

Country /City New Zealand / Wellington

University / School Vistoria University of Wellington / School of Architecture

Academic year 2020-2021

Title of the project Ecological experience in Aotearoa/New Zealand deathscapes

Authors Logan Drummond

TECHNICAL DOSSIER

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| Title of the project | Ecological experience in Aotearoa/New Zealand deathscapes |
| Authors | Logan Drummond |
| Title of the course | LAND 593 |
| Academic year | 2020-2021 |
| Teaching Staff | Peter Connolly |
| Department / Section / Program of belonging | Landscape Architecture |
| University / School | Victoria University of Wellington / School of Architecture |



Written statement:

This design-led research explores reshaping the way we experience death through our engagement with it ecologically and socially. Exponential population growth and death has increased pressures of urbanisation on cemeteries and the lands' capacity for burial. Aotearoa's young colonial history means the majority of our dead lie in a mono-functional, socially and ecologically vacant lawn-cemetery typology from Europe. These prevailing cemeteries hide death by sanitising the visceral qualities of landscapes above ground, whilst poisoning them below. This research will explore Te Ahumairangi in the Wellington Town Belt as the site of a new forested public space cemetery. Existing landscape conditions have the potential to be interwoven with alternative burial methods that can allow for a greater frequency of burial in an urban environment constrained for burial space. This research proposes that reinterpretation is needed in making Aotearoa's South Pacific deathscapes unique. The end-of-life methods of natural burial, aquamation and cremation can be explored for their potential to address capacity pressures, pollutants and the negative impacts of lawn-cemetery cemeteries on the landscape. It explores how designing the process of these burial methods in the landscape has the potential to alter experiential, ecological, social and sacred richness of death spaces. This research sheds light on these considerations, findings and underexplored relationships, through a type of ecological-experience fieldwork to counter current practice. The uncovered range of potentials in landscapes of death can be tapped to catalyse the discipline of landscape architecture.

For further information

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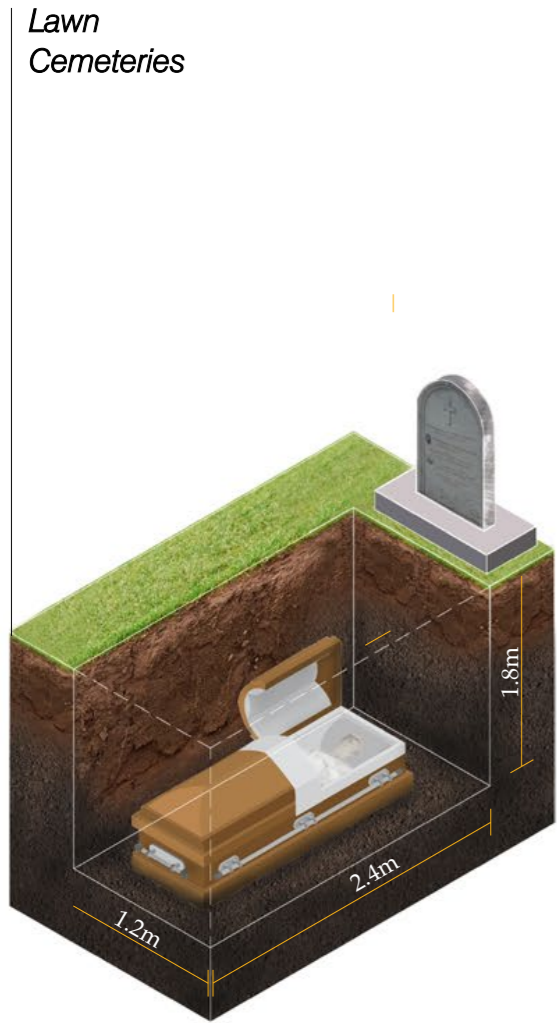
Carrer Arcs, 1-3
08002 Barcelona - Spain

