Case Study - Saltwater Community Centre

The Saltwater Community Centre (Saltwater), located on Saltwater Promenade, Point Cook, is a mixed-use development based on 5-star Green Star rating (not certified). The Saltwater Community Centre received the 2016 Architecture award for Sustainable Architecture and Melbourne Prize and the 2016 IPAA Environmental Sustainability Award for Carbon Reduction Initiatives.

The building is comprised of the following:

- Children's rooms for kindergarten programs
- Consulting spaces for maternal and child health (MCH)
- Community rooms and lounges
- Community art Studio and gallery
- Associated areas including reception, meeting rooms and amenities
- External spaces including community gardens, playground and seating

This gives a vast range of community groups exposure and education opportunities for environmentally sustainable design (ESD). The ESD features of Saltwater Community Centre look at

many aspects of sustainability including energy consumption, water use, sustainable transport and edible gardens. The ESD features include:

Thermal Labyrinth

A thermal labyrinth has been constructed beneath the community amphitheatre, which is an underground heat exchanger, that acts as a heating, ventilation and air conditioning system. The labyrinth preconditions fresh air and supplies to community gathering spaces.

Water and Rainwater Capture

In total, 80% of rainwater is collected via roof drainage into a 30,000 litre rainwater collection tank. The tanks are located in the community produce garden, with the collected water utilised for the irrigation of the community produce garden and surrounding native landscaping.

Water facilities are fitted with smart metering technology that help to record and reduce water consumption and promote water conservation.

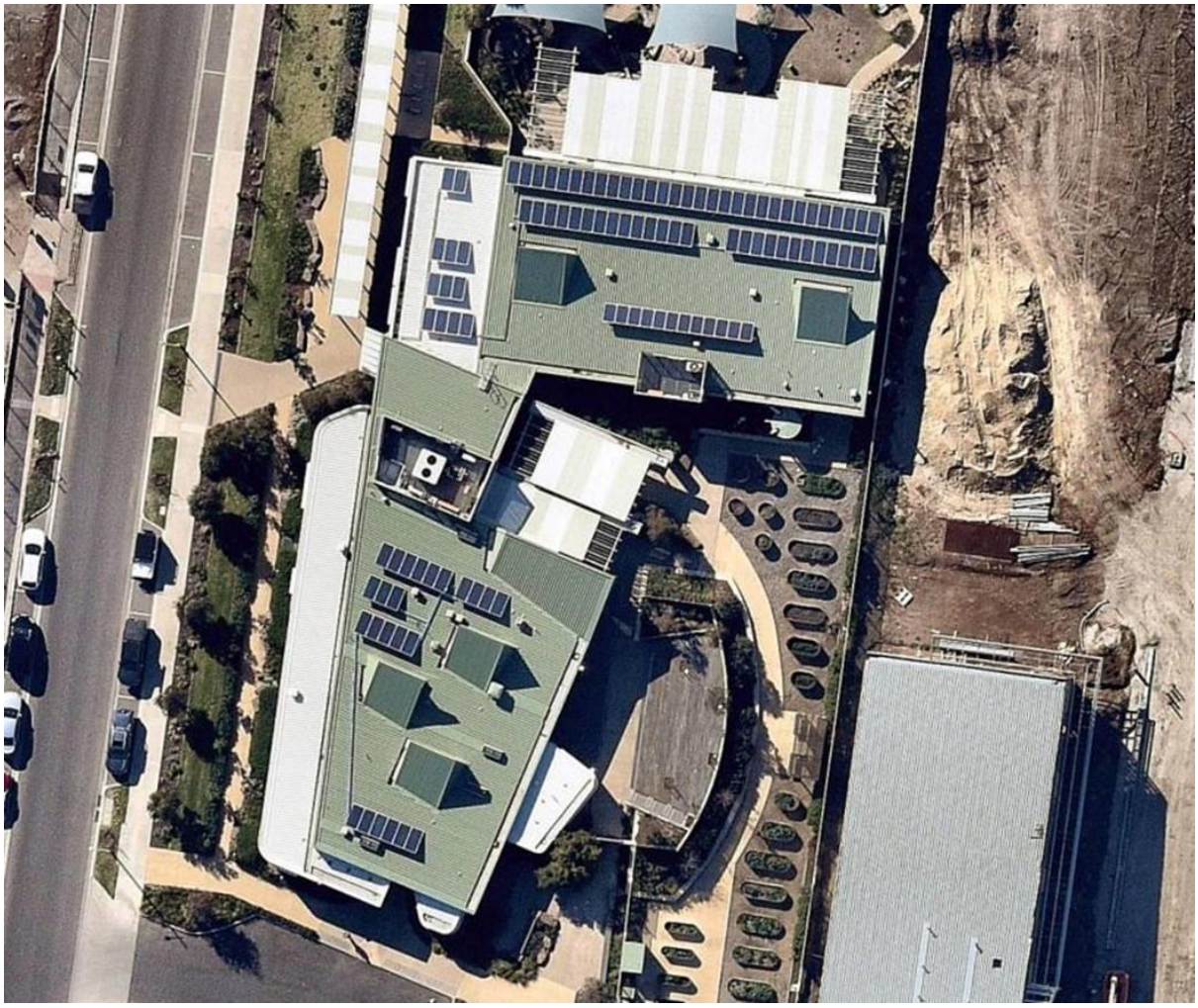
Renewable Energy and Energy Saving

Saltwater rooftops are fitted with a 30kW capacity photovoltaic solar system and 32kWh capacity battery system.

