Designing for Resilience: Collaborative Architecture Education for Climate Adaptation in Kaituna South Dunedin

Atelier South Summer School 2025 – Ōtepoti Dunedin

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Ara
Institute of Canterbury
Ara rau, taumata rau

OTAGO
POLYTECHNIC
Te Kura Matatini ki Otago

MONASH
University

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Educational Context: Atelier South

- A pan-institutional collaboration, initiated by **Irene Boles** (Ara) and **Tobias Danielmeier** (Hod – OP) in February 2024, with the goal of channelling research and innovative learning opportunities in Te Waipounamu (South Island of New Zealand)
- A 3-year research programme, focussing on **Ōtepoti Dunedin** urban regeneration though the lenses of climate adaptation, community resilience, alternative economies and more…

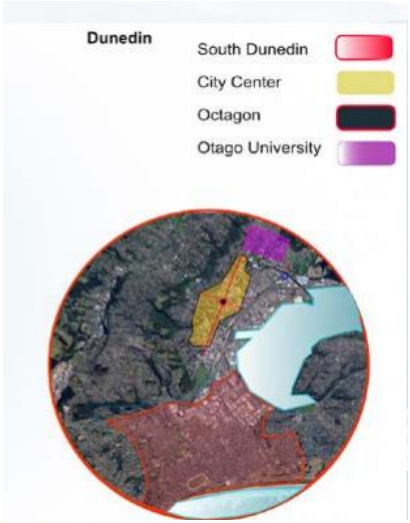
Educational Context: Climate Change and collaboration

- Climate change is a global, **interdisciplinary** challenge (Tonbol, 2024).

- Architectural education must evolve from individual creativity to **collaborative**, systems-based thinking (Rodic et al., 2013).

- **Atelier South** Summer School positions **architectural education** as an interdisciplinary, hands-on laboratory for real-world scenarios, in the climate adaptation and urban resilience context.

Geographical Context: Kaituna South Dunedin



Flooding has been an issue for over a decade

Hinake (Eel trapping) was an efficient way of hunting

- Otago, Te Waipounamu, South Island of Aotearoa New Zealand
- Early Maori settlement (1300)
- Wetland, used as Mahinga kai site
- Settled by Europeans in 1800 with land reclamation

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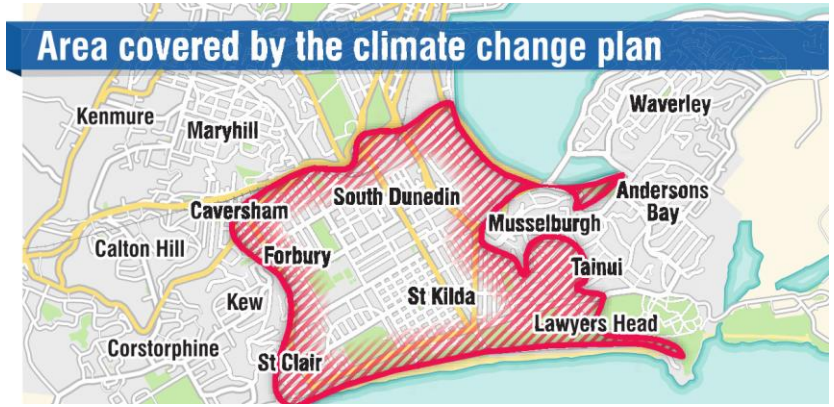
Geographical Context: Kaituna South Dunedin



- Severe flooding (worst in 2015)
- Low-density, old housing stock, low socio-economic but very strong and active community (Dream South-D)

A testing ground for collaborative, interdisciplinary, design-led climate adaptation & urban regeneration

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Project Objectives

- Foster **interdisciplinary** and **trans-scalar understanding** of climate impacts on urban areas and communities
- Embed indigenous environmental knowledge – Mātauranga Māori and Kaitiakitanga
- Develop student agency in climate adaptation
- Cultivate peer-to-peer, cross-institutional collaboration for long term benefits (students and staff)

(Korsager & Slotta, 2015)

Pedagogical Framework

- Three complementary frameworks:
- 1. Collaborative Learning (Smith & MacGregor, 1993)
- 2. Experiential Learning (Kolb, 1984)
- 3. Ethnographic & Transformative Pedagogy (Antonini et al., 2021)

