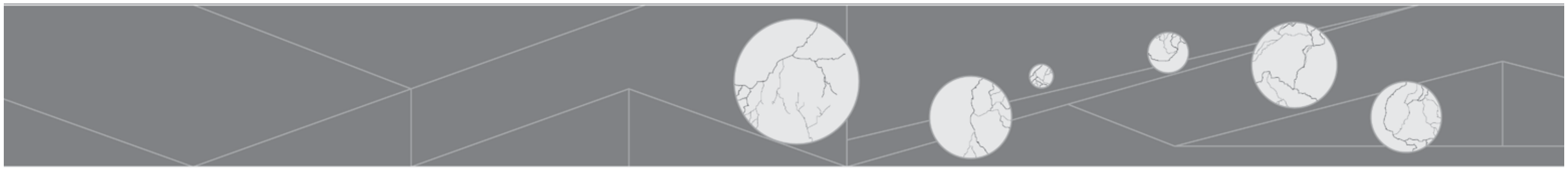


BOTANICAL GARDENS & PARKS / RIO TINTO NATURESCAPE - COMMUNITY SHELTER ARTWORK PROPOSAL - PAMELA GAUNT 2011

CONCEPT INTRODUCTION

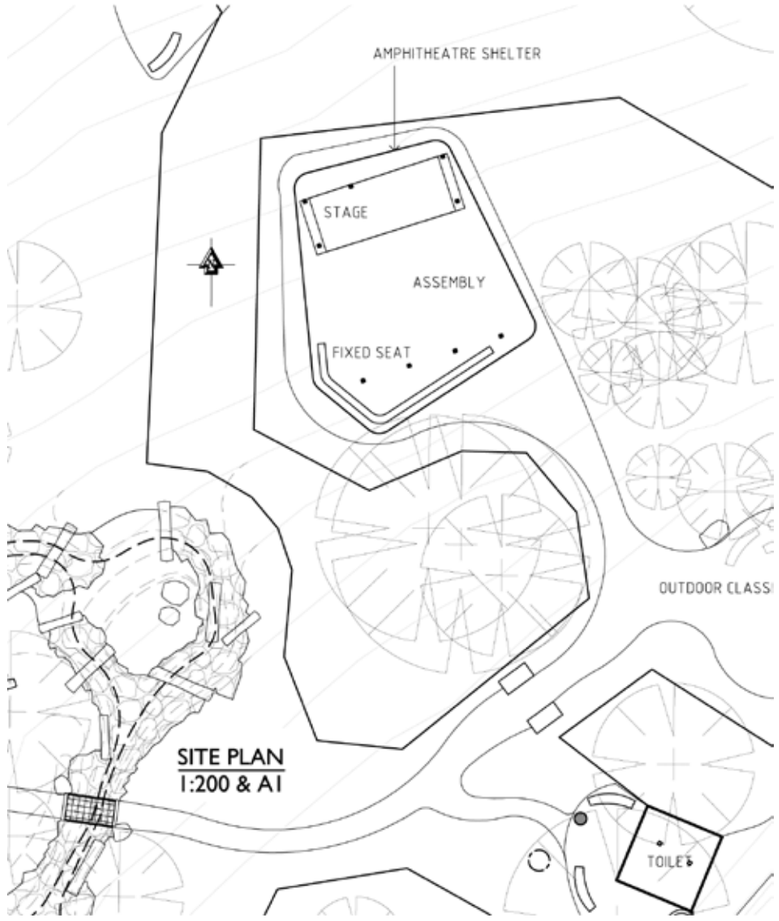
This proposal seeks to integrate the project into the naturescape, with a minimal footprint, and to create conceptual and visual links between the naturescape artwork and the BGPA education/admin building whilst still undertaking to fulfil the artist's brief.

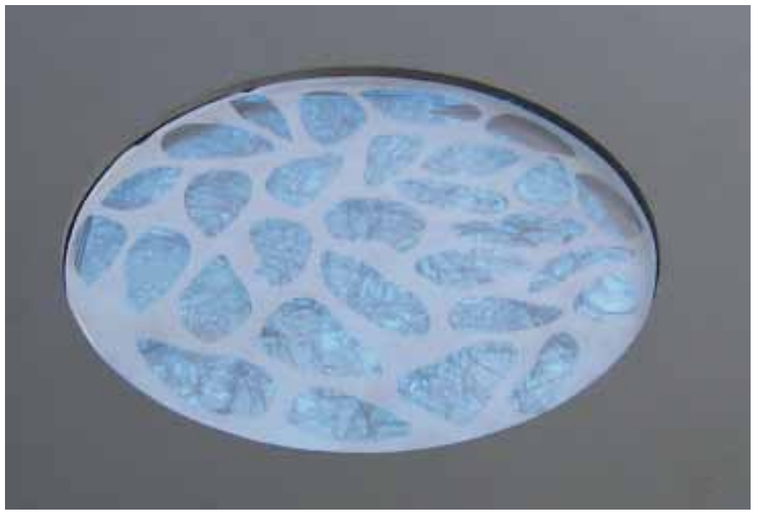
The building artwork project evolved from discussions about the 'under the ground' nature of the building. Research into the 'underground naturescape space' for elements suitable for translation into intriguing imagery about elements in the naturescape, resulted in the choice of root systems. Root systems are distinctive to each species and the selection was determined by availability and aesthetic appeal. The root systems then formed the basis for patterns that were developed into integrated artworks.

