



## HUBS. Hobart Urban Bus Shelters

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15.6.21

WOW + Core Collective

You asked for:

**A modular system that was easy to maintain and upgrade, made of sustainable, durable materials that could be locally produced.**

**An all-weather shelter that was child and disability accessible with smart lighting that respected the Dark Sky initiative and could be run off-grid.**

**A competitive solution which was both tech forward and unique in its offering.**

**We designed:**

HUBS are a modular system of infrastructure that respond to and support the unique social, environmental and urban conditions of each locality.

These all-weather shelters offer multiple seating options, equitable access, live-information on transportation and local events, as well as micro-business opportunities that extend amenity for public transport users and the wider community.

Constructed of locally manufactured, renewable and recycled materials with integrated solar power, green roofs and habitat, HUBS offer environmentally sustainable design solutions.

Each HUB responds to the particularities of place - through design for climate, framing views, commissioned artwork and capitalising on existing urban assets, from street trees to pocket parks.

HUBS are more than a bus shelter. They are a vital part of the social infrastructure of the city.

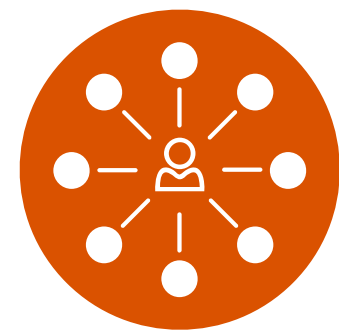


Features and program of HUBS aim to support three distinct audiences.



**Public Transit Commuters**

- Transit information and updates, community notice boards
- All weather shelters and seating options
- Additional amenities: charging docks, water fountains, storage lockers
- Micro-businesses categories: F&B, Repair, Education, Entertainment



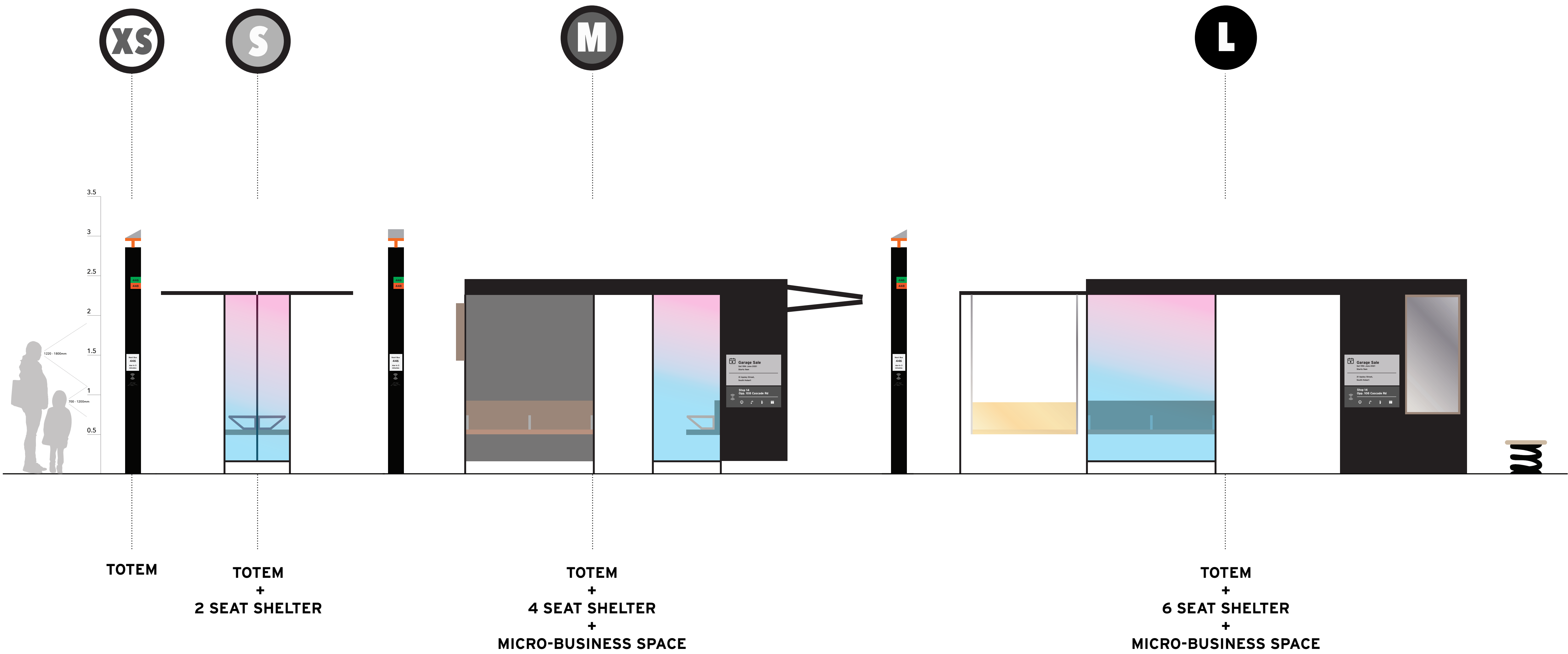
**Local community who are not public transport users**

- Way finding for walkers & cyclists, community notice boards
- Water fountains, bike tools, storage lockers, recycling, public seating, local curated and commissioned art
- Micro-business categories: F&B, Retail, Repair, Education, Entertainment, Pop-ups
- 'More than human' community - dogs, native birds, insects and flora



**Tourists**

- Way-finding + local information
- Water-fountains, charging docks, luggage lockers, public seating, art
- Micro-business categories: F&B, Retail, Education, Entertainment, Pop-ups



HUBS Modular system. Elevations

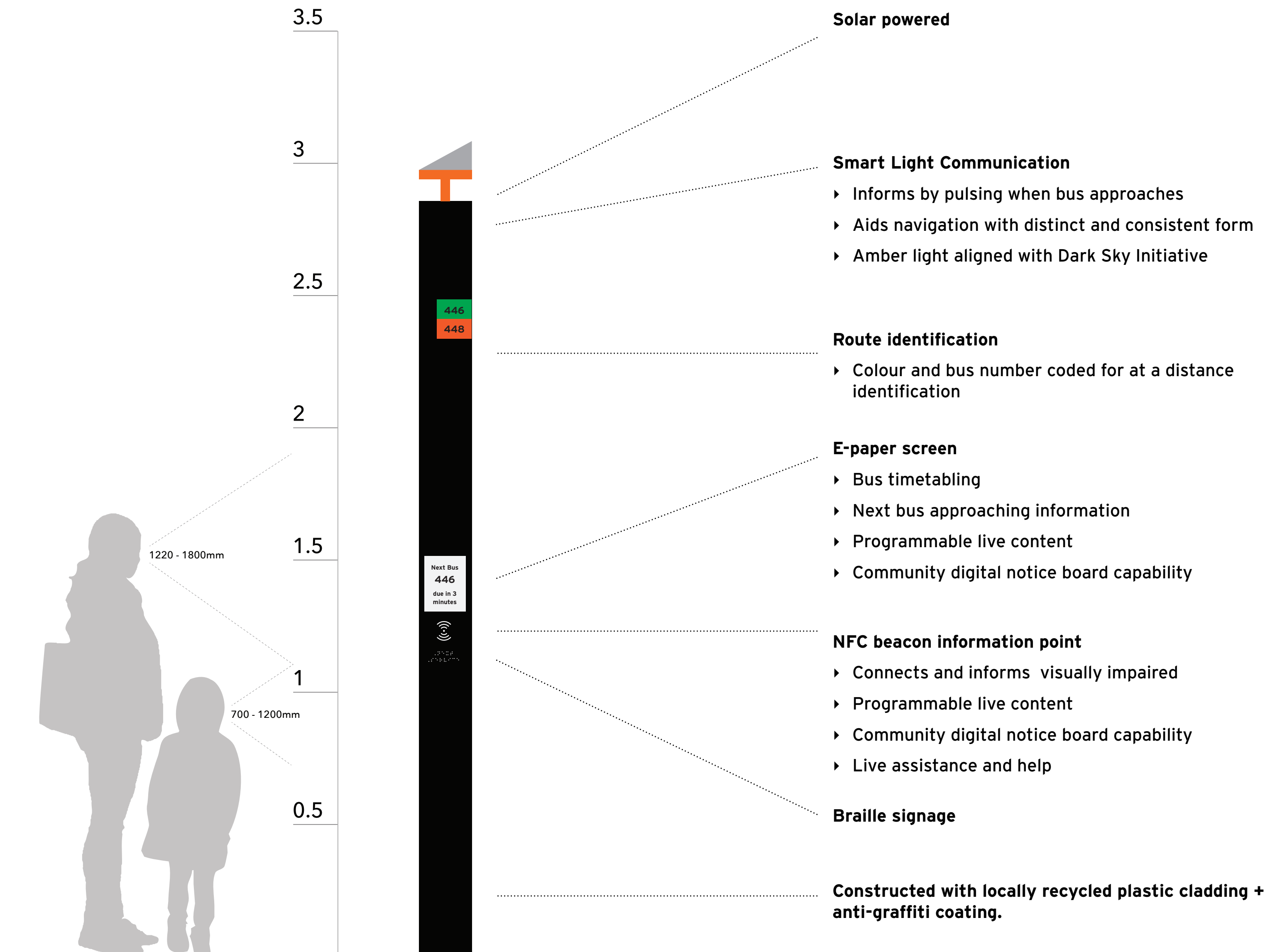




## TOTEM

Designed to replace the galvanised steel bus pole, this solar powered 200x200mm footprint unit, assists and informs through both static and digital communication.

Every bus stop has a totem as a minimum requirement.

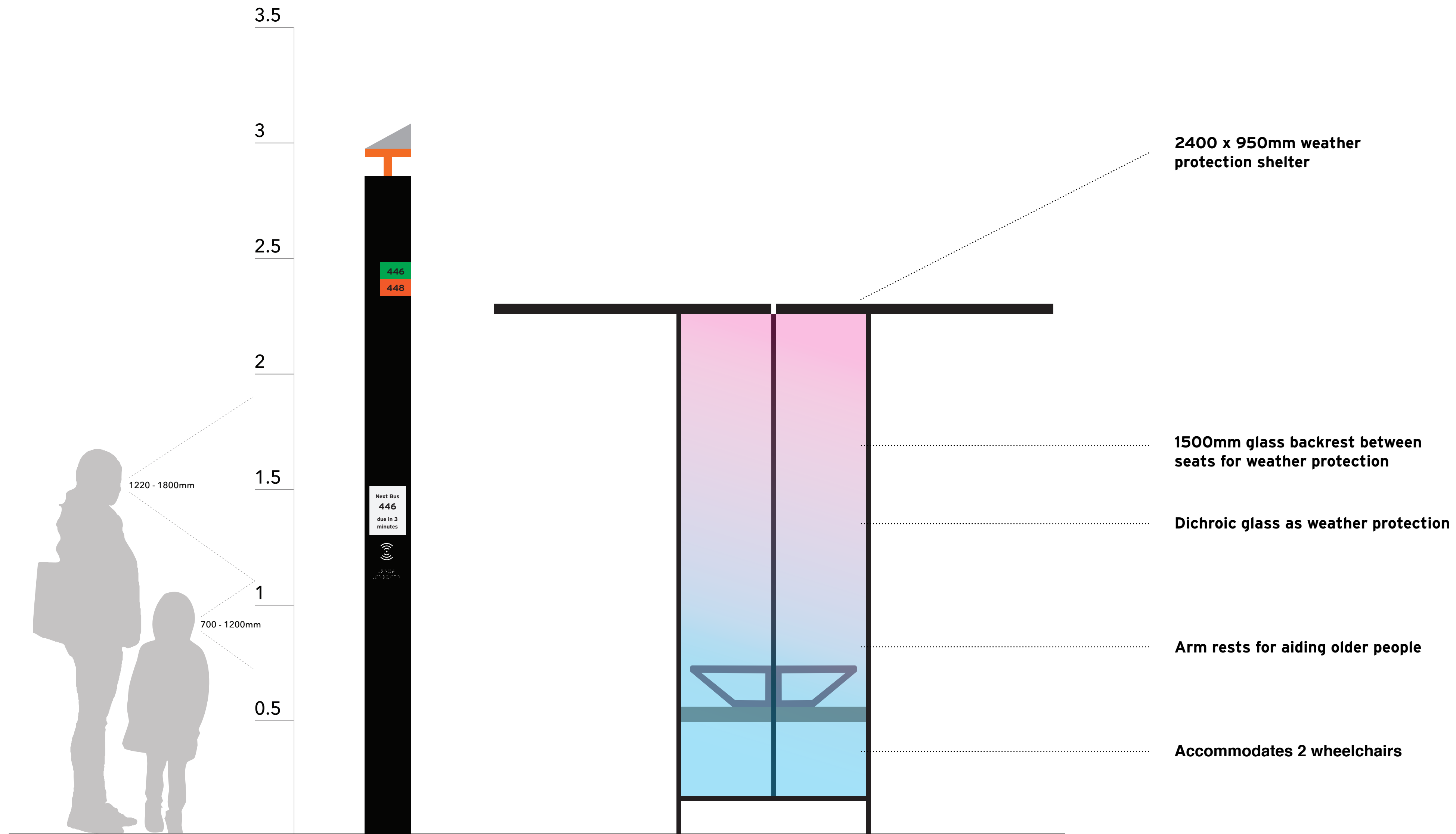




## TOTEM + 2 SEAT SHELTER

This two seater shelter provides weather protection in the most constrained of sites.

