

Futures in 2050

Reimagining Agriculture is a 12-week speculative, world-building project bred out of collaboration with artist and theatre maker Jess Kapuscinski-Evans through MPAC. The artefacts created are displayed in the Accessible Futures: Disability, Environment and Inclusion exhibition, Melbourne Design Week 2025.

Our design approach is rooted in Protopia, a term first coined by Kevin Kelly (2011) which portrays a future where the world is gradually improving. In contrast to dystopian futurism often coupled with destructive events and a war-torn world, Protopia illustrates a rather hopeful outlook into the future with attainable actions through urban agriculture.

On top of the 3 key pillars of accessible, sustainable and inclusive, the idea of centralising crop growing with living spaces and within reach promote well-being. This world is a space where people of all ages and abilities reconnect with nature and each other through the joy of growing your own food.

Our team envisioned to create an entire self-sustaining agricultural ecosystem in 2050 that projects into 2100. This project is further united by our shared passion (and necessity) for food - which led to the underlying theme of urban agriculture.

Stay Sane, Grow Plants.

The Team

Our team of 4 is made up of 2 industrial designers and 2 spatial designers.

Beyond being a designer and presenter, we each also took up different roles and responsibilities to our strengths and skill set.

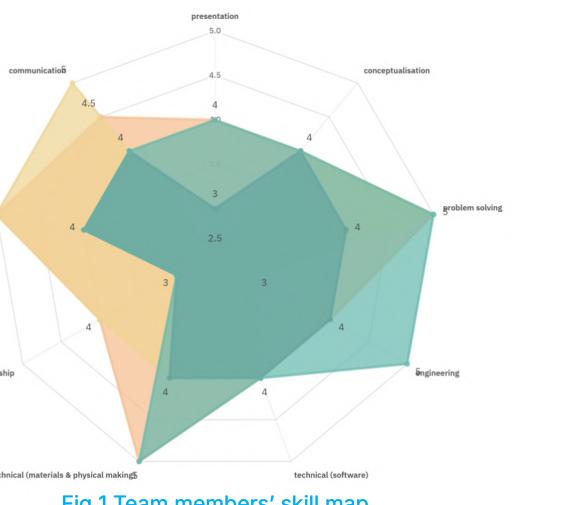
Phourin(bott) Aing
Conceptualiser
Timekeeper
SDesigner

Haruku Nishikawa
Engineer
Model Making
Idesigner/Engineer

Yi Jing Ang
Project
Coordinator
Photographer*

Yuzhi Lin
Researcher
Documenter
SDesigner

*All photographs included are taken by Yi Jing, unless otherwise stated.



Project Brief

Speculating what Future in 2050 might be like for a play written by Jess Kapuscinski-Evans and creating appropriate artefacts for it.

The 2050 Future considers accessibility and is inclusive of all people.

Team Expectation

We are aiming high with our best efforts for

- HD
- Outstanding exhibition display
- One of the finalists for theatre work in 2026 Alter State Festival
- Melbourne Design Week award?

This means doing work ahead of their expected deadlines to give ourselves lots of time for refinement.

Team Catch-Up

Team Role

Face-to-face regular meeting: Monday, after class

Additional meeting: Wednesday

Regular asynchronous updates on Instagram

Team Role

Everyone is a designer, presenter, model maker. In addition,

Haruki is the model making coordinator and engineer for real world feasibility.

Bott is the conceptualiser and timekeeper.

Yuzhi is the researcher and documentator.

Yi Jing is the project coordinator and photographer.

Bott and Yuzhi (spatial designers) are mostly responsible for the conceptual presentation, Haruki and Yi Jing (industrial designers) are mostly responsible for the physical prototyping.

Marking Criteria

- C1 research & analysis
- C2 experimentation & iterative processes
- C3 conceptual thinking
- C4 technical execution
- C5 collaborative engagement & participation
- C6 communication
- C7 reflective practice & feedback integration

Team Role & Responsibilities in detail

Haruki - Model Making Coordinator, Engineer

Role: Overseeing the model making process. Organising materials, logistics of materials, making techniques, storage of materials, how the model is being built and assembled. (Maquette, Lo-fi, Mid-Fi, High-Fi) Responsible of considering concept feasibility through an engineering lens.

Bot - Conceptualiser, Time Keeper

Role: Conceptualising and exploring ideas through sketching, CAD, diagrams, renders and modes. Responsible for making sure the visuals are all cohesive and consistent across the team. Time keeping the team during meetings and procedures in order to make sure the team finishes on time.

Yuzhi - Researcher, Documentator

Role: Continuously research about concepts, social issues, and case studies in the real world. Organising presentation materials, visual materials and a log of decision making. Research fits the rubric required, and all design decisions can be traced back to a relevant idea.

Yi Jing - Coordinator, Photographer

Role: Making sure that the team is on track. This involves project planning, arranging agendas, and keeping track of each member's work. The coordinator oversees the well-being of the team and streamlines operations. Responsible for photographing documentation throughout the project.

Timeline + Key Deadlines

ENSURE ALL COMMUNICATION IS INCLUSIVE OF DIVERSE AUDIENCES!

| Deadline/ milestones M = monday T = thursday | W2 | W3 | W4 | W5 | W6 | W7 | Mid-Sem | W8 | W9 | W10 | W11 | W12 | SV | W14 |
|--|----|---|--------------------------------------|--|---|---|---|---|---------------|---|---|--|----|-------------------------------|
| | | M 4-min presentation: areas of interest, direction | M 8-16 maquettes show refinements | T Presentation: 6-min 3 concept proposals (ranked) [CHANGED deadline!] | M A3 presentation of blended concept | Presentation: Final concept | | WIP Presentation | Theatre visit | Visual Presentation | Exhibition: Final artefacts, presentation | | | Individual Project Journal |
| Expected work | | • AI activity • Research • Brainstorm | • Iterative generation | Summarise each concept with • research • refined maquette • model • visual diagram/ render • feedback | • 3 lo-fi prototypes • Initial CAD | Back concept with • research • project requirement • concept sketch • WIP CAD • Small scale prototype • Project dev doc | | • Mid-fi prototypes • Functional prototypes | | • Hi-fi prototypes • Refine with feedback | FINAL • Scaled model of concept town • Potential 1:1 prop for play • Accessibility AOI • Diagrams/ renders • Audio-visual etc. | | | |
| Our own timeline | | Brainstorm + decide on • 3 concepts, • making techniques, • materials, • what to present W5 | W5 presentation: • refine visuals | Decide on what to CAD • Start creating basics | | | • Finalise existing ideas + models • Material research: fabrication + techniques • Build physical models + outcomes • Prepare documentation for presentation • MDS setup prep | | | • FINAL model • Practice presentation | | • Edit documentation journal per submission • Photographs of MDS • Reflection of MDS | | |

1 Exploration and Understanding

Any project begins with understanding.

Individually, we first identified our areas of interest to world build in this 2050 future. Then, we came together as a team and narrowed down to 1 focus: Urban Agriculture. At this early stage, we decided to explore Urban Agriculture through multiple perspectives, our lens of interests.

Adaptable Living Space – Bott

Knowledge – Yuzhi

Transport and Mobility – Haruku

Waste resources and Energy – Yi Jing

Key precedents for me are

- Future Food System, Joost Bakker
- Recycling biosolids to make sustainable bricks, RMIT
- Helioskin PV, Cornell University

Recycling biosolids to make sustainable bricks - 2019, RMIT

Biosolids are by-products of treated sewage. The making of these biosolids bricks halves the energy requirement compared to conventional bricks. Compared to concrete, they transfer better insulation and have great strength. They can also be good fertilisers for food production. It's a great example of turning waste into value.

Monash Microgrids

mushroom cultivation using food waste, food waste upcycling

Using food waste as part of the mushroom substrates as an organic fertiliser and crop production. Crop nutrient management

P2P Energy Microgrid, German Wildpoldsried Village

This village generates > 500% energy it needs using wind, solar, biogas, hydro power and profits by selling this surplus into the national grid. The accessible future could be an island microgrid where every household generates energy, and any surplus gets distributed to others in need or to operate communal places.

Reimagined PV Helioskin, Cornell University (Jenny Sabin Lab)

The left shows a reimagined photovoltaic (PV) panels, it's hinged and lightweight instead of flat and could be wrapped around complex building structures. With the reimage the sun like a giant sunflower! Beyond producing energy pass adopt it by showing them the beauty it creates when integrated slow adoption of solar panels can be attributed to two things:

solar oven + dehydrator, l'atelier solaire

Using free (SLN) energy to cook and heat food. The dehydrator allows preservation of food (fruits, vegs, herbs etc.) without the need to use electricity. These are built from Pine, stainless steel shelf grids, Glass facade and can be easily carried around to be placed anywhere.

Wonder how consistent the cooking would be if there is no sun?

Fig 3 Research on precedents.
Top: Yi Jing's case studies, **right:** the team's collective research.

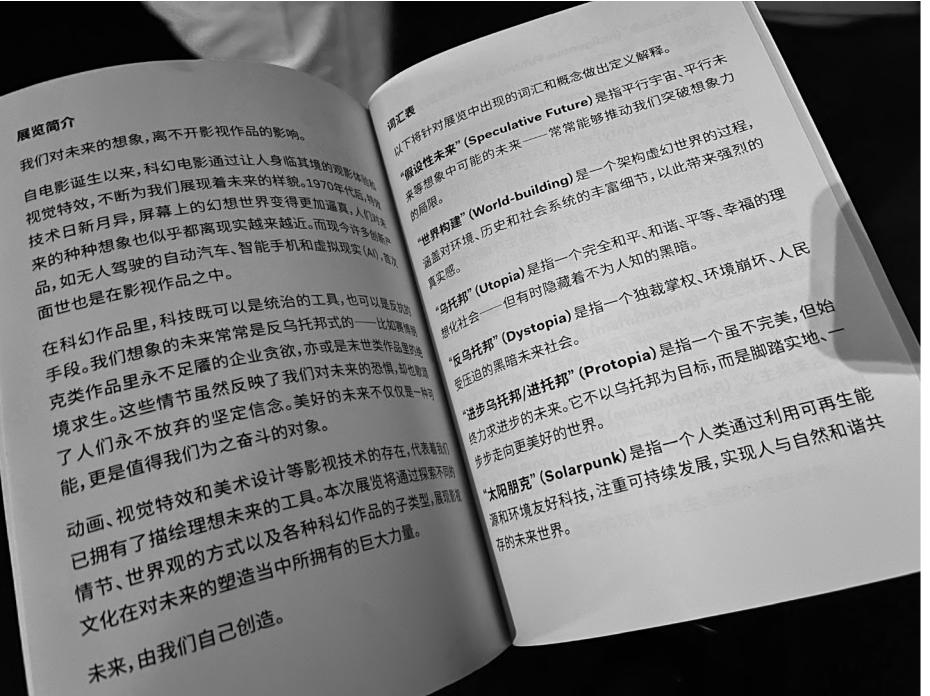


Fig 4 Yi Jing's Discovery of "Protopia" at The Future & Other Fictions exhibition (ACMI 2024)

how did you feel?
what futures were you excited about, worried about?
what techniques inspired you?
what techniques might you borrow and adapt?

Self: I found it quite difficult to relate to the dystopian futures, I don't quite understand the fear. There was a lot of space exploration and I thought these futures were more a form of escape than practical in ways to improve the reality. I think Protopia seems a better fit, I found this word while flipping through the exhibitory booklet.

On discussion with my peers, Cissy and Yuzhi.
Self: I enjoyed the works showing strong contrast in dimensions, scale, materials, light and shadow the most.

Cissy: I agree and I especially like the iridescent dress near the start of the exhibition.

Yuzhi: I think the music was important in complementing the atmosphere.

Coming from Asian background, we thought the exhibition wasn't representative of other ethnic demographics and considered potential explorations in the project.

AI Interaction for Research

As a team, we explored ChatGPT, Microsoft Co-Pilot, Deepseek and Perplexity as our AI tools in our design curriculum.

Prompt: Problem Statement
The topic the team is focusing on is urban agriculture. The theme is explored through multiple perspectives, ranging from waste management to cultural heritage, adaptability to mobility.

The project name is Protopia, a term first coined by Kevin Kelly which portrays a future where the world is gradually improving. In contrast to dystopian futurism often coupled with destructive events and a war-torn world, Protopia illustrates a rather hopeful outlook into the future with attainable actions.

Urban agriculture creates a microcosm of accessible vegetation. In conventional agriculture, food is often transported through strict logistics. The idea of centralising crop growing with living spaces and within reach is simply accessible - where people of all ages and abilities can provide themselves with food. The constraints are the limited space and growth at a small scale with minimal industrial technology.

Our group strived to create an entire ecosystem that envisions 2050, further united by a shared passion (and necessity) for food - which lead to an underlying theme of urban agriculture. Or perhaps, we just wanted to make sure we can have some warm bowl of good food in a calamitic world.

Further exploration

I chose Exhale by Julian Melchiorri, from Bott's findings as I initially thought the case study presented a living material that aligns with my personal interest in materials and team's sustainability focus well. I later found out through my research and another detailed AI prompt that it was a chandelier. This wasn't very relevant to our project hence I selected The Plant (Chicago) instead, also from Bott's collection.

The Plant (Chicago)

Founded in 2011 by an industrial designer John Edel, Bubbly Dynamics, this project transformed a former meatpacking factory facility into a hub for sustainable food production, waste management and community development.

I would consider this project to be relatively impactful within its community, the project houses 20+ small businesses in their system of food production and provide 100+ jobs. It may not be pioneering in the field, but it's a practising example as shown in this academic journal article and has been featured on notable platforms such as Archdaily and Business Insider.

https://www.researchgate.net/publication/319234427_The_Plant_An_experiment_in_urban_food_sustainability

This work relate to Protopia for its systemic approach to practising sustainability in a community-oriented setting. They challenge the conventional idea of linear economy whereby the waste streams of one business source become feed for another, and shown the possibility of integrating activities beyond urban agriculture with careful planning.

Influences and Direction Forward

The key practitioner I found is Joost Bakker. His work approaches the cultivation of food in built environment holistically. He also inspired Silo, the world's zero-waste restaurant through the emphasis on circular practices and techniques like fermentation.

Beyond this, I also explored the different possibilities of urban agriculture. This led to the idea of communal spaces like the multi-sensorial urban garden, Zighizagi in Favara, Italy.

Based on the following project description and problem statement "The topic the team is focusing on is urban agriculture. The theme is explored through multiple perspectives, ranging from waste management to cultural heritage, adaptability to mobility."

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"I'd like you to answer the following:
Who are notable designers or practitioners working in [urban agriculture]? Provide 10 examples of existing designs addressing constraints and challenges. Provide designers' names and relevant projects."

Show less

Answer Sources 8

Synnefa Green LTD Urban Farming: The Benefits and Challenges That Come With It [PDF] Urban food security, urban resilience and climate change LinkedInEditors Urban Farming: Significance, Types, Benefits & Challenges -... +5 sources

Notable Designers and Practitioners in Urban Agriculture

1. Dickson Despommier

- Project: Vertical Farming
- Focus: Pioneered the concept of vertical farming, integrating agriculture into urban skyscrapers to address space constraints and improve food security.

2. Will Allen

- Project: Growing Power (Milwaukee, USA)
- Focus: Developed community-based urban farming systems that incorporate aquaponics and composting to maximize productivity in small spaces.

3. Ron Finley

- Project: The Ron Finley Project (Los Angeles, USA)

Ask follow-up

Paul Burton

12. The Plant (Chicago)

- Aspect Addressed:** Waste Management
- Design:** An old meatpacking facility converted into a sustainable urban farm. It integrates food production with waste-to-energy systems, including composting and aquaponics.

13. Kirsten & Julian Melchiorri

- Project:** Exhale
- Description:** A bio-tech design studio known for creating innovative solutions in urban agriculture. They designed "Exhale," a biodesign project combining plants and textiles to create a living material capable of photosynthesis and air purification.