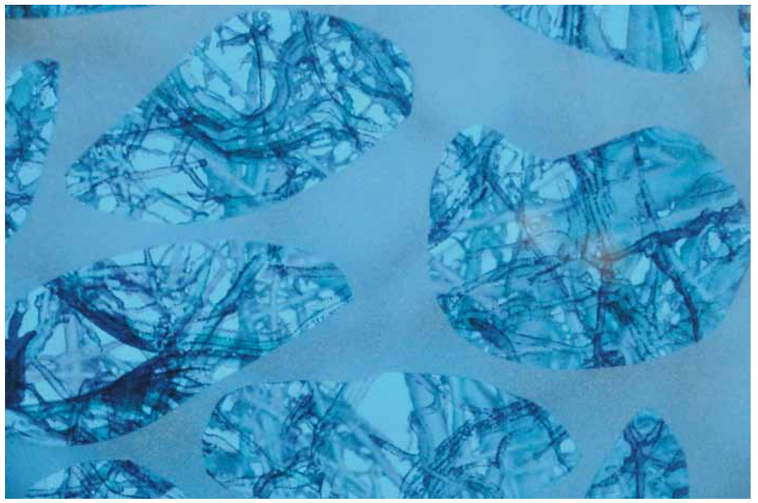
The proposal for the naturescape component also incorporates the same root systems – but with a twist – instead of being in the ground the viewer observes them by looking up to the sky through circular apertures in the community shelter roof structure. The artworks will also double as skylights which negates the PlanE's intention to incorporate skylights within the shelter's roofing.

A solar aspect is an essential part of the brief for both the building and the naturescape. This is addressed in the building via the illuminated, live data collecting metering column. The original proposal for the community shelter in the naturescape intended that there was a 'solar loop' in that the work will not only be powered by solar radiation but also meter solar radiation. However, further research indicated that feeding solar energy back to the grid was more preferable option for longevity of the devices used.

The metering instrument is a small weather device that specifically measures solar radiation. To ensure the device used is the most appropriate for the environment and the project's intention, the artist has consulted with the Bureau of Meteorology in Perth, and also with a solar radiation specialist in Melbourne recommended by the BoM. The sun will ostensibly power the weather device through solar panels, which in turn meters the solar radiation, which is subsequently visually represented through a series of circular patterned interventions in the roofing structure using electro-chromic glass. The patterns will be embedded into the interlayer of the glass as well as on both glass surfaces. The patterns will reflect the one of the root systems in the building and will be embedded into the interlayer of the laminated electro-chromic glass and printed onto the exterior of both glass surfaces. Therefore, if there is no solar radiation pattern, or a diminution of the pattern due to low radiation levels, the public will still be able to see the permanent root patterns printed onto the glass surface.

