

If a building becomes architecture, then it is art. Clearly, if a building is not functionally and technically in order, then it isn't architecture either – it's just a building.
Arne Jacobsen

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To
The City of Sydney Council
Sydney
NSW-2000

STEENSEN VARMING

UTS Central's Response to the Department of Planning regarding Sustainability queries raised during the Public exhibition of the DA

Sydney July 13, 2016

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Dear Sir /Madam,

This letter has been prepared to provide a response (from the client and the design team) to the sustainability queries raised by the City of Sydney, following the Public exhibition of the Development Application of the UTS Central project.

Query – 1

Design for Renewable Energy

The ESD Report does not address renewable energy technology. A building of this nature should readily consider solar photovoltaics in the form of BiPV (building integrated photovoltaics) including in vertical planes, acting in part as glazing shade structures.

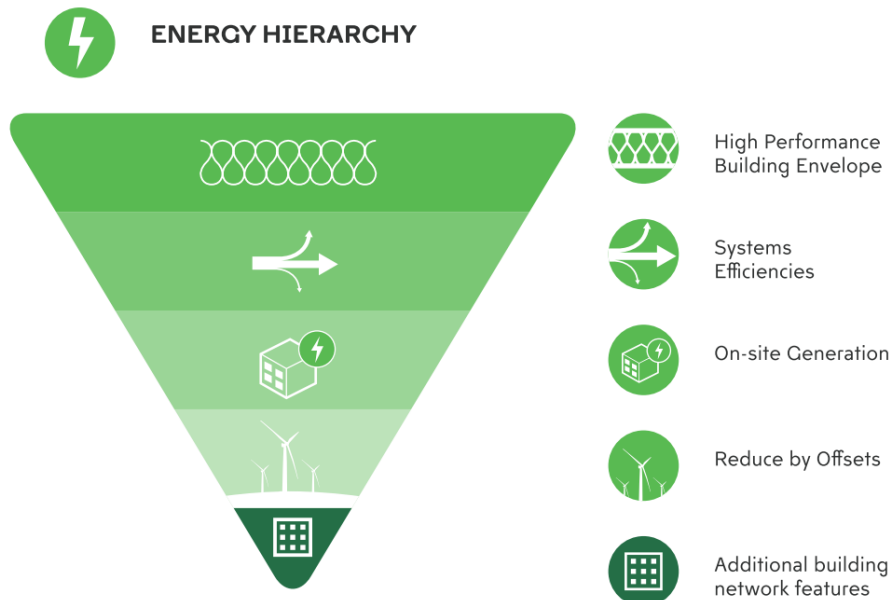
Solar thermal water heating is a proven commercial solution which should be considered by the proponent.

Response 1

Given that BiPV technology is continuing to change and be superseded UTS have decided against including this technology at this time. The proposed renewable energy strategy consists of roof-mounted evacuated-tube solar collectors, for providing domestic-hot water.

The sustainability strategy for UTS Central follows an energy-hierarchy approach.

The “energy hierarchy” links defines an integrated approach to the management of energy demand and supply. The energy hierarchy has the reduction of energy use as its first priority, and then seeks to meet the remaining energy demand by the most efficient means applicable, before the inclusion of on-site generation and importation of green power. The following energy hierarchy has been adopted.



Therefore, as per the above approach, key emphasis has been placed on high-performance building envelope and systems. Renewable energy sources have been included in the project, but to a limited extent.

The proposed renewable energy strategy consists of roof-mounted evacuated-tube solar collectors, for providing domestic-hot water.

The proposed hydraulic services design is considering utilisation of the air conditioning heating plant as a heat source for the hot water demands of the project.

In addition, evacuated tubes are also being considered as a solar-powered hot water system. Should the Mechanical system be low on heat supply, a higher number of evacuated tubes will be considered, dependant on roof allocations. This strategy will provide a sustainable solution to the campus's additional hot water demand.

The chosen collector type, evacuated tube will be of the highest year-round proven performance available at the time of the project design.

Query - 2 ***Design for Water Efficiency***

The ESD Report has not adequately explored the opportunity of connecting to a ready supply of reticulated recycled water for non-potable end-uses (toilet flushing and air-cooling). Central Park has a water harvesting and treatment system in place and the City understands that the utility managing this plant is actively seeking extension of service to new sites. That the current proposal, with immediate proximity to an existing scheme, may not connect to it would be a disappointing outcome. UTS are aware of the Broadway precinct as having potential to demonstrate wide scale solutions to sustainability challenges and should consider this further.

The City expects new development of such scale and prominence to harness the opportunity for water efficiency, including the harvest of rainwater and stormwater, store this on site and use for non-potable purposes. As a leading education institution within the City of Sydney LGA, it is expected that UTS will lead with example in all aspects of ESD.

Response 2

UTS has been involved in discussions with the owners of Central Park during the past 12 months regarding the option of connecting to the Central Park water harvesting and treatment system and has undertaken technical investigations.

It is noted that Development Approval (DA_2016_434) was recently granted for the construction of services trenches below Jones Street, containing new pipes to provide thermal energy, recycled water and data link between Central Park and UTS City Campus Building CB02. The development is an extension of the piping works already installed under Broadway as part of Development Consent D/2015/1450 approved by Council on 6th January 2016. UTS are currently making a final assessment of this proposal.

The UTS Central project includes stormwater harvesting (from roofs), storage and recycling for non-potable purposes, such as toilet flushing and landscape irrigation. The project also includes stormwater harvesting for fire system test water storage and recycling for non-potable purposes. All these initiatives count towards the Green Star rating for the project.

In addition the following water-efficiency measures have been considered in the current design:

- Water efficient fittings will be specified to minimise consumption: dual flush toilets (max 4.5/3 L/flush); waterless urinals; 7.5 L/min taps and any other water fixtures will achieve at least a 5 Star WELS rating.
- Water efficient controls will be specified - sensors, timers or spring loaded devices for taps where possible to reduce water loss from taps being left running. High efficiency pumps, including variable speed drives.
- Water and sub metering shall be provided with digital output linked to the BMS to both potable and non-potable water supplies.
- A major leak detection device shall be installed to protect both internal and external water services installations and proximity detection equipment shall be installed to all WC installations.
- Water real-time metering to monitor and record water use patterns; linked to central management system to monitor water consumption and inform leak detection system.
- Final connections to all sanitary ware will be installed complete with isolating ball valves and integral flow limiting cartridges to ensure minimum flow rates are achieved.
- Drip feed irrigation or similar water efficient technology from a non-potable water source where irrigation is necessary.

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- Rainwater harvesting will be integrated to collect rainwater from the new building CB02 roof and collect within the Level 18 plant room. Tank size based on roof area and number of WC's.

Kind regards

Diksha Vijapur
Sustainability Consultant