The dichroic glass shelter faces the road to protect passengers from splashing of passing cars, wind, rain while still affording full visibility.







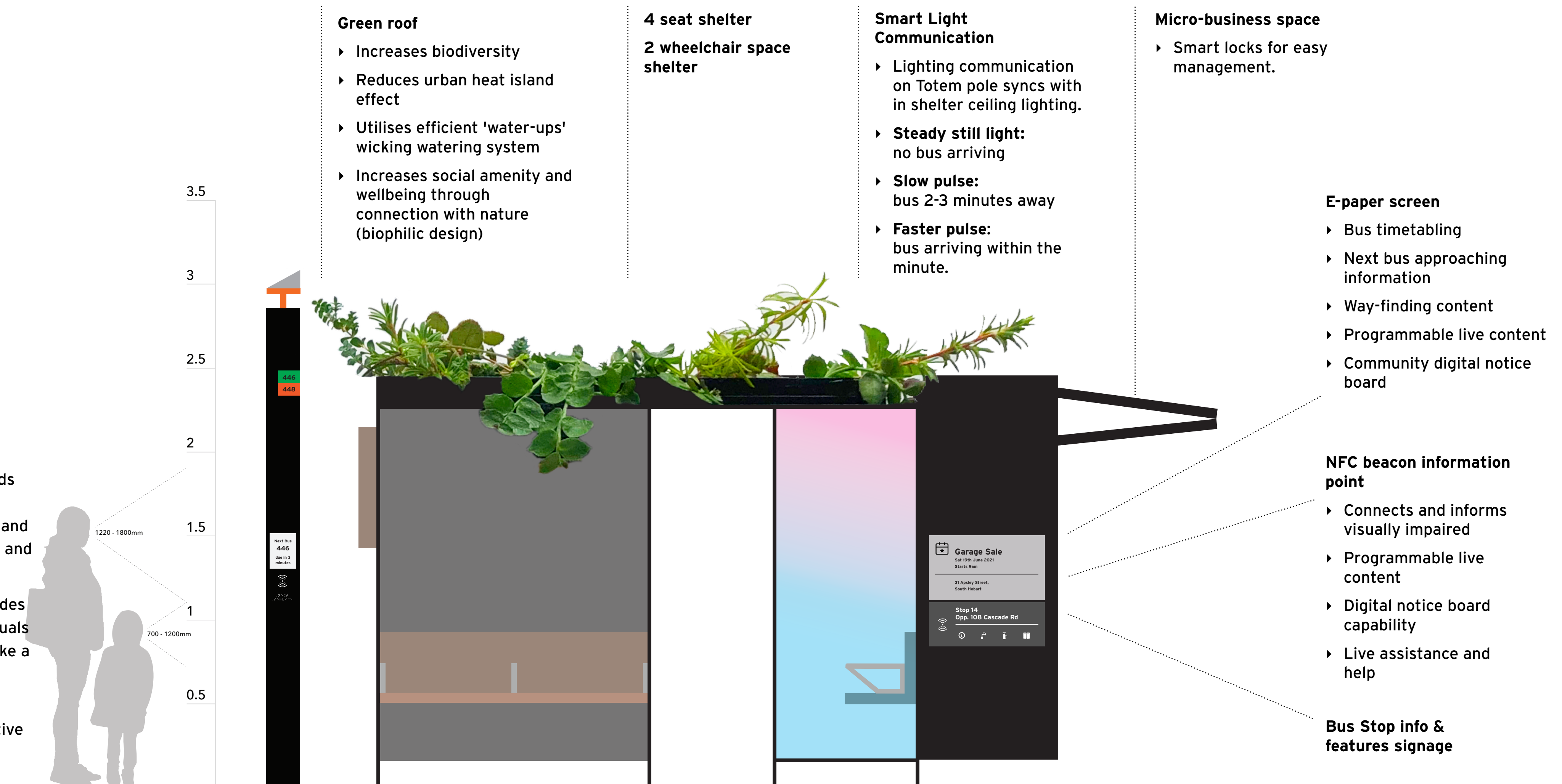
## TOTEM + 4 SEAT SHELTER

The Medium unit offers 4 seat shelter with space for 2 wheelchairs.

The larger e-paper screen affords greater visibility to act as a community digital notice board and way finding for walkers, cyclists and tourists.

The micro-business space provides water and electricity for individuals and entrepreneurs that would like a micro footprint or more direct access to a community.

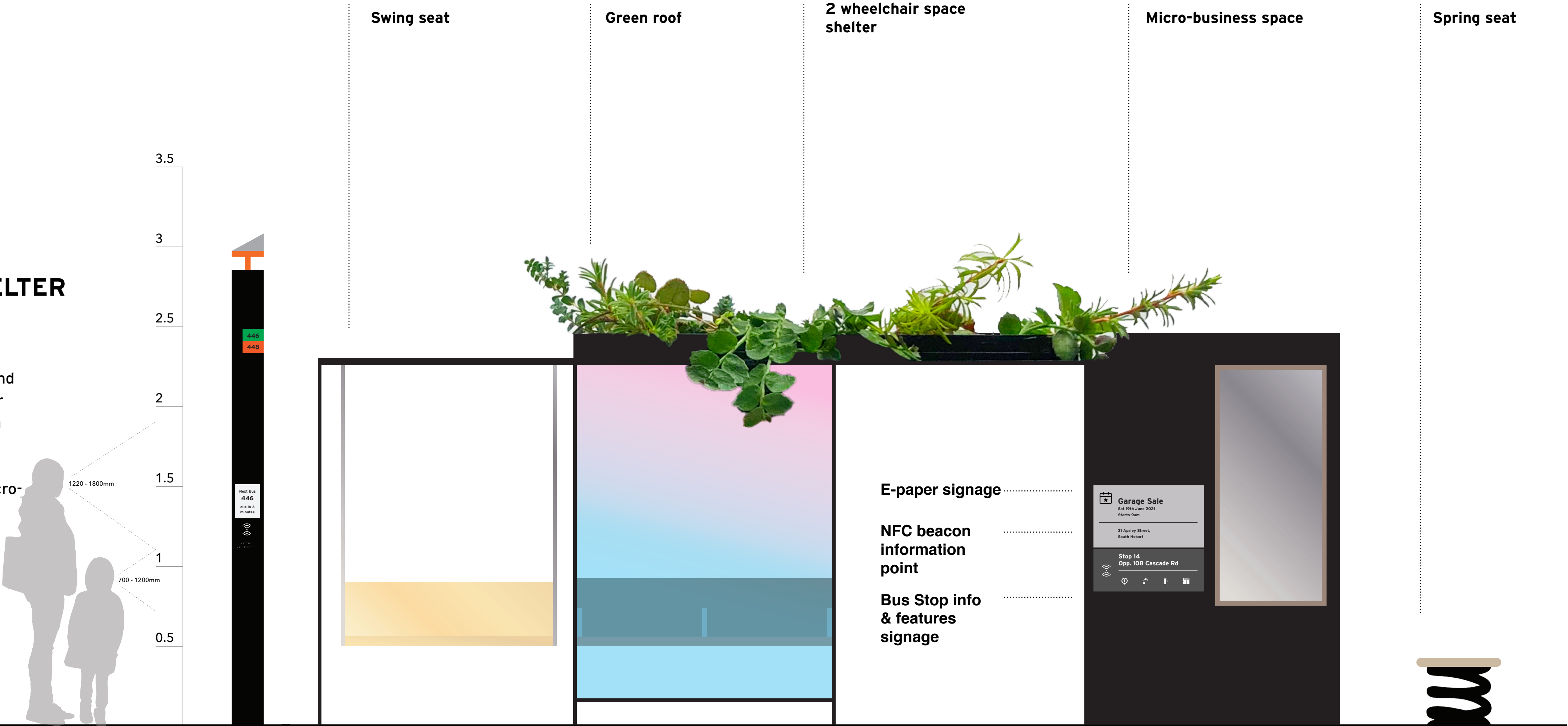
While the green roof has a positive impact on communities and increases biodiversity.



L

TOTEM +  
6 SEAT SHELTER

The largest of the modular unit has all the other benefits and features of the other sized shelters with a range of playful seating options and the addition of a micro-business space.





**HUBS establishes a network of evergreen technology.**

Our approach to the role of technology is to enable ease of upgrading and updating, ensuring public infrastructure investments don't become redundant.

1

Durable, adaptable **e-paper screens** are centrally controlled enabling up to the minute content to be pushed out to localised nodes as required.

2

Similarly the **NFC beacons** are controlled by the same network, allowing a change of URL destination to be pushed out by locality.

3

**Smart light communication** creates a subtle but learned connotation for all travellers irrespective of age or language.

Solar power

3

**Smart lighting communication**

- ▶ **Steady still light:** no bus arriving
- ▶ **Slow pulse:** bus 2-3 minutes away
- ▶ **Faster pulse:** bus arriving within the minute.
- ▶ **Smart light communication** correlates to in-shelter ceiling light, enabling visibility by all, day and night.

**E-paper screen**

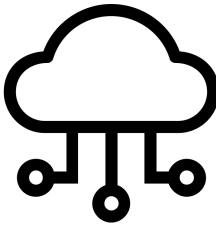
Totem (all)

209 mm high x 157 mm wide

1

**NFC Beacon**

2



**E-paper screen controlled by central location for live, localised content.**

- ▶ Next bus information
- ▶ Timetable information
- ▶ Late or delayed services
- ▶ Way-finding
- ▶ Local events
- ▶ Digital community notice board
- ▶ Emergency or alert information
- ▶ Local digitised art

1

2



**NFC Beacon points at a URL offering passengers multiple choices:**

- ▶ To trigger Blind Square app for the visually impaired
- ▶ Timetable information
- ▶ Access to a digital community notice board

**E-paper screen (M + L)**

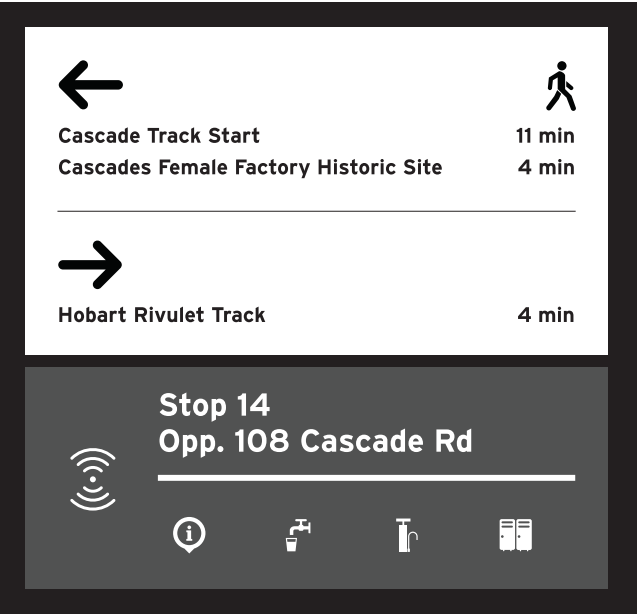
690 mm high x 388 mm wide

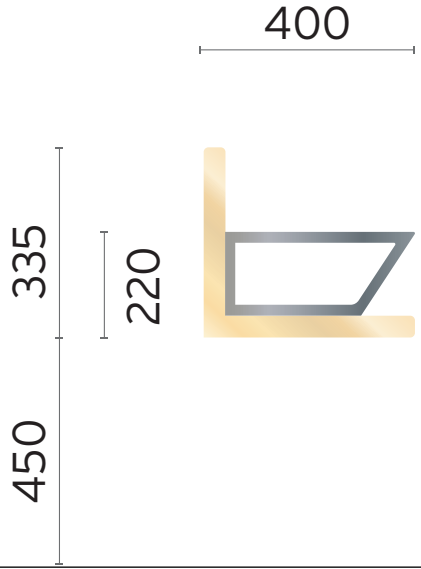
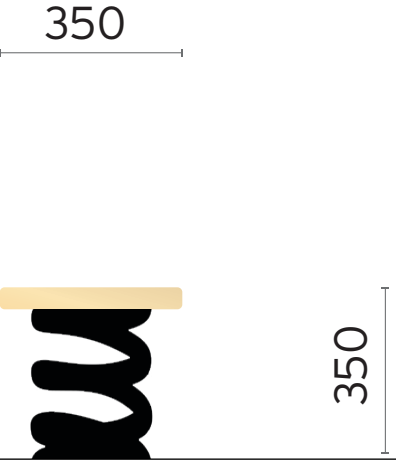
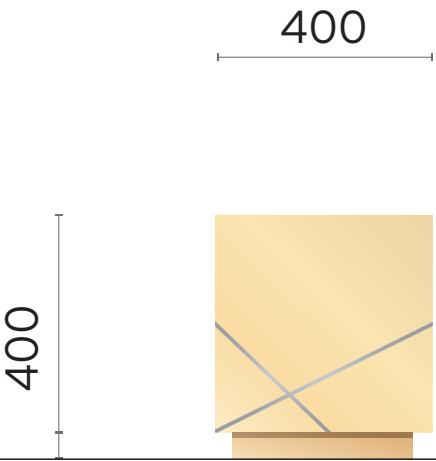