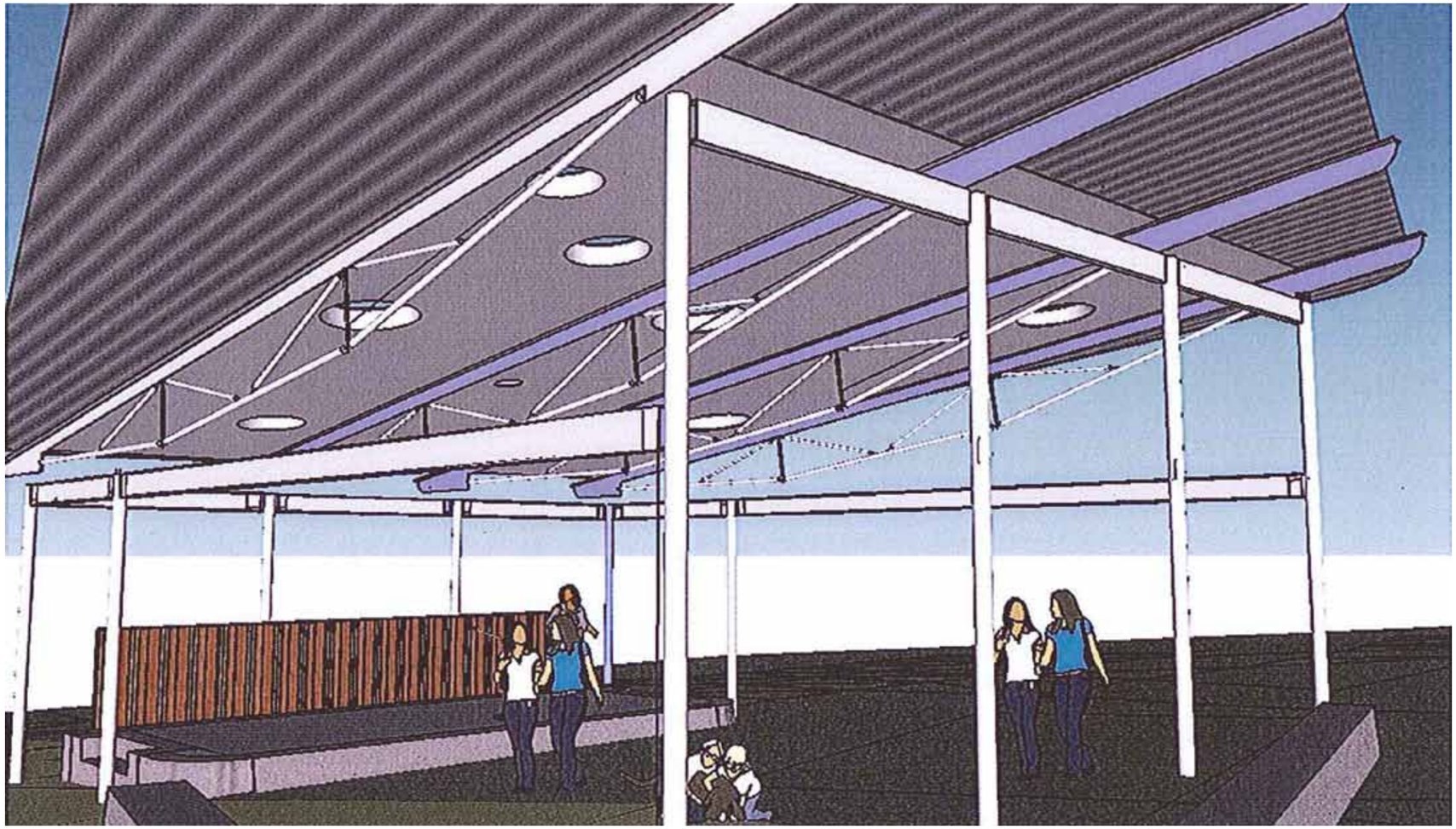






[LEFT] 3d Render of BGPA/RTN metering pole and root system disc installation.
[TOP RIGHT] Prototype of root system disc installation
[BOTTOM RIGHT] Prototype of root system disc installation detail