12th International Biennial Landscape Barcelona

Barcelona November 2023

SCHOOL PRIZE

Landscape and ecosystems in cemeteries



| Current Practice Criteria | My Site Criteria - Te Ahumairangi |
|---|---|
| Land zoned outside of the rural-urban boundary. | 1. Use government owned reserves (no purchase cost, lower burial prices, most are already used for recreation). |
| Flat-gently sloping gradient; well-draining soil with minimum groundwater impact. | 2. Ability to accommodate alternative burial (allows for steeper and forested land). |
| 30 minute drive of most residents. | 3. Within walking distance of Central Business District (close to daily life and sociality). |
| Located on public transport routes, near a main highway. | 4. A site with native afforestation aspirations (burial can fund and enhance ecology). |



Emerging and re-emerging end-of-life choices

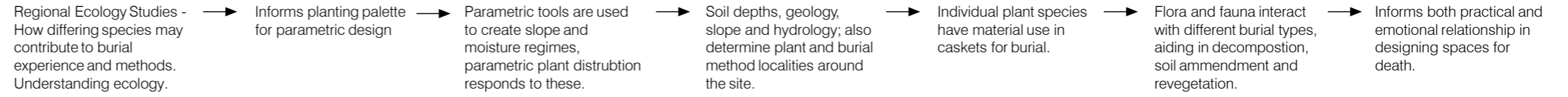
| BODY | INPUTS | PROCESS | OUTPUTS | PROCESS | PRODUCT | IN LANDSCAPE |
|---|--|--|--|--|---|--------------|
| <p>NATURAL BURIAL <i>Earth - Decomposition</i></p> | <p>Natural material casket</p> <p>→</p> <p>Made from native plants</p> | <p>No embalming</p> | <p>Grave dug</p> <p>2m pit width</p> <p>0.5-1m pit depth</p> | <p>Body decomposes faster in the more biologically active layer of soil</p> | <p>Area specific tree species planted</p> <p>Tree growth, marker for the dead</p> | |
| <p>AQUAMATION <i>Water - Infiltration</i></p> | <p>300L H₂O (Water) + NaOH (Lye)</p> <p>→</p> | <p>Heated water dissolution</p> <p>160C for 180mins 90 kWh electricity</p> | <p>Bones remain</p> <p>350L Alkaline H₂O</p> <p>Water Drained</p> | <p>Ca₅(OH)(PO₄)₃ Bone Powder</p> <p>+ Water Urn</p> <p>Metals reclaimed, fillings, joints</p> | <p>Irrigation or infiltration into streams</p> | |



Interspecies relationality

Entwining burial and ecosystem

Here the concept of utu (that which is reciprocally connected between past, present and future) is explored through the interface of burial methods and process with highly localised slope, geology, hydrology and life-forms. By engaging with the interconnectedness of life-forms in the landscape, we can provide conditions for them to flourish. In turn, this shapes our experience of cemeteries and allows our dead (that which experienced the past) to interact with the present and future.

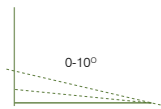


Natural Burial - Hollows



If a small depression were to be left atop graves, it would allow the land to hold water ephemerally. This would benefit a range of fauna.

This is mostly possible on shallow slopes.



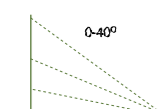
- | | | | |
|---|---|---|---|
| <i>Cyathea medullaris</i> Mamaku |  |  |  |
| <i>Dysoxylum spectabile</i> Kohekohe | Blue Damselfly | Native Mudsnaill | Fuchsia Moth |
| <i>Freycinetia banksii</i> Kiekie |  |  |  |
| <i>Melicope ternata</i> Wharangi | Kereru | Tinakori Mudsnaill | Hydrocotyle Moth |
| <i>Podocarpus totara</i> Totara | | | |
| <i>Rhopalostylis sapida</i> Nikau | | | |
| <i>Ripogonum scandens</i> Supplejack | | | |









Natural Burial - Scree Mounds



In scree valleys, stones may be piled atop the deceased to mark their place. Atop these rocks, hounds tongue fern and a fragrant fern are likely to grow.

This works on higher slopes as rock covering prevents erosion.