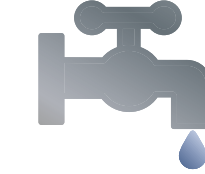
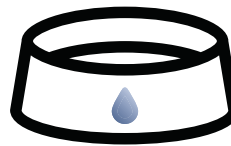
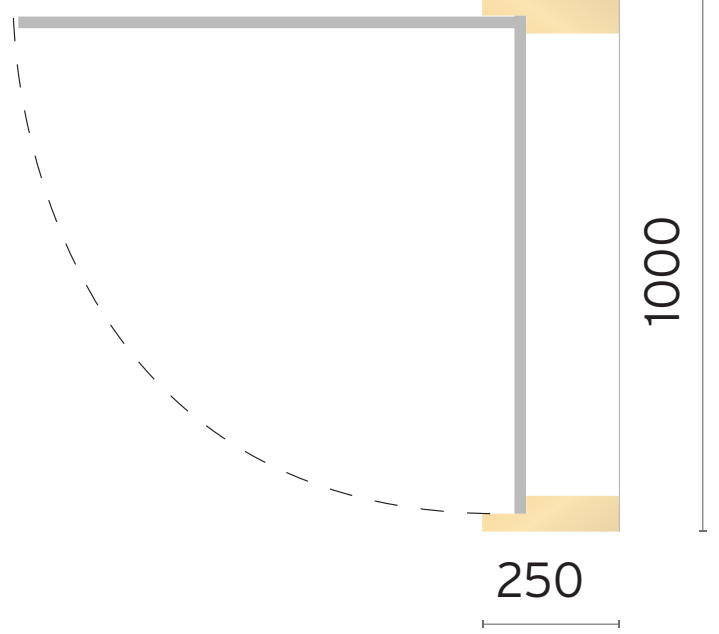
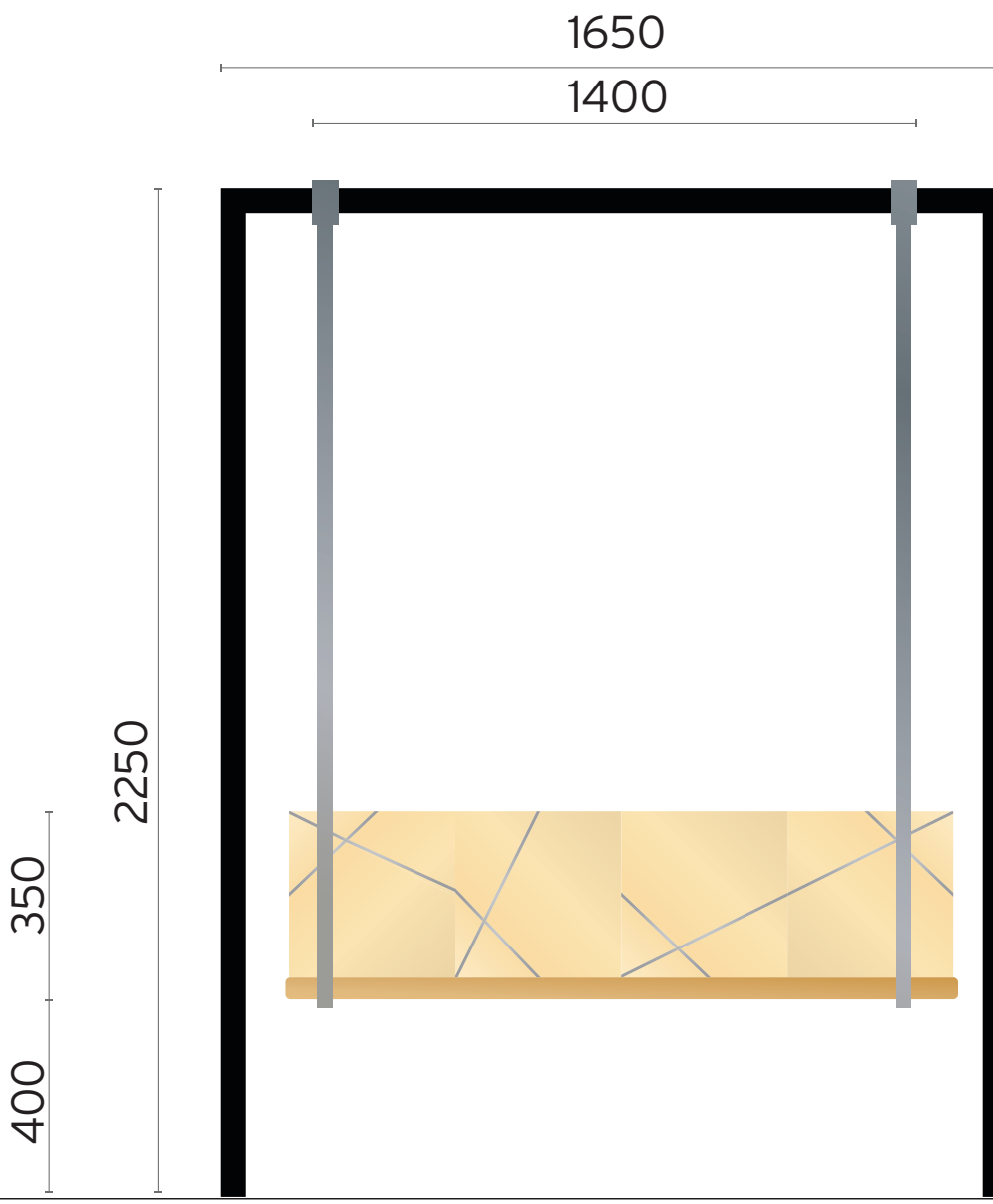
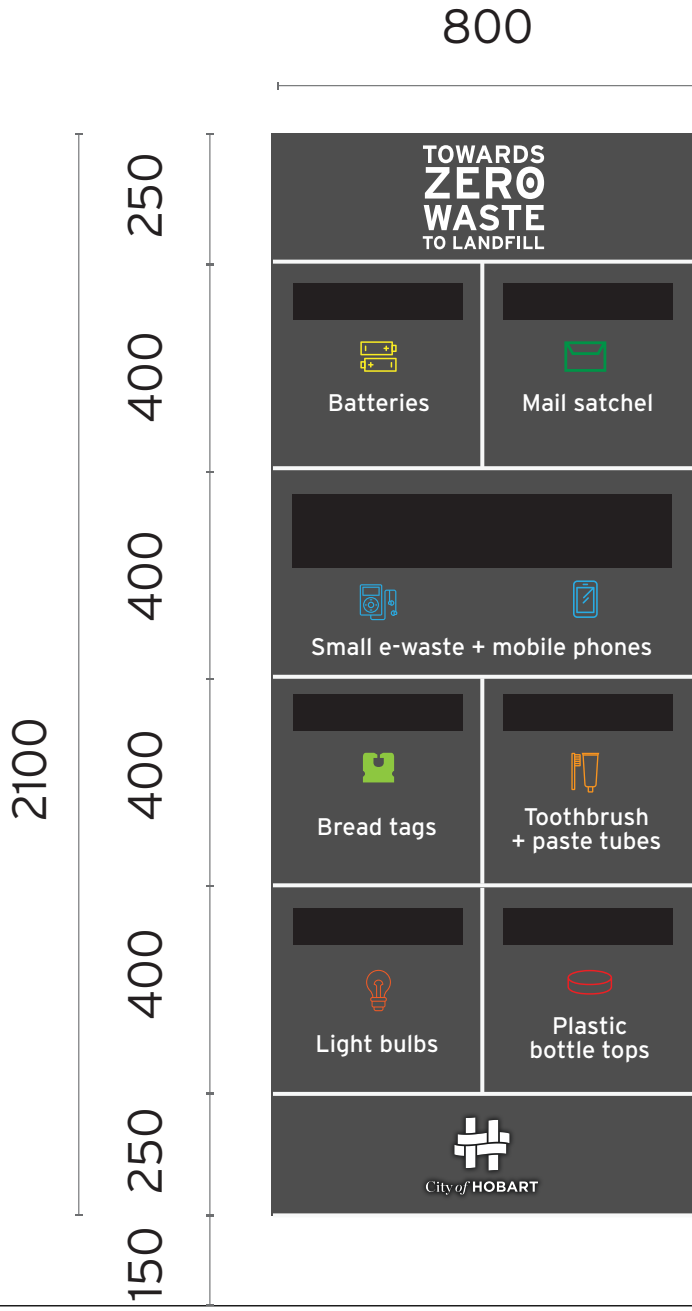

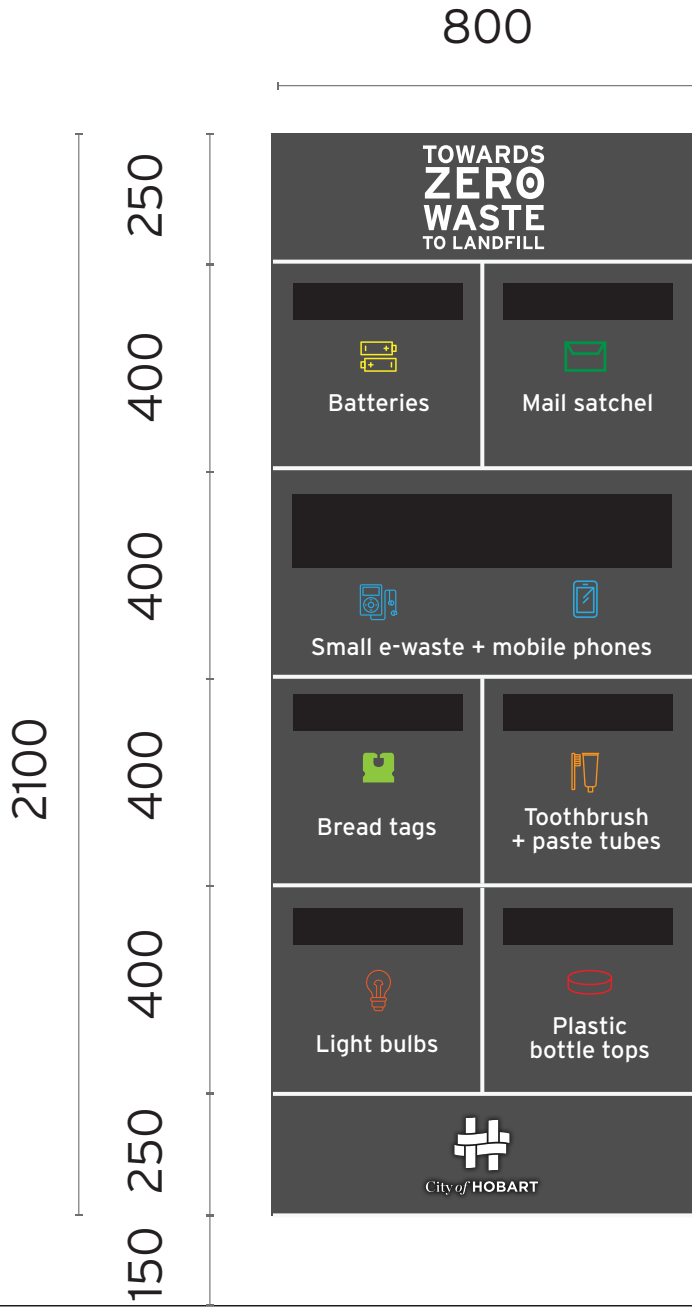

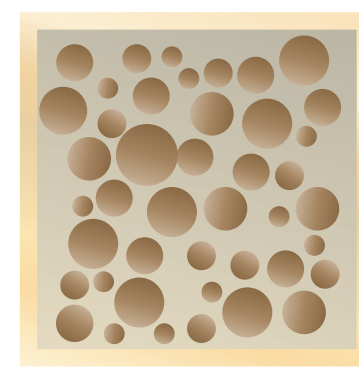
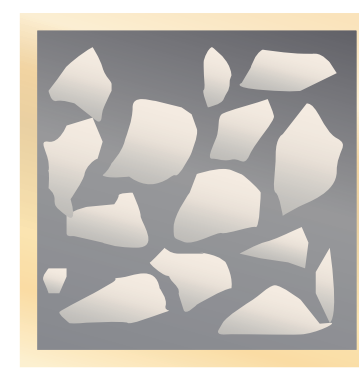
This larger surface area provides greater opportunity to cycle through a range of content.