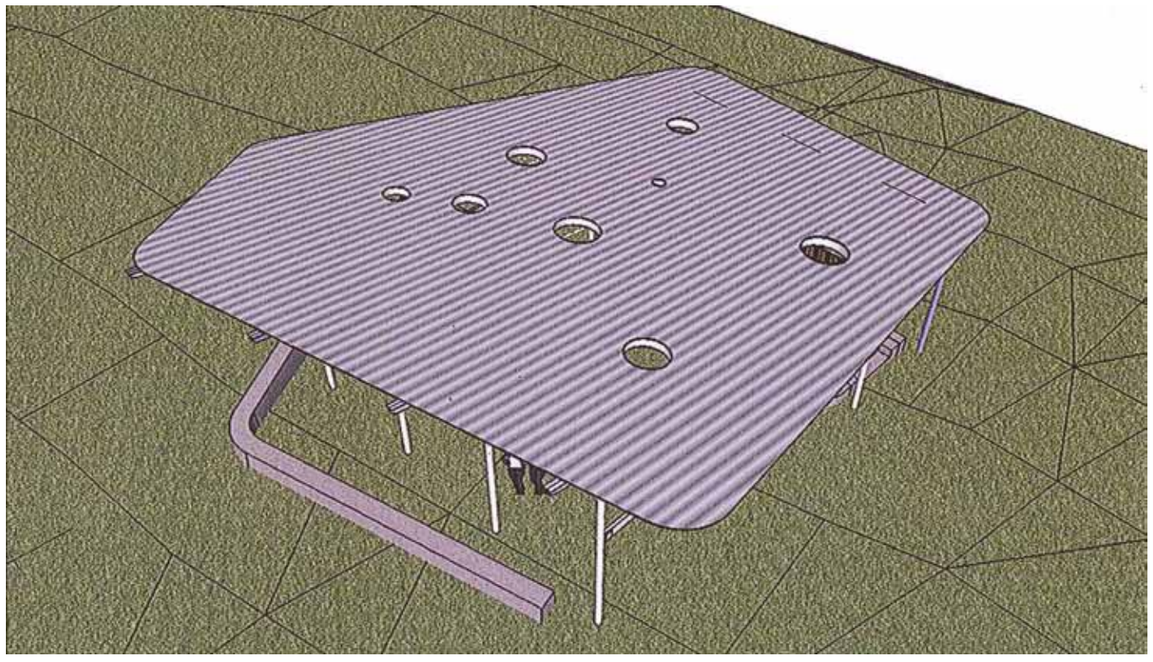
ARTWORK LOCATION

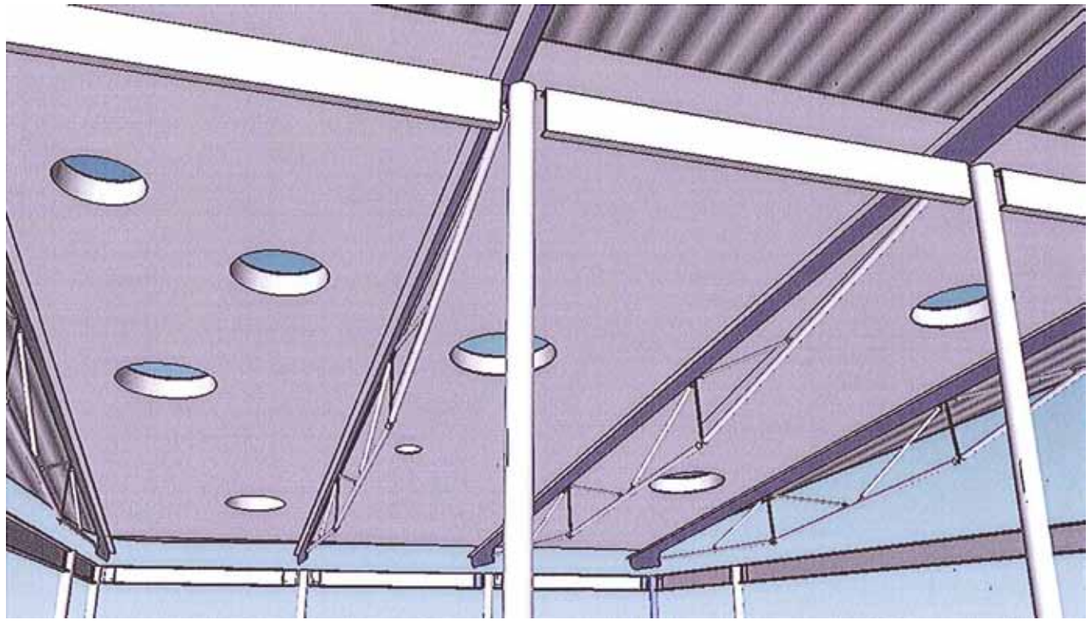


The project originally proposed a series of circular interventions in the roofing structure of the Community Shelter designed by PlanE. However, due to budget constraints, the configuration has been redesigned to incorporate one large singular ovoid-shaped intervention.

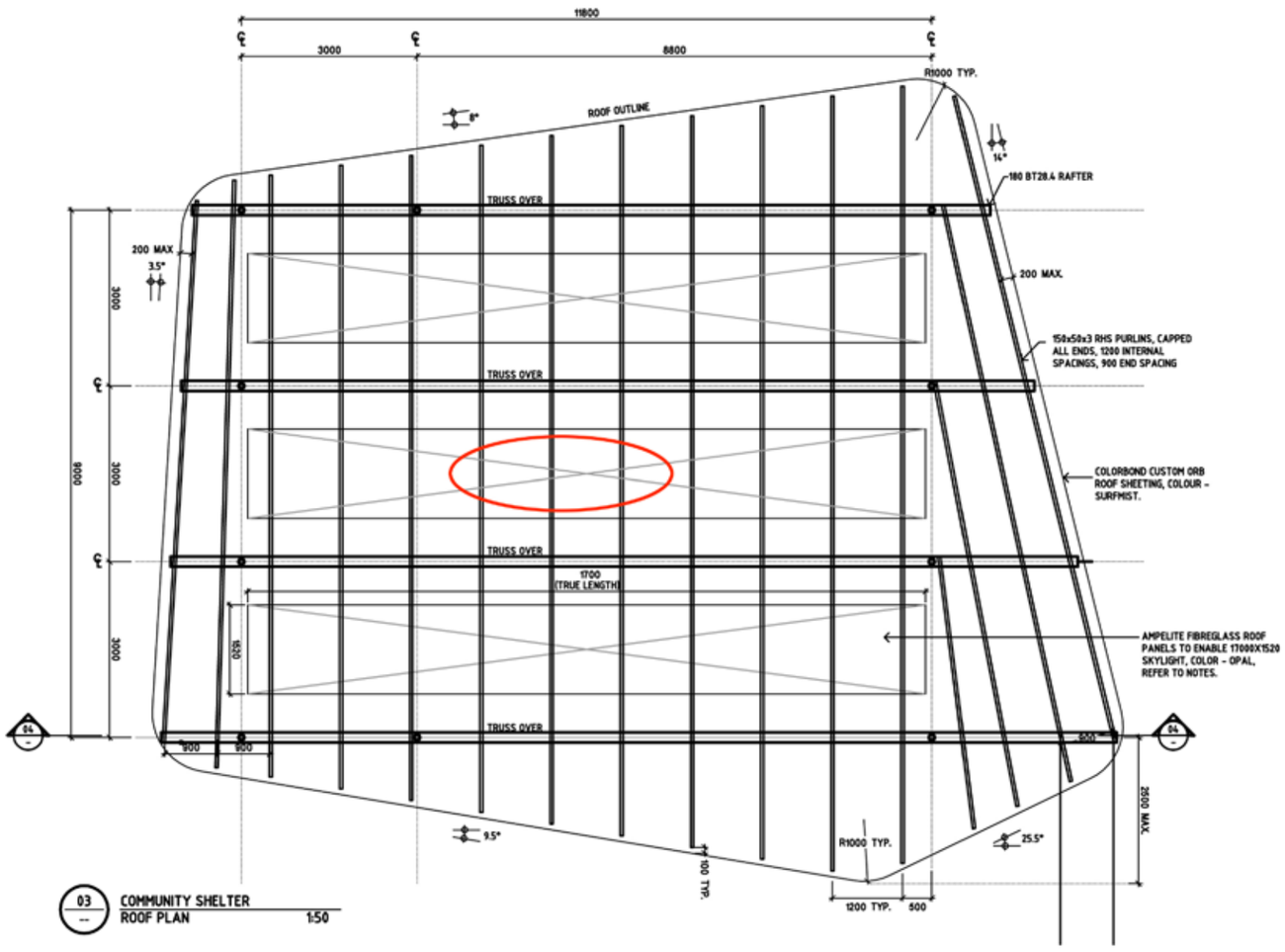
Solar panels will be located on the roof along with a solar radiation metering device. A programming device will be connected to the weather device and the electro-chromic glass and secreted in between the roof structure and the proposed marine ply lining, with other wiring. The solar panels will collect more than the power required to power the devices used – but be fed back to the grid. In a sense the loop between the solar collection for the power and the metering of the solar radiation is not as complete in the scenario that feeds the solar energy back to the grid. However, after much discussion, the risk factor in powering devices with fluctuating power seems an unsustainable option. Therefore, the artwork will not be directly powered by solar energy, but use less energy than the power collected on the roofing structure that it is integrated into.