I'm interested in the following precedents:
Luca Farms,
Square Roots
Edible walls

For each of the above, please provide the following:
an overview of the designer/practitioner,
what fields they contribute to
whether they have other notable projects in relation to [specific aspect of the challenge that led you to explore this precedent]
what their design philosophy is
Who are other leading voices in the field?

Show less

Answer Sources 8

Synnefa Green LTD Urban Farming: The Benefits and Challenges That Come With It [PDF] Urban food security, urban resilience and climate change LinkedInEditors Urban Farming: Significance, Types, Benefits & Challenges -... +5 sources

Notable Designers and Practitioners in Urban Agriculture

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Ask follow-up

4. Paul Burton

Here's an analysis of the requested precedents based on the provided sources:

1. Luca Farms (Planet Farms)
Designer/Practitioners: Luca Travaglini and Daniele Benatof
Field: Vertical farming and controlled-environment agriculture (CEA).
Notable Projects:

- Cavagna Vertical Farm: Europe's largest vertical farm (9,000 m²), producing 800 tonnes of salads/herbs annually using automated systems, LED lighting, and organic substrates.
- Global Expansion: Plans to replicate scalable vertical farming models worldwide.

Design Philosophy:

- Focuses on precision agriculture with controlled variables (air, water, light) to maximize yield and sustainability.
- Prioritizes resource efficiency, using 97% less water than traditional agriculture and eliminating pesticides.

Related Challenges Addressed:

- Solves space constraints via vertical stacking.
- Reduces food miles by locating farms near urban centers.

Ask follow-up

2. Square Roots

Note: No direct information about this precedent exists in the provided sources. The term "Square Roots" appears in unrelated contexts (mathematics and a farm named Profound Microfarms in).

summarise the Kirsten & Julian Melchiorri Project: Exhale

Answer Sources 8

The Exhale project, created by Julian Melchiorri, is a groundbreaking "biotic chandelier" that combines art, design, and biotechnology to purify indoor air. This innovative living object, now part of the Victoria and Albert Museum's permanent collection, consists of 70 living modules that grow microalgae and purify the air. Key features of the Exhale chandelier include:

- Air purification: The microalgae perform photosynthesis, absorbing carbon dioxide and releasing oxygen into the room.
- Biotech: The design is inspired by nature, particularly the Vitis Art Nouveau and Islamic Art collections.
- Symbiotic relationship: The chandelier establishes a unique exchange between object and environment.
- Handcrafted structure: The metal framework is entirely handmade, with each element holding a single net module in three different sizes.
- Microalgae: The chandelier uses a species developed by Abnova engineers that can produce up to 100 times more oxygen than traditional microalgae.

Melchiorri's Exhale project demonstrates the potential for applying biotechnology and engineering to everyday objects, inspiring art and architecture to serve a functional purpose. By integrating art and science, Melchiorri's innovative approach to design showcases the possibilities of integrating living organisms into functional art pieces, paving the way for future developments in sustainable and biologically active architecture.

Fig 5 Response from AI Interaction

Experience using AI for research

I think AI...

...worked well for its ability to compile and condense loads of information in short amount of time.

...is limited by skewed results. Also it requires specific instructions to be useful. Depending on the AI platforms used, the results often featured the more influential examples in the fields, hence eliminating other useful examples.

...ChatGPT, Microsoft Copilot and Perplexity tend to focus on literature/findings from the West hence overlapping results while Deepseek fills in on the missing voices from Asia.

...Perplexity with its detailed explanation on its WiP and citations in the form of clickable links are useful for further research and validation.

2 Consolidate Findings

The Tomorrow Party, a co-creative futures method, is introduced to us by A Prof. Shanti Sumartojo. This research method emphasised on dialogic communication to uncover unspoken, subconscious thoughts.

We carried out open-ended, dialogic interviews with 5 participants to uncovered what 2050 looks like to them. Our participants ranged from fellow peers in the cohort, to government official, and our lecturer expert in participatory design. The key question raised was "Would people be nicer in 2050?", concern with climate change and AI and criticism to improve our interview approaches through the act of priming. Despite these, our participants remain positive and hopeful as they imagine their future selves in 2050.

Within one week, we consolidated our preliminary research and the core emotions we want to capture in this 2050.



Fig 6 Yi Jing and Dr Dion Tuckwell in an interview, photographer: Haruku

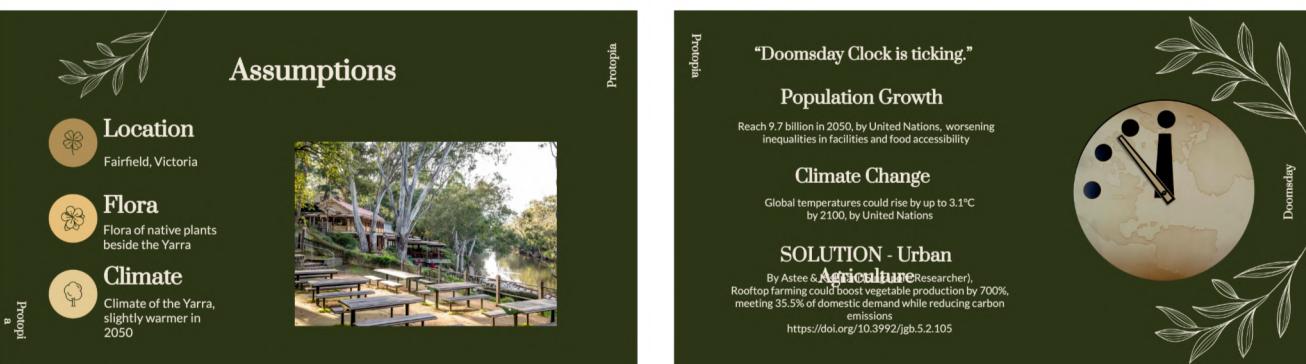


Fig 7 Preliminary presentation in Week 3
Presentation layout done mostly by Yuzhi

On the left, this first maquette imagined a world built on a slope with a river flowing through. The world consisted a decentralised network of villages and their crop land. On the side, we have the scaled models of an isolated village and a movable dwelling.

Tutor: Aileen Ng

1. Great explorations on urban agriculture from multiple perspectives
2. Clarify how you are going to tie the different perspectives together (eg. mobile house vs the plant going to the person rather than the other way round)
3. Think about the people and how they live in Jess' play, are they in individual dwellings, is it a community, how are resources shared?

Direction forward
Follow through with previous exploration of social structure.
Jess' play focus: sustainability, accessibility and inclusion

Speculative Collage

Another consolidated exploration of what could be included.

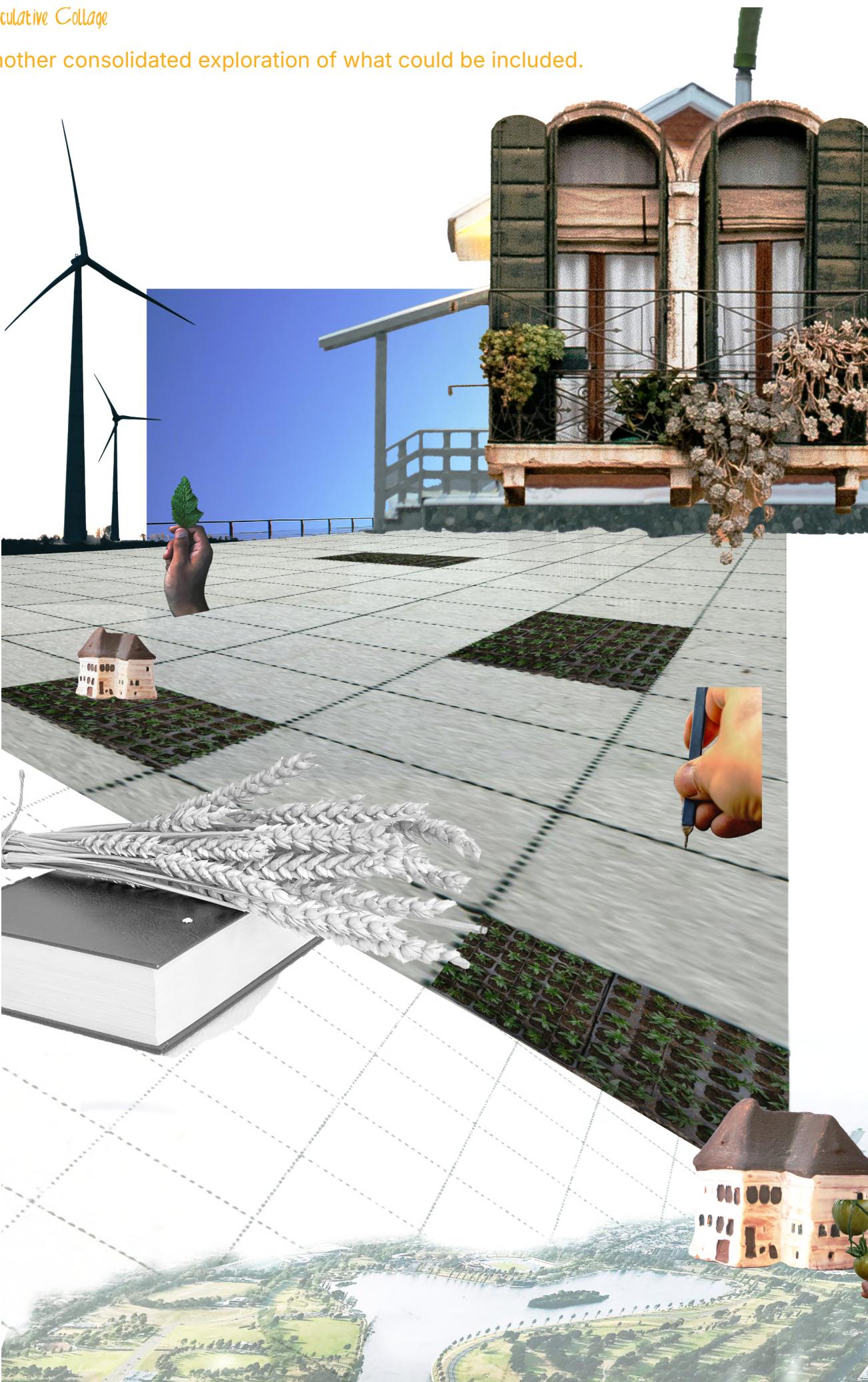


Fig 8 Speculative collage by Yi Jing

Preliminary Introduction to the Concepts

At the studio, each team had a display setup of our preliminary concept development. We then walked around with post-its in hand and commented on each other's work.



Fig 9 Review of preliminary maquettes

Top: Dr Chris Cottrell (tutor) looking at speculative collages
Bottom left: the team's table setup of early maquettes
Bottom right: post-its feedback from peers



3 Concept Proposal

How might agricultural practices be for Jess' 2050 play and characters?

This is the problem statement we set out to answer. On top of designing with the play's central themes of accessibility, sustainability and inclusivity, Protopia also addressed 7 out of 9 of the conundrums set in this 2050 world (with scarce resources) through our 3 concept proposals.

Conundrums

- no industrialised agriculture
- no printed/ recorded media
- no recorded music
- no fossil fuels
- no longer globalised interconnected society
- no internet, no AI
- what technologies are there?
- no cars
- infrequent trains and buses

The Concepts

1. The Researcher and their Data
2. Cycle of Food Production
3. Expressive World

We began by understanding the social structure of this world through the characters, the roles they take and how they relate with each other.

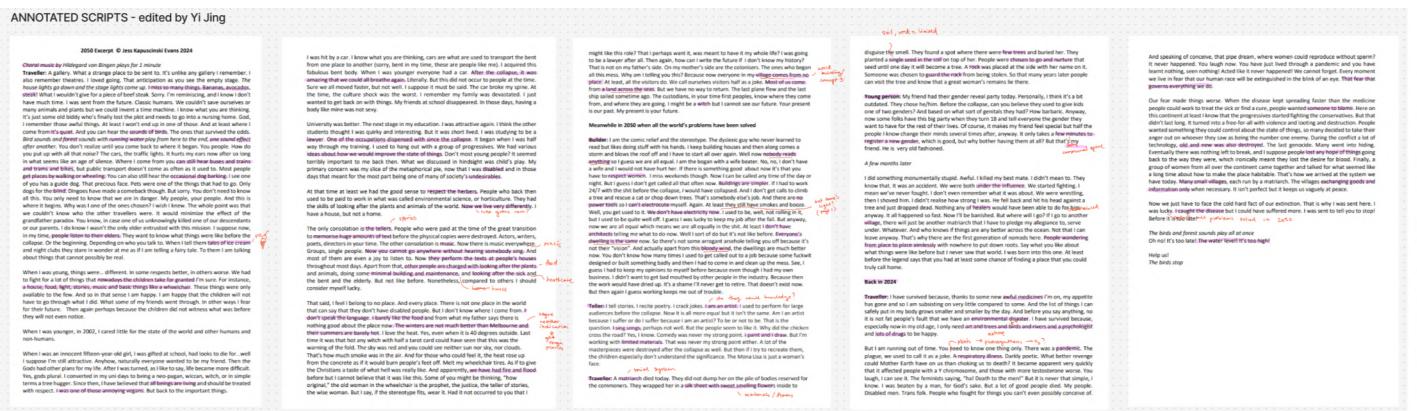


Fig 10 Character profile mapping

Top above: Yi Jing's annotated script
Top: summarised list of (new) characters
Right: character map by Yi Jing

The session is led by Haraku with Yi Jing and Yuzhi (Bott apologised for absence). Yi Jing summarised the key characters and details for contextual understanding.

