to scale.

All dimensions in millimetres.

## Question 2

Alby and Judy have just purchased a block of land in Darwin on which to retire. To keep building costs down, Alby and Judy are planning to construct their home using three transportable building modules that will be placed on the block by a crane. The transportable buildings are lightweight and well insulated with vertical timber boards on the outside and plywood lining on the interior. The windows and doors can be customised and placed where appropriate.

- Module 1 contains a kitchen, dining and living spaces
- Module 2 contains two bedrooms and a bathroom
- Module 3 is a joining module that can be used to connect Modules 1 and 2 together and can be any height up to 6 meters. Alby and Judy can choose one joining module from the four available options (see plans over page).



Alby and Judy have asked for your advice on the design and layout of the three modules on site. They would like the design to allow at least one bedroom and living space to be passively cooled, as well as external deck areas.

You must leave the module room layout the same – you can flip or mirror the buildings in any direction to suit the design aims.

### Response

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

Draw your solutions and justify all key design decisions by annotating your drawings.

In plan view, draw the following at a scale of 1:100:

- The design layout of the three modules.
- The location and size of doors and windows.
- The location and size of eaves/roof shown with a dotted line.
- The location and size of deck areas.

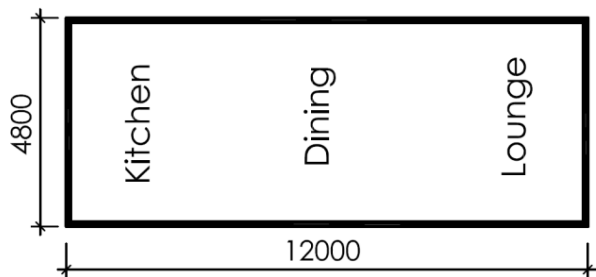
Draw an elevation that will show all modules and demonstrate the solar gain and shading at a scale of 1:100.

**Question 2 continues**

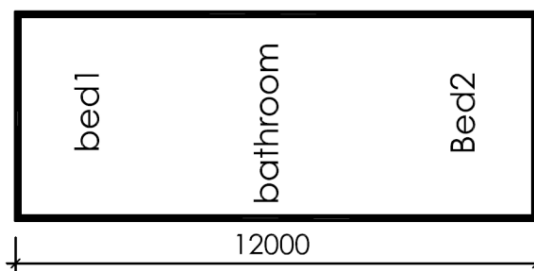
## Question 2 continued

Include both of the modules shown below:

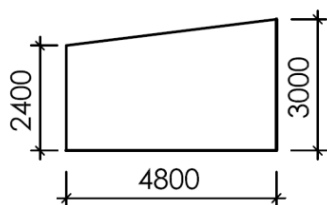
Module 1 plan view



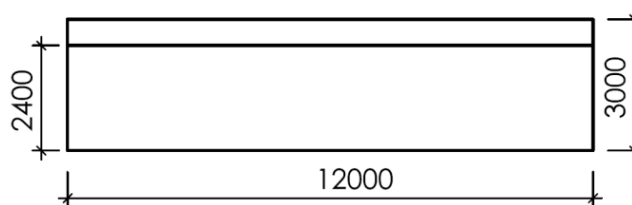
Module 2 plan view



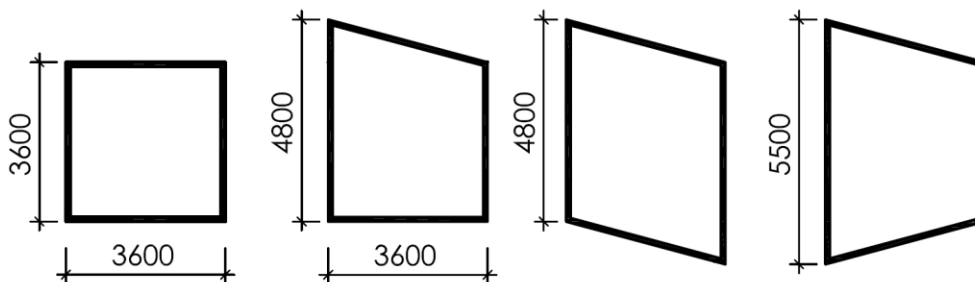
Short Elevation



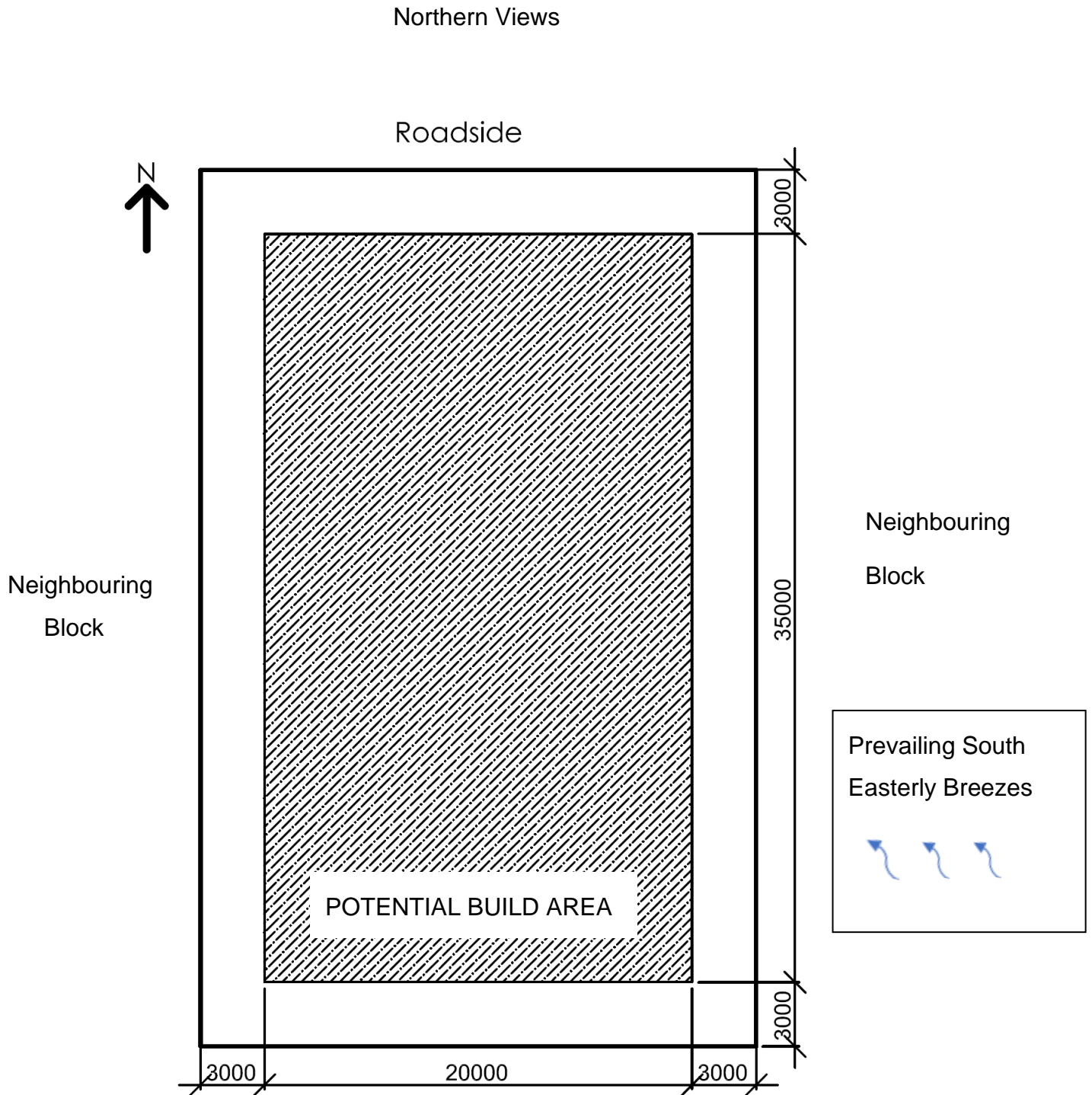
Long Elevation



Joining module options in plan view. Choose **one (1)** of these four joining modules. They are all 3600 mm wide.