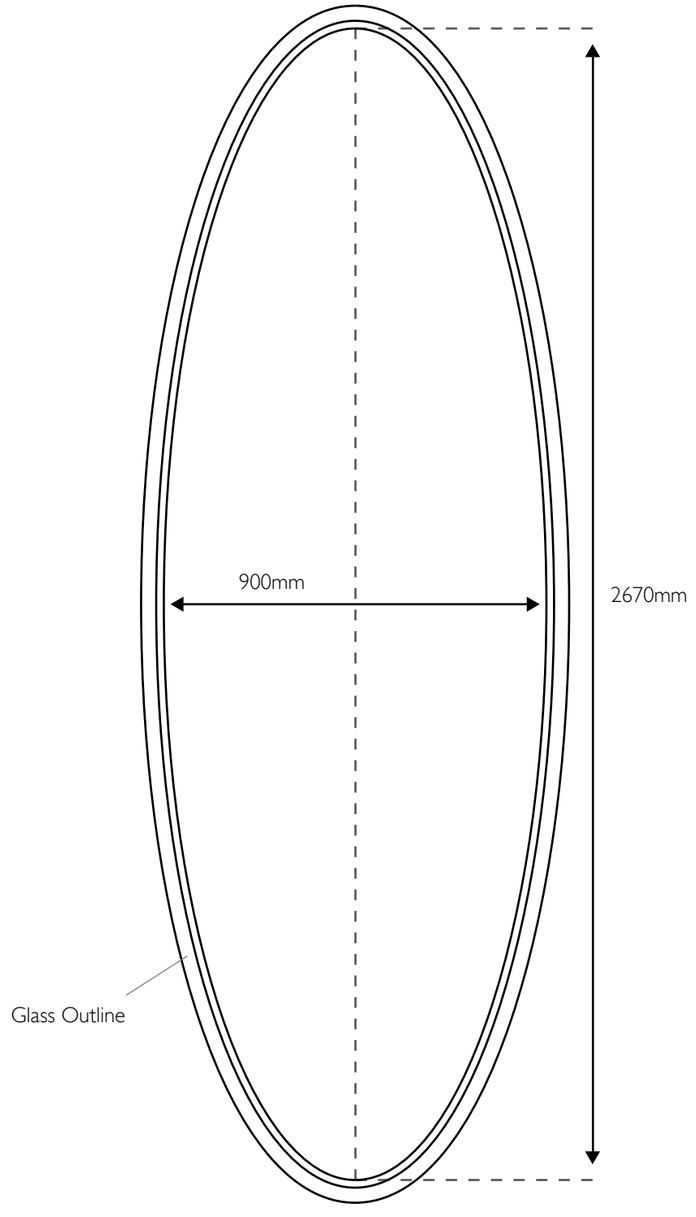
ORIGINAL CONCEPT

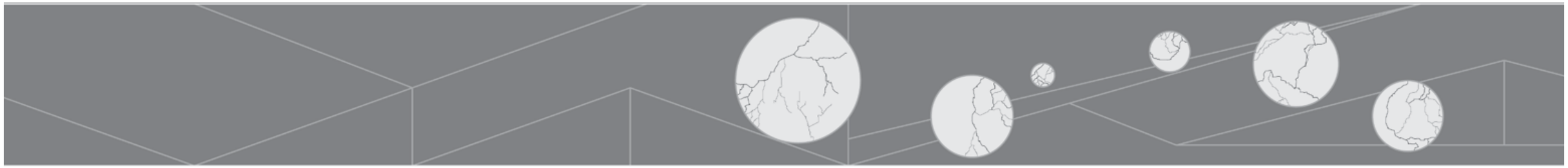




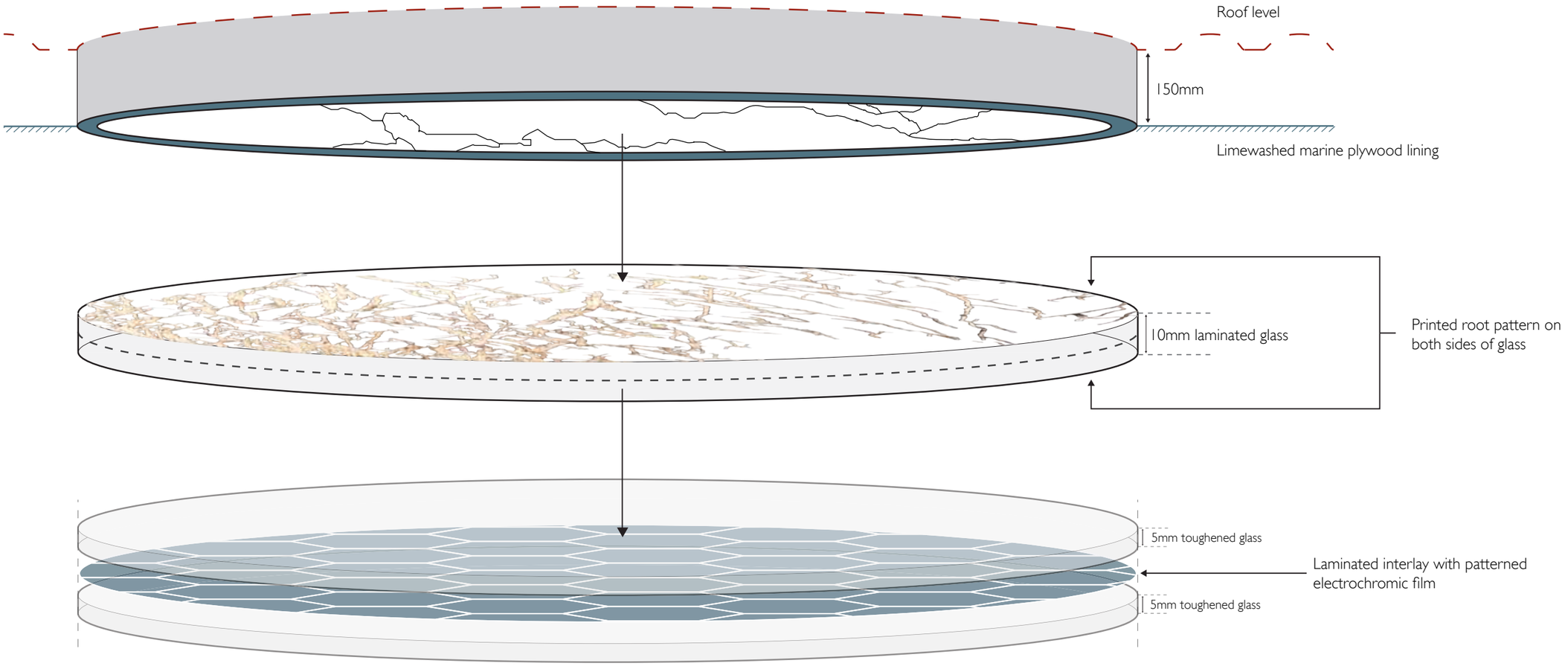
MODIFIED DESIGN - VERSION TWO



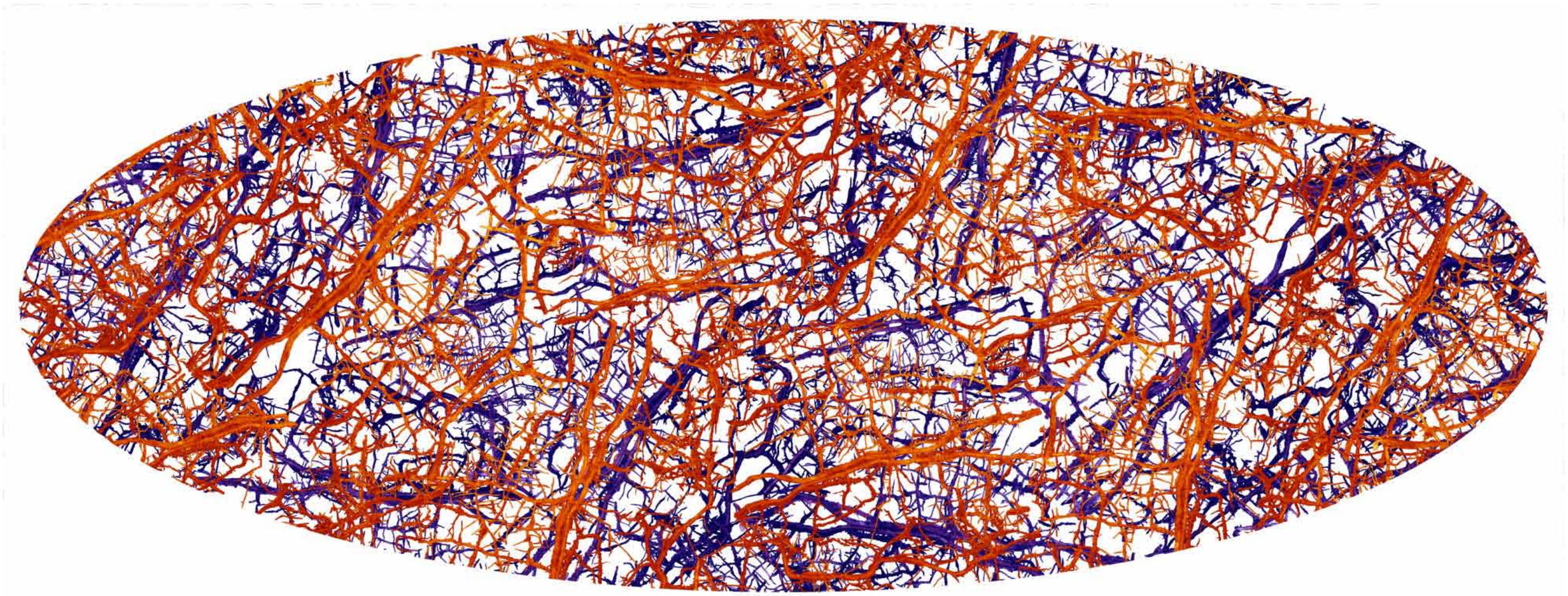




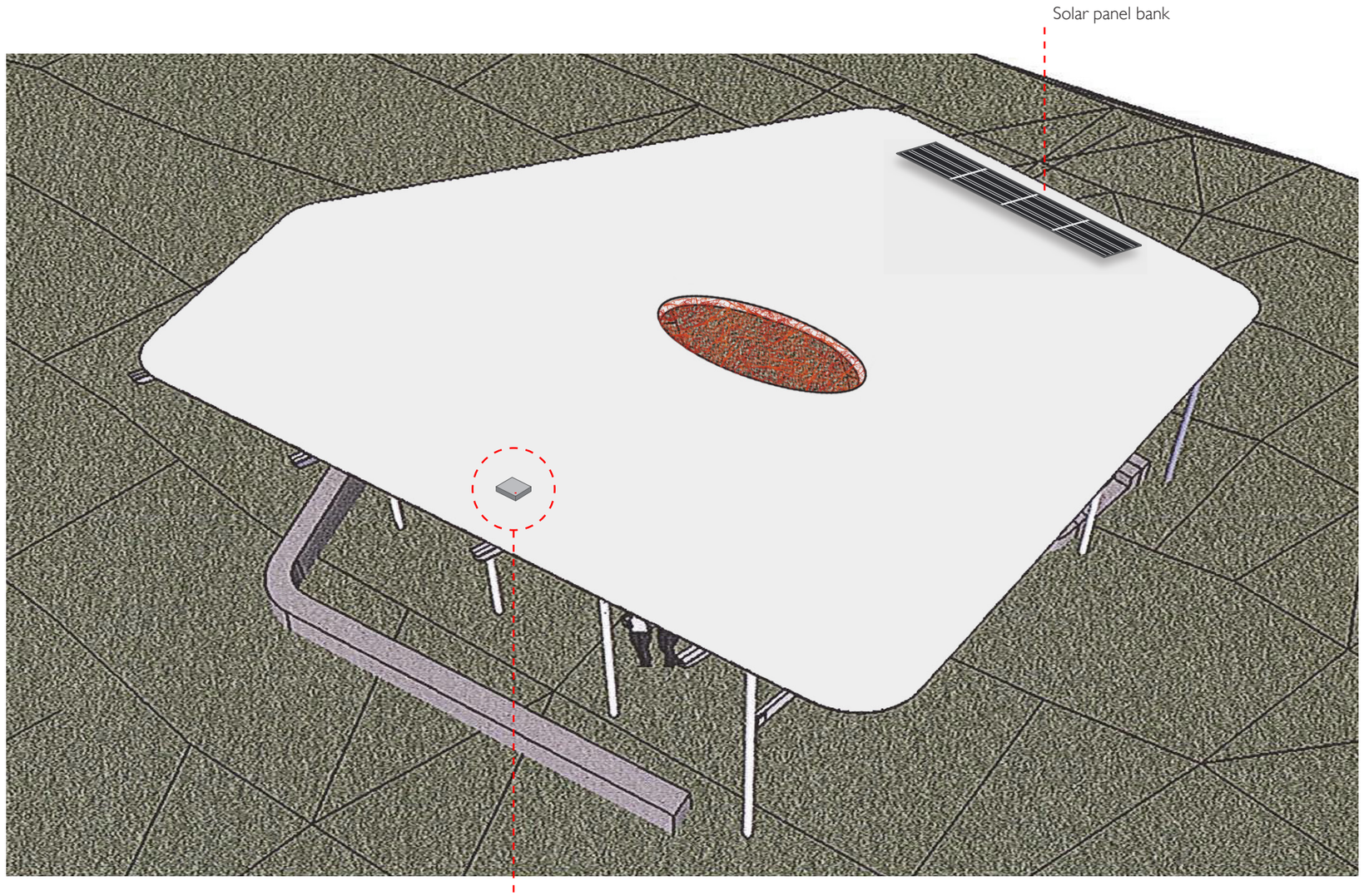
ARTWORK INTERVENTION DETAILS

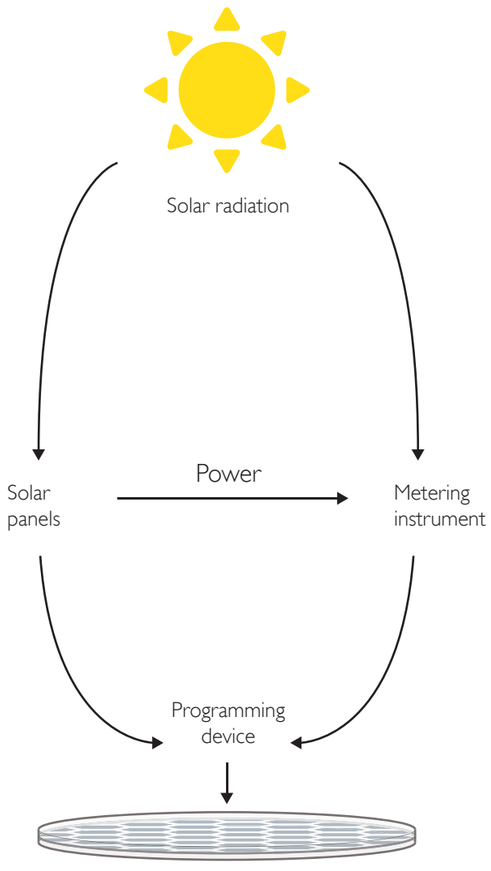


PROPOSED ROOT SYSTEM PATTERN



SOLAR POWER INTEGRATION





Electrochromic glass responds to programming device

ELECTROCHROMIC GLASS

Electro-chromic glass has a translucent-to-opaque appearance, depending on whether it is on or off. Once an electric current is passed through the glass it becomes transparent. The technical detail of this process operates through the production of an interlayer that carries the necessary electrical component and is laminated between