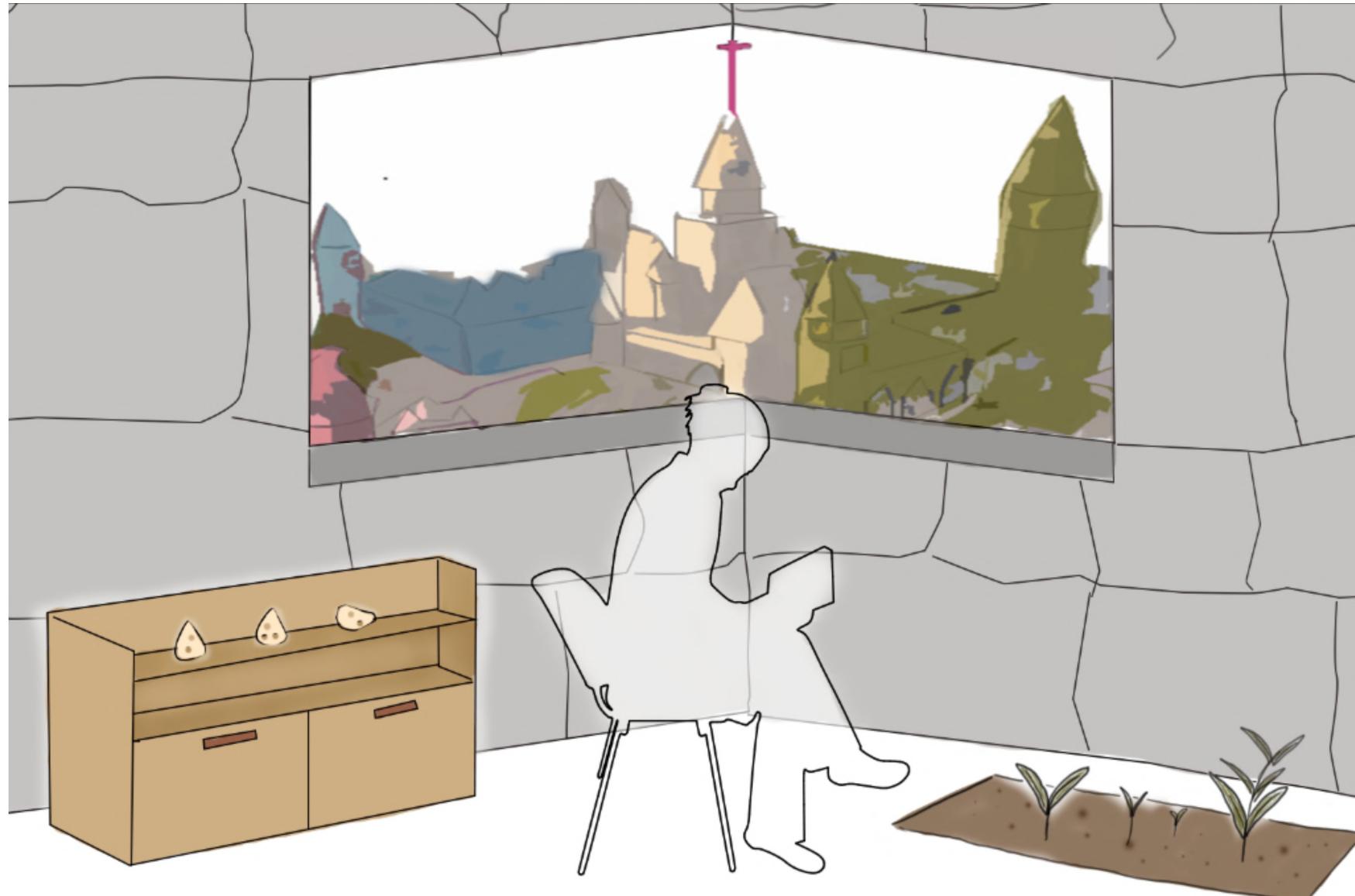
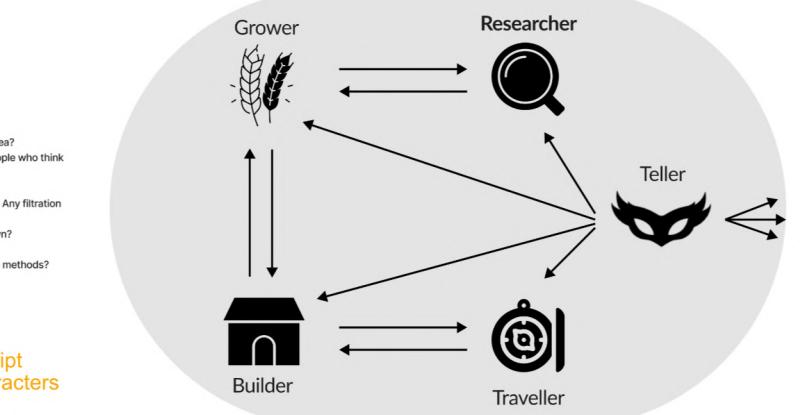


Fig 11 Sketch of all-in-one concept
Featuring the 2050 world through the window by Haraku refined by Yi Jing, interior environment by Yuzhi

Feedback

Highly engaged research and world-building that expands the parameters of the project. New characters, and sophisticated proposals for knowledge storage and transmission. Good range of media to express concept proposals.

Dr Giorgia Pisano (tutor): really like how they (the concepts) are all blended but also standalone concepts

Ruth Oakley: character mapping is a great visual!

Visuals are further developed for future proposals.

Concept 1: The Researcher and their Data

Initially, this concept intended to challenge the conundrum of no internet by taking a tech-driven approach. This would be done through the use of sensors, as a means to monitor and optimise the environmental conditions to grow plants. We believe humans seek improvements continuously and this may be one of the methods.

We later pivoted to create a new character, the Researcher, after receiving feedback from Chris to identify the core concept. The core concept resulted as optimising crop production using data rather than being technologically-driven.

Hence, the Research attempts to do the same (monitor & improve) but manually with trial-and-errors and observation.

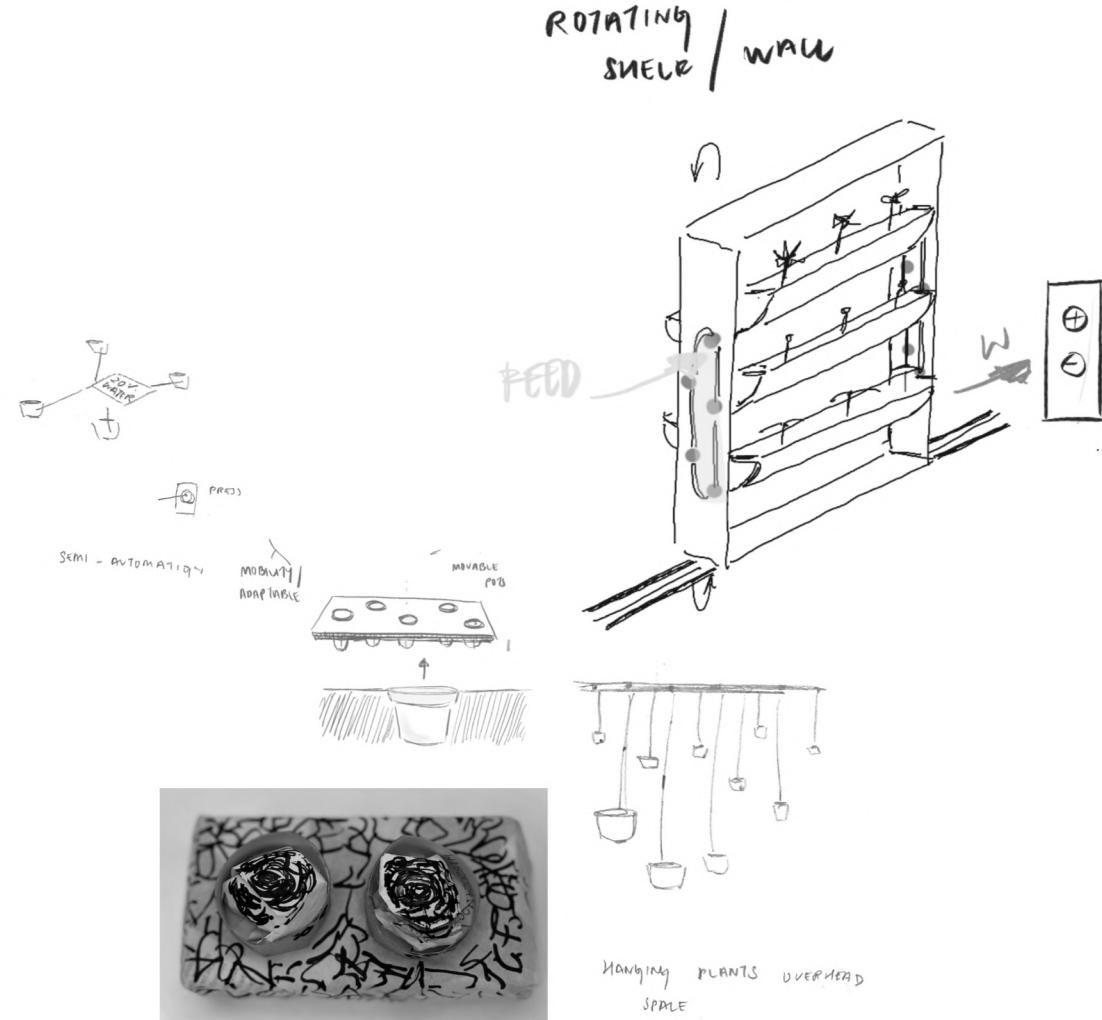
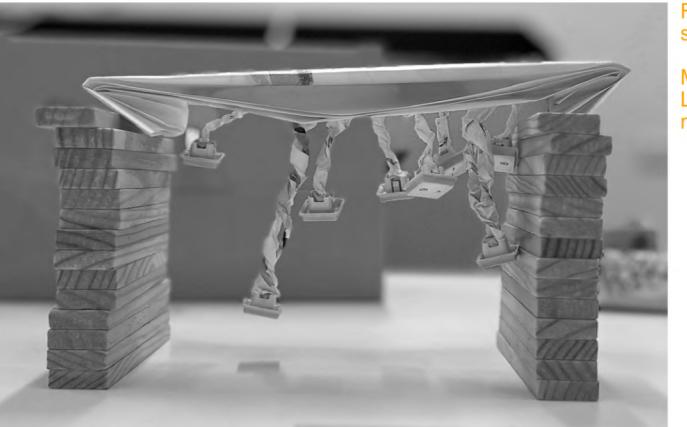


Fig 12 Yi Jing's sketches to maquettes exploring tech-driven solutions from top to bottom

Mid left: a biofuel-powered remote
Left: hanging plants from ceiling represented with keycaps, this maquette attracted many comments for its visual aesthetics



Concept 1 The Researcher and their Data



I was an environmental scientist, I need a space for my trial-and-error. The Grower doesn't understand me.

In 2100, everything is growing their best in this bloody weather and good thing I created Hortishell backed in 2050.

This concept proposes the "Researcher" character and an experimental technology to improve food production. The "Researcher" favours manual trial-and-error, and they gather data to enhance food yield.

- Enhance food yield for the villagers
- Minimise resource exploitation
- Knowledge transfer to future Growers

Conundrums

- no industrialised agriculture
- no internet, no AI
- what technologies are there?

References
Interior vertical farming, <https://www.nda.ac.uk/blog/interior-vertical-farming/>

Fig 13 Concept 1 presented in Week 5
Concept of manual measurement proposed by Yuzhi.

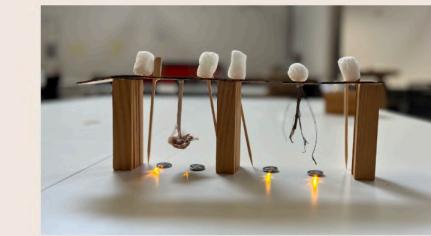
From left to right featuring character profile, writing and early maquette by Yi Jing, sketch of environmental conditions by Bott, refined maquette (with plants collected by Yuzhi and Yi Jing), sketch of researcher and render of Hortishell by Haruku.

Feedback

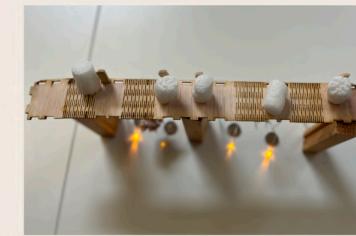
JKE: like the character relationship, and people learning new things → researcher

Dr Robert Lundberg (guest panel): researcher felt industrialised, why plants would be removed from where they are grown?

Later, the Researcher is refined as an experienced Grower to fit the final narrative.



Initial brainstorm with the use of sensors and data to optimise crop production

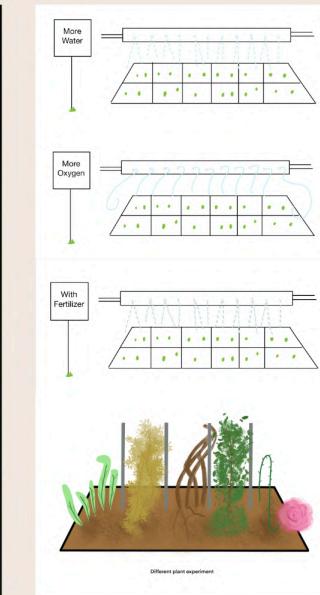


"I don't speak the language," – Traveller

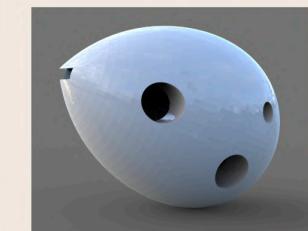
The Researcher making the Hortishell



Maquette of different plants being the Researcher's trial-and-errors



Different environmental conditions



Concept 2: Cycle of Food Production

This concept is all about the circular practice of food production; this looks like adopting the

- harvest of bush tuckers – native Indigenous Australian ingredients (Hazelwood et al. 2025) – and edible insects as protein,
- utilisation passive processing techniques: fermentation, underground fridges and solar oven
- composts into fertilisers or bio-fuel

Then passing down these agricultural knowledge to the future generations through the Hortishell artefact.

Hortishell uses a universal language of vibration, ensuring villagers at different abilities to understand each other without a common language.

My attendance at the Melbourne Conversations: Future Proofing Green Spaces talk received a lot of learnings on potential growing method and the idea of integrating bush tuckers.

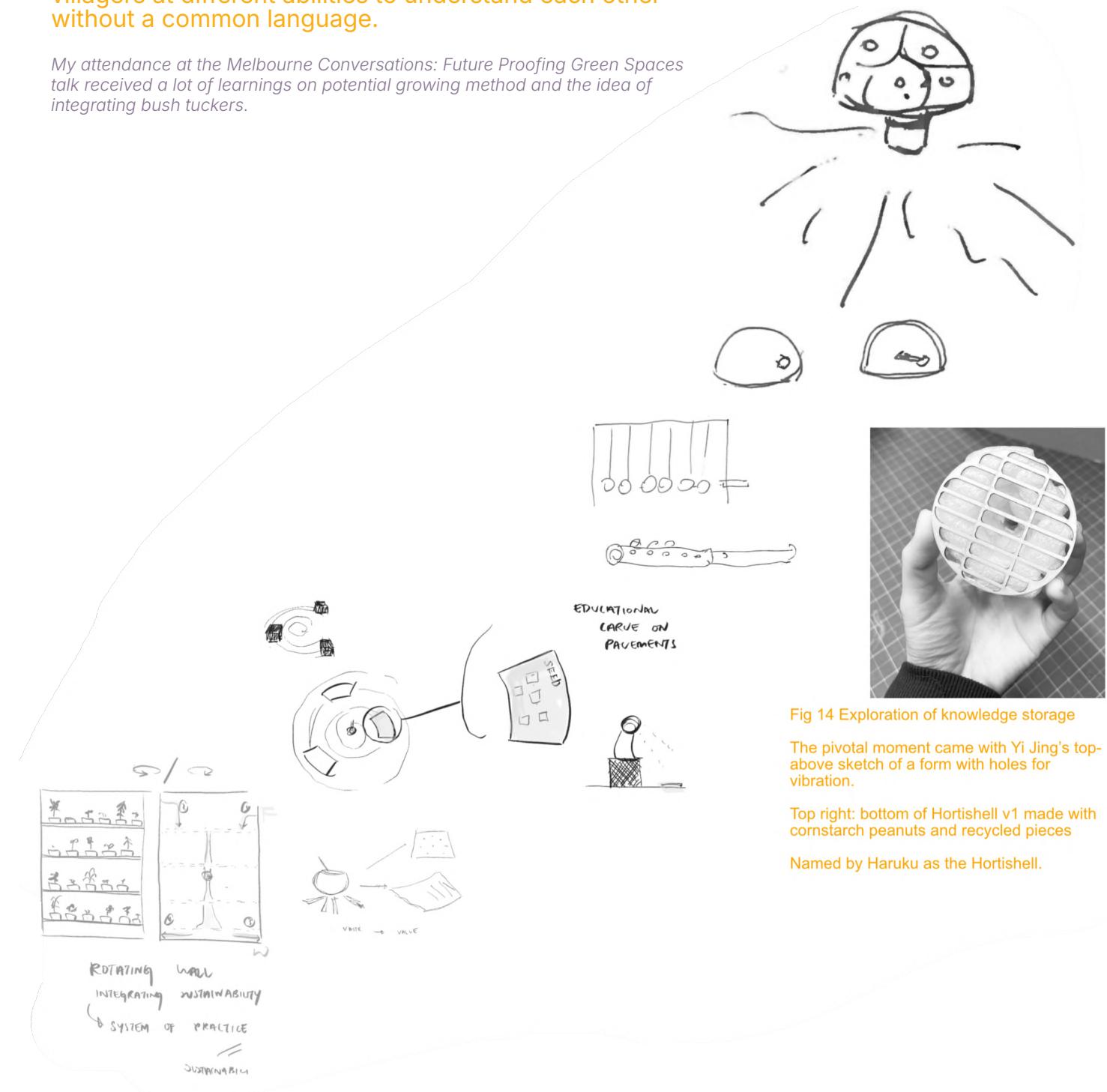


Fig 14 Exploration of knowledge storage

The pivotal moment came with Yi Jing's top-above sketch of a form with holes for vibration.

