

25th June 2019

TThinc
Level 19
One Wharf Lane
171 Sussex Street
NSW 2000

Attention: Ms Orla Conlon

ALL WELCOME, CULTURAL AND CIVIC SPACE COFFS HARBOUR COFFS HARBOUR ESD STRATEGY

Dear Orla,

The proposed All Welcome Cultural and Civic Space development at Coffs Harbour has been designed to incorporate a number of Ecologically Sustainable Design (ESD) initiatives which have been selected to meet or contribute towards the objectives of the Coffs Harbour Sustainability Policy.

The building has been designed to:

- Incorporate energy efficiency strategies that would be capable of achieving an equivalent 6 Star NABERS Energy rating.
- 140kW of façade integrated PV reducing the building's electricity consumption by approximately 18%.
- 100kL rainwater storage reducing the onsite water consumption by 45%.

A summary of the design initiatives has been listed below and categorised under the Coffs Harbour Sustainability Policy:

1. **Zero Carbon** - Ensure buildings and activities are energy efficient and deliver all energy with renewable technologies.

The proposed development is not able to source all its energy from renewable technologies. However, it will include energy efficient building services and an on-site photovoltaic array to reduce its carbon footprint. A selection of these strategies includes:

- 140kW of Photovoltaic panels on the roof generating approximately 190,000 kWh and reducing energy consumption by approximately 18%.
- High performance façade incorporating the increased stringent measures of the 2019 BCA Section J
- Low energy air conditioning system incorporating the following features:
 - Air handling systems matched to thermal and operational zones
 - Low velocity high efficiency handling plant incorporating EC plug fan technology and low temperature VAV control with swirl diffusion
 - Variable speed drive chillers, fans, and pumps to match the capacity with the load
 - 100% outdoor air economiser cycle using free cooling when ambient conditions are favourable.
 - Mixed mode natural ventilation to dedicated rooms adjacent the facade
- The buildings heating hot water requirements shall be met by way of a series of high-efficient air to water heat pumps boosted with the heat collected by solar panels.



- Provision of power factor correction to reduce building maximum demand and energy consumption from the grid.
- Inclusion of photoelectric sensors to automatically control external lighting around the building.
- Provision of energy efficient LED lighting throughout.
- Use of motion sensors for back of house areas and carpark to automatically switch luminaires off after a period of inactivity.
- Provision of digital power meters for lighting, power, photovoltaics and mechanical equipment to meet NABERS requirements. All digital power meters will interface with BMCS to cater for energy consumption monitoring within the building.
- Photoelectric cells to perimeter zones for daylight harvesting.

Based on this array of energy efficiency strategies and the proposed PV installation, which are currently allowed for within the project budget, it is anticipated the building should be capable of performing with an equivalent NABERS energy rating of 6.0 Stars. Currently the cost of certification (\$15-25k) is not included in the current budget. It is assumed that monthly and annual monitoring would be undertaken by Council.

2. **Reduce Waste** - Reduce waste by avoidance, reuse and recycling, maximising diversion of waste from landfill.

The project aims to maximise the all waste diverted from landfill to be recycled throughout the construction and operational phases of the development's life.

3. **Sustainable Transport** - Reduce the need to travel and encouraging low and zero carbon modes of transport to reduce emissions.

The proposed development seeks to minimise greenhouse gas emissions produced by transport to and from the site by providing staff bicycle parking and end-of-trip facilities to encourage cyclists.

A selection of these strategies includes:

- 60 bicycle rails for visitors
- 40 bicycle spaces for staff / employees
- End-of-trips facilities and
- Pick-up / drop-off area for light vehicles and buses/coaches along the Gordon Street frontage

4. **Local and Sustainable Materials** – Maximising the use of sustainable and healthy products, such as those with low embodied energy, locally sourced, and made from renewable or recycled resources.

Materials will be sought from regional suppliers to minimise the carbon footprint from transportation. Where possible timber with FSC or PEFC certification will be sourced. Use of PVC and steel will be minimised and have proof of being responsibly sourced or having a sustainable supply chain.

5. **Local and Sustainable Food** - Support sustainable and humane farming, promoting access to healthy, low impact, local, seasonal and organic diets and reducing food waste.

The design of the building does not directly ensure local procurement and growth of sustainable food sources. However, as a community civic centre, the development provides a space to educate and promote local groups or events involved with sustainable food production.

6. **Sustainable Water** - Use water efficiently in all buildings and operations. Designing to avoid local issues such as flooding, drought and water course pollution.

Demand from the local potable water utility is reduced through the provision of the following strategies:

- High WELS equivalent fixtures and fitting selections
- Water metering and monitoring for each floor level, rainwater tank, mechanical plant and hot water plant



- All water sub-meters are connected to the BMCS
- 100 kL tank to collect and store rainwater to offset 45% of the annual needs for toilet flushing, irrigation and mechanical equipment needs

7. **Land Use and Biodiversity** - Protect and restore biodiversity and natural habitats through appropriate land use management and planning.

The project will be constructed on a previously developed site which has a large fig tree directly adjacent to the site. The fig tree will remain and will be a focal point from which the building form of the development will follow. As a result, the project has minimal impact to the surrounding biodiversity and ecological integrity.

The project has an indirect impact to conserve biodiversity and ecological integrity to the surrounding area. By minimising demand on energy and water resources, the need for land-clearing and the pollution generated from new utility infrastructure to support the surrounding area will be minimised.

8. **Culture and Community** - Respect and revive local identity, wisdom and culture; encouraging the involvement of people in shaping their community and creating a new culture of sustainability.

The development will be a civic centre which provides a gathering point for the community through its café, arts gallery and library. As a local government building that aims to meet the objectives of the Coffs Harbour Sustainability Policy, it encourages other developments to incorporate sustainable design outcomes through example.

9. **Equity and Local Economy** - Create bioregional economies that support equity and diverse local employment and international fair trade.

The construction of the building will provide employment opportunities to local trades, consultants and contractors who support local businesses. When in operation, building occupants will continue to support local businesses estimated to add \$2m annually to the Gross Regional Product, reinvigorate the CBD and generate direct and indirect employment.

10. **Health and Happiness** - Encourage active, sociable and meaningful lives to promote good health and wellbeing.

The proposed building design and services deliver comfort to occupants while minimising energy and potable water consumption. The supply of higher than the minimum requirement of outdoor air to the occupied spaces and the use of low VOC and formaldehyde emitting materials ensures that sick building syndrome is minimised for the benefit of occupancy health.

It is noted that a Green Star rating is not being pursued by Council as it anticipated the potential uplift in cost is in the order of 3% of construction cost + \$150k of consultant costs.

We trust you find this satisfactory.

Kind regards

Yours faithfully,

Lester Partridge

Director

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