two sheets of toughened glass at the desired thickness. The wiring is invisible and the interlayer is clear (although slightly cloudy). The artist proposes to intervene in this 'magical' process to create a patterned electro-chromic 'response', rather than the standard 'all-over' on/off (translucent / transparent) appearance.

Electro-chromic glass has a life span of 25 years and is normally guaranteed for 5 years. It is produced in Australia by iGlass (Melbourne) who have a global reputation.

[RIGHT] Electro-chromic glass being used in a medical facility.

IMAGINK

ImagINK is a printing process using ceramic based inks, printed onto a glass surface and kiln fired. They have a lifetime guarantee and are UV stable. The proposal intends to use this process to pattern one side of the glass surface. Cooling Bros. are a Perth based company with the licence to produce both iGlass electro-chromic glass and imagINK.

[RIGHT] ImagINK implemented in an outdoor setting.
Image sourced from coolingbros.com.au

SOLAR RADIATION SENSOR
Licor LI-200SA Pyranometer

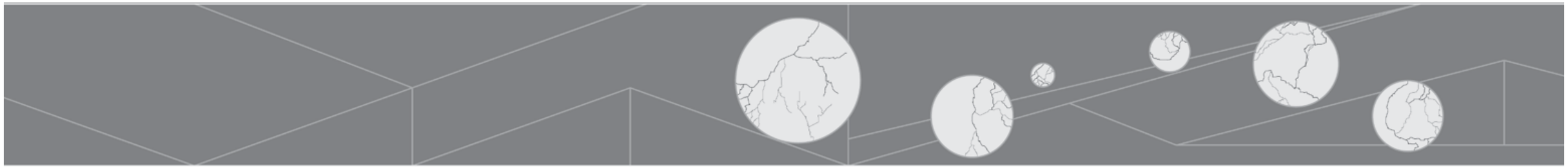
This solar radiation measuring device is a
Full spectrum unit chosen for its suitability for
the project and its ease of maintenance.

SOLAR PANELS

Serengeti E13 / 228 Polycrystalline panels
require low voltage inverter if grid is connected.

Recommended by SunPower Corporation for
Avant Solar

[RIGHT] Pyranometer, the proposed solar radiation metering device.



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Steve Berrick - programming

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