Top right: bottom of Hortishell v1 made with cornstarch peanuts and recycled pieces

Named by Haruku as the Hortishell.

Concept 2 Cycle of Food Production



This concept explores the food production process from planting to waste and then ways to pass on this knowledge through a universal language of vibration.

- Bush tucker (native ingredients), passive methods
- Circular resource efficiency (waste = nutrients)
- Everyone has access to food source

Conundrums
-no industrialised agriculture
-no recorded media/ music
-no fossil fuels

References
The Plant, Chicago - <https://www.plantchicago.org/>
Melbourne Conversation: Future Proofing Green Spaces

Fig 15 Concept 2 presented in Week 5
Concept of vibration as a universal language proposed by Yi Jing.

From left to right featuring character profile, writing and food production map by Yi Jing, early maquettes by Yuzhi and Haraku, sketch of the researcher interacting with Hortishell and cross-section by Haraku, refined maquette by Yi Jing

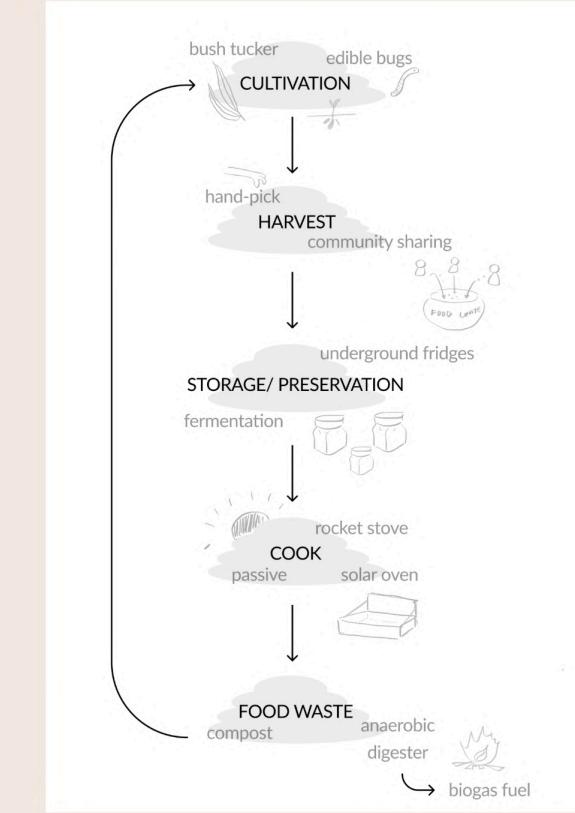
Feedback

GP: Hortishell is very interesting, more sensory experiences perhaps bringing it close to the audience, universal language, draw more attention to this

RL (guest panel): Hortishell - abacus? Any alternative communication/storage system? Think it can be interesting to develop further

RO: 'Hortishell'. I love this. It is a bit like biodynamics with the 'horn' - but developing on that idea, including using it as a communication tool for blind people, and for passing down knowledge

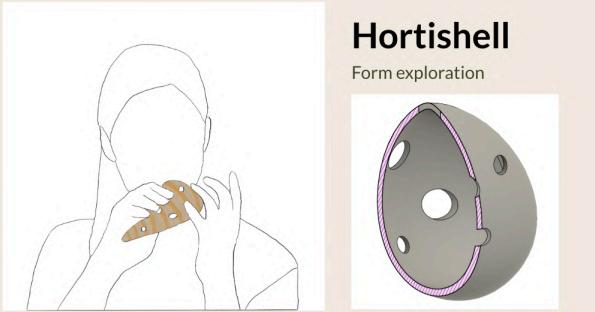
Hortishell is a well-loved highlight and a key candidate for the next project phase.



Livestock living with people & Crops in close distance



Underground Fridges/ Food Preservation Fermentation Techniques



Hortishell
Form exploration



Hortishell, it is inspired by seashells by the sea. Its structure produces multimodal communication: visual, auditory and tactile - vibration.

Concept 3: Expressive World

This concept imagines Jess' world make up of decentralised societies. It visualises what the community would look like as it grows over time.

Could the different architectural elements and their functions be presented in their forms? Could the dwellings be individual modules? Could these modules be arranged in some ways to form a pattern that expresses the community?

Everyone was onboard with Haruku's proposal in projecting 2050 into 2100 to highlight the theme of time and growth.

I thought this is cleverly interesting.

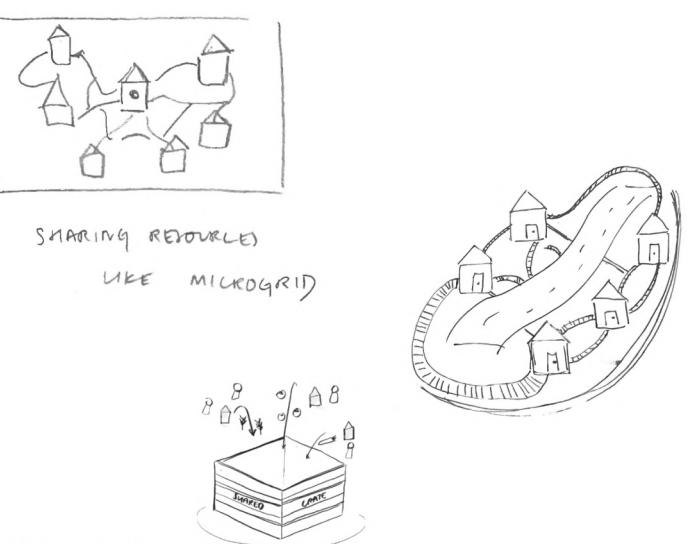


Fig 16 Yi Jing's sketch exploration of the community

Concept 3 Expressive World

Builder
"I keep building houses, it keeps me out of trouble."

I was a construction business owner. I need to make stuff, can't stand the architects but I like architectural arts.

In 2100, nobody knows but our village is a wonky circle. The birds know. (+ Traveller)

This concept explores the theme of time in Jess' play by showing how a community builds and grows over time. It treats individual homes (doubling as agriculture production) as decentralised modules.

- All resources within walking distance
- Lowered carbon footprint
- Shared architectural expression

Conundrums

- no industrialised agriculture
- no longer globalised interconnected society

References

- Ana Hatherly's Poems
- 15-min city urban planning
- Nomad: walking city

Infrastructure

- ◆ Public Bath and Water Supply
- ◆ Sewage and Waste Management
- ◆ Micro-Grid
- ◆ House on Wheels
- ◆ Vertical Gardens

Fig 17 Concept 3 presented in Week 5
Concept of a growing community by Haruku.

From left to right featuring character profile and writing by Yi Jing, sketches and infrastructure by Haruku, early maquettes by Yuzhi and Haruku, refined maquette by the team.

Feedback

JKE: movable, dynamic community, what's the purpose of the wall – have considered it, would it keep people in/out of it – is there conflict between villagers/ communities? Haven't thought about water storage, appreciated this was brought up, really like we speculated 2100

RO: People in 2050 should be thinking about 2100. This neatly solves a theatrical conundrum that 2050 was a bit soon into the future for our audiences to see such a new world. Further projecting in the future opens up much more possibility.

The themes of time and growth are prominent features for considerations.

19

20

1 Concept Iteration

Body Storming

The Scenario

Imagine a house, where the inside and outside are separated by a sliding door. The door width can be lengthen to accommodate its audience's needs.

Situated outside is a vertical farm with several shelvings. These shelves rotate when you pull on the pulley, so that you can harvest different plants on different levels without needing a ladder. On the ground is a land plot with some stepping stones. And on the side is a water tank collecting rainwater runoff for watering.

Role play

Individual(s) with wheelchairs.

I am an individual in a wheelchair. I find it difficult to reach and harvest the produce even with the stick picker. There is no way to pick the produce if they fell onto the ground, I can't bend my back. Everything is too far away from my reach. I am struggling.

Seeing the struggle made us realised the importance of having things within reach at appropriate distance. Later, Haruku led the exploration of accessible garden.

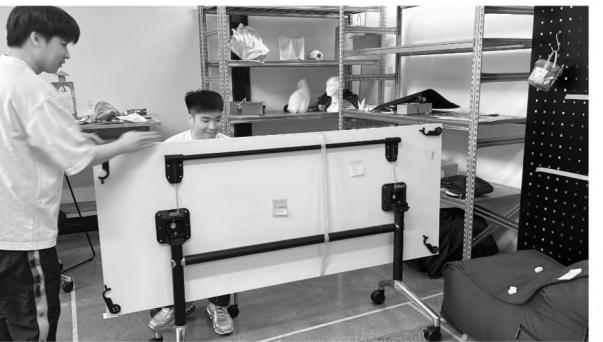
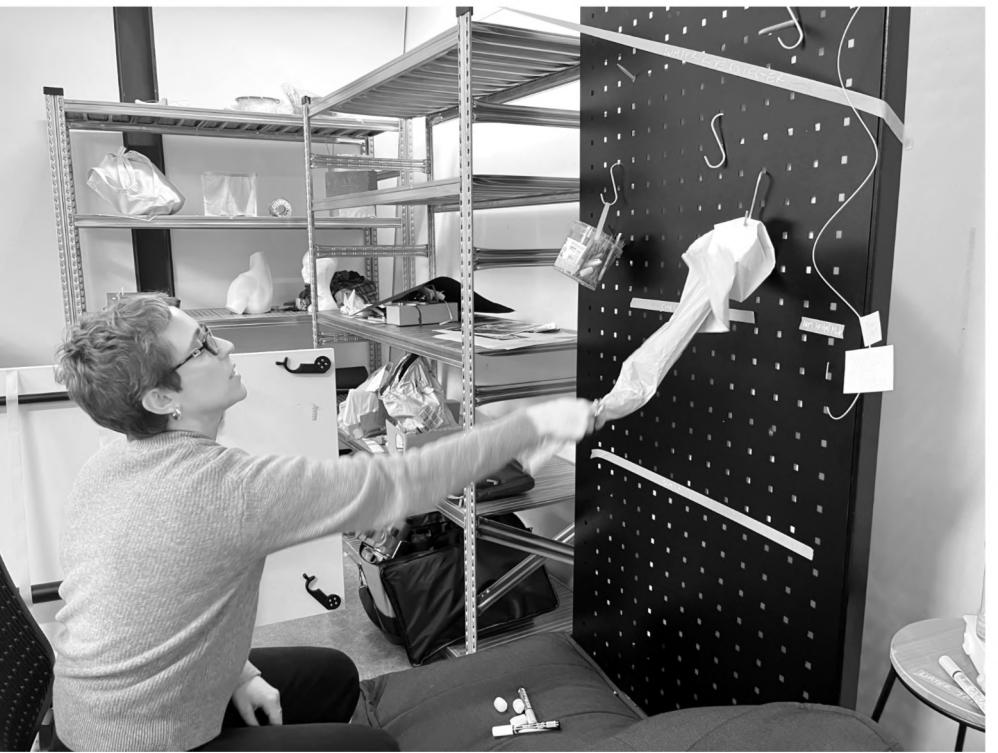


Fig 18 Bodystorming in action

Left: Peers testing the sliding door
Bottom: GP trying to pick food with the stick picker



Iterated Concept Theme

After attending the Melbourne Edible Futures exhibition and talk (Low, Walls and Kok 2025), Haruku and I discussed about the technologies used in agriculture and its impact on health and wellbeing. The speakers talked of how advanced agricultural technologies are not sustainable and the high failure rates of business ventures in the field. They also mentioned the limited Australian diet with only 12 veggie varieties and 5 meats. We both concluded that advanced technologies like vertical farming are not suitable for the 2050 world we envisioned, agriculture has greater potential than just a food source and perhaps we could explore the nutritional aspect if we have time. We then proposed and refined the idea with Bott and Yuzhi.

With positive feedback from the panel, we also decided to combine the highlights our 3 concept proposals into one. The character of the Researcher. Hortishell. The theme of time. Sustainable growth. Systemic interactions.

This final concept evolved to focus on the experience of agriculture and how it enables people to reconnect with nature, with each other through an emotional sense of belonging. It also emphasised on storytelling and building the overall narrative of the world and the artefacts: Accessible Planter Box and Hortishell.

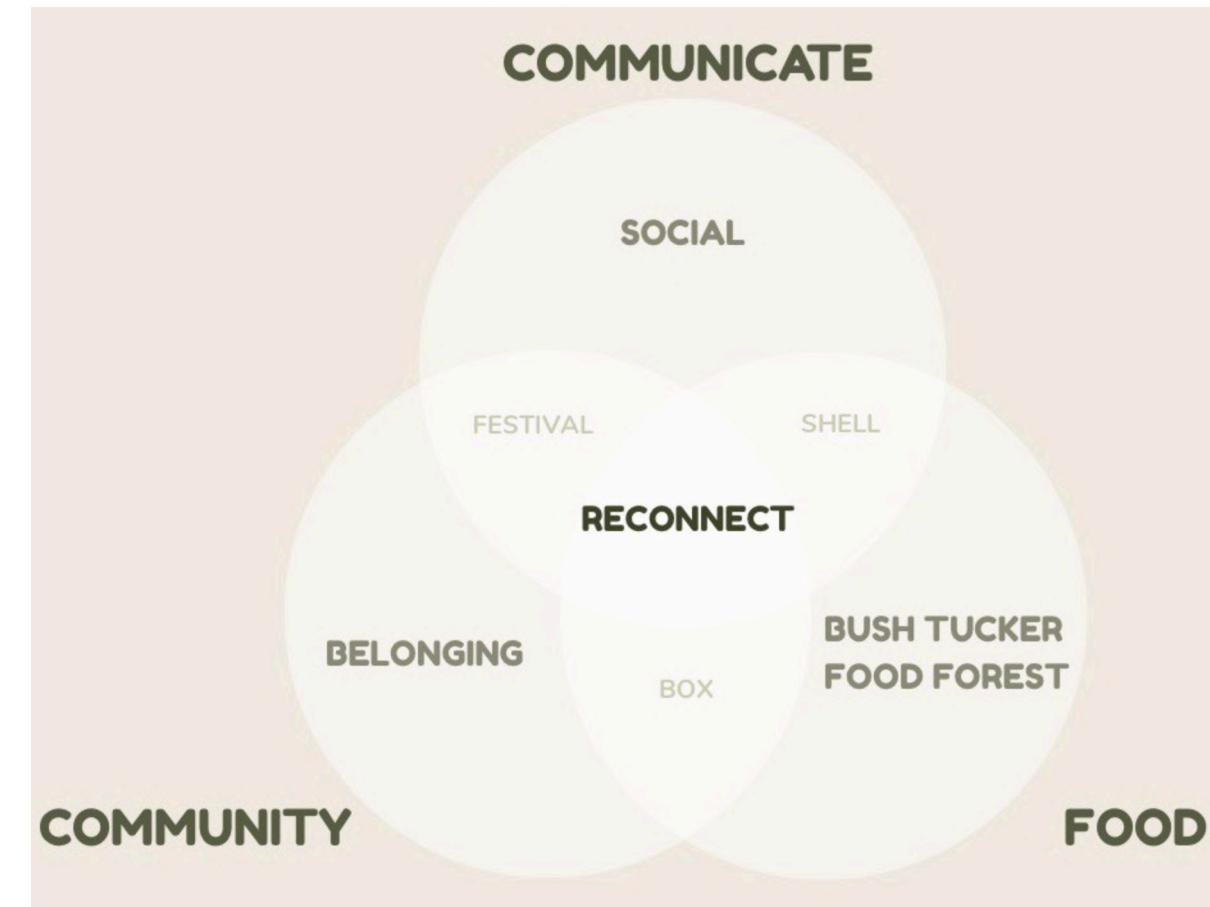


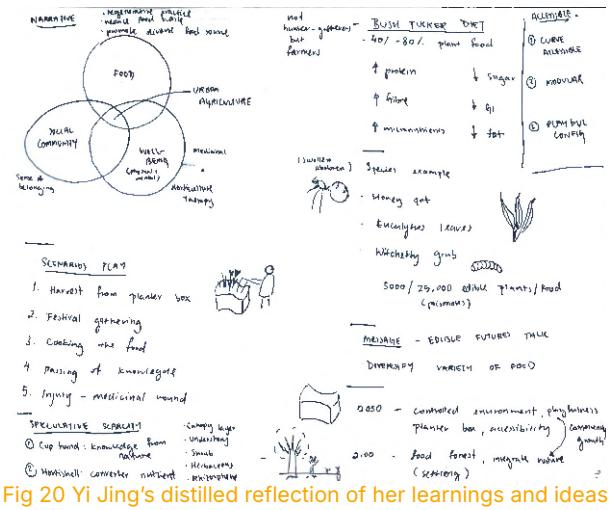
Fig 19 A venn diagram summarizing the concept's key aspects by Yi Jing, refined visual by Bott.

