

The Living House

Biophilia Plan

November 2017



Environmental features

Color

The use of color in the Living House will be key. The rammed earth walls will be coloured to enable tonal variation to be achieved throughout the walls.



The natural earth walls will be contrasted with the wooden glulam roof beams and plywood walls. It is intended to source and use recycled timber as the ceiling material for the mid floor. Aged and coloured flooring will be sourced to bring some life and texture to these ceilings. It is also possible that reclaimed timber from used pallets will be used for this.



Living colors will be introduced through the use of interior planting. Lush greens and where possible coloured plants will be used to bring depth and variety to the interior spaces. Primarily colour will be introduced into the Living House through fixed artworks like splashbacks. A local photographer has agreed to provide us with his photos to use throughout the project.





Water

The Living House hopes to bring exterior water inside as a showcase of how the water cycle works. Ideally the Living House would like to bring some rainwater inside the house as a living water wall to separate the dining area from the living room. Ideally as a sheet of glass that the water travels calmly down.



Air

Not addressed by the Living House at this time

Plants

Plants are incorporated throughout the design of the Living House. There will be internal planting inside the dwelling, most particularly the living wall in the 'lung' entry way, the ivy that will grow up the main staircase branching all the way up to the living roof.

Animals

The Living House plans to incorporate live animals into the project through the inclusion of a chicken coop on the premises as well as bee hives on the green roof.

Natural materials

Use lighter rammed earth on the interior walls when compared to the exterior walls. Exposed glulam timber roof beams, reused plywood formwork from the rammed earth on the interior walls.



View and Vistas

The Living House is fortunate in that it has the ability to provide a window to every room in the dwelling, and most of these windows will have a view to nature, including sea views from the first floor and the green roof.

Façade greening

The Living House does not intend on greening the façade of the building as such the rammed earth is designed to be exposed as a hero. However the 'roof façade' will be greened with the living roof. Rather than just using the roof as a static space the Living House is hoping to turn the roof space into a true living roof through the inclusion of a living roof balustrade where pallets planted with fruits and vegetables form the balustrade that is required by Auckland council. In addition bee hives will be located on this roof.



Geology and landscapes

Auckland has a large number of volcanoes and one of the most famous is Rangitoto which will be visible from the green roof. The Living House will connect to Auckland most famous geological feature through its views and vistas.



Habitats and eco systems

Not addressed by the Living House at this time

Fire

Not addressed by the Living House at this time

Response to Natural Shapes and Forms

Botanical motifs & Tree and columnar supports

Ground the base of the main stairs like a tree with a heavy wooden material and then allow the higher risers to grow upwards like branches. Grow an ivy up the balustrade between the flights of stairs reaching up towards the light from the roof like the leaves on a tree.



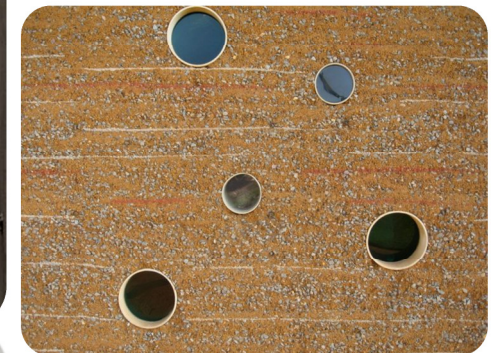
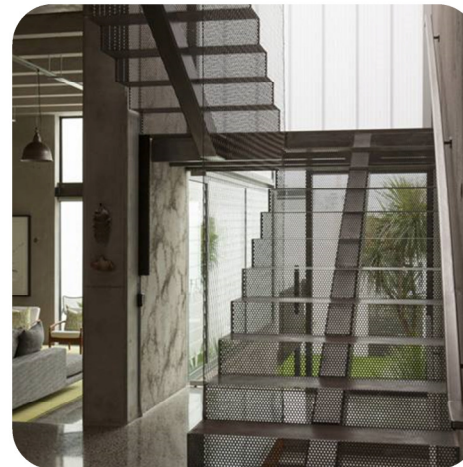
Animal motifs & Shells and spirals

The Living House is located in Beachlands, which as the name suggests is adjacent to the sea. Shells and sealife are therefore an integral part of the place of the location of the Living House. It is possible to carve into the formwork of the rammed earth to create patterns and shapes and the Living House plans to investigate creating fish, sealife and shell motifs on select walls of the Living House. This motifs will likely be incorporate in support of a poem or quotes on the staircase walls. We will also try and incorporate some additional animal motifs like the downpipe example.



Egg oval and tublar forms

The treads of the main stairwell will be fabricated out of circle mesh (white). Provide peep holes in the staircase rammed earth walls to look into the study nook.



