

Country / City New Zealand / Wellington

University / School Victoria University of Wellington / School of Architecture

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Title of the project Towards co-creation: A design-led study of ecological shifts in the tidal margin.

Authors Celia Hall

TECHNICAL DOSSIER

Title of the project Towards co-creation: A design-led study of ecological shifts in the tidal margin.
Authors Celia Hall
Title of the course LAND 593
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University / School Victoria University of Wellington / School of Architecture



Written statement:

Pauatahanui Inlet, Porirua supports a diverse ecosystem of aqua-fauna, micro invertebrates and wading birds that rely on the shallow saltmarsh habitat within the estuary. However, with sedimentation from the surrounding catchments slowly filling up the inlet, along with predicted tidal inundation from sea level rise, the future of this coastline is uncertain. Rather than attempt to secure a fixed future for the coastline, as is the prevailing anthropocentric response, this design led research responds to human induced pressures by aligning design with cyclical phenological processes and ecological interactions existing within the harbour. The research ambition is to co-create a shared public tidal realm. A series of interventions were conceived of to test this ambition, located along a coastal boardwalk fringing Pauatahanui Inlet. These interventions consisted of tidal pools, bird hides, elevated lookouts and a marine education centre. Unlike human-focused boardwalks, this infrastructure is designed to support the needs of multiple species simultaneously and has the capacity to adapt as long-term tidal edges shift, in either direction, while facilitating movement for all forms of life to traverse the harbour. The research surpasses perceived barriers between nature and culture with an emergent inquiry into the poetic nature of the site itself. Here landscape design practice is developed towards the creation of social capital as occurring between species, while ensuring the natural ecosystem (and the life it supports) has the capacity to adapt to potential climate related changes.

For further information

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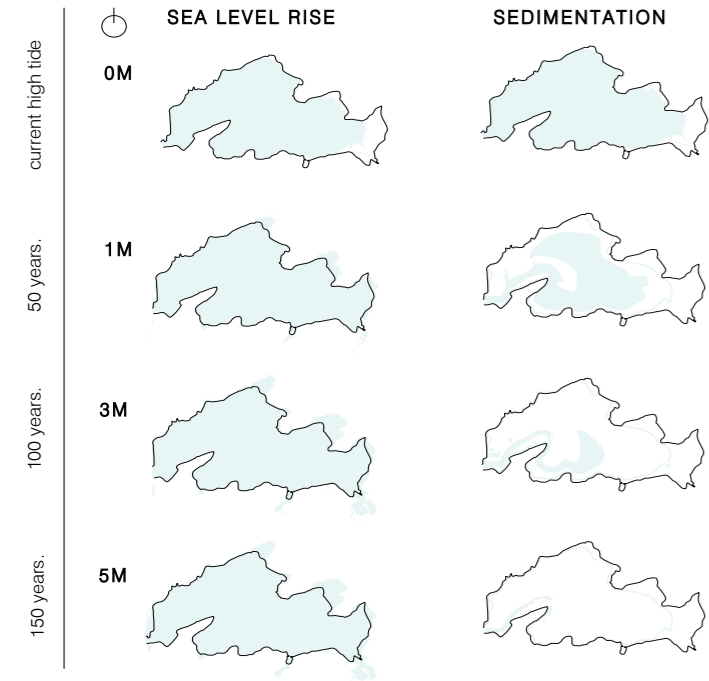
12th International Biennial Landscape Barcelona

Barcelona November 2023

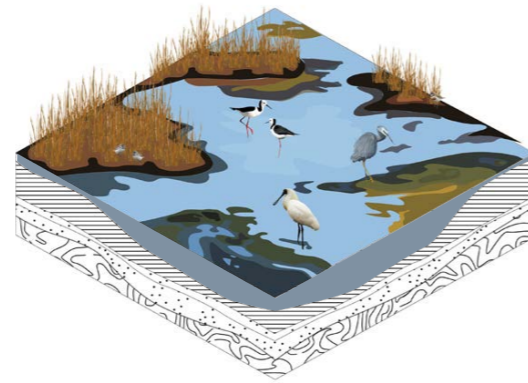
SCHOOL PRIZE

Pauatahanui: the uncertain future of the tidal habitats

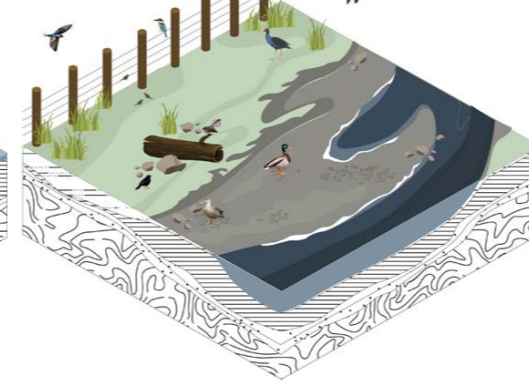
Two conflicting predictions allude to a dynamic and unstable coastline in the near future. The rate of sedimentation runoff entering the harbour has rapidly accelerated. Projections estimate that the harbour will be completely filled in 150 years time. At the same time, the impact of sea level rise poses a significant threat to the ecological fabric of the inlet. This project embraces methods of flexible design adaptation that work within the indeterminate futures presented by sea level rise.