Collaborative Learning

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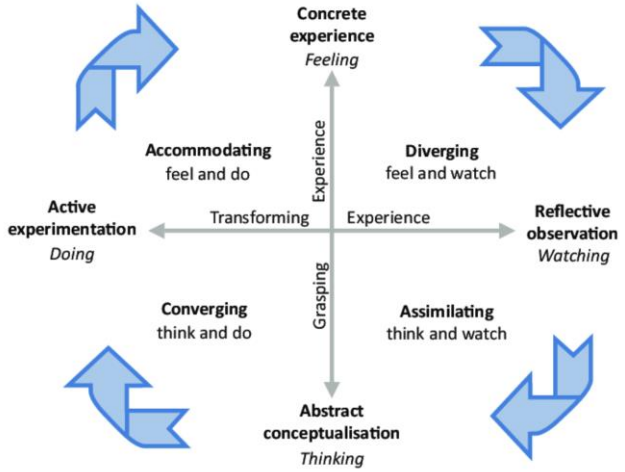
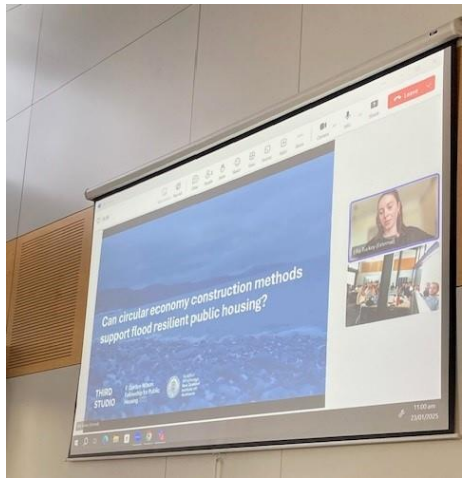
- Students worked in groups across institutions and disciplines
- Focus on knowledge co-creation and shared authorship
- Real-world scenarios and people

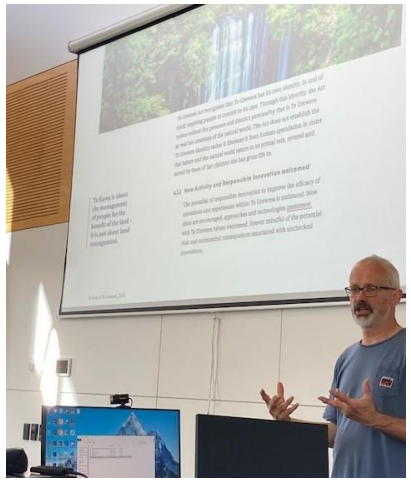
(Smith & MacGregor, 1993)

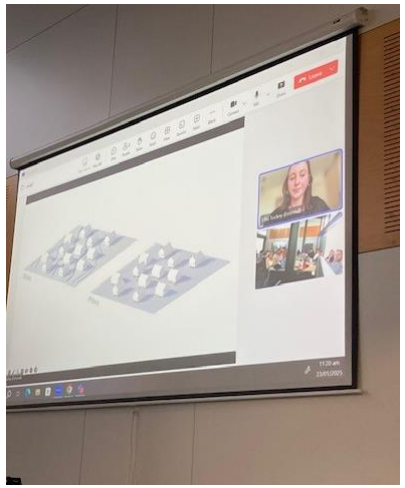
Experiential Learning



- Based on Kolb's (1984) experiential learning cycle
- Field immersion, hikoi, and stakeholder engagement
- Iterative process of action and (collective) reflection







Students developed embodied understanding of collaboration and meaningful professional relationships

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Ethnographic and Transformative Pedagogy

- Participatory mapping and informal interviews
- Design as listening and empathy (Antonini et al., 2021)
- Shift from object-making to relationship-building

Encouraged ethical, reflective co-design practice.