Arches vaults and domes

Not addressed by the Living House at this time

Shapes resisting straight lines and right angles

'lean out' the rammed earth walls at the front of the house to try and break up the straight lines of the rectangular shape.



Simulation of natural forms

Not addressed by the Living House at this time

Bimorphy / Geomorphology / Biomimicry

Not addressed by the Living House at this time

Natural Patterns and processes

Sensory variability

Rammed earth is an incredibly sensory material. It is warm and textural to touch. Its temperature changes during the day soaking in the sun's warmth and releasing it later in the day. The colors of the earth can also vary providing a glorious visual vista.



The ceilings of some of the ground floor rooms may use timber to provide texture and pattern contributing to sensory variability.

Information richness

Not addressed by the Living House at this time

Age change and the patina of time

Use of exposed and untreated glulam timber beams which will age over time. The use of rammed earth as the exterior walls will also allow slow aging to occur over time with the weathering of the exposed rammed earth. The use of recycled timbers where possible will bring aged materials into the building.

Growth and efflorescence

Growth will be addressed in the Living House through the use of living plants (that will actually grow) as well as through motifs such as the stairwell that grows from the earth to the living roof and sky above.

Central focal point

The main stairwell of the Living House will be the central focus point of the house, the spine of the building if you like, that links you from its roots in the ground (the basement) to the green roof at the top.



Patterned wholes

The Living House will be a series of contrasts between strict patterns (such as the circle pattern on the stair treads) and wild natural variability (such as the ivy growing up the stair balustrade). No space in the Living House will be overlooked with traditional spaces such as garages and basements also being considered and carefully crafted as integral parts of the Living House with their contributions celebrated. An example of this is the balustrade in the garage that will protect that basement stairs. The Living House is exploring using local driftwood to form this balustrade in a similar manner to the below patterned image.



Bounded spaces

Not addressed by the Living House at this time

Transitional spaces

The main stairwell and entry way will be treated as the main transition space within the dwelling. It will be the main transition from the outside to the inside of the dwelling and will be designed as a lung with a large green wall and planting to enable toxins to be 'breathed' in.

The materials in this space will visually reinforce the transition from outside to inside with the colors of the rammed earth changing from darker outside shades to lighter inside shades.

A 'coat check' will be provided at the entry of the house to physically reinforce the fact that visitors are now entering a passive house and that they will not need as many layers of clothes on.



Linked series and chains & Integration of parts to wholes

Rather than hiding integral building system away in pipes in walls the Living House plans to expose as many systems as possible for education purposes. The rainwater system will be exposed as 'linked in series' to the underground rainwater tanks via the use of a visible rain chain. This chain will provide visual and audio context to the rainwater system allowing people to physically view and listen to the collection of potable water from the sky, reinforcing human dependence on nature for this life giving resource.

A manual hand pump will be provided to get water out of rainwater tanks. This direct connection to the water tanks will be provided so that users can feel the effort and effect of pulling water out of the earth.



Complimentary contrasts

Not addressed by the Living House at this time

Dynamic balance and tension

Not addressed by the Living House at this time

Fractals

Not addressed by the Living House at this time

Hierarchically organized ratios and scales

Not addressed by the Living House at this time

Similarly the grey water system will be exposed and linked in a series to reinforce the idea that the waste that we create doesn't just magically disappear. The dirty grey water will be showcased in a clear pipe that runs through the basement to the greywater treatment tanks. The treated water will also be visible as it is pumped out of the basement to the curved channel path that will lead the treated grey water to the ETS beds.

Light and Space

Natural light

The Living House will use natural light extensively throughout the dwelling. Every room has a window allowing natural light to filter through the dwelling from all sides.



Filtered and diffused light

Light will filter down from the pop top door and window, down the main stairwell. An open mesh material will be used for the stair treads to better allow light to filter down the stair well.



Light and shadow

Light and shadow is designed to reflect throughout the Living House. In particular down the main stairwell and through the north facing windows into the main living areas of the house. The staircase material has been carefully selected to allow diffuse light to filter down the stairwell shaft, creating pools of light and areas of shadow.

Reflected light

The swimming pool is located directly underneath the level 1 deck which comes off the kitchen. Light will therefore reflect off the swimming pool up onto the deck above.



Not addressed by the Living House at this time

Spatial harmony

Not addressed by the Living House at this time

Inside outside spaces

The level 1 deck off the kitchen/dining space has been design as an inside/outside space with wide doors that can fully open up. There are views towards the sea from this end of the house. The transitions from the house to the deck will be level in accordance with our Lifemark rating helping connect the interior to the exterior.