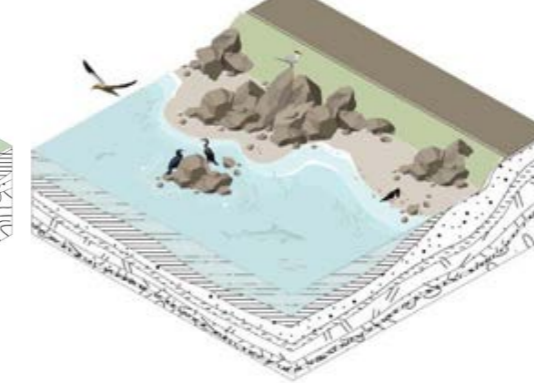
SALTMARSHWETLAND



FARMLAND STREAM



ROCKY COASTAL EDGE

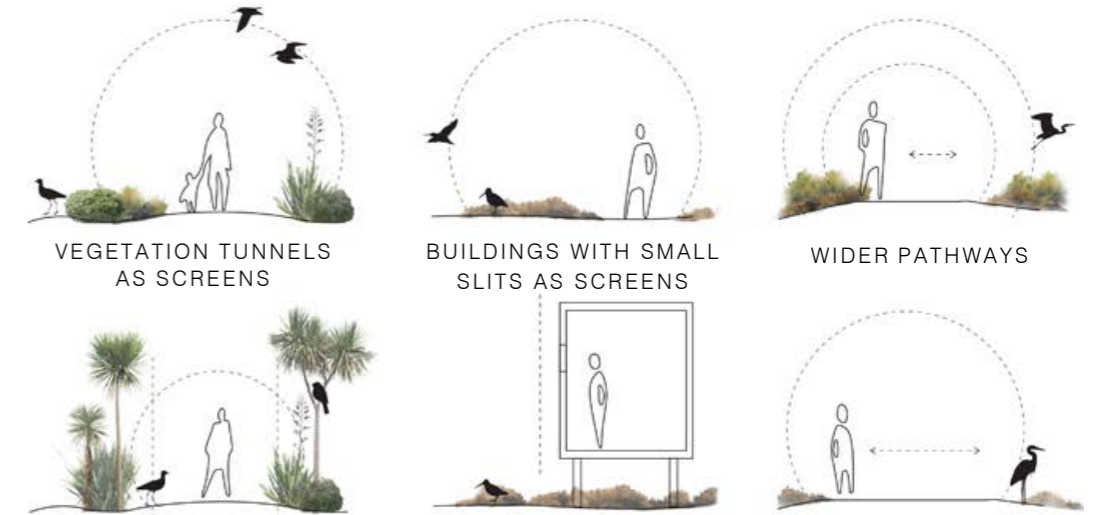


FARMLAND STREAM



Behavioural patterns and inter-species encounters

This research assessed species behavioural patterns to ascertain safety requirements around facilitating modes of encounter. Questions around interspecies proximity became central to this. How close can two species be without making either feel unsafe? What level of interaction they could tolerate? Opportunities for engagement are synthesized into the design and materiality of the harbours edge. These diagrams depict different modes of encounter, both passive and interactive, building from the research study in proximity distance required for each.

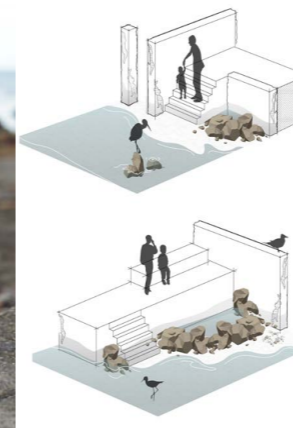


Materiality investigations



CONCRETE

Cracks and crevices provide shelter for limpets, molluscs and crustaceans. Holes and hollows create space for birds and fish to hide and nest.