1

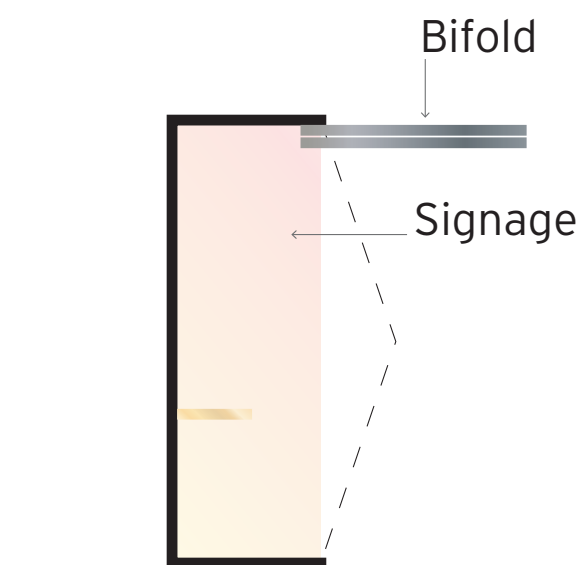
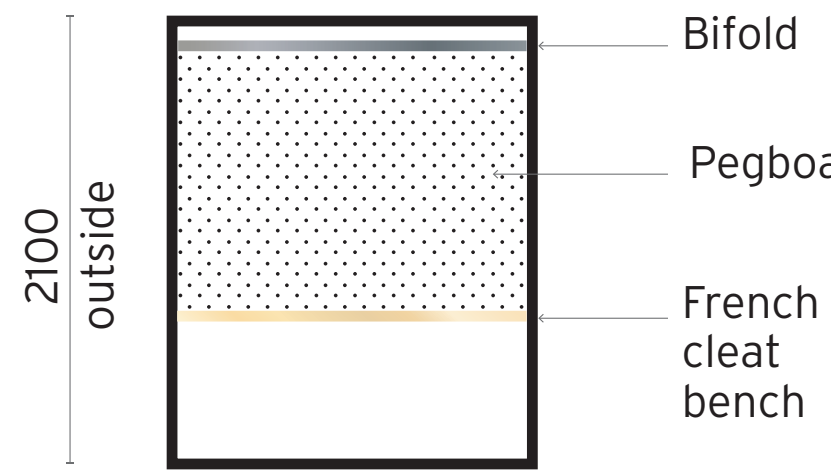
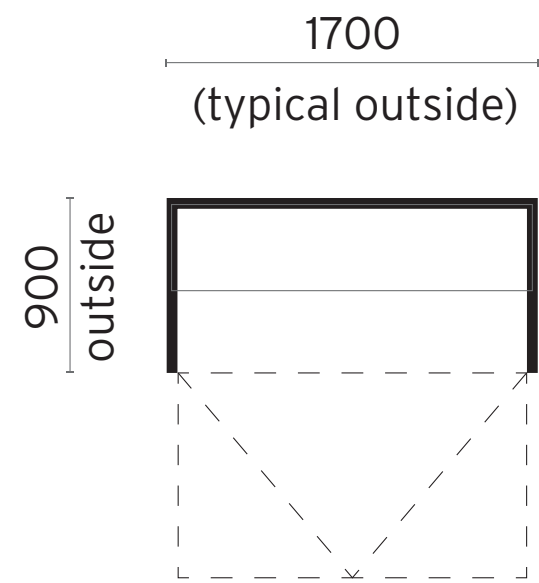
2

**NFC Beacon**



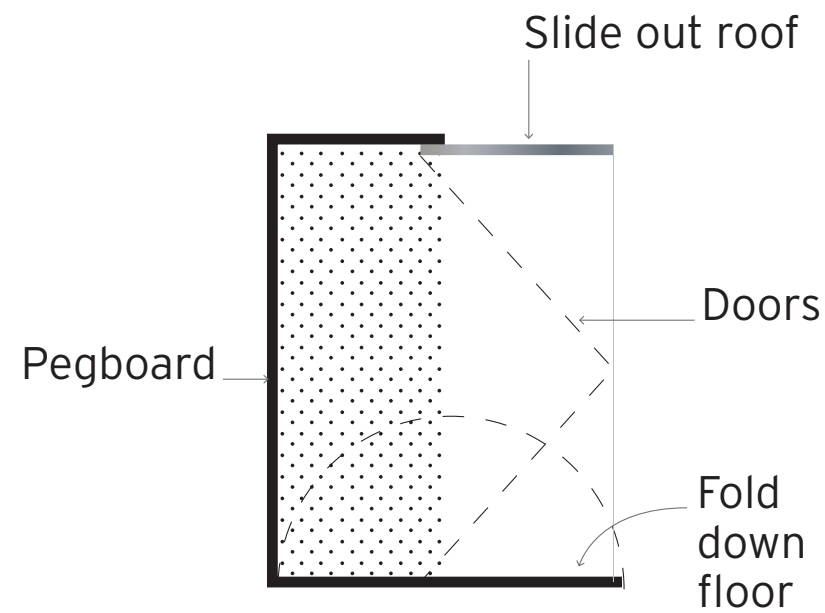
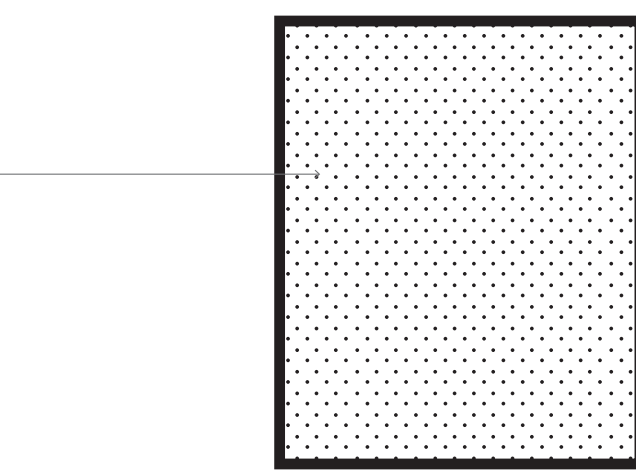
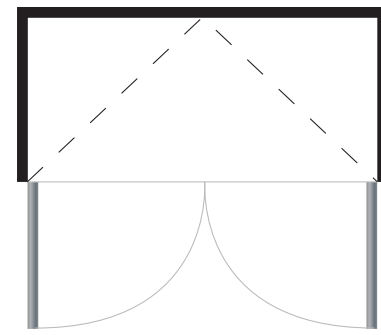
SEATING OPTIONS				WATER STATION	VIEW WINDOW / HATCH
				 <p>TAP (Humans)</p>  <p>BOWL (Dogs, birds, insects)</p>	
<b>STANDARD SEAT</b> Tasmanian timber, arm rests. Simplicity, Affordability, Inclusion: older adults	<b>SPRING SEAT</b> Tasmanian timber, reused springs, colour coded to routes / place Inclusion: children, neurodiversity	<b>BLOCK</b> Tasmanian timber, CNC routed patterns, 'story seats', place-based commissioned art, Simplicity, Affordability	<b>ROCK</b> Natural, Simplicity, Affordability)		
					
<b>SWING SEAT</b> Tasmanian timber, CNC routed patterns, 'story seats', place-based commissioned art. Inclusion: children, neurodiversity				<b>RECYCLING</b>	
<b>PLANTER WITH INTEGRATED SEATING</b> Tasmanian timber, CNC routed patterns. Inclusion: biodiversity				<b>HABITECTURE MICRO-SPECIES HOTEL</b>	
					
					
					





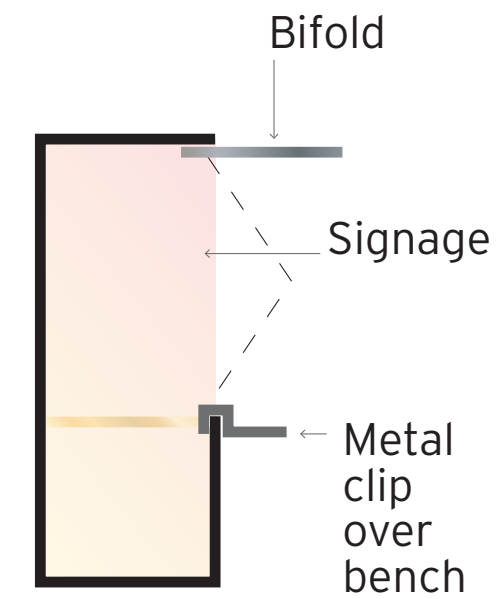
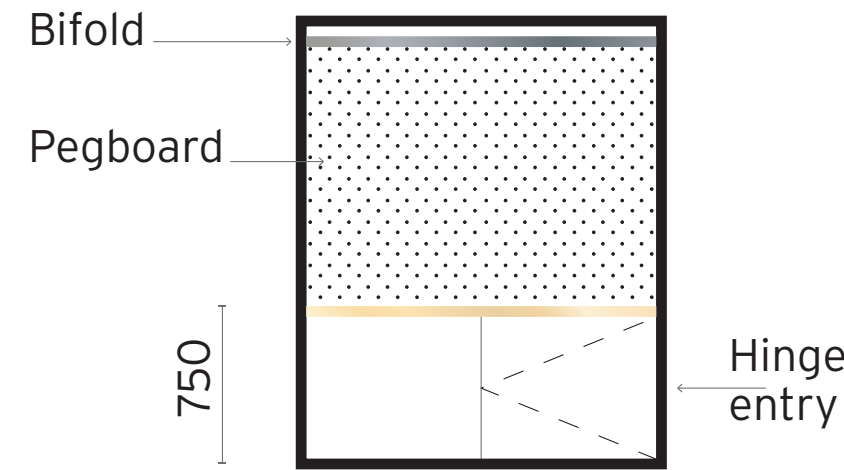
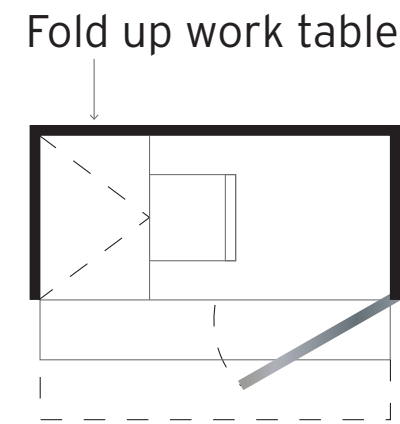
## OUTSIDE WORK

- Bike repair
- Nursery
- Florist
- Farm gate produce



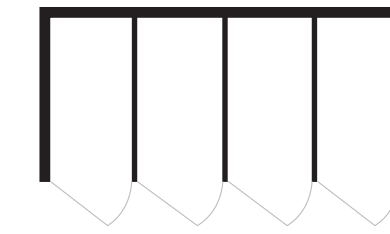
## INSIDE VIEW

- Gallery
- Clothing / accessories / lifestyle / objects / stationary pop-up
- Research point

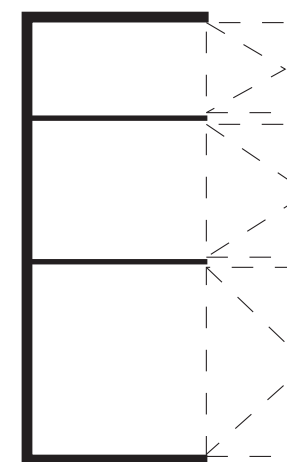
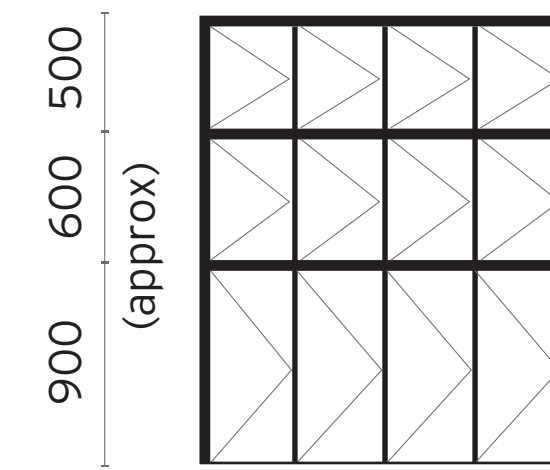


## INSIDE WORK

- Sewing
- Shoe repair
- Keys cut
- Toner / ink / printer refills

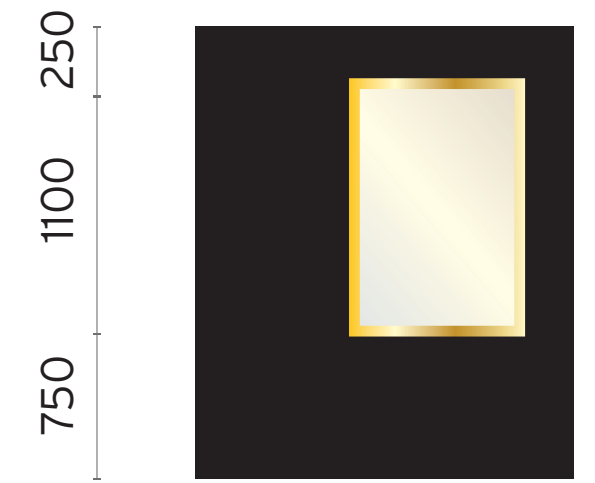
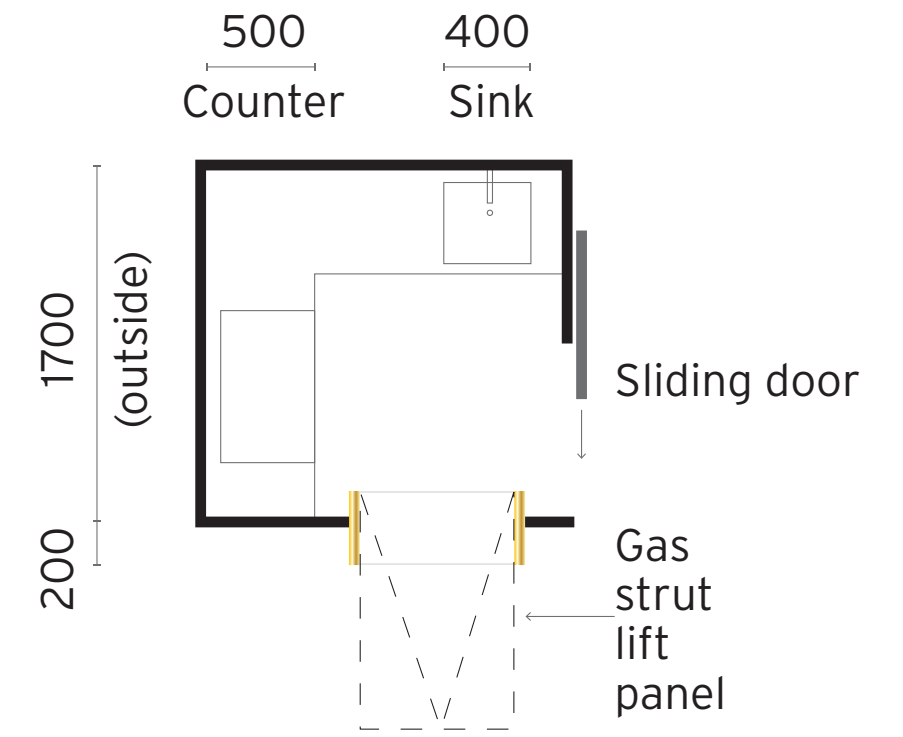