Feedback

JKE: Good utopian vibes "cute and friendly"

GP: Great project all around, clear explanation of concepts, with well researched and delivered rationale for each design decision made. Visual communication is strong but the slides could have more text to help the audience follow your presentation. Great references to Jess's script in building your concept.

CC: Presentation ran a bit over time! Try to tighten this up in your next presentations.



This reflection combined all my learnings from Melbourne Conversations, Melbourne Edible Futures, bush tucker diets and early speculative ideas for the Hortishell. It was a necessary moment for myself to clarify where we have progressed in the project. I think the session bred many ideas that added to the project at this stage.

Hortishell

"During the last days of the great war before the apocalypse, ultrasonic weapons were rampant, creating the need for countermeasures. The predecessor of what became the Hortishell was developed, when civilians detected incoming ultrasonic waves. Scavengers during the looting era after the apocalypse realised its potential as a sensory device to unarm remaining ultrasonic weapons. The Hortishell played a pivotal role in the regrowth under the rule of the matriarchs."

Plants emit ultrasonic waves, far beyond human's hearing range (Khait et al. 2023, TAUVED 2023). The Hortishell translates these, acting as a bridge reconnecting humans to nature. There is no longer a need to pass down agricultural knowledge, because it is harnessed from the source itself.

The Hortishell hangs around the waists of the villagers, from young children to the elderly across all ages and abilities. It became a shared identification, uniting these nomads with a sense of belonging.

The Hortishell was left untouched until the accessible planter box was figured out. The great challenges were its form and narrative. As I distilled the project in reflection, I wondered about nutritions and knowledge storage. I knew plants emit noises, so I thought what if people could hear directly from them and the Hortishell as a nutrients converter. What if there aren't so many steps in the food production process? I had Haruku as the first sounding board and found my initial ideas being too complicated to understand. He suggested why not have combined the ideas into the Hortishell? This bred the final narrative above.

If I had more time or do this again, I'd love to think about nutrition further.

Feedback

RL: Hortishell — lovely artefact / concept. Super to see how this has been developed and is refined as a translator / interpreter of ultrasonic plant frequencies — keep going :-) This could be a great candidate for 3D printing at full size?

Accessible Planter Box

Accessibility reimagined in modular planter boxes. It playfully interconnects both vertically and horizontally, allowing the community to create their own unique shape and configuration. Designed to foster community gathering and a place of education, the planter boxes form a part of a wider system of agriculture. Sitting tall at both 35cm and 70cm, it is accessible to a wide audience from wheelchair tall at both 35cm and 70cm, it is accessible to a wide audience from wheelchair users to children. The curvature serves both as an aesthetic and a function; it smoothly connects to other planter boxes as well as providing accessible comfort.

Planter boxes are commonly square or rectangular in shape.

Dissatisfied by this, Haruku led a brainstorming session exploring the form of the planter box.

We explored organic and rounded forms and how they could join together. We stumbled upon a form we all liked when I had a rough sketch of a rectangle with both concave and convex curves. Later, I found Ovidiu and Dragan (2009) referencing the shape exactly with perfect curvatures, the dimensions were not attached though. Haruku proceeded to use desmos and mathematics to figure out the exact circumference and 3D modelled the planter boxes, with referenced height and width measurements from accessible houses and toilets figured out by Bott and Yuzhi. We also considered the transportation ease of these planter box: manual forklift or wheels? Wheels is voted when Haruku shown us the Rocks on Wheels (Hewson 2022).

Once the form has been settled, I moved on to create a 1:1 prototype using recycled cardboard and fresh corrugated ones from the Monash Bookstore. Cardboard's flexibility in combination with laser kerf achieved the curvature we envisioned. The pieces are glued together with hot glue and cleaned up with a covered masking tape edge.

Feedback

CC: Accessible planter boxes — modular system. Great to have the physical prototypes both at 1:1 scale and the smaller 3D printed components. A series of diagrams could help show the possibilities of this system.

RO: Reusing materials — could also explore Monash Precious Plastics.

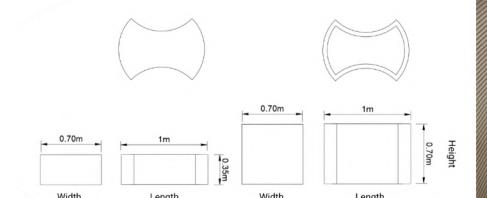
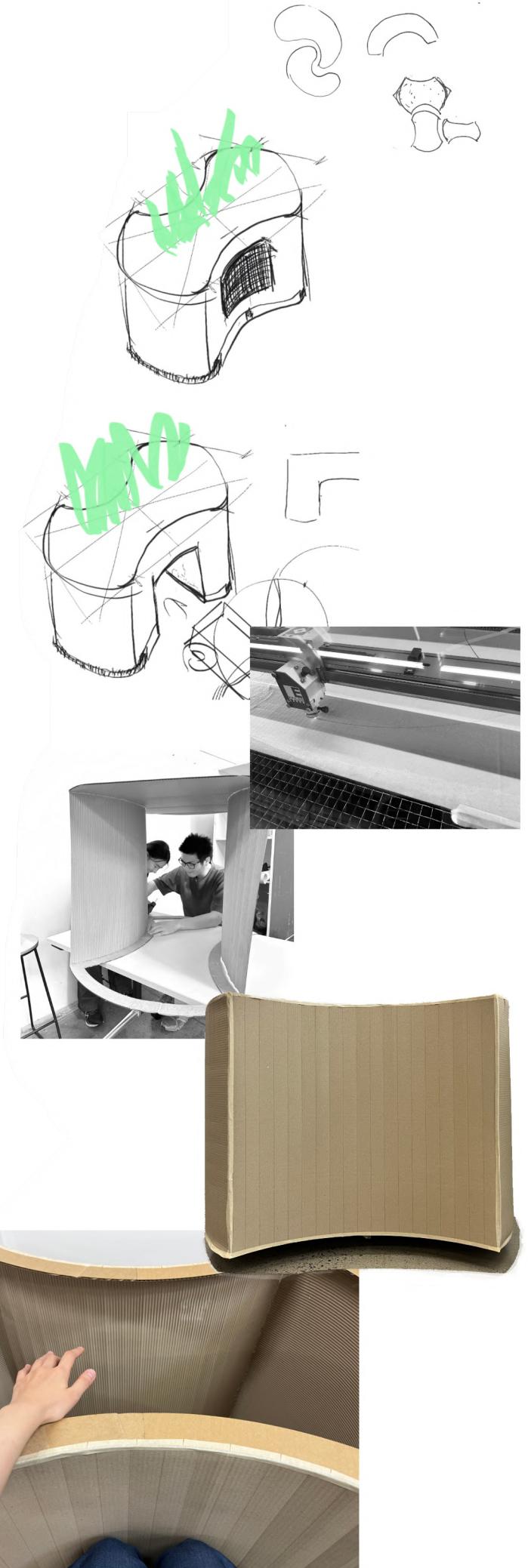


Fig 21 The development process of the 1:1 accessible planter box prototype

Top right: initial sketch exploration by Yi Jing
Mid: Yi Jing and Haruku gluing, Yuzhi as photographer
Right: Yi Jing sitting in front of the completed 1:1 prototype
Above: specifications by Yi Jing from CAD by Haruku, measurements refined by Yuzhi



Refined Concept in Scenes

While Haruku and I worked on the physical prototype, Bott and Yuzhi handled the digital sketches.

Having performed in theatre plays and musicals, I proposed to the team in representing the world in scenes that could be acted out in Jess' play. Yuzhi further suggested to compose something resembling a fresco featuring different scenes in one big picture.

The two ideas are combined into these beautiful sketches, created by Bott and Yuzhi . The theme of time presents the growth of agriculture from accessible planter box, 2050 into a self-sustaining food forest (Low, Walls and Kok 2025), 2100. Additionally, demonstrating our artefacts in interaction with the play's characters and design approach in one.

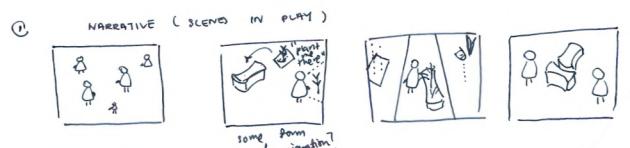
Summary of key features:

- Hortishells hanging on the characters' waist
- Accessible planter boxes in use
- Food forest of native bush tuckers in 2100

2050

Scene 1
The discovery of Hortishell and how it became a unifying accessory

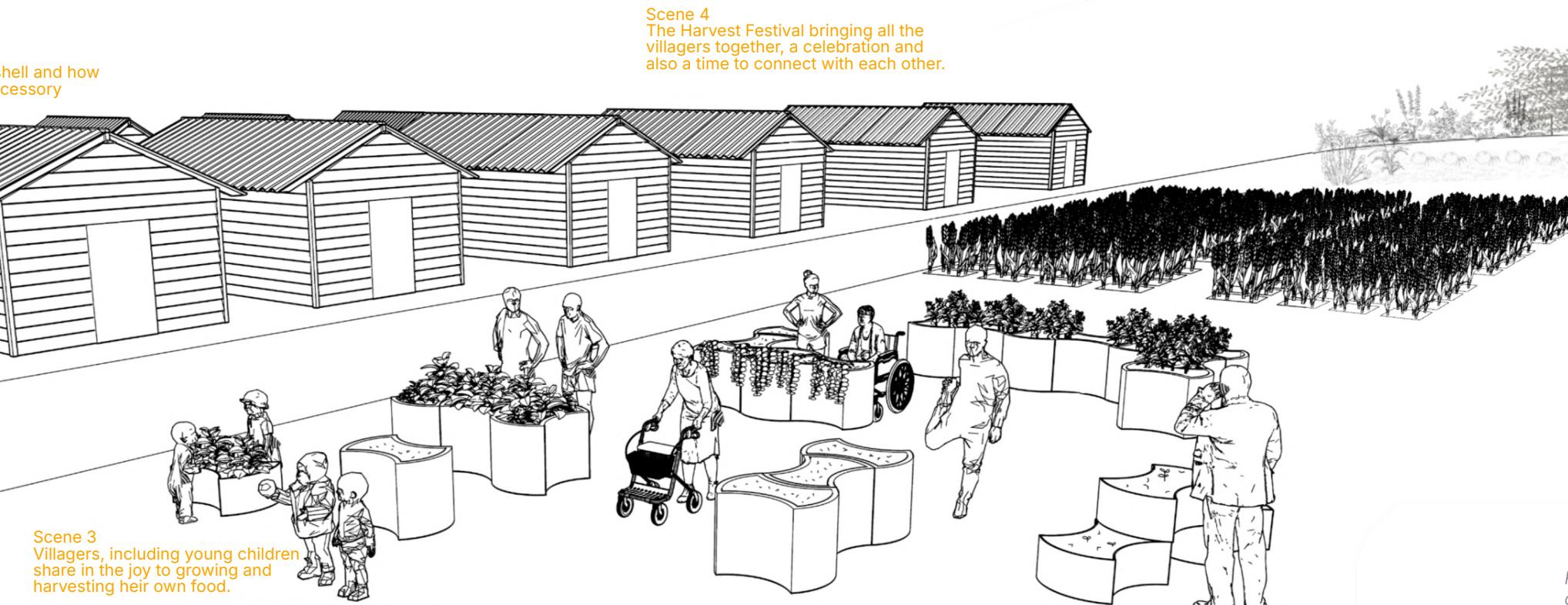
① HORTISHELL BACKSTORY - HANGING ON EVERYONE
② PLANTER BOX + HORTISHELL - SUITABILITY ✓ Researcher Grower
③ PEOPLE TAKING FOOD / MEDICINE (show the bush tucker) scenarios
④ FESTIVAL TOGETHER



Scene 3
Villagers, including young children share in the joy to growing and harvesting their own food.

Fig 22 The World in 2050 to 2100

Left: draft sketches by Yi Jing, proposing a 2100 future in the form of a food forest
Centre: refined sketches by Yuzhi, 2050 and Bott, 2100



Feedback

RO: Great to be thinking about the longer timelines through the growth of the food forest.

RL: could keep diving into more detail with the particular plants — as well as food, how might they influence air quality? What plants might be suitable in a future climate? — heat/drought resistance.

GP: Consider researching in more detail the plants you want to use—opportunity to think about air quality optimised through plant use. The storytelling around the hortishell, it being a knowledge storing device (maybe a defence mechanism too?) and a functional component is incredibly strong — keep exploring and visualising your wonderful imagination!

These positive feedback consolidated our final concept, narrative foundation and its many artefacts reimagining agriculture in differing perspectives. Also further refinement in our selection of bush tuckers.

5 Exhibition Preparation

From W7-W10, we focused on creating our final artefacts for the exhibition. These are

- 1. 1:1 accessible planter box
 - 2. 1:20 accessible planter box
 - 3. 1:50 miniature theatre set
 - 4. Hortishell
 - 5. Banner (+ additional exhibition labels)

These artefacts at different scale and dimensions were selected to portray various aspects of our concepts. Additionally, for our visitors to understand our concepts through interaction.

Each artefact is featured separately in the following pages; each narrated with their own progress, technical details and final display. The artefacts are listed to their time of completion; mostly due to material availability and making time required.

The project is sponsored with AUD200 by MPAC.

| Deadline/ milestones M = monday T = thursday | | | | | | | | | |
|--|---|---------|--|--|--|---|-----|----|--|
| | W7 Presentation: Final concept | Mid-Sem | W8 WiP Presentation | W9 Theatre visit | W10 Visual Presentation | W11 M Installation at Victoria Pride Centre Exhibition: T Final artefacts, presentation | W12 | SV | W14 Individual Project Journal |
| Expected work | Back concept with <ul style="list-style-type: none"> • research • project requirement • concept sketch • WiP CAD • Small scale prototype • Project dev doc | | <ul style="list-style-type: none"> • Mid-fi prototypes • Functional prototypes | | <ul style="list-style-type: none"> • Hi-fi prototypes • Refine with feedback | FINAL <ul style="list-style-type: none"> • Scaled model of concept town • Potential 1:1 prop for play • Accessibility AOI • Diagrams/ renders • Audio-visual etc. | | | |
| Our own timeline | <ul style="list-style-type: none"> • Finalise existing ideas + models • Material research: fabrication + techniques • Build physical models + outcomes • Prepare documentation for presentation • MDS setup prep | | | <ul style="list-style-type: none"> • FINAL model • Practice presentation | | <ul style="list-style-type: none"> • Edit documentation journal per submission • Photographs of MDS • Reflection of MDS | | | |

Fig 23 Refined project planning for exhibition preparation

Top: timeline with action items discussed, modified by Yi Jing
Bottom: Yi Jing's track of project budget with different stakeholders

As a team, we have discussed and agreed to allocate more budget approx. AUD10-20 each) into the project ourselves. Although the budget has exceeded the sponsored amount with a total of AUD285.64 (each – AUD21.71), our additional budget allowed us to achieve what we envisioned with careful material selection.

| Object Budget - \$200 | | | | |
|-----------------------------------|-------------|--------------------------|-------------|--------------------------|
| | Price (AUD) | Paid by | Reimbursed? | Notes |
| amorph | 33 | Chris | - | invoice passed to Chris |
| wood | 65.34 | Haruku | x | submitted reimbursement |
| erugated | 15.90 | Yi Jing | x | submitted reimbursement |
| ashboard | | | | |
| hesive + | | | | |
| eels | | | | |
| 82.79 (after refund: 57.19) | | Yuzhi | | Refund extra at Bunnings |
| eds | 11 | Chris | - | passed to Chris |
| mboo | 39.96 | Yi Jing | x | submitted reimbursement |
| ks | | | | |
| eds | 49.50 | Chris | - | invoice passed to Chris |
| ay Bottle | 4.15 | Yi Jing | | |
| ck napkin | 9.6 | Yi Jing | | |
| nting cost | 62 | Lexie (Bath pavilion) | | |

Laking + Materials Plan

24 An overview of the making plan as part of exhibition preparation

end

column: indication of execution (green = completed, red = change of plans)

row row: 1:1 accessible planter box
1:1 accessible planter box

Te row: 1:20 accessible planter box
Quince row: 1:50 miniature theatre set

quose row: 1:50 miniature theatre
nge row: Hortishell

by row: exhibition banner and other additional notes

is established as a team, then populated with details by Haruku and Yi Jing.