Light pools

Light will be allowed to 'fall' down the stairwell and pool at the bottom of the stairs throughout the day.

Warm light

The light that is allowed to filter into the Living House will be diffused warm light from the sun.

Light as shape and form

Not addressed by the Living House at this time

Spaciousness

Not addressed by the Living House at this time

Spatial variability

Not addressed by the Living House at this time

Space as shape and form

Place based relationships

Geographical connection to place

It is important that the Living House be connected to its location, specifically its location by the sea. The Living House plans to connect to its location by the sea through the use of sea and sea animal motifs through the dwelling (as discussed earlier in this plan). The local volcano Rangitoto is a large presence on the local sea scape and the Living House will be able to connect to Rangitoto through its views as well as internal artworks. Sailing is an important element of the Beachlands culture and boats and navigation will also be addressed through art.



Historical connection to place

Maraetai was a very early European settlement dating back to 1838 and, like Beachlands, was subdivided in the 1920s. Omana's major housing developments followed after a large subdivision in the late 1950s.

The name "Omana" has been shortened from O-Manawatare, (meaning "the dwelling place of Manawatare") from the name given to the Ngai Tai pa site, now part of Omana Regional Park. "Maraetai" means "meeting place by the sea".

Ecological connection to place

Not addressed by the Living House at this time

Cultural connection to place

Auckland has a large number of volcanoes and one of the most famous is Rangitoto which will be visible from the green roof. Carve this legend into the stairwell rammed earth wall.

According to Maori legends, a giant couple once lived on a tall mountain. The pair were 'tupua' (meaning demon, but not demonic per se), and children of the Fire Gods. The couple started arguing and did not notice that their fire had burned down and gone out.

Enraged at their loss of flame, they cursed Mahuika, the fire goddess. Mahuika was greatly displeased at the unfair cursing and asked Mataoho, the god of earthquakes and volcanic eruptions, to teach the couple a lesson. In response, Mataoho caused a mighty eruption that destroyed the couple's home, with such force that a hole was ripped out of the land and Lake Pupuke was formed. The couple were left stranded, imprisoned on a mountain peak out to sea, unable to return to the mainland. This peak was Rangitoto and legend has it that the mist that often surrounds the island is the tears of the couple, mourning for their lost home.

The name (which means Bloody Sky) has nothing to do with the islands hot heated nature, but is actually a shortened version of the name Ngā Rangi-i-totongia-a Tama-te-kapua which means 'The day of the bleeding of Tama-te kapua'. Tama-te Kapua was a Maori captain who was viciously wounded on the island, and the bleeding skies refers to his blood, not the volcanoes lava bombs.

Indigenouness materials

The Living House is proposing to make use of natural earth materials wherever possible, including the rammed earth walls, an earthen floor, and natural timber wall and floor finishes.

Landscape orientation

The Living House is orientated on site to follow the natural path of the sun throughout its days journey. The kitchen of the house faces East and the sun will track along the front face of the house throughout the day ending the day on the western elevations.

Landscape features that define building form

Not addressed by the Living House at this time

Landscape ecology

Use of native NZ plants in the ETS beds.

Integration of culture and ecology

Not addressed by the Living House at this time

Spirit of place

Not addressed by the Living House at this time

Avoiding placelessness

Not addressed by the Living House at this time

Evolved Human Nature Relationships

Prospect and refuge

The Living House is designed to be a refuge from the elements outside. Whilst the house is directly connected to nature outside, in times of inclement weather (whether too hot or too cold) the house has been designed through the use of passive house to always remain at the temperate level.

Order and complexity

Not addressed by the Living House at this time

Curiosity and enticement

The Living House has been designed to enable curiosity and to enticement people to learn more about green building. The exposing of typically hidden systems will encourage people to think more about the way their houses operate and what they can easily do to affect change in their own lives. Items like exposing the greywater treatment cycle and the rainwater collection will entice people to learn more about their natural environments.

Change and metamorphosis

The Living House is designed to showcase the changes that occur in the water cycle of a dwelling. From how the rainwater that is collected for use in the dwelling, how it is dirtied, where it goes to be treated, and what happens to it at that point will all be showcased in the dwelling.

Security and protection

Not addressed by the Living House at this time

Mastery and control

Not addressed by the Living House at this time

Affection and attachment

Not addressed by the Living House at this time

Attraction and beauty

Not addressed by the Living House at this time

Exploration and discovery

Not addressed by the Living House at this time

Information and cognition

Not addressed by the Living House at this time

Fear and awe

Not addressed by the Living House at this time

Reverence and spirituality

Not addressed by the Living House at this time