400 Modules

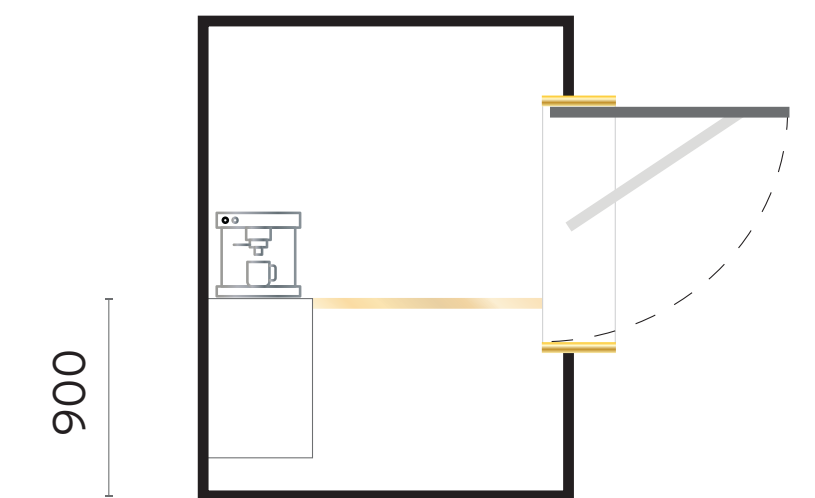


## STORE

- Luggage lockers
- Parcel delivery / collection (Courier point)
- Foldable electric scooter / bike storage
- Storage for shopping



800 250 Window



## F&B (Double size)

- Coffee
- Food
- Juice Bar
- Ice Cream



## Promote entrepreneurship

### Rental as X% of Total Revenue

- Encourage individuals & startups in the community to try out business ideas by keeping rent low
- Support experimentation. Their success is your success.
- Recommended X at around 10%



## Partner with established businesses

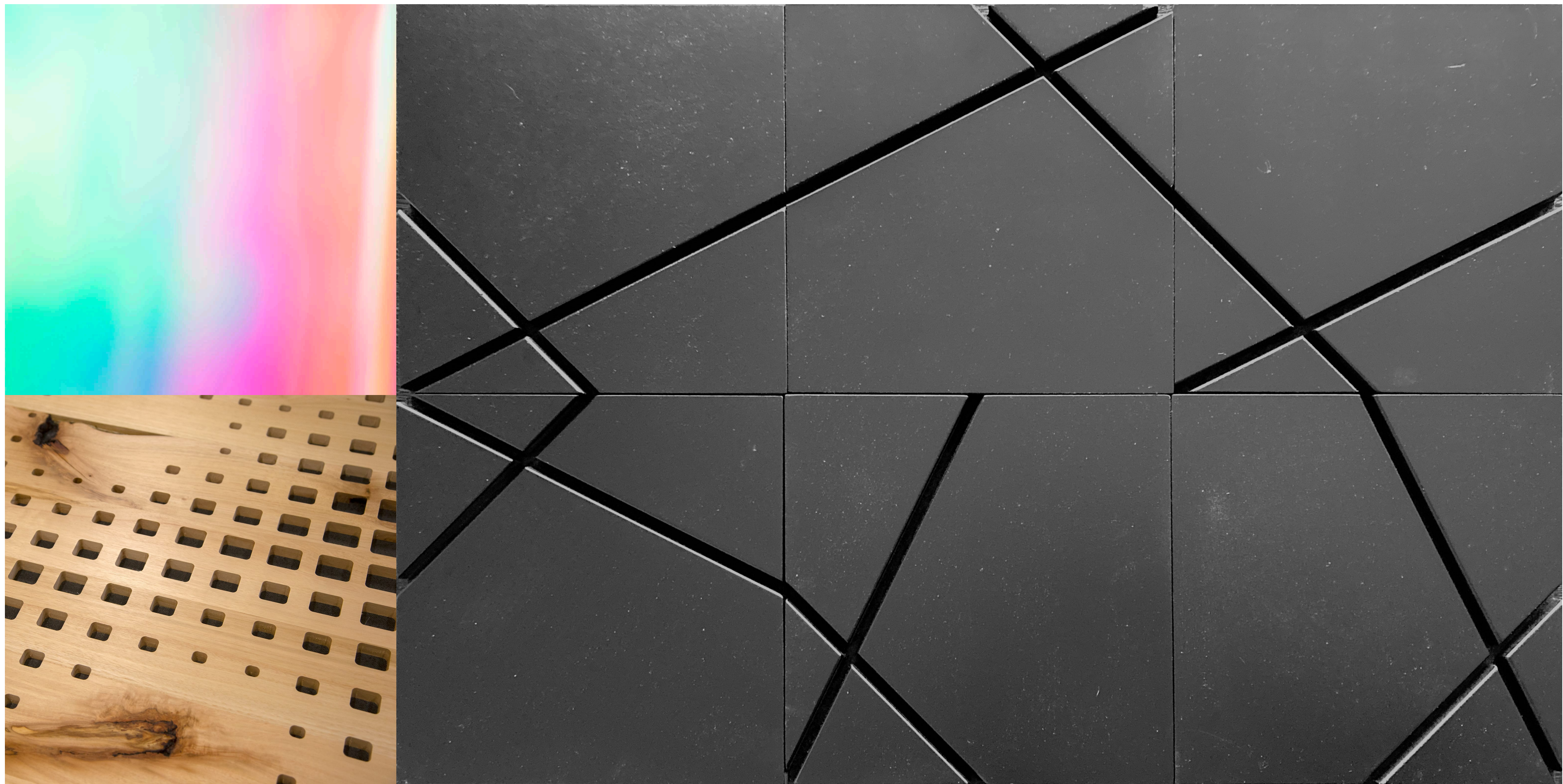
### Fixed weekly rental

- Enable expansion of retail footprint for established local businesses.
- Locally situated in communities, these micro-business spaces stretch and expand these brand's presence.

### Estimated income

- Each Micro-business site could generate a range between \$500 - \$1000 rental per month.
- This is based on M + L HUBS.





\*Option to commission local artists to create routing pattern or imagery.

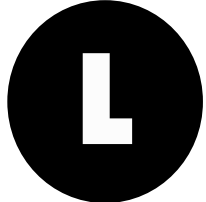




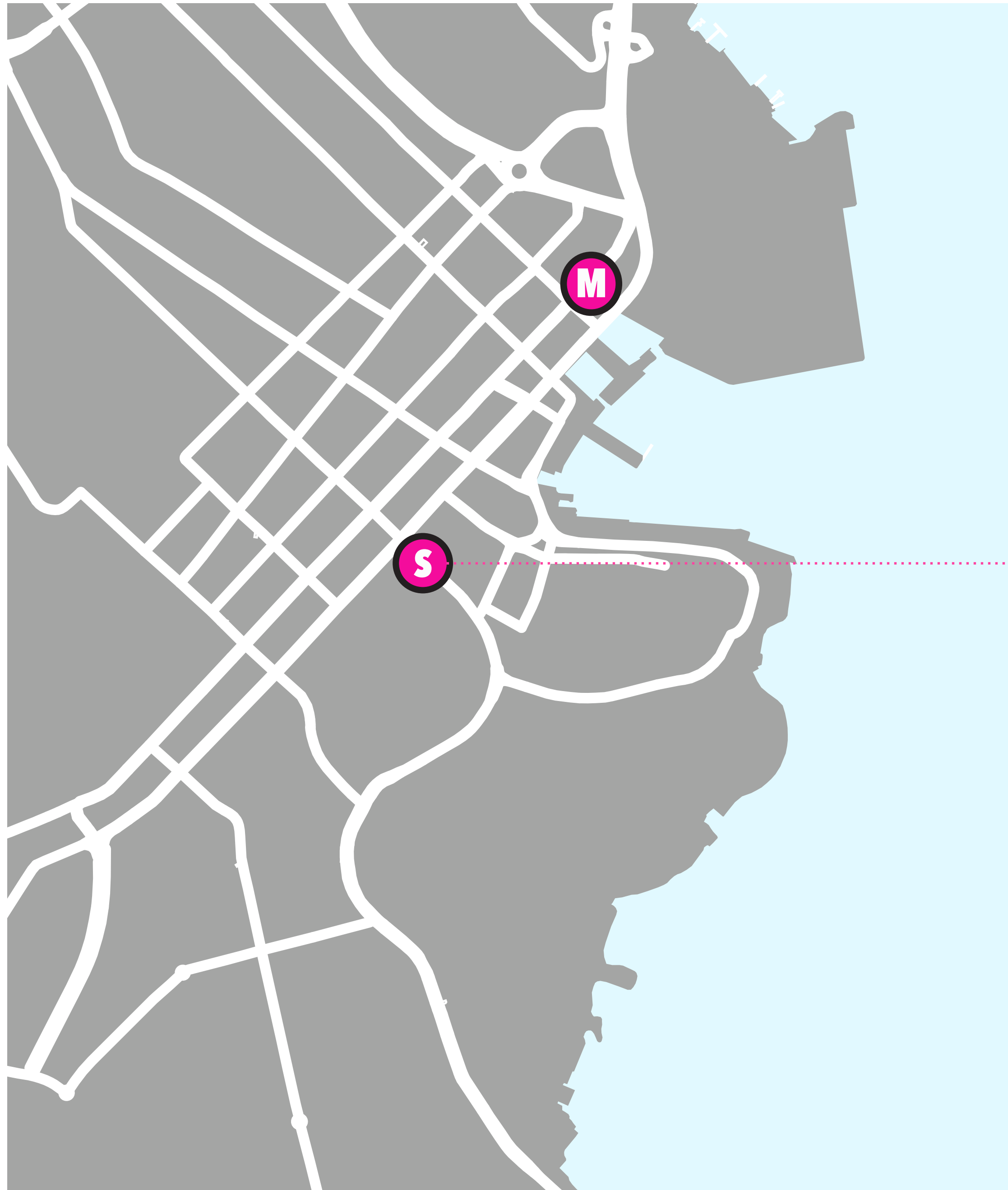
**Stop 4, St Davids Park. Sandy Bay Rd.**