Planned Exhibition Layout

Venue details

Location: Theatre, Victorian Pride Centre
Possible setup: tables against the wall

At this stage, we planned out possible exhibition configurations of our artefacts.

Key features:

- A vertical banner against the wall
- A table displaying the miniature theatre set and Hortishells
- Personalised Hortishells for each characters
- 1:1 accessible planter boxes on wheels for interaction x2

Our exhibition outcomes have mostly resembled this setup, with minor impromptu adjustments onsite due to space constraints. I think this diagram summed up everything central to the project moving forth.

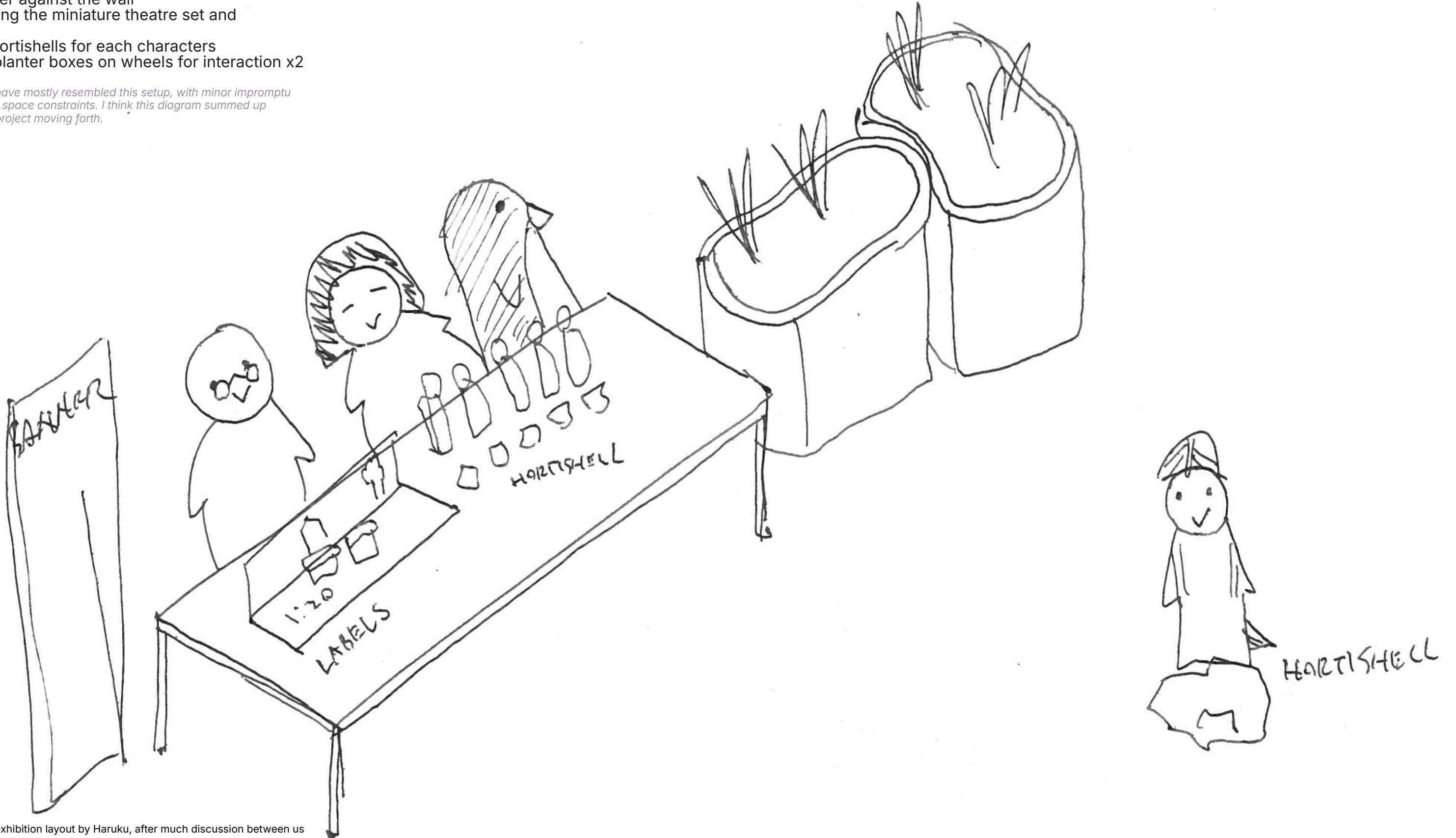


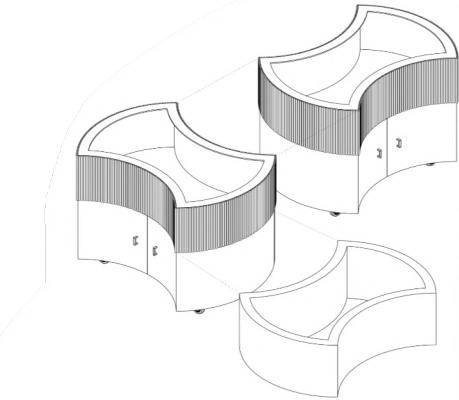
Fig 25 A refined sketch of exhibition layout by Haruku, after much discussion between us

1:1 accessible planter box

The hollow top of the planter box serves as the growing area while the base, a cabinet where gardening and miscellaneous tools are stored. It is constructed with bamboo and wood, or from any feasible locally available material.

It is seated on a wheeling platform for ease of transport across locations and enables different individuals to configure their own playful connections.

On material choices: we consulted multiple sources Chris, Monash dFab and WaM and had a few options. Bendy plywood, structural frames etc. Some of the options take too long and expensive to make hence we opted for what we have readily available. Plywood structure, bamboo sticks, reuse our cardboard prototype as frame lining and blue foam for elevation on the inside.



Planter Box
Playful Planting

Accessibility reimagined in modular planter boxes. It playfully interconnects both vertically and horizontally, and the base serves as a cabinet where gardening and miscellaneous tools are stored.

Take a seat, see the trays of microgreens, open the cabinet doors, have another peek. How do you feel? Have we convinced you that growing food can be fun too?

Fig 26 1:1 accessible planter box

Top right: Yi Jing's refined sketch demonstrating the modular connection from Haruku's CAD Centre: in-context hero shot
Left: accompanying exhibition label by Yi Jing

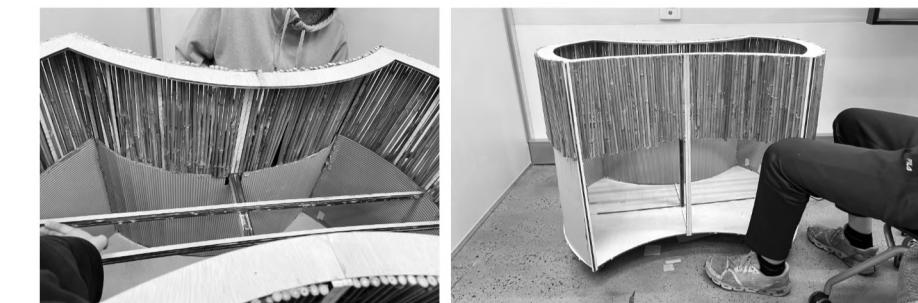
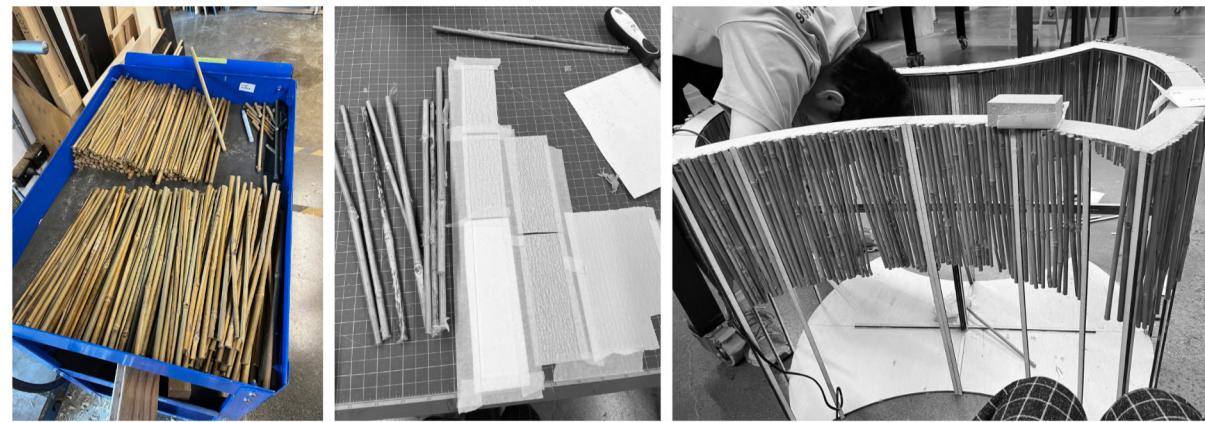
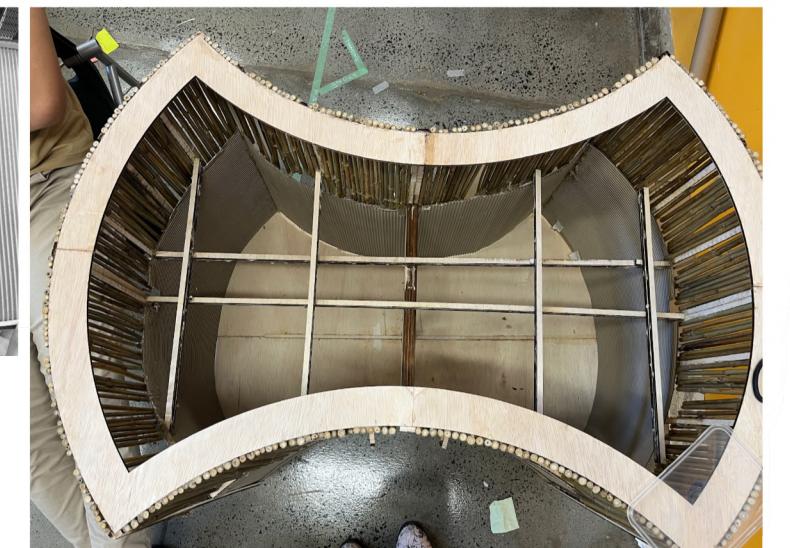


Fig 27 The making of 1:1 accessible planter box

1st row: early attempt to create worn-down look using recycled materials with Bott and Yuzhi, CLUBS feedback
2nd row: plywood structure, wheels glued on by Bott
3rd row: Haruku and Yi Jing's bamboo trimming at the bandsaw, glued on by Haruku, Yuzhi and Yi Jing
4th row: Haruku's I-beam adding extra support
5th row: installation of 3DP hinged door and cabinet framing

Bryan during CLUBS feedback brought our attention to the extensive space available in the planter box. We are inspired to make it a cabinet instead. The worn-down look wasn't a neat aesthetics commented Chris, we took on the feedback and used bamboo instead for an earthy fit with our theme. This took many hours and days...



Microgreens in 1:1 accessible planter box

Microgreens are selected for their fast growing rate of 7-14 days and relatively easy germination conditions – moist and warm environment.

We initially wanted to use grown bush tucker plants but we decided against it in the end for many reasons. 1 – they are EXPENSIVE. 2 – as potted plants, they don't cover a large surface area over the 1:1 planter box. 3 – out of stock. 4 – they required more knowledgeable care and maintenance.



Fig 28 Microgreens in 1:1 accessible planter box on top of black napkins

Feedback

AN: impressed at our attempt to grow living things and they survived!

