# Dew Drops on the Lawn

## Written Description:

As the result of significant consultation with the St Kilda community, the St Kilda Triangle master plan was considered a comprehensive guide to the site. We observed that, between the existing site and the proposed master plan, a significant amount of new works were required. Therefore, we reconsidered part of the existing masterplan using more sustainable materials, such as Cross-Laminated Timber (CLT). CLT is a renewable, sustainable, and environmentally friendly construction material currently gaining popularity in Australia.

By using CLT and Rawlemon solar, our proposal aims to replace part of the proposed works with our artwork to create a functional, intimate, and evocative space. The concern of maintaining the existing view lines was the stimulus to the idea. The design aims to provide an interesting and connected space, that allows natural light into the underground cultural facilities and car park. As visitors walk through the cultural spaces, through the pavilions, and in the underground carpark, the Rawlemon solar above will refract light into these spaces in an ever changing display of light. At night, LED lighting around the water-filled glass balls could evoke the night sky, compressed almost close enough to touch.

Rawlemon solar is a beautiful alternative to traditional solar panels. Light is refracted through the water-filled glass ball onto a condensed collector. The condensed collector tracks the sun as it moves across the sky. The resulting Rawlemon device retains views through the system, while generating power. Additionally, the water inside the glass balls can be coloured. This system is more efficient, has less embodied energy, is cheaper, and more aesthetically pleasing than traditional solar panels. Although the technology is based on a traditional system, the look and feel is very different, challenging the idea of what renewable power can be, and how it could be incorporated into everyday life. Additional to the proposed artwork, the Rawlemon system could be incorporated into the pavilions and facade of the proposed hotel to create coherence across the St Kilda Triangle.

Rawlemon solar has an average energy production of 3.4kWh per day. Dew Drops on the Lawn incorporates 215 Rawlemon solar, allowing our installation to produce approximately 731 kWh per day. Annually, the installation could produce approximately 267,000 kWh, which should be enough to power both Luna Park and the Palais Theatre.

Specifications:

* Lens Design Acrylic-Polymer ball lens water filled
* Diameter 1.8 m
* Efficiency 57% (hybrid)
* Average energy output 3.4KWh/day
* Weight 3.35 kg
* Dual axis tracking Low inertia DC Microdrive

Materials:

* CLT
* Rawlemon: Glass and water
* Rawlemon: small hybrid collector
* Battery: lithium iron phosphate

## Environmental Impact Summary:

Rawlemon solar system is made primarily of glass and water, with a relatively small condensed collector. It is cheaper, more efficient, and has less embodied energy than traditional solar panels. Dual axis tracking system allows the size of the collector to be reduced up to 25% of a conventional PV panel. Since collectors are made of precious semi-conductors, reducing the size of collector reduces the embodied energy of Rawlemon compared to traditional PV solar panels.

The lithium iron phosphate battery would be the most efficient battery option with less environmental impact compared to other battery options. It requires less mining for production and no maintenance. The battery can be more compact and stored in the CLT grid, to maintain the aesthetic intention of our design. The non-explosive, non-toxic properties of the battery ensure the safety of visitors. Lithium ion batteries have a long lifespan, and can be recycled.

By using Cross-Laminated Timber, the environmental impact of the proposed works could be reduced significantly. Cross-Laminated Timber is a sustainable and renewable construction material, with opportunities for quicker construction and low embodied energy. CLT stores carbon that would otherwise be released into the air through burning or decay.