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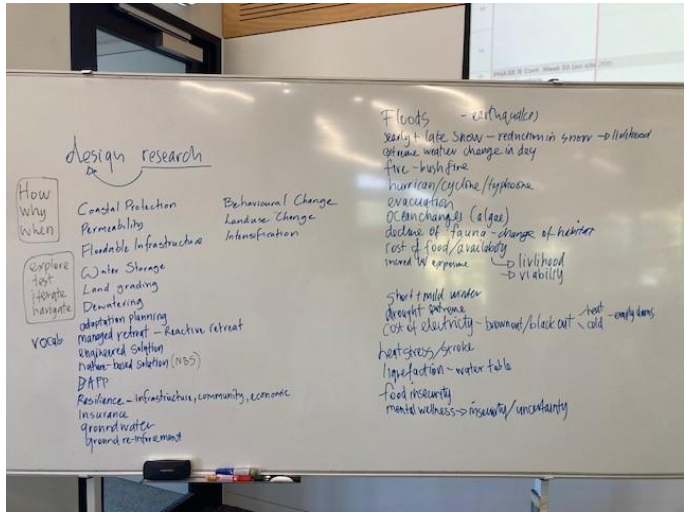
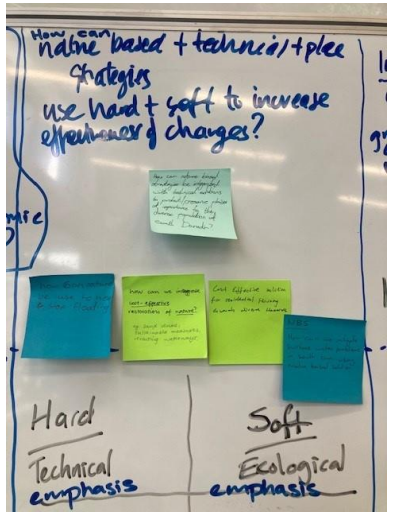
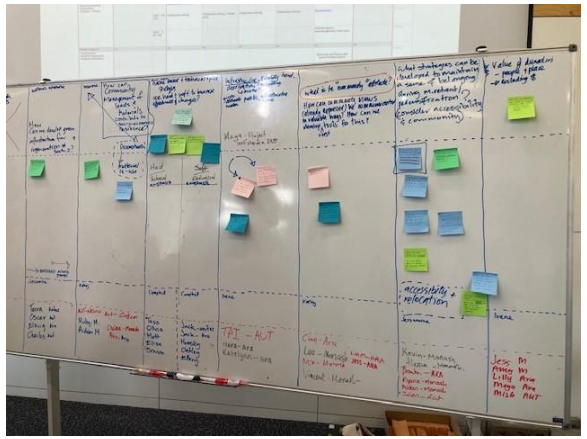
Studio Process







- All students brainstormed climate change and adaptation issues
- Research questions were formed
- Groups formed based on interests
- Groups designed methodologies to address the research questions

Collaboration as a method of inquiry

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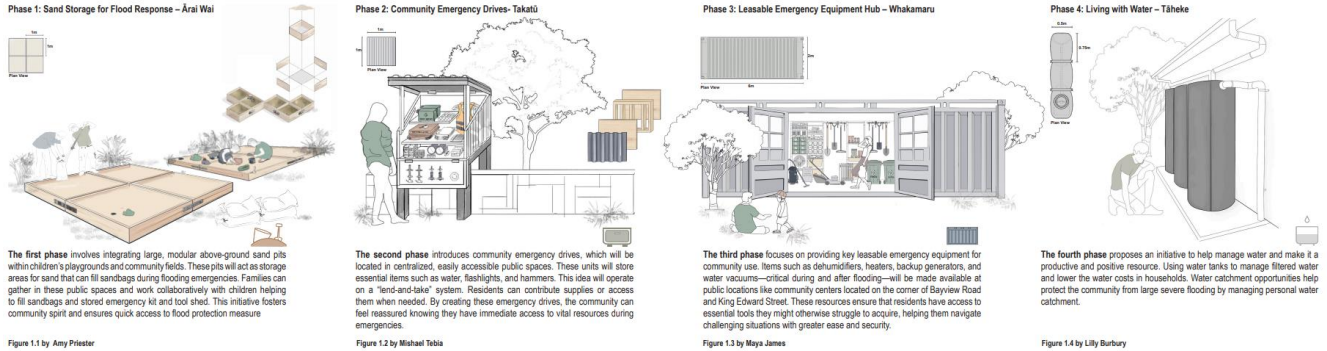
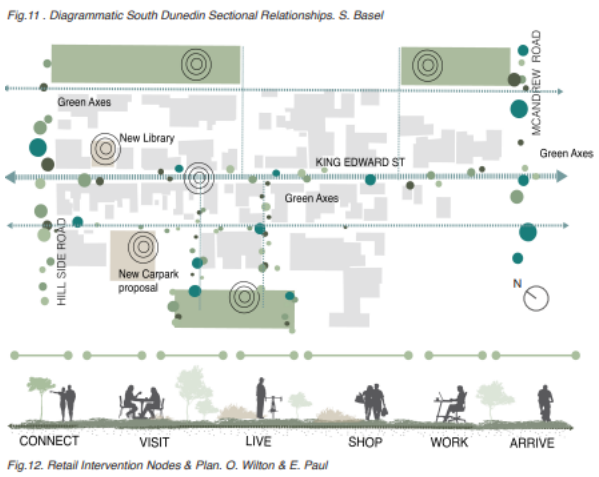
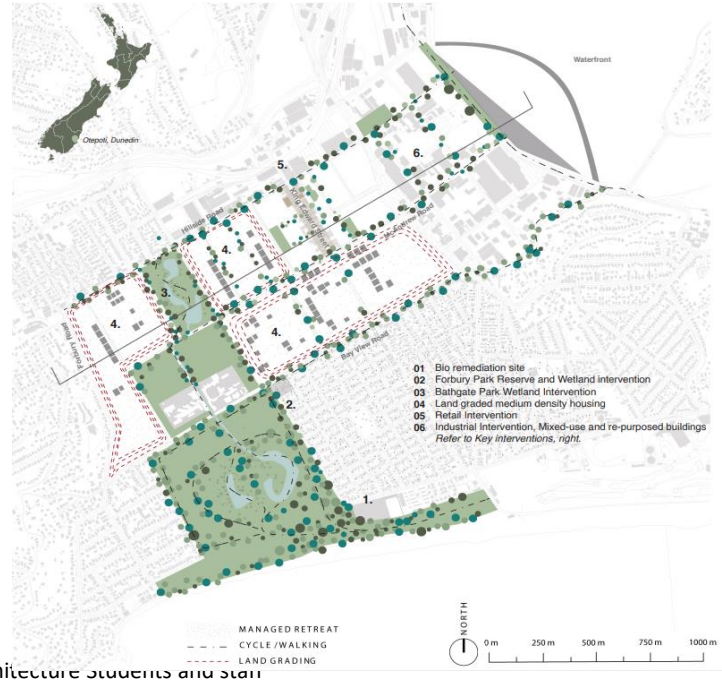
Studio Process