Carbon Dioxide (CO_2) is monitored in all community gathering spaces to ensure maximum efficiencies are achieved in the operation of mechanical systems and the number of building users at any point of time.

Data concerning solar and rain harvesting is collected on site, including data from the energy consumption of the facility. Once collected, the data is managed and collated through the Building Management System (BMS) and Energy Management System (EMS) and communicated to the community via a dedicated LCD display promoting the performance of the ESD initiatives of the building.

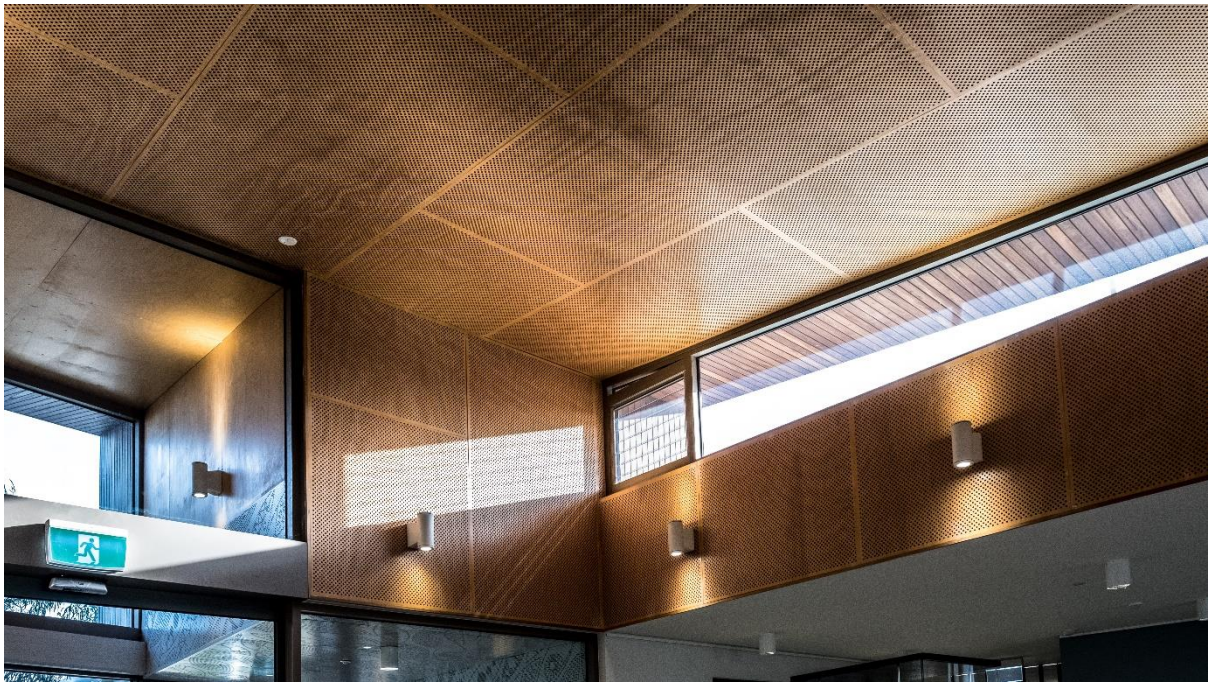
The community spaces are also serviced with displacement mechanical heating and cooling local to gathering nodes, and feature windows that open to allow for automated night purging through the Building Management System. Heating and cooling is set to sensor control that turn off after 60 minutes when no movement has been detected in the room.



Lighting

Daylight harvesting methods are used to offset the use of electric lighting required during the day. This includes positioning of windows to allow for maximum natural light during the day and timing sensors throughout the entire complex, allowing lights to turn off when an area or room is not in use

Energy efficient LED globes and been installed throughout the building to further reduce on energy consumption.



Sustainable Transport

The centre includes undercover bike parking and a shower is provided for patrons arriving on bicycle to encourage sustainable transport modes.

Procurement and Design Features

The design of Saltwater Community Centre has included several sustainable procurement actions including:

- A focus on sustainable or 'green' purchasing.
- Purchase of low VOC paints and carpets in accordance with the Green Star criteria to minimising the harmful release of toxins into the air.
- Carpet is made from 60% recycled fishing nets.
- FSC Australian native hardwood timber used throughout the building.

With the understanding that, the community centre today may not meet the needs of tomorrow, the design team undertook significant future planning of areas within the facility. Areas such as the kindergarten and MCH consulting rooms, for example, are designed for disassembly and then reuse. The external metal cladding, external timber cladding and internal timber linings are detailed with standard lengths and concealed/clip fixing, which enable these components to be disassembled and reused elsewhere without damage or compromise to the salvaged material.

Gardens

A community produce garden promotes strategies for healthy communities and sustainable food practices, whilst encouraging the community to seed, cultivate and cook their own produce on site.

The produce gardens are used for a variety of different groups including kindergartens, local community groups and a Garden Champions group, made up of approximately 20 local community leaders with a passion for gardening.

Art

Nature based artwork is incorporated throughout the building including native birdlife, indigenous art and brickwork nodules signifying cloud-like forms that cast shifting shadows with the natural movements of the sun.