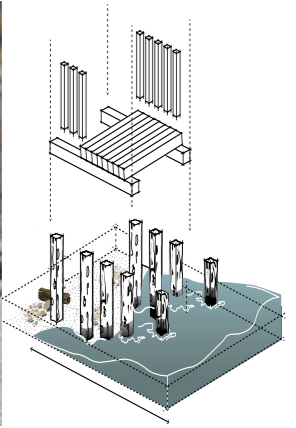
CLAY/CERAMICS

Ridged texture creates a perforated substrate for mosses, algae and lichens. Clay breathes and allows the moisture to move through it.

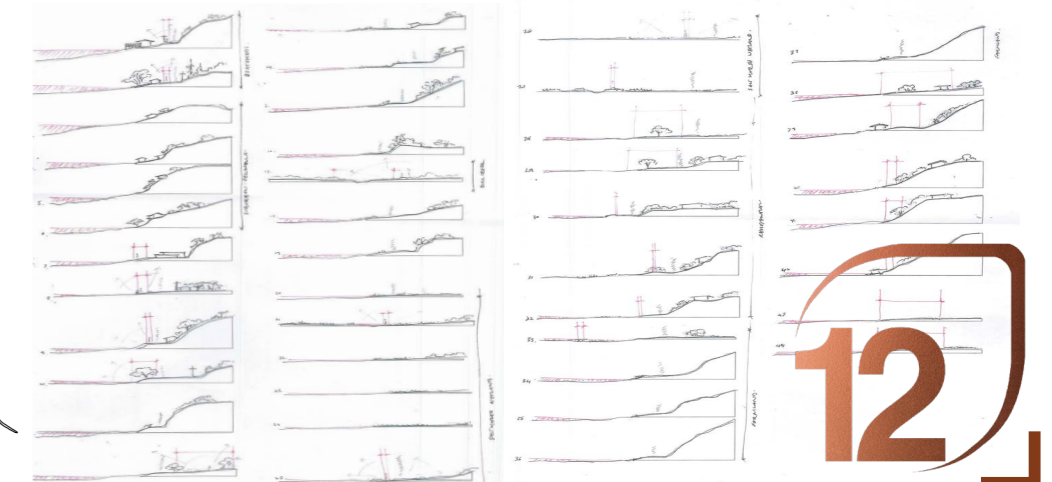
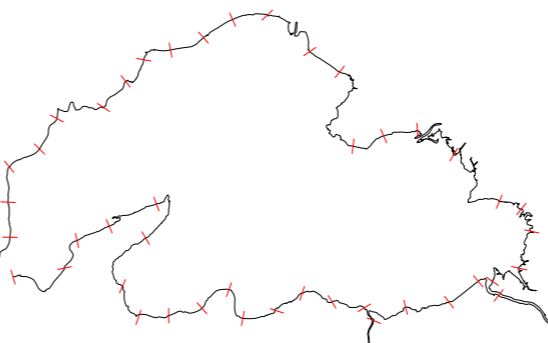


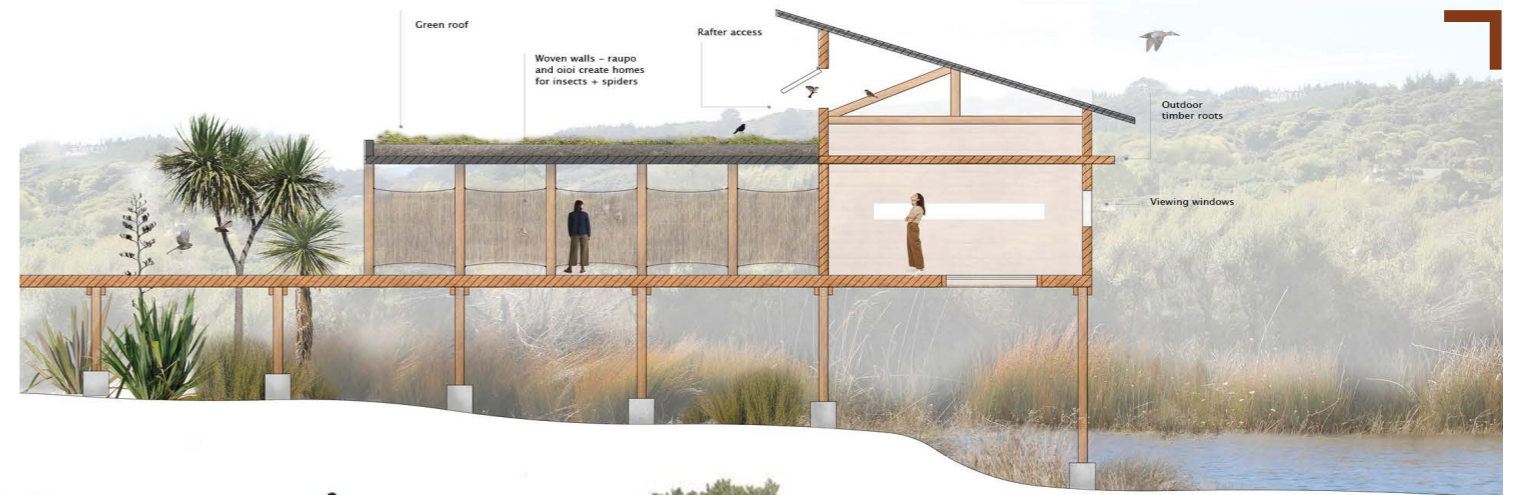
TIMBER

Textures and soil deposits: spaces for epiphytic plants and climbers to take root. Roosts for birds.