GP: almost alien-looking when looking at them with attention

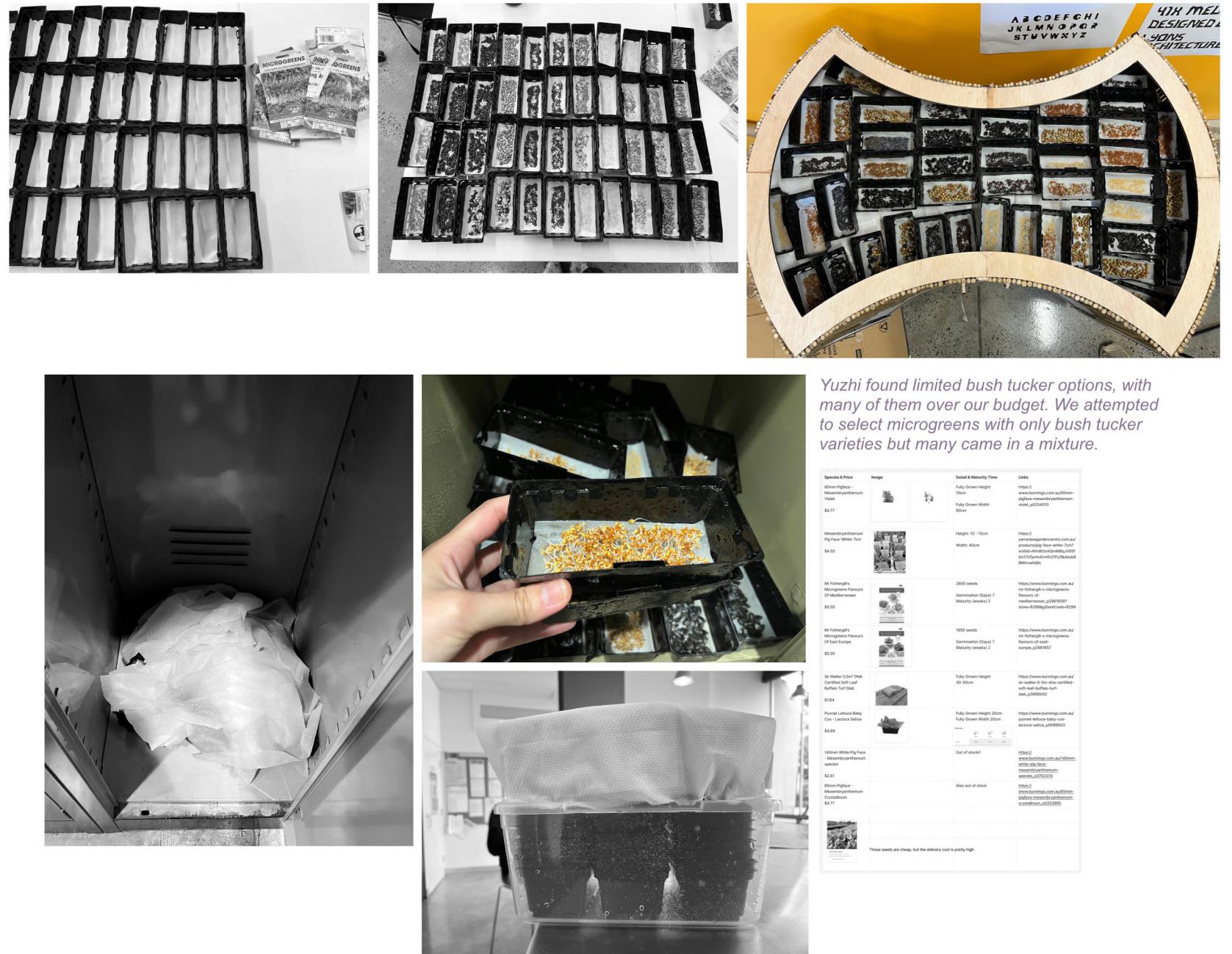
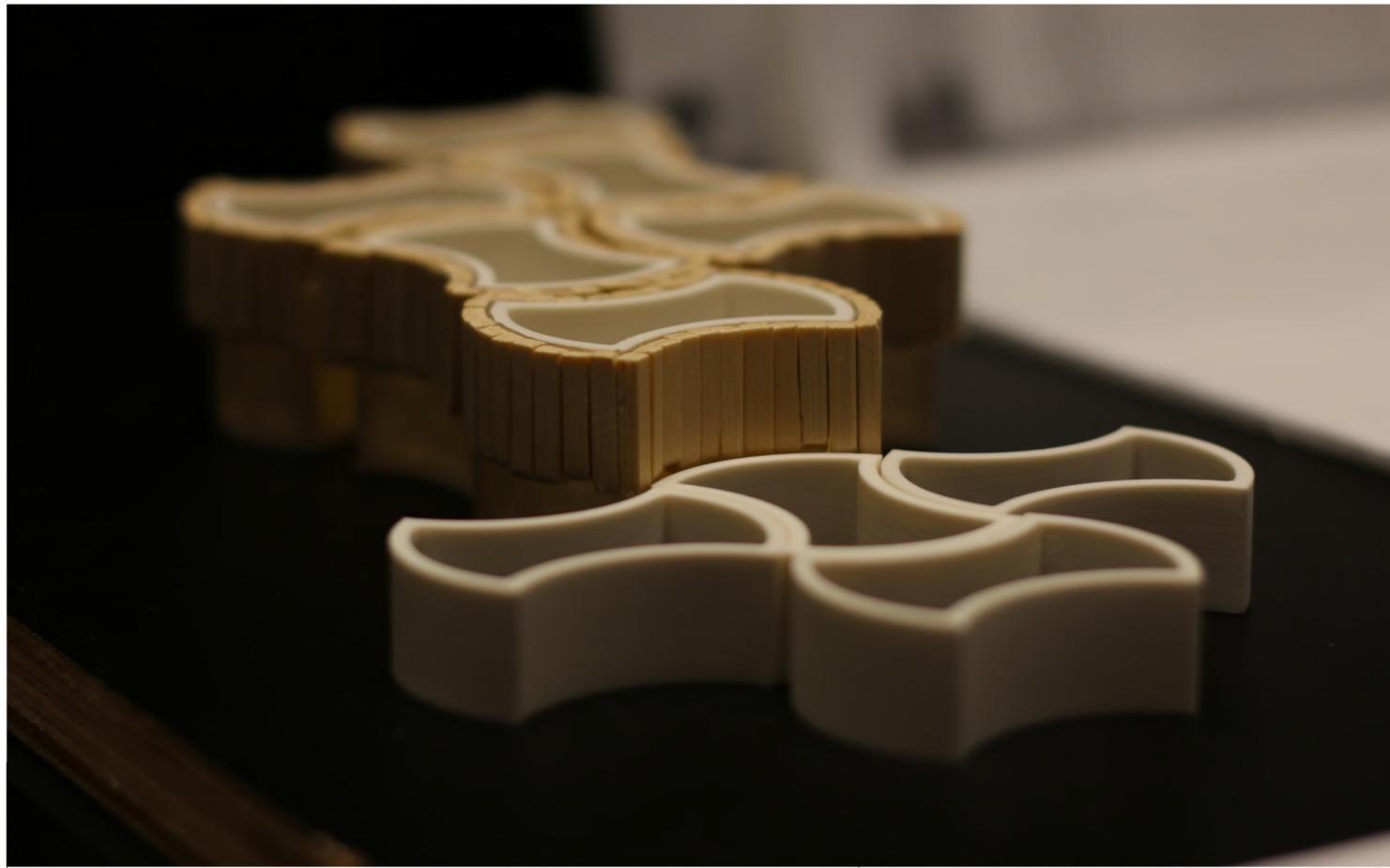


Fig 29 The growing of microgreens

1st row: first attempt, acquired free planter boxes from Ceres with Haruku
2nd row: Yi Jing's attempt at laying seeds perfectly
3rd row: seeds relocated to grow in a locker, then transported to Yi Jing's home.
Seed research by Yuzhi, finalised by Yi Jing, purchased through Chris.

1:20 accessible planter box

These planter box are scaled down to a comfortable size to be interacted with. The structure are 3D printed with white PLA and lined with bamboo skewers.



Miniature Planter Box
Move It in Dream Garden

Here are miniature planter boxes, all carefully lined with bamboo sticks. It playfully interconnects both vertically and horizontally, allowing the community to create their own unique shape and configuration.

We would like to invite you to imagine how these planter boxes are arranged in your dream garden. Share them with us on instagram #hortishell

Fig 30 1:20 accessible planter box



Perhaps they should have been lined with round skewer or toothpicks instead, I thought, despite the many hours that went into constructing them. "They no longer fit perfectly," said Haruki and Chris.

I supposed the initial reasoning for these rectangular skewer is to use what we have available if we have them and Yuzhi has an unlimited supply of them unused since her first year at university. This is a great example of conflict in design in terms of material usage: new to satisfy the vision but with risk of unused abundance afterwards or old and more sustainably-thoughtful but with constraints.

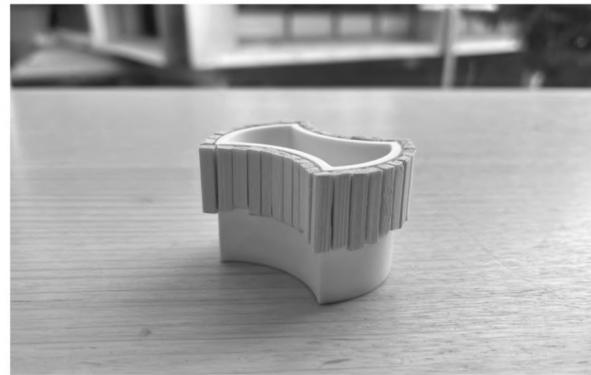


Fig 31 The making of 1:20 accessible planter box, featuring Yi Jing's makeshift workspace with a sanding station

1:50 miniature theatre set

This miniature theatre set attempts to display the speculative world with the characters, agriculture and artefacts in one. It is a three dimensional play on Yuzhi and Bott's two dimensional sketch. At approx. 200 × 1000mm, this set is created out of paper on recycled foam board donated from Monash Bookstore discard pile, 3DP grey planter boxes and miniature greens.

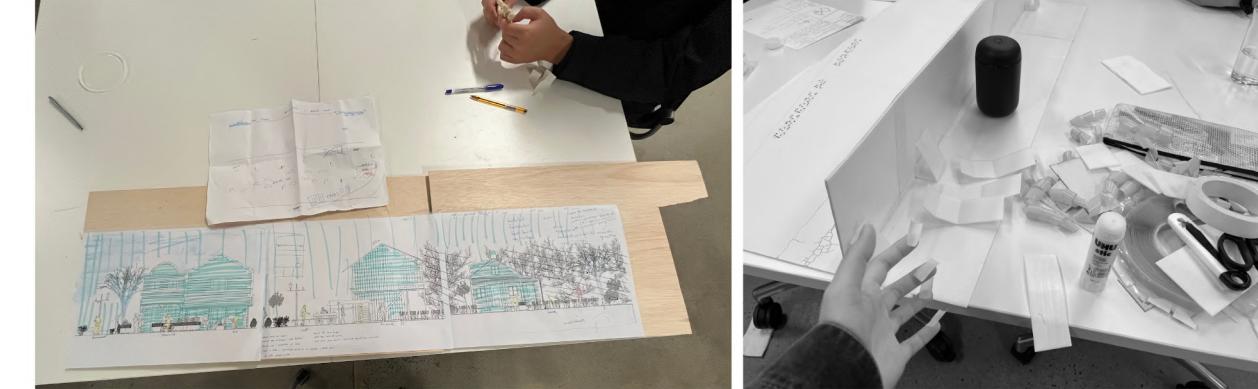


**2050 into 2100
Theatre Set**

This cross-section theatre set showcases the world we built of urban agriculture for Jess' play. From 2050 to 2100, from a small village to growing with a self-sustaining food forest, from collapse to reconnection.

How would your future look? Would you join us in growing your own food source?

Fig 32 1:50 miniature theatre set
Top: close-up shots of scenes
Centre: overall display



These are originally 1:200, but we realised they are not a good scale after Yuzhi's draft print. It is great team effort with all of us working on this at various stages: Yuzhi's draft, character cut-outs from Haruku, Bott and I securing the planter boxes in place and Bott's miniature greens.

It is interesting to see how 2D can be transformed into 3D visually.



Fig 33 The making of 1:50 miniature theatre set

1st row: team's planning process of the layering stage, Yi Jing sticking parts together
2nd row: mid-progress and draft layout
3rd row: more planter boxes printed to create a fuller look and showcase configurations

Hortishell

Each Hortishell is personalised to different characters in the play and intended to be worn as a unifying symbol in the play. Personalisation is achieved through our varying making abilities and own interpretation of the characters. The final forms of the Hortishell are created with Instamorph, a thermoplastic, chosen for its modability and lightweightness.

Feedback

RO: has seen the impressive progress over time since day 1, characteristics of characters really shown through the hortishells

JKE: wasn't sold on Hortishell initially, now it's somewhat sci-fi looking



Hortishell
Now You Hear Them

It is known that plants emit ultrasonic waves, far beyond humans' hearing range. The Hortishell is a translator of nature to humans.

Each Hortishell is personalised to the play's characters. On each Hortishell, you will find a note describing their owner's needs, wants, their lives before the collapse and in 2100. How would your Hortishell look?

Fig 34 Hortishells displayed in the 1:1 planter box,
Photograph by Tobias Titz

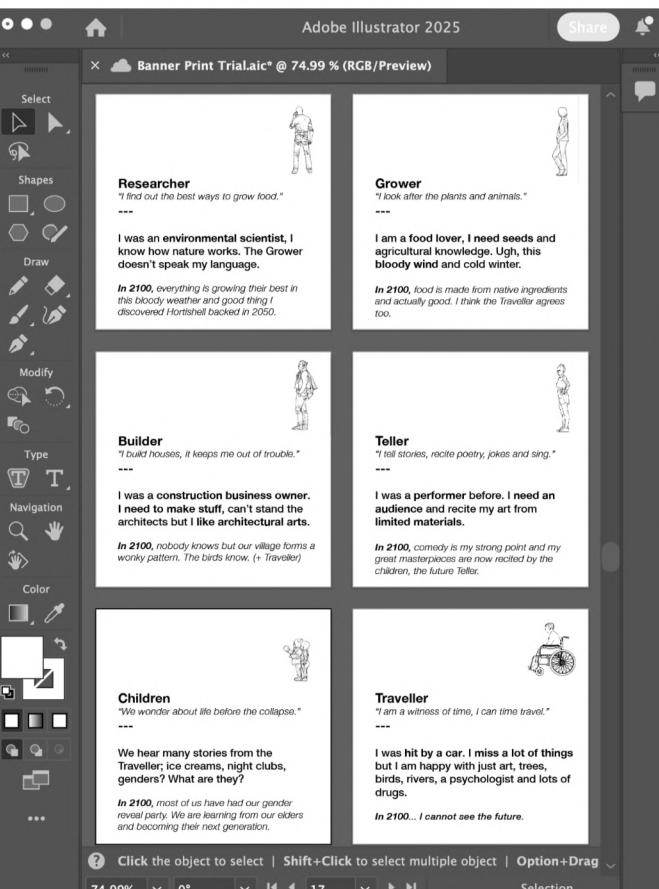


Fig 35 The making of the Hortishells

1st column: team bonding session through making, Yi Jing demonstrating Instamorph's modability
2nd column: exhibition notes and labels created on Adobe Illustrator by Yi Jing

It is refreshing to create forms and thinking through making. This making technique also allowed us to create complex, organic forms that would otherwise be difficult to reproduce digitally.

Instamorph is an incredible material I came across 2 years ago and it's great to explore them further for the Hortishells. They are like clay but cleaner, and can be reworked again and again when submerged in hot water.

Neat and visually striking.



Fig 36 800x1800mm Exhibition Banner designed by Yi Jing

From top to bottom featuring
Render by Haruku
Technical sketches by Haruku and Yi Jing
2050-2100 sketch by Yuzhi and Bott (also colorist)
Scenes writing and photographs by Yi Jing
Photograph of Yi Jing by Bott

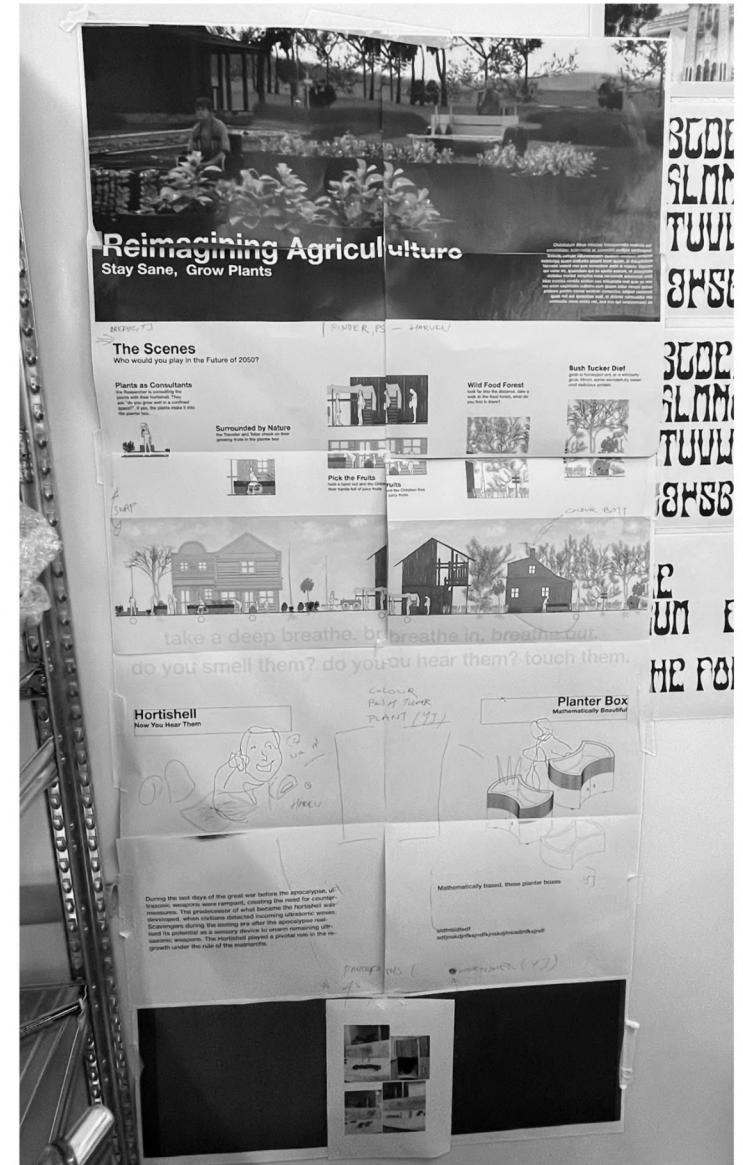
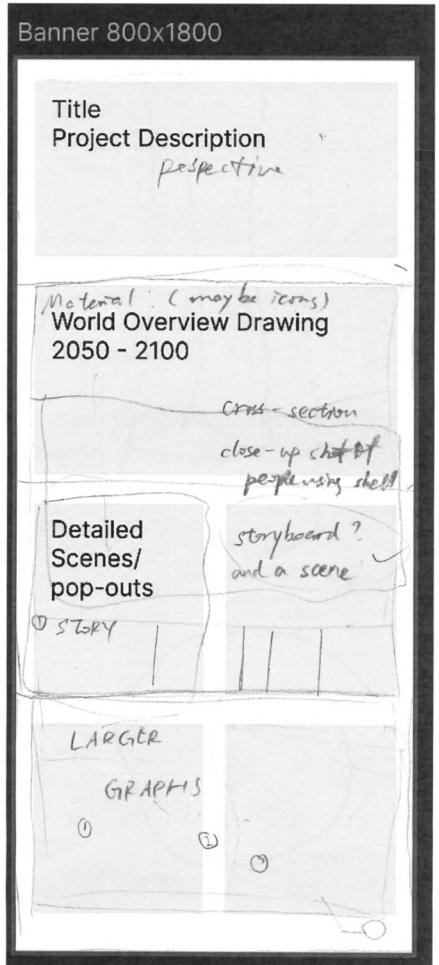


Fig 37 Progress of banner layouts with comments from CC



We have received great help from our peer Lexie, in printing the final banner for the exhibition. Thank you to her that we have one less thing to carry to the exhibition venue.