**Stop 1, Macquarie St.  
Stop 14, Cascade Rd.**



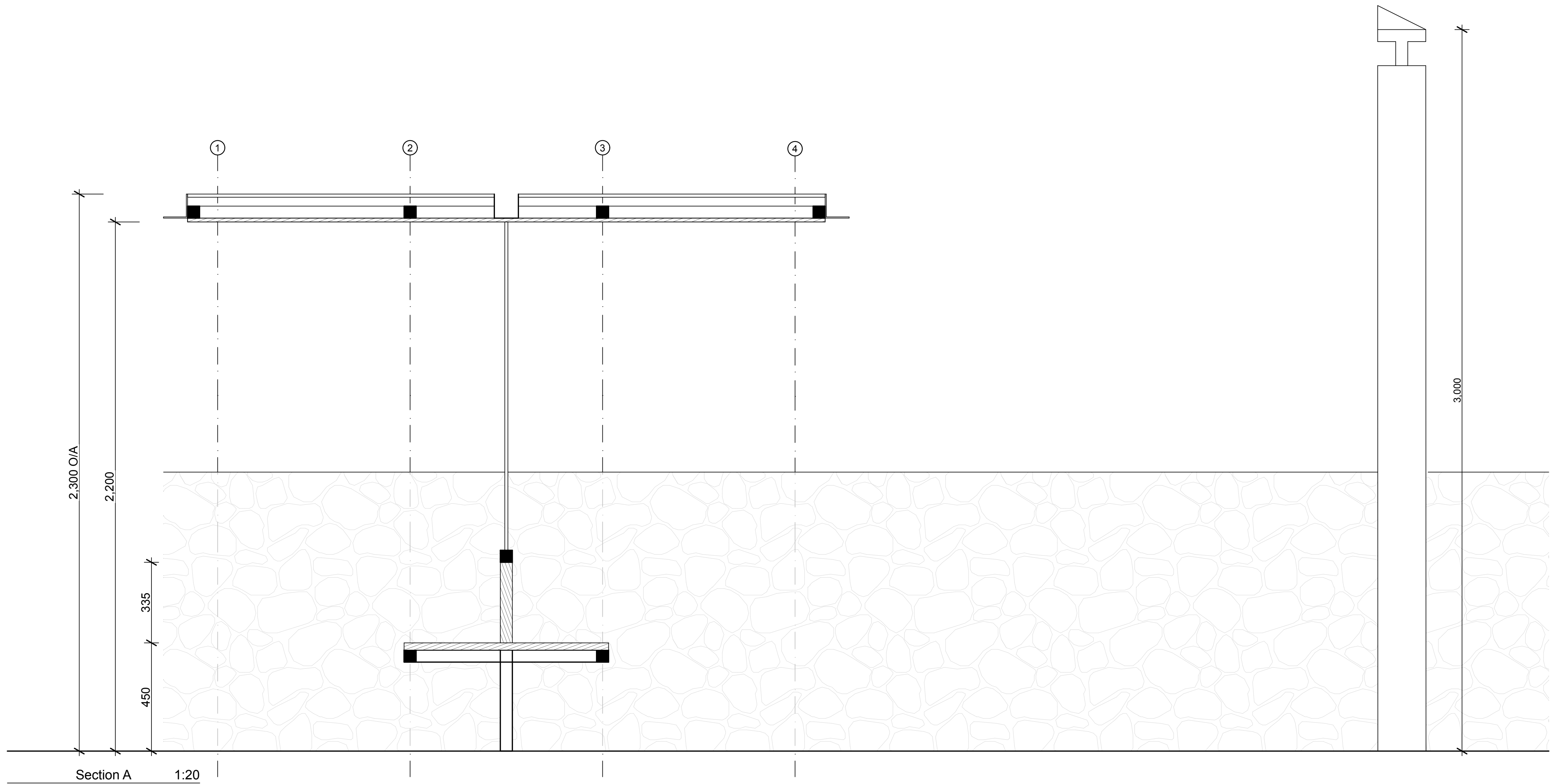
**Stop 13, Sandy Bay Rd.**



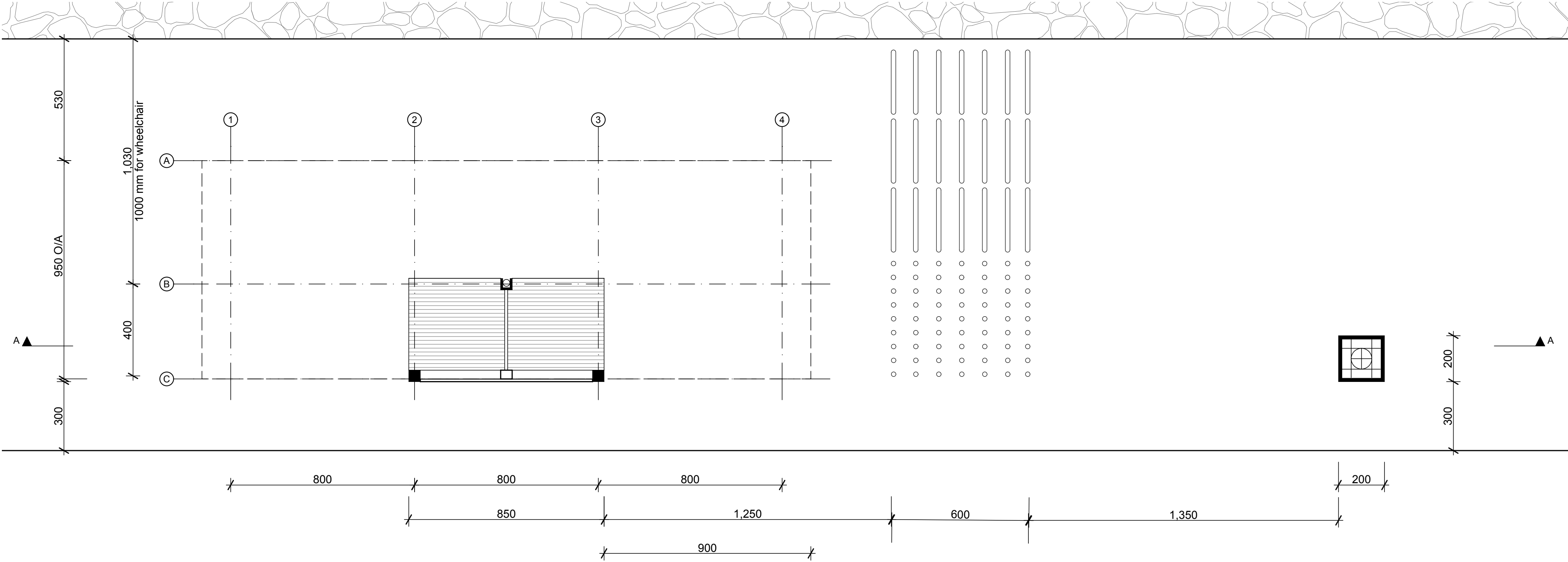
Stop 4. St Davids Park.  
Sandy Bay Rd.

**Totem + 2 seat shelter**





Stop 4, St Davids Park. Sandy Bay Rd. Small HUBS. Section



Ground Plan in Context 1:20





Stop 4, St Davids Park. Sandy Bay Rd. Small HUBS

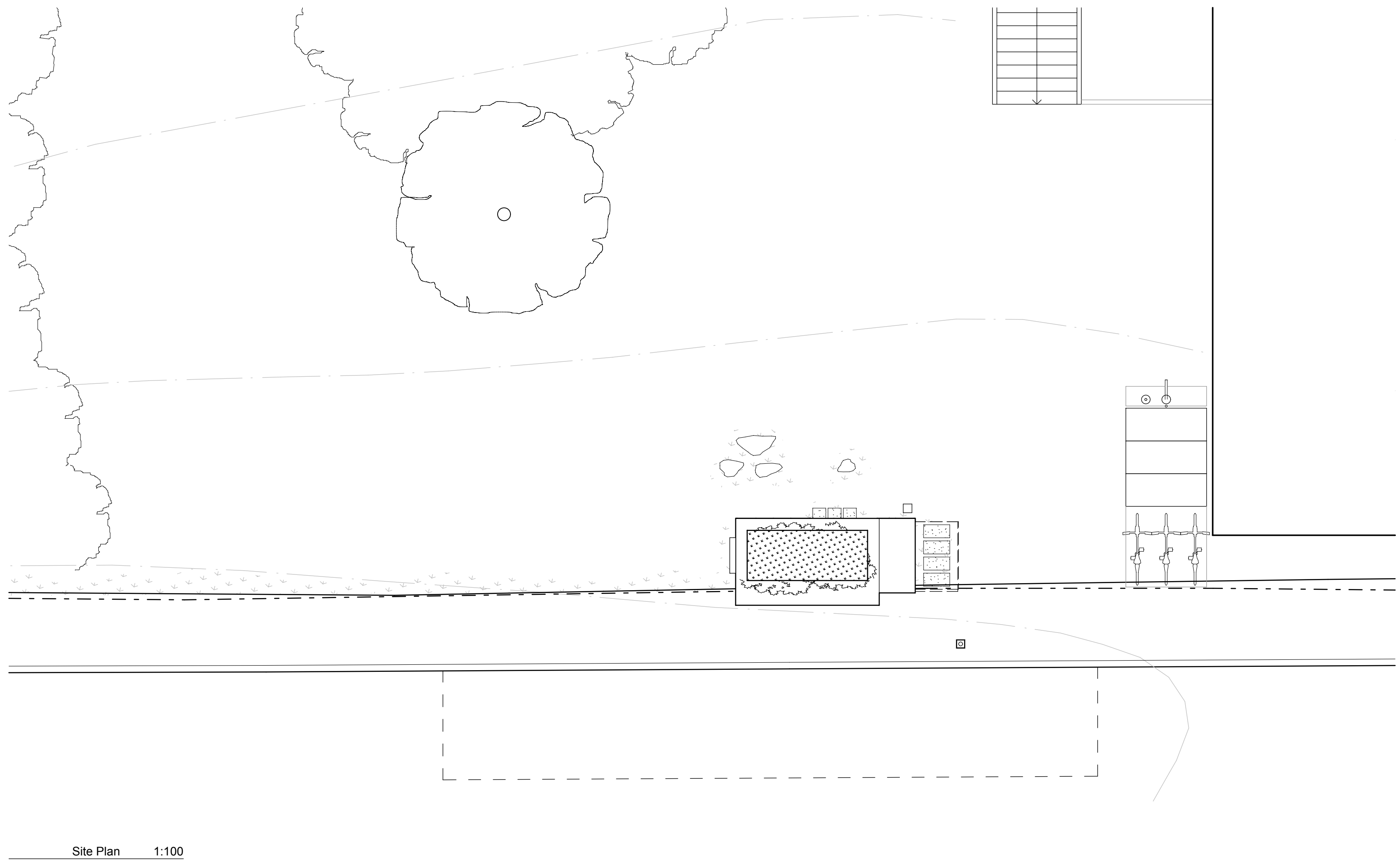




## Stop 14. Cascade Rd

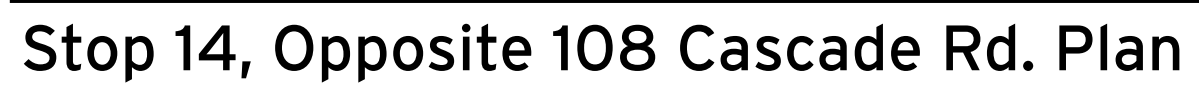
**Totem + 4 seat shelter + Micro-business**

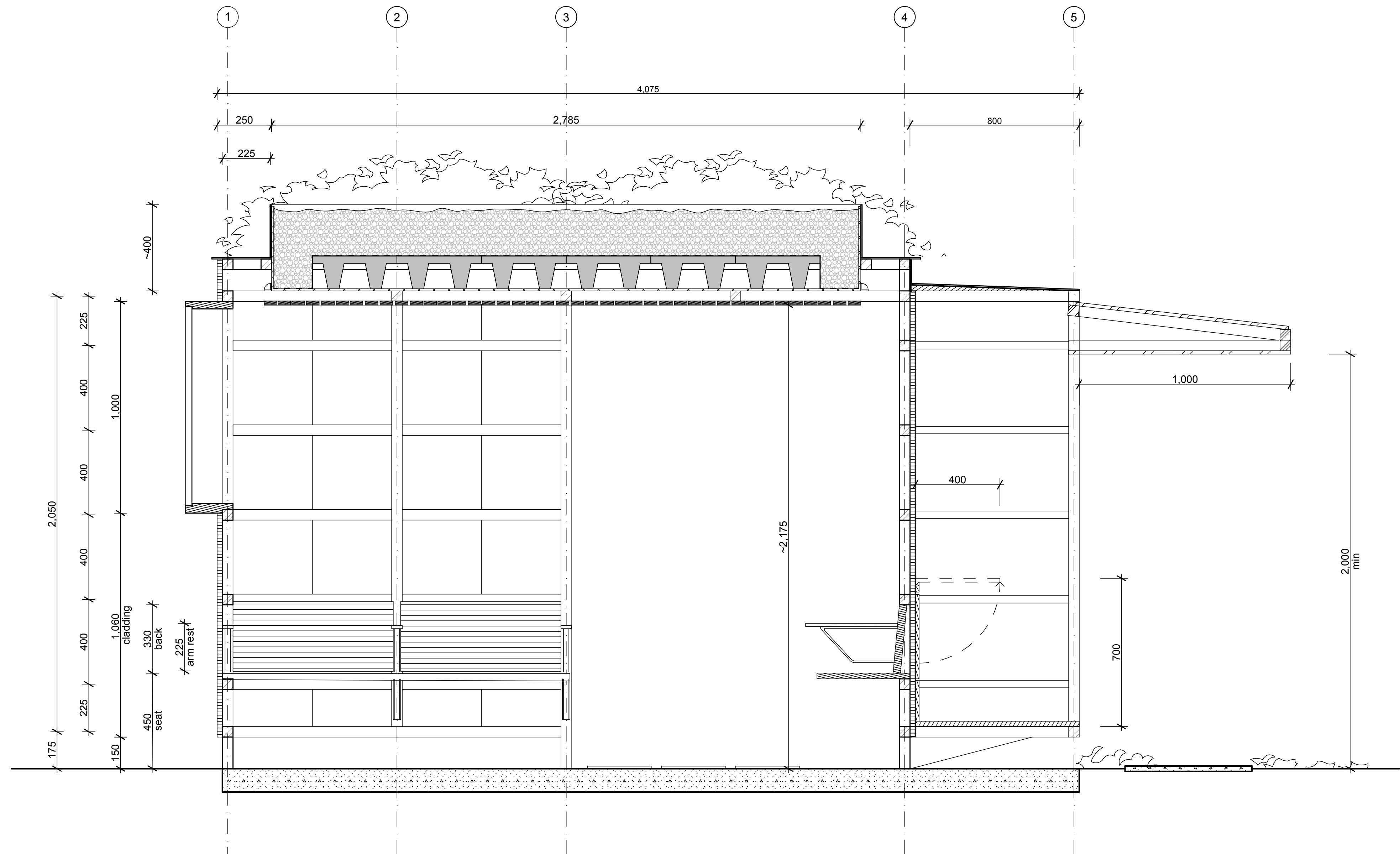
- Micro-business (bicycle repair)
- Green roof
- Rock seating