Question 2 continued



Site diagram is not to scale.

All dimensions in millimetres.

Exam continues over the page

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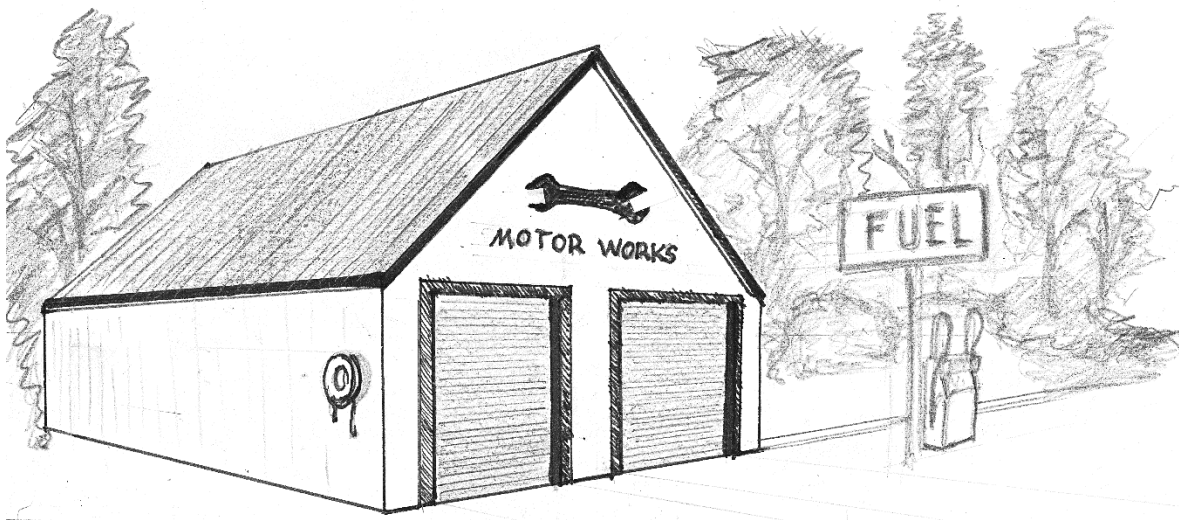
# Section B

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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.
  - The suggested working time for this section is **approximately 60 minutes**.
  - This section assesses **Criterion 4**.
- 

## Question 3

Joni and Stefan own a successful sports physiotherapy business, located in a Tasmanian town popular with mountain bikers. They have an opportunity to buy a workshop and plan to convert it into a new home and physiotherapy business. It is an empty space with three-metre-high roller door openings and a raked ceiling to five metres. Joni and Stefan are seeking your design advice to convert the workshop.



## Aims

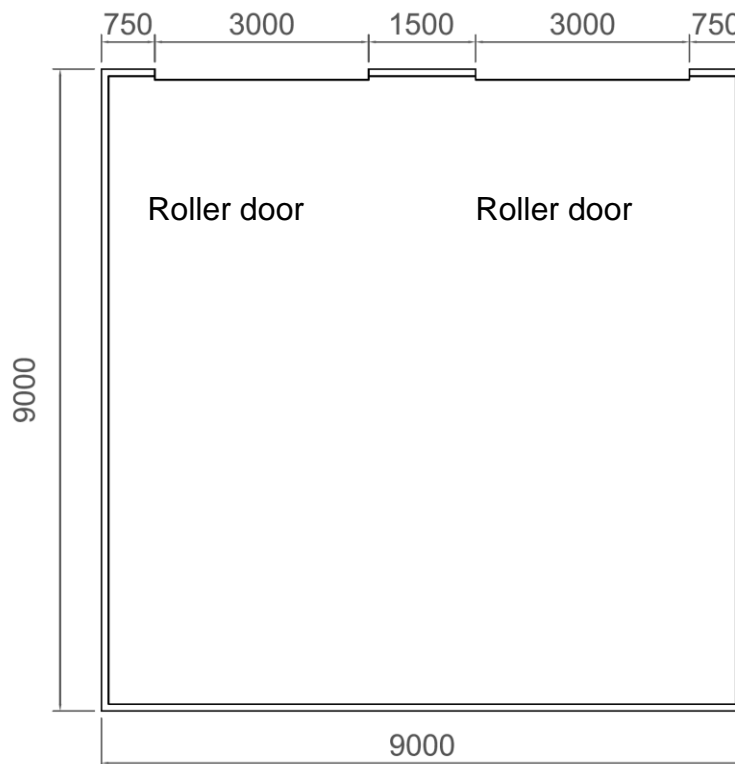
Requirements for their design:

- A reception area where they can work at a desktop computer and use a laser printer.
- A space for two clients to wait near reception.
- A physiotherapy consultation room – 9 m<sup>2</sup>.

**Question 3 continues**

### Question 3 continued

- A space for sleeping and storing personal belongings.
- A space to prepare food (only draw the location of kitchen benches – no further detail required).
- A space that four people can use to relax.
- A space where four people can be seated around a table.
- A bathroom area for a shower, toilet and laundry.
- Alternative joinery to replace the old roller doors including doors and/or windows.
- Up to four awning windows with dimensions of 800 x 800 mm.



Drawing is not to scale.

All dimensions in millimetres.

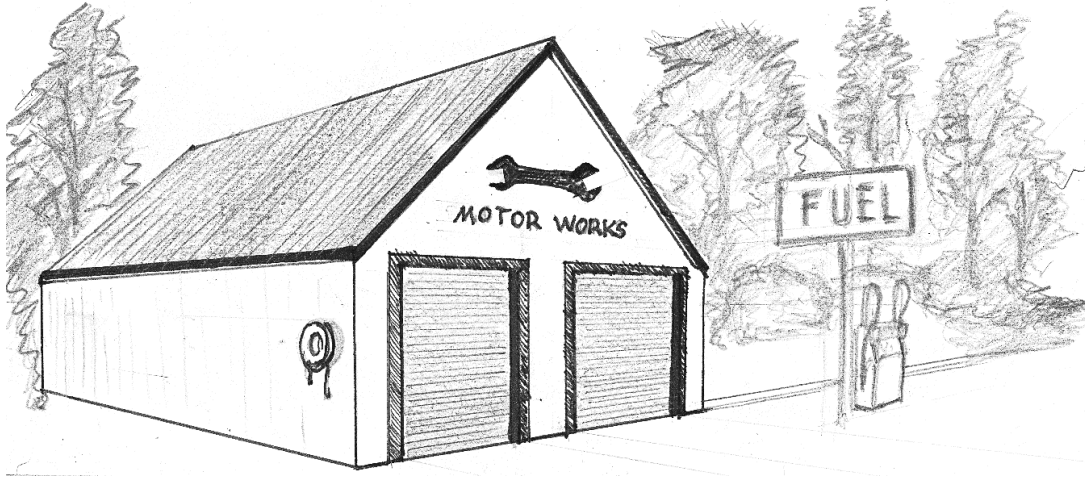
### Response

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

- Draw your solutions – floorplan at 1:50 and any other drawings/diagrams.
- Justify your design decisions with key annotations.

## Question 4

Kurt is a paraplegic who lives an active lifestyle. He has just purchased a workshop and thinks it would be an ideal space to restore his 1979 Chevrolet Van. He would like to convert part of the workshop into a wheelchair-accessible home. It is an empty space with three-metre-high roller door openings and a raked ceiling to five metres. Kurt is seeking your design advice to convert the workshop.



### Aims

Requirements for the design:

- To keep one part of the building as a workshop space.
- To design a simple open plan, industrial style home in the other part of the building.
- Large internal windows so he can gaze upon the van he is restoring from inside his home.
- Wheelchair accessible spaces.
- Alternative joinery to replace the roller doors.
- Additional doors and windows as required.