6 Exhibition

Transportation, Exhibition Venue set-up

Venue: Victorian Pride Centre

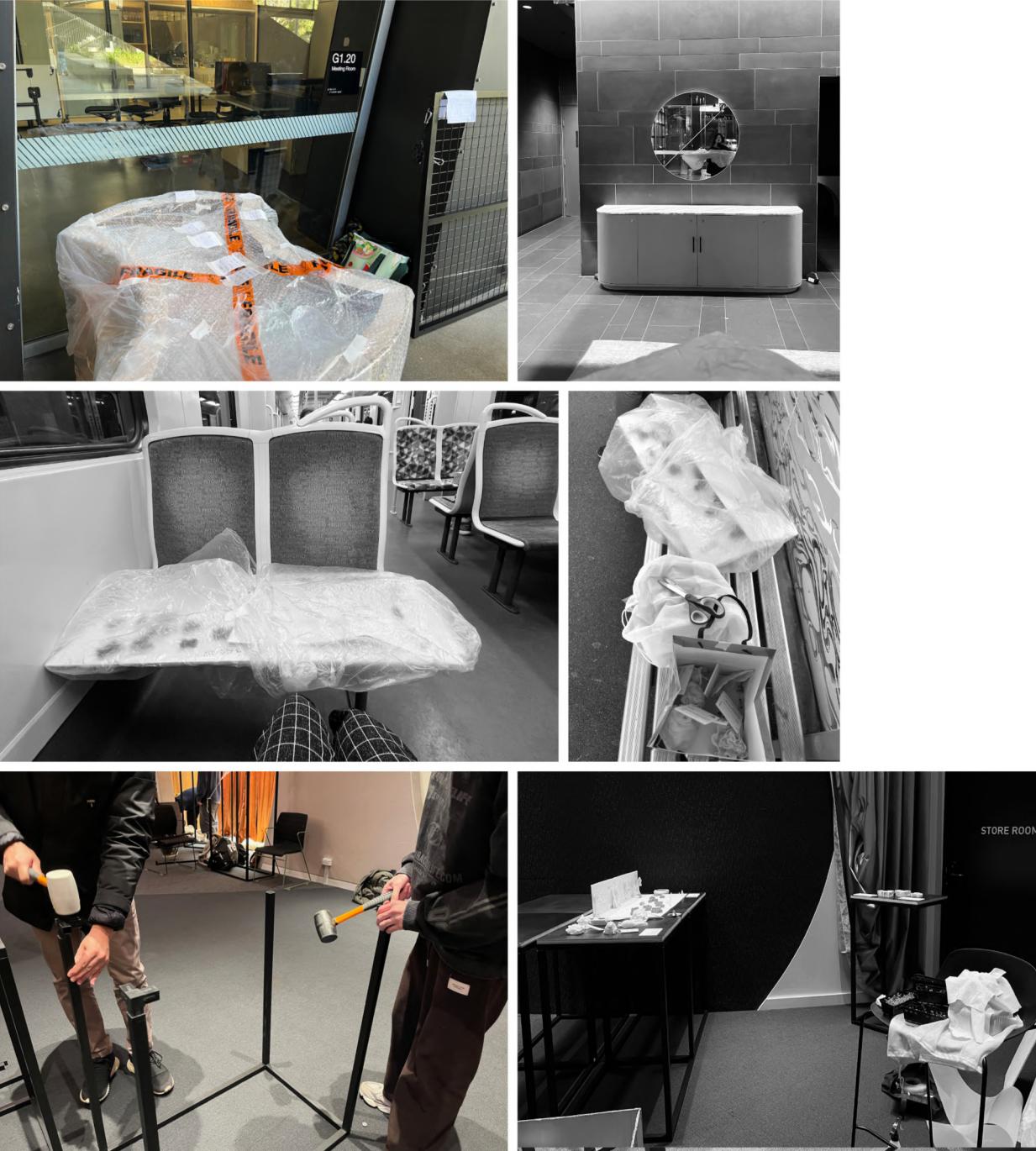


Fig 38 Exhibition prep: wrapping, transporting, hammering, moving

Exhibiting Period 22 - 24 May 2025

During the exhibiting period, we had opportunities to introduce our project to multiple visitors. Microgreen watering does not stop and we received diligent help from a staff member who offered to water them when we are not around throughout the day. Thank you to her that the microgreens survived too!

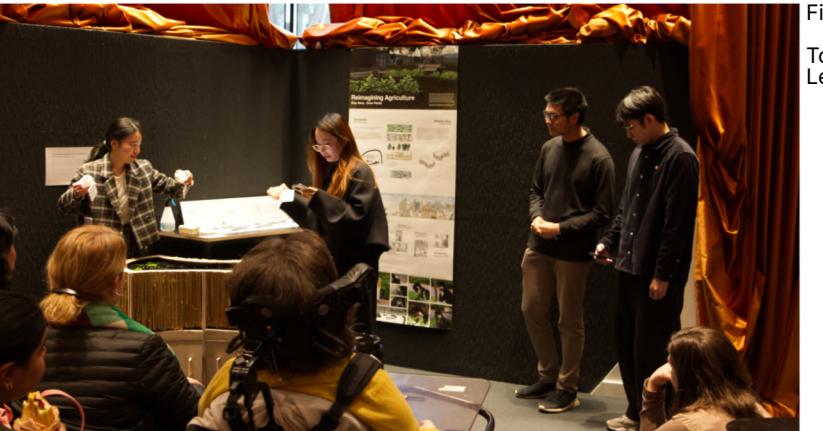


Fig 39 Events that happened during the exhibition period

Final Presentation and Outcome

The final 5-minute presentation to present to the panels.

The first to go. We are ready.



Feedback

CC: Clear professional presentation — lots of opportunities to engage with your project at an impressive range of scales. Really well thought through across all aspects of the brief, extending and expanding the world of 2050 with storytelling and new characters, into the practicalities of theatre making.

AN: Great detail in telling the story and speculative imagining, great hortishell script development, commendable on the different model making techniques – playing on different areas of strength across the team

GP: The level of outcomes show you continuous weekly engagement

Closing Thoughts

We imagined urban agriculture in Jess' 2050 play to be more than a system of making food but a way of life to grow with nature. In this world with limited resources, we built on Jess' conundrums of non-extractive measures and the three key pillars of Accessibility, Sustainability and Inclusion. As part of our world building process, we projected the vision of 2100 in 2050, where the world rebuilds itself to implementing naturalistic food production incorporating native bush tuckers.

The essence of our design philosophy is Protopia: the desire to create a better future through small incremental changes.

The final visual aesthetics is a mix of organic earthy tones and monochrome, especially white. The colours represent the 2050 world while the white is a linger trace of the world before the apocalypse.

Reimagining Agriculture (or Protopia as we called ourselves) has been a fruitful experience: to be able to stretch my abilities with others and to design for various settings from exhibition venue to theatre set. I think I may have gained a new hobby too in growing microgreens.



Fig 41 Protopia team posing with the final outcome. From left to right: Yi Jing, Haruku, Bott and Yuzhi. Photograph by Chirag Balamurali Krishna

AI: From Detail to Image Practising Descriptive Communication for All Audiences

Precedent: Rocks on Wheels, Southbank
Adobe Firefly, Bing Image Creator, Leonardo.ai

Describe the precedent without naming it.
Imagine a small patch of nature in a bustling city of cars. Imagine a skateboard, then put a large, ragged rock on top. Imagine multiple of these, connected with ladders and a network of ropes for safety. Imagine laughing kids climbing, jumping and wrestling, with parents chatting and birds chirping in the background. Imagine your dad, looking at the top of rock.

Revised (after multiple iterations)
Imagine a small patch of nature in a bustling city of cars. Imagine a large, angular ragged rock with a large base but narrow top. Then place it on top of a skateboard-like platform with wheels. Imagine 5 of these rock installations standing independently and locked in place. Imagine the surface being covered by handles and inserts that connect them together with metallic ladders, a network of ropes for safety and colourful slides. Imagine laughing kids climbing, jumping and wrestling, with parents chatting and birds chirping in the background. Imagine parents, looking at the top of rock, smiling at the kids.

The revised prompt included more specific details and language about how the objects are related to each other spatially. An example is the incorporation of numerical values instead of vague terms like "multiple". However, this is continually misinterpreted as one giant object rather than multiple standalone objects that are joined together.

As we discussed, we thought that GenAIs are great at capturing the overall design essence but not able to reflect the minute details exactly. An interesting note about our initial generation is how GenAIs have chosen to render the output in cartoonish style. Words are ambiguous; and as we expanded the prompt with more specific details, this also increases the room for error as shown by GenAIs' responses.

This experience highlighted the importance of visual support on top of clear and concise verbal communication.

Communication, in this project, occurred mostly in the format of small group consultations and large scale presentations with time constraints. Hence, our communication style was direct with just enough context and information for our audience to understand. We also presented in our own roles to fit the wider project scope, like a character in a theatre play.

There are few strategies we employed visually in the latter half of the project. The first, a simple presentation with clear focal point in each slide or section. The second, we engaged with our physical artefacts as we introduce them. The third, our audience are invited to interact with the artefacts. The fourth, we open the floor for questions and feedback. The fifth, we follow up with any ambiguity. These strategies enabled us to make sure we are all on the same page with our audience and between ourselves.

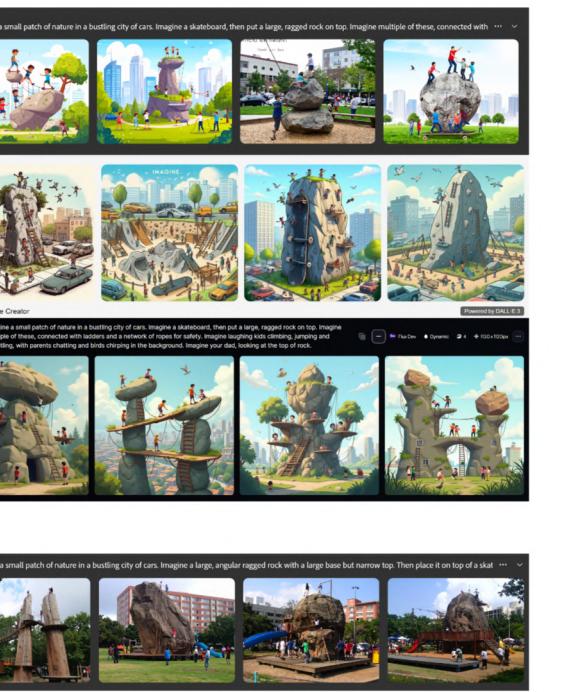


Fig 42 AI Responses

The AI-generated critical questions contextualised the project in reality – beyond the stage – and revealed the level of potential complexities with negotiations. Negotiations of design in acknowledging stakeholders (particularly those in marginalised communities) and their positions at different levels of the social hierarchy. These deeper questions touched on related topics we previously discussed as a team, some remained doubtful and unresolved for us due to time constraints while others indirectly addressed.

As I reflect on the project, I think acknowledgement is an important and courageous action. We have incorporated knowledge from talks, research and Indigenous culture of bush tuckers. Beyond citations, I felt that aspects especially related to the Indigenous diet could be explored further – perhaps consulting an individual from the community.

There are many narratives interwoven in our project and if this project had more time, I would like to clarify and refine the process of agriculture and nutrition. The Hortishell has resolved this to an extent as it inherits the spirit of listening to nature and connecting to land – and this allowed us to focus on the artefacts and how they connect to the play, its characters and social accessibility more.

I also think our design approach has grounded the 2050 world in a relatable manner for our audience and their future audience. Our artefacts are simple twist on what existed in reality – and the twist I hope brought a sense of fictional surprise – these became a fictional reality that could be realised. The physicality of the artefacts also supported the speculative narrative. The greater message is to encourage people to see agriculture from another perspective and maybe even inspired them to take part in the process.

Overall, I am satisfied with the project outcome. As mentioned, I would refine the bush tucker diet further, although I also think a deeper dive in the topic could obscure the focus into abstraction, making it difficult to understand.

AI as a Questioner Deepening thinking, rather than generating content

"Hey, I'd like you to take on the role of a critical collaborator and reflective thinking partner. I'm a final-year design student working on a group project, and I'd like your help to think more deeply about it. Please ask 4–6 open-ended, critical questions that will help me reflect on the strengths, weaknesses, and implications of our design. Focus your questions on the lens of Ethics, Culture and Social Impact. Do not give any answers—just questions."

Project Summary:

We imagined urban agriculture in J.K.'s 2050 play to be more than a system of making food but a way of life to grow with nature. In this world with limited resources, we built on Jess' conundrums of non-extractive measures and the three key pillars of Accessibility, Sustainability and Inclusion. As part of our world building process, we projected the vision of 2100 in 2050, where the world rebuilds itself to implement naturalistic food production incorporating native bush tuckers. With these considerations, we created 3 artefacts: namely the Hortishell, Accessible Planter Box and a miniature theatre set with sequential scenes showing the artefacts in interaction with the characters.

The essence of our design philosophy is Protopia: the desire to create a better future through small incremental changes. A positive and hopeful future.

Here are some critical questions to help you reflect deeply on your urban agriculture project through the lens of ethics, culture, and social impact:

Who gets to define "better" in your vision of protopia, and whose voices might be absent from this definition of progress? Consider how different communities, economic classes, or cultural groups might experience your "incremental changes" differently.

How does your incorporation of "native bush tuckers" navigate the complex relationship between Indigenous knowledge systems and design innovation? What are the potential implications of integrating traditional ecological knowledge into a futuristic design context?

What power structures and inequalities might your accessibility-focused designs inadvertently reinforce or challenge? Think about who controls food production, distribution, and access in your 2050 vision.

How might your emphasis on "growing with nature" intersect with existing environmental justice issues, and who bears the burden or reaps the benefits of this naturalistic approach? Consider geographical, economic, and social factors that influence environmental impact.

In what ways could your "non-extractive measures" philosophy conflict with the material realities of manufacturing, distributing, and maintaining your designed artifacts? What ethical tensions arise between idealistic principles and practical implementation?

How does your theatrical presentation format shape the narrative about who belongs in this future, and what stories about urban agriculture might remain untold through your chosen medium?



Claude can make mistakes. Please double-check responses.

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