Stop 14, Opposite 108 Cascade Rd. Medium HUBS. Site plan







Long Section 1:20





Stop 14, Opposite 108 Cascade Rd. Medium HUBS





Looking North



Looking East

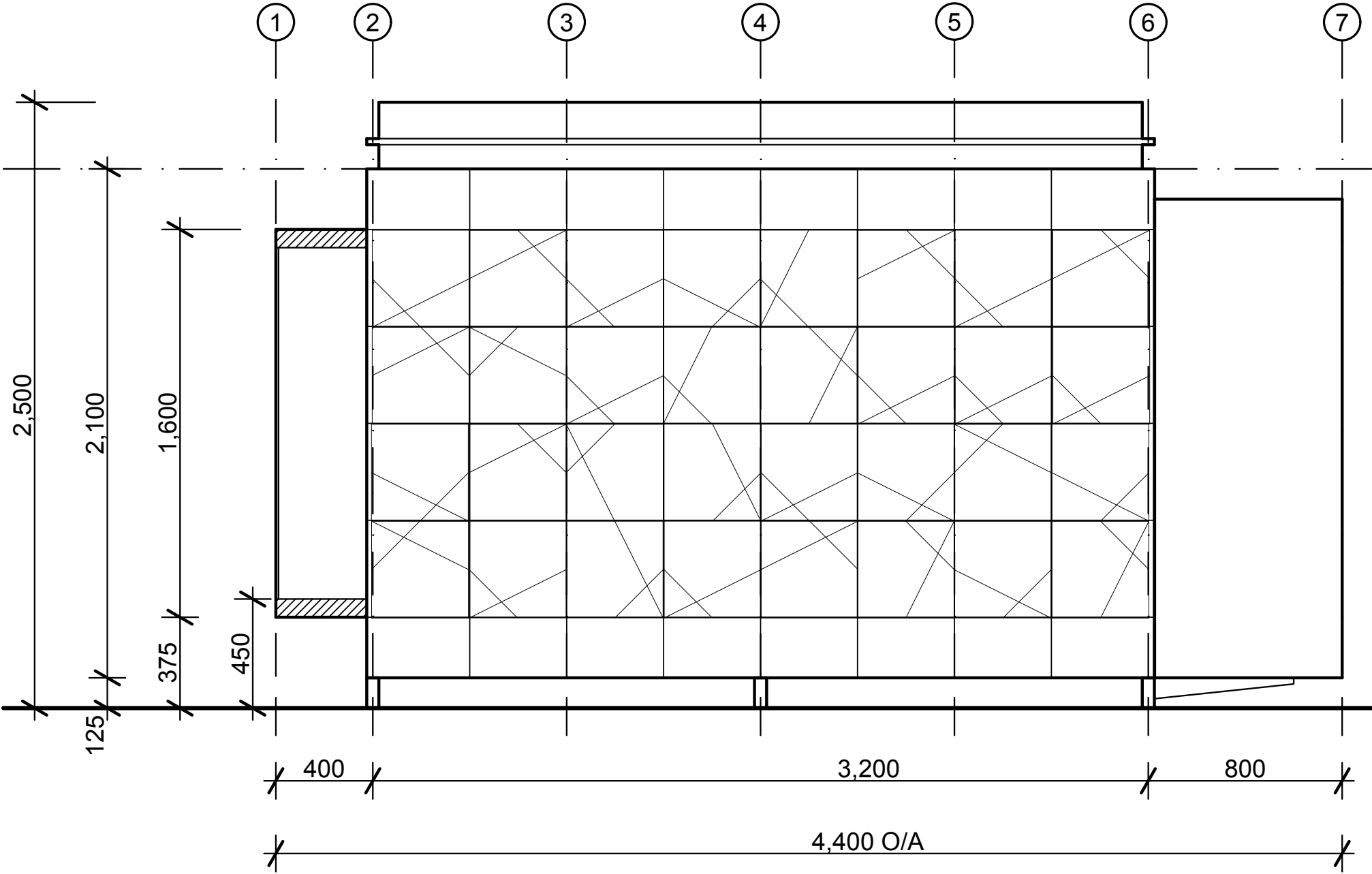




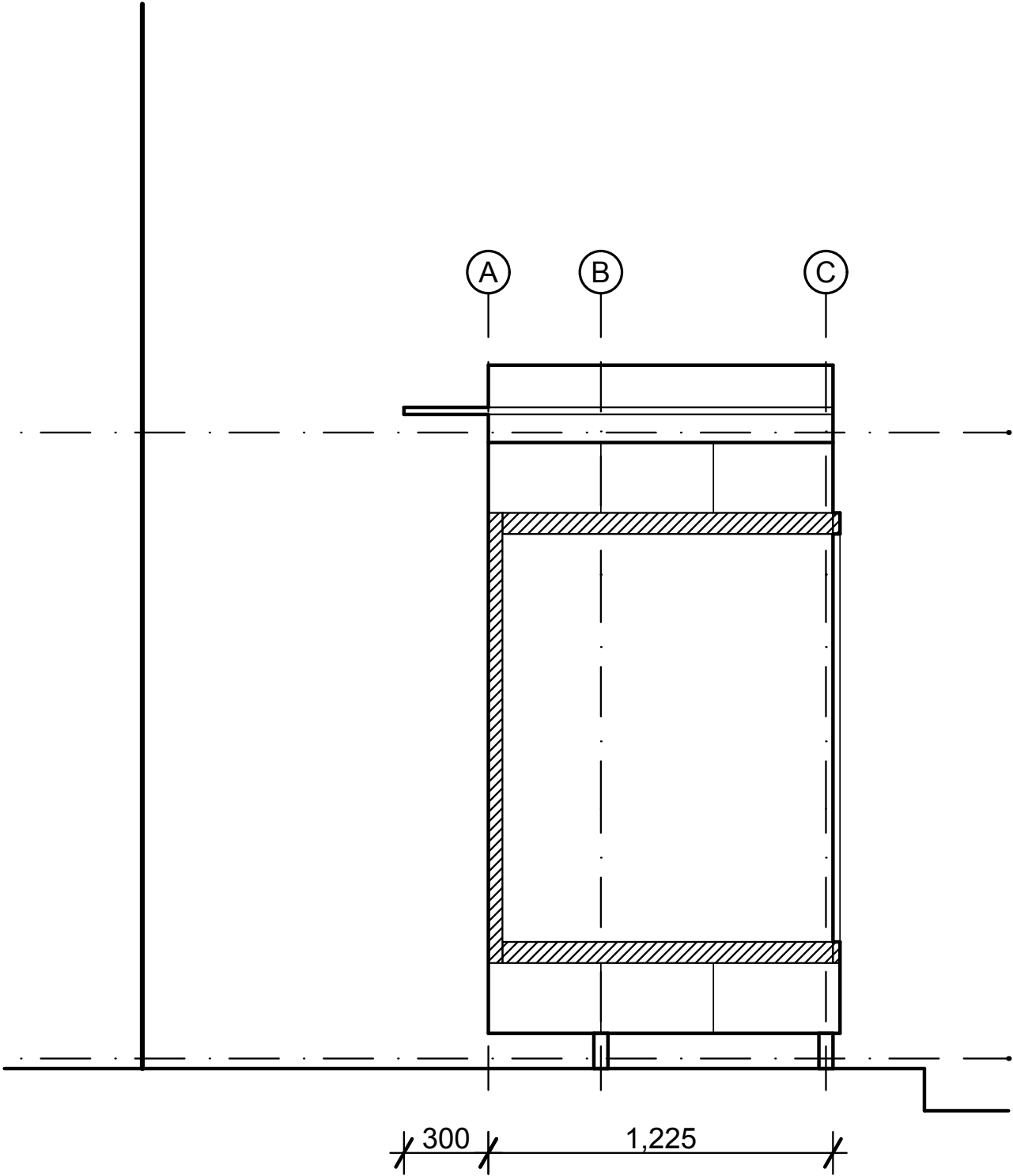
## Stop 1. Macquarie St

**Totem + 4 seat shelter + Micro-business**

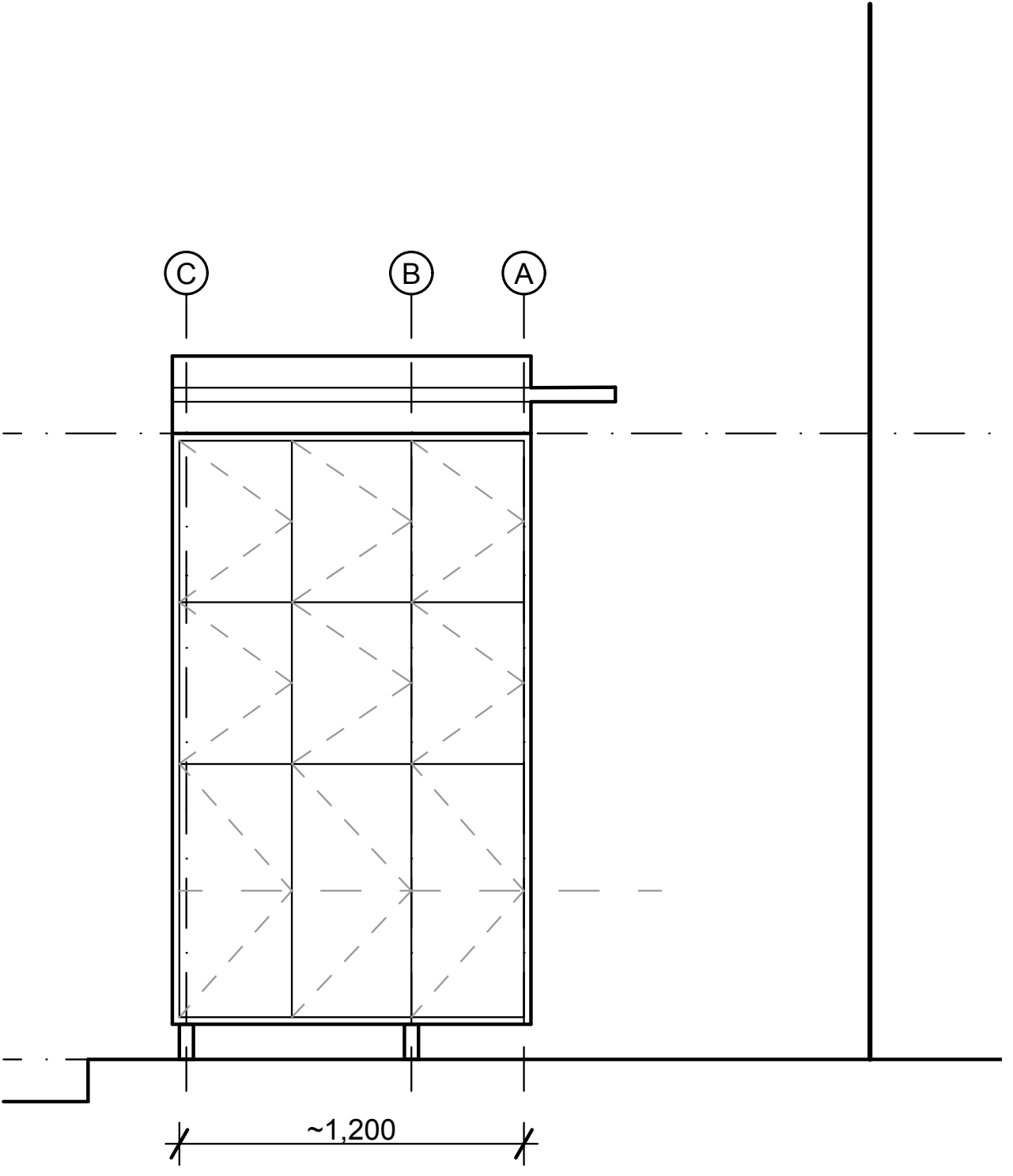
▸ **Smaller footprint Micro-business** (Luggage lockers, parcel delivery, scooter lock up)