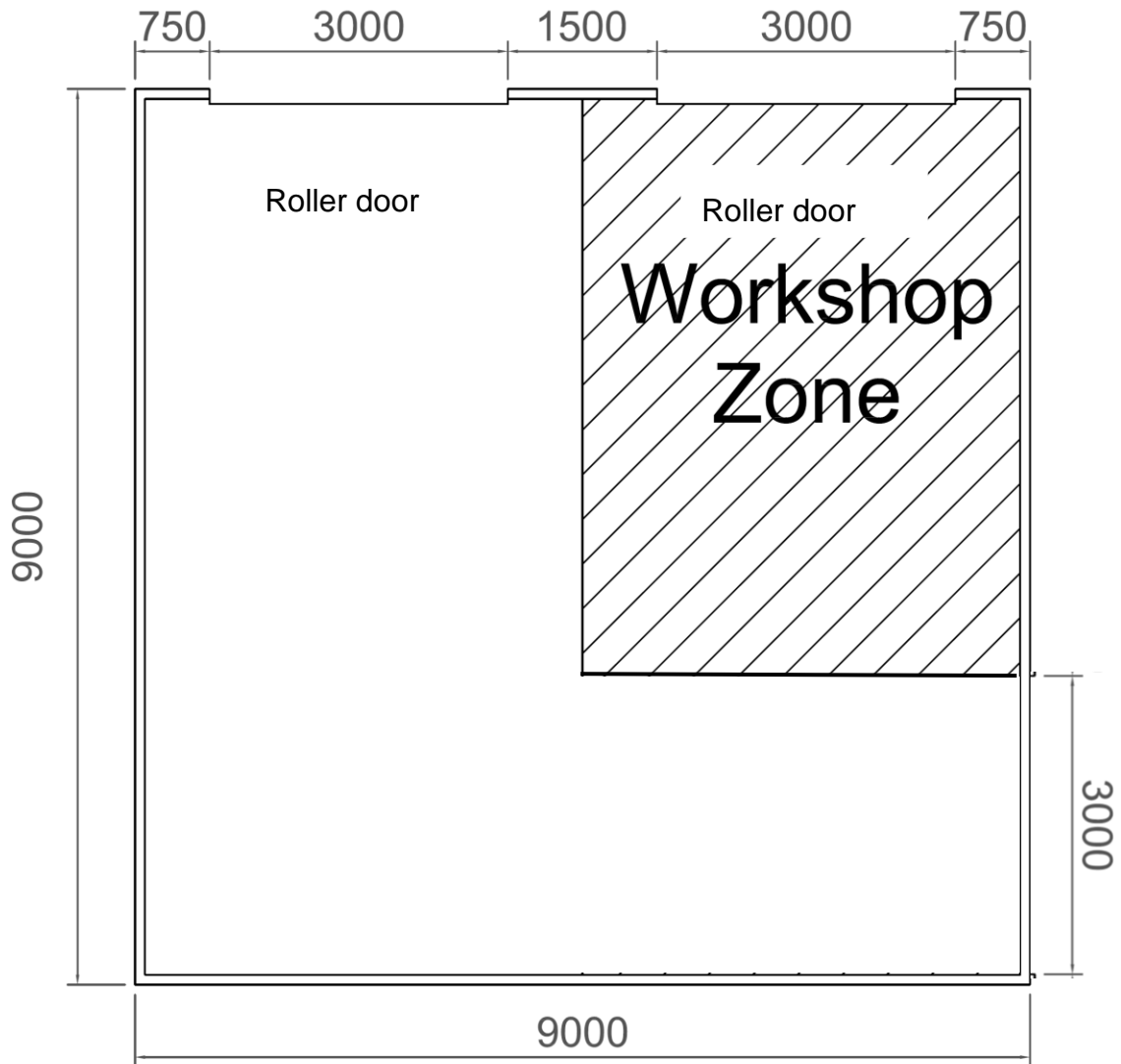
### Response

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

- Draw the floorplan at a scale of 1:50.
- Draw at least **one (1)** section of the accessible kitchen **or** bathroom.
- Justify all design decisions with key annotations on your drawings.

**Question 4 continues**

Question 4 continued



Drawing is not to scale.

All dimensions in millimetres.

End of Exam

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