- | | | | |
|---|---|---|---|
| <i>Cyathea medullaris</i> Mamaku |  |  |  |
| <i>Dysoxylum spectabile</i> Kohekohe | Mahoe Moth | Campanella tristis | North Island Fantail |
| <i>Freycinetia banksii</i> Kiekie |  |  |  |
| <i>Melicope ternata</i> Wharangi | Stone Moth | Kawakawa Looper | Pixie-cap lichen |
| <i>Melicystus ramiflorus</i> Mahoe | | | |
| <i>Piper excelsum</i> Kawakawa |  |  | |
| <i>Schefflera digitata</i> Pate | Mahoe-stripper Moth | Tokoroa/Cave Weta | |



Lacusium design

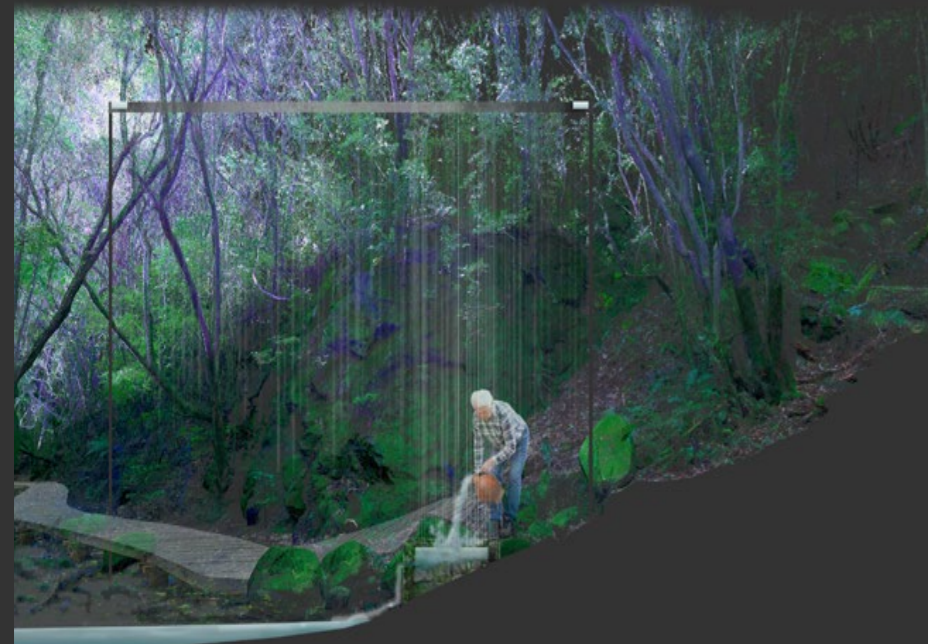
LiDAR in the design of forested spaces

Lacusium: scattering place of liquid remains

(Section aa) The increase in water from interred aquamated remains in the Lacusium will raise the current water level and flood the trench further. A boardwalk allows a flat and easier accessibility. At no point is the damp ground stood upon, giving the ground a tapu like quality and creating respect for the liquid remains below.



(Section bb) Basins constructed from on site stone, left over from quarrying collect falling water from the overhead channel. A mourner returns their aquamated loved one (in an urn) back to the land.



Boardwalk

A board walk is proposed to raise visitors off the boggy ground and away from aquamated remains. It weaves between tree trunks and requires no removal of vegetation or change of terrain. The preciseness of LiDAR allows for a remote design of this.

Aquamation Basins

These are proposed stone basins placed near the path and under the line of falling water from the overhead channel. As the water falls it collects and sprinkles in the basin to suggest the interment of liquid remains here. It travels down from the basins and into the main pool before making its way through the wider landscape.

Stone Path

The stone inventory is used to create sections of stone pathways that connect to the existing landscape and merge into the stone aquamation basins.

Ellipse of Water

The ellipse shape becomes an overhead steel channel that is built into the rockface and collects and distributes water from the waterfall.

The channel is design to overflow to create a curtain wall of water dripping from the canopy above.



The elliptical channel slopes toward the main pool. It is shallow, so that water collected from the waterfall falls through holes into the stone basins.

The channel is held up on adjustable support poles allowing them to react to the growth of the mahoe trees.

Partially hidden in the canopy and designed in the point cloud where every branch is visible in three dimensions, the visual effect will be that of rain produced by the group of trees it encapsulates.

Existing waterfall