- All students brainstormed issues related to climate change and adaptation
- Draft research questions were formed based on those topics
- Students grouped based on their interest in the formalised research questions
- Groups designed appropriate methodologies to explore and address the research questions, through adaptive strategies at multiple scales:
- Managed retreat
- Blue-green infrastructure
- Community resilience
- Housing typologies
- Nature-based solutions

Design Outcomes







- Community-Led Early Response Network
- Indigenous Adaptation Overlay (Mātauranga Māori)
- Land guardianship post-retreat to maintain bond with place (Kaitiakitanga)
- Nature-Based Solutions for climate adaptation

Shared premise: adaptation as collective practice.

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Reflections and Learning

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- Students reported transformation in ethical and ecological awareness
- Learning through practice, reflection, negotiation and co-creation dialogue
- Friendships = future professional partnerships

Supports Antonini et al. (2021): pedagogy as transformative, not technical.

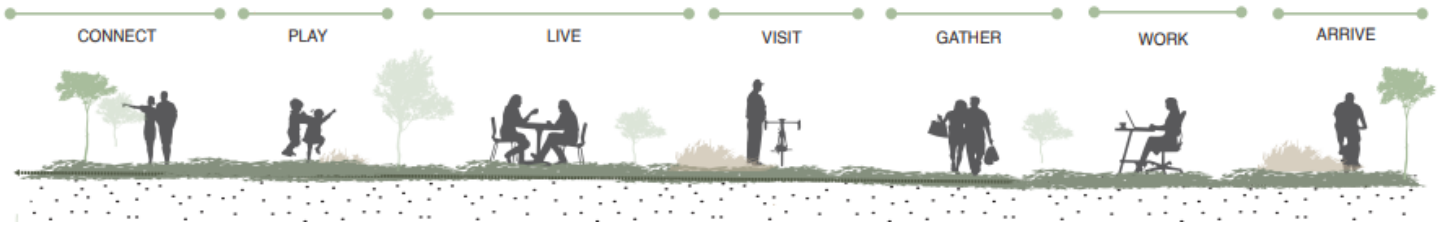
Significance for Education and Policy

- Context-based learning fosters civic and technical competence
- Schools as living laboratories for adaptation
- Dialogue with iwi, council, and community

- (Korsager & Slotta, 2015)

Broader Implications & Learning

- Education must reorient toward care and collaboration (Rodic et al., 2013)
- Interdisciplinary, place-based models bridge research and action (Tonbol, 2024)



Architecture as a discipline of care.

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Conclusions

- Collaborative, experiential, and ethical learning prepares architects for an age of uncertainty.
- Education as adaptation—and as advocacy.
- Ngā mihi nui — thank you.

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