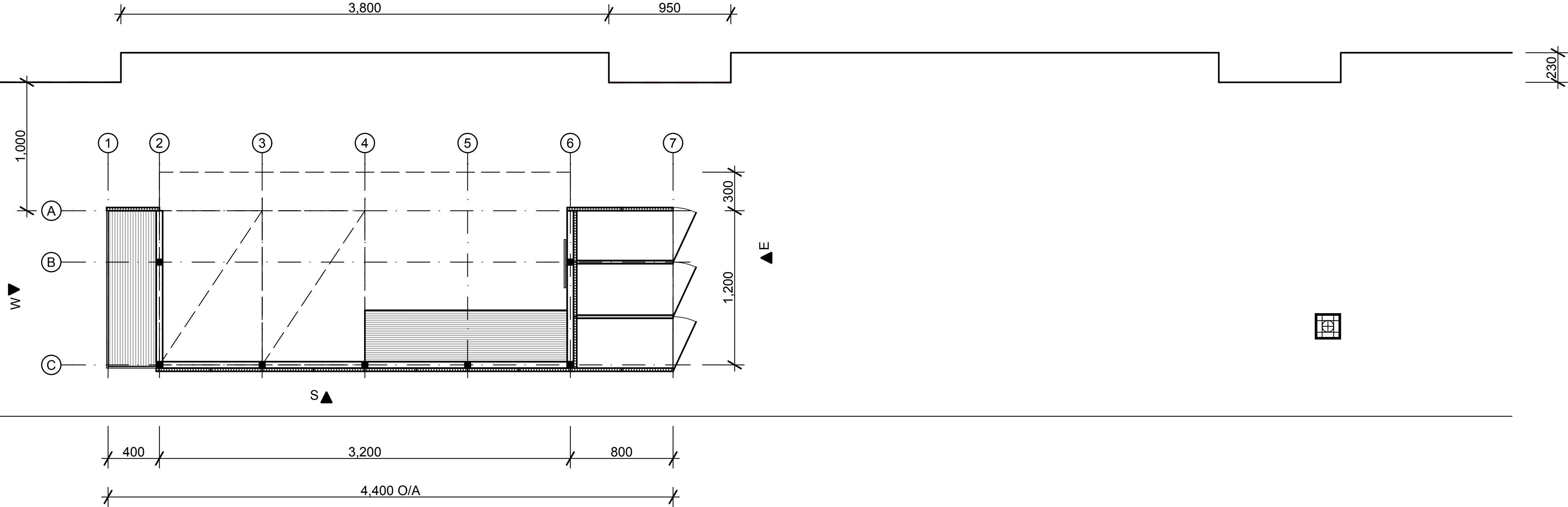
South Elevation 1:50



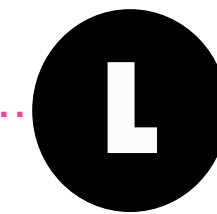
West Elevation 1:50



East Elevation 1:50



Ground Plan in Context 1:50

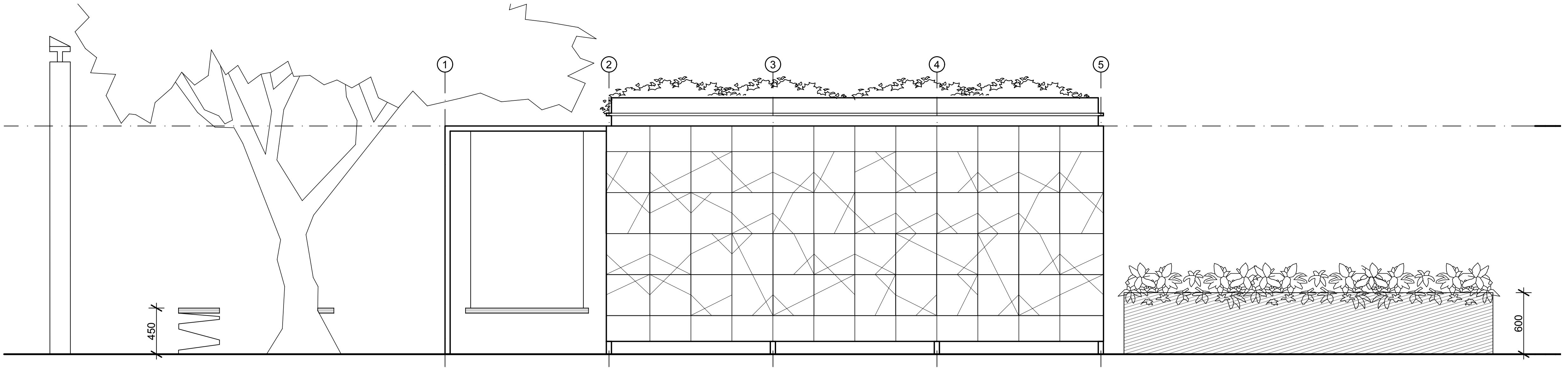


## Stop 13. Sandy Bay Rd.

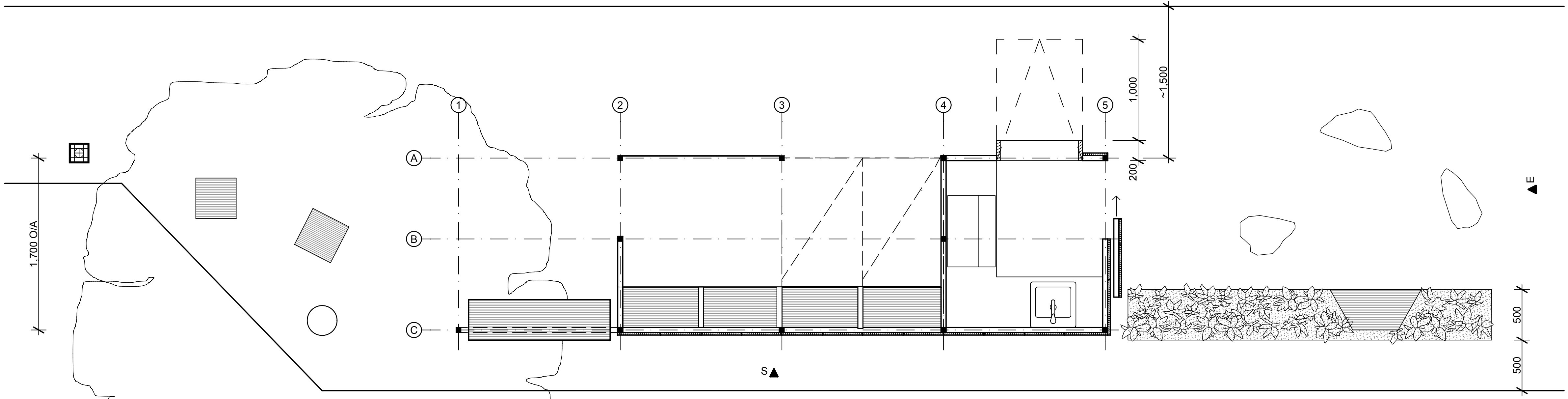
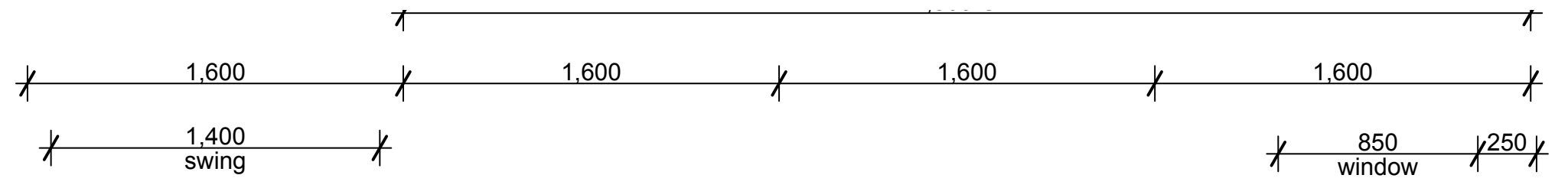
### **Totem + 6 seat shelter + Micro-business**

- Larger footprint Micro-business (F&B)
- Swing seat
- Spring seat
- Green Roof + planter with Integrated seating
- Rock seating





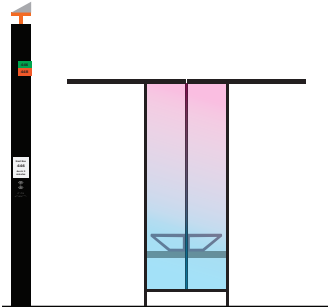
South Elevation 1:50



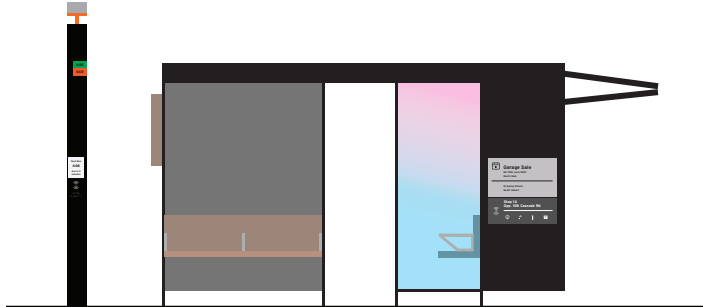
Stop 13, Sandy Bay Rd. Large HUBS



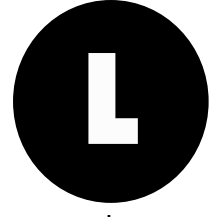
TOTEM	
Totem Technology (e-paper & beacon) *	\$3,000.00
Framing + Cladding	\$4,500.00
Electrical + Lighting	\$1,200.00
Signage	\$800
TOTAL **	\$9500.00



TOTEM + 2 SEAT SHELTER	
Totem Technology (e-paper & beacon)*	\$3,000.00
Framing (paint finish)	\$6,200.00
Cladding + Roofing	\$3,000.00
Windows + Joinery	\$2,600.00
Electrical + Lighting	\$2,500.00
Plumbing	\$1,500.00
Signage	\$2,000.00
TOTAL**	\$20,800.00



TOTEM + 4 SEAT SHELTER + MICRO-BUSINESS	
Totem Technology (e-paper & beacon)*	\$3,000.00
Shelter Technology (e-paper & beacon)*	\$5,000.00
Framing (paint finish)	\$16,800.00
Cladding + Roofing	\$10,700.00
Green roof	\$3,600.00
Windows + Joinery	\$7,100.00
Electrical + Lighting	\$3,600.00
Plumbing	\$3,000.00
Landscaping + Signage	\$5,000.00
TOTAL**	\$57,800.00
POSSIBLE INCOME OFFSET	\$500 p/m



TOTEM + 6 SEATING + MICRO-BUSINESS	
Totem Technology (e-paper & beacon)*	\$3,000.00
Shelter Technology (e-paper & beacon)*	\$5,000.00
Framing (paint finish)	\$18,500.00
Cladding + Roofing	\$11,000.00
Green roof + Planter	\$5,000.00
Windows + Joinery	\$9,000.00
Electrical + Lighting	\$5,000.00
Plumbing	\$4,000.00
Additional Seating	\$2,500.00
Signage	\$4,300.00
TOTAL**	\$67,300.00
POSSIBLE INCOME OFFSET	\$1000 p/m

\* Technology costs are for hardware only, this does not include cloud hosting, device cellular data, content management and system integration. Additional costs of \$1500 per screen for solar panels + battery

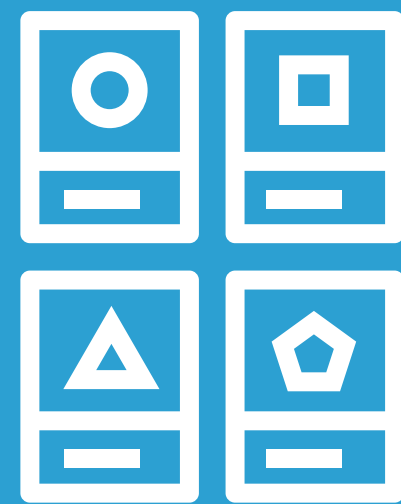
\*\* Please note that these costs are approximates only and do not include preliminaries, demolition / site civil works, power to site, building permits, contingency or margins. For estimates of these costs please see accompanying documentation.The design of these HUBS use the existing footing and concrete pads where possible.

## Table of costs



## Engaging key user groups

- Identifying diverse and important audiences, be they lower income, elderly or disability groups to understand if the current design addresses their needs fully.



## Co-designing workshops

- Conduct a series of workshops with key user groups to have them prioritise the features and amenities by selected localities.



## Augmented visualisation

- Based on the workshops, create an augmented reality environment that lets the key usergroups and other stakeholders see the design virtually on site.



## Research + Development

- Collaboration with UTAS on Materials development (Tasmanian timber/parametric design, digital fabrication technologies); habitecture (Species hotels), Games + Creative Technologies (ICT)



3M Dichroic film and anti-graffiti covering.



Locally sourced and recycled plastics in Bell Bay.



E-paper screens, NFC beacons and network setup.



Bike fix-it & water stations.

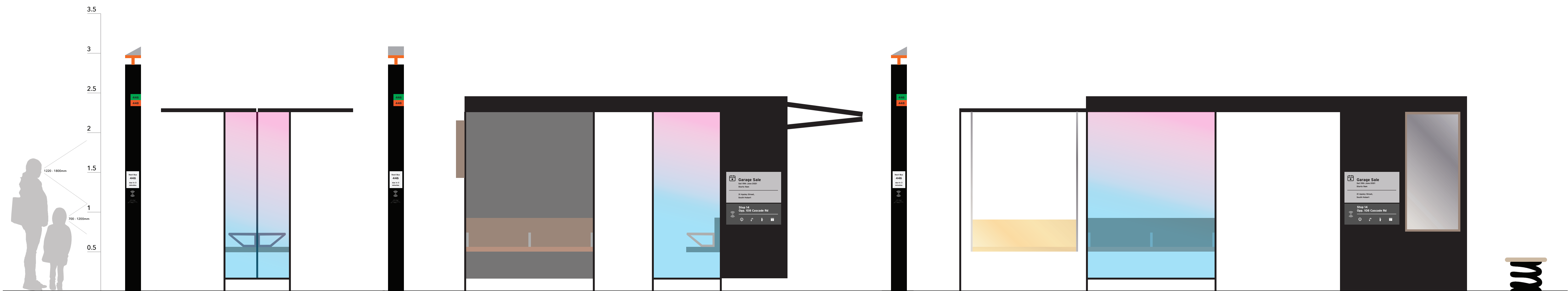


Green Roof system.

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Vendors + suppliers





Thank you.