Mapping the edge condition





Modes of encounter



BIRD HIDES



LOOKOUT



RAISED BOARDWALK



GREEN ROOFS



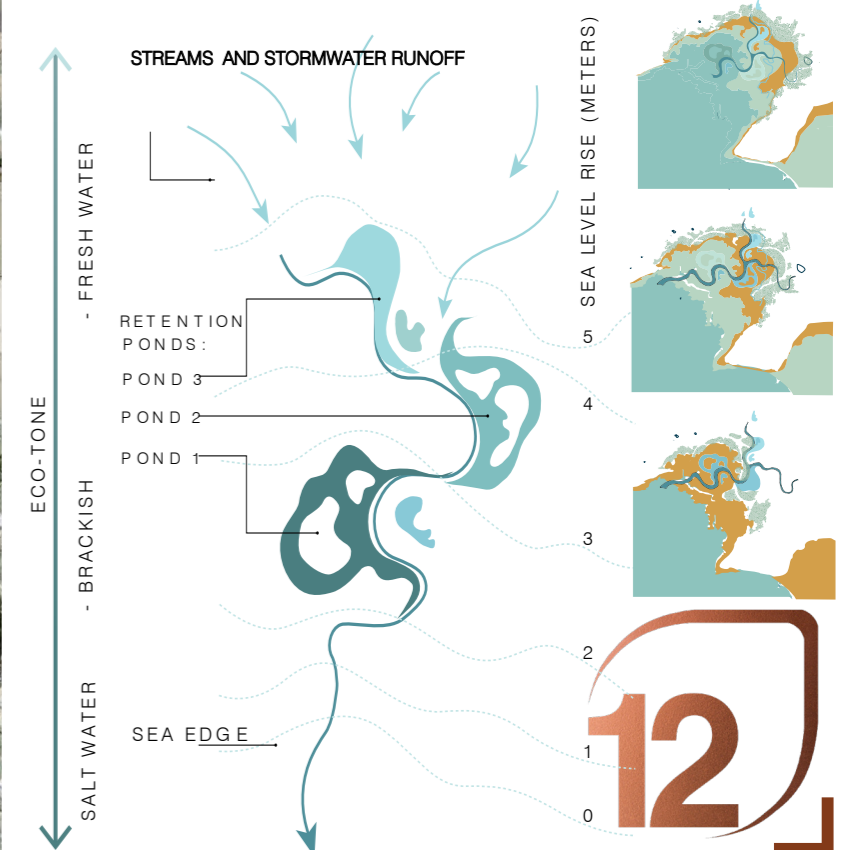
NESTING BOXES



- 1. WETLAND: PONDS + SALTMARSH
- 2. SHELL BANKS
- 3. COASTAL BUSH
- 4. PERCHES/ ROCKY OUTCROPS
- 5. REST STOPS/EVENT SPACES
- NORTHERN WALKWAY (ROAD REMOVED)

The expanding salt marsh wetland

The wetland has been designed to create space for the rising sea levels to move inland. It also filters sediment from within the catchment by slowing the course of the Horokiwi stream and allowing sediment to drop before reaching the harbour. The development of this saltmarsh wetland would create a significant ecological habitat for a wide range of species within the harbour. Different modes of encounter between species have been designed, both passive and interactive, and based upon proxemic distance required for each.





The rocky shoreline and the education centre

The southern path follows the rocky coastal edge, shouldered by clay cliff faces to the south, cloaked in trees. The fauna that frequent this type of habitats is relatively comfortable with human presence, requiring rocky perches and shelly beaches on which to rest. A range of interventions are explored to present opportunities for interspecies encounter: both interactive and passive depending on the tolerance of the individual species. The development of a marine education centre is central to the design of this walkway. This community space allows people to learn more about lives within the harbour through both scientific research and tactile engagement in the surrounding rock pools. Whilst primarily intended for education, the built form itself allows for a range of uses for the communities across the inlet, including its tidal saltwater pools.

Modes of encounter

