

Mr Robert Farley
Manager, Sustainable City Development
City of Perth
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PERTH WA 6839

Submitted via email to: energy@cityofperth.wa.gov.au

18 September 2014

Dear Mr Farley,

RE: TOWARDS AN ENERGY RESILIENT DIRECTION FOR PERTH

Thank you for the opportunity to provide comment on the *Towards an Energy Resilient City Directions Technical Report (the Technical Report)*. The Green Building Council of Australia (GBCA) commends the City of Perth on the Technical Report which aims to future-proof the city against climate change and the impacts of rising energy demand. The GBCA supports, in principle, government policies that aim to reduce greenhouse gas emissions in the built environment.

About the GBCA

The GBCA is the nation's authority on sustainable buildings, communities and cities. Our mission is to accelerate the transformation of Australia's built environment into one that is healthy, liveable, productive, resilient and sustainable. We work together with industry and government to encourage policies and programs that support our mission. We educate thousands of people each year on how to design and deliver sustainable outcomes for our buildings, communities and cities. We operate Australia's only national voluntary and holistic rating system for sustainable buildings and communities – Green Star.

The Green Star rating system

The first Green Star rating tool was released in 2003 in response to market demand for a rating tool that would evaluate the sustainable design and construction of buildings as well as establish a common language for buildings.

Green Star rating tools can be applied to almost all building types. Over 750 projects have now achieved Green Star certification across Australia, with a further 430 projects registered. There are currently over 60 Green Star – certified projects in Western Australia (WA) and over 30 Green Star – certified projects in Perth, including West and South Perth local government areas (LGA).

The Green Star rating system is designed to take an holistic approach within each class and building sector, addressing nine categories in total; Management, Indoor Environment Quality (IEQ), Energy, Water, Materials, Land Use and Ecology, Emissions, Transport and Innovation and defining 'best practice' in each.

In 2013, The GBCA released the *Value of Green Star: A Decade of Environmental Benefits* report. The report investigated the overall impact of Green Star certified projects on greenhouse gas emissions, operational energy usage, operational water consumption, and construction and demolition waste. Key findings of the report found that on average, Green Star-certified buildings produce 62 per cent fewer greenhouse gas emissions and use 66 per cent less electricity than average Australian buildings and use 51 per cent less potable water than if they had been built to meet minimum industry requirements.

The GBCA has provided examples below for each of the four strategic directions of the Technical Report regarding the ways in which Green Star certification can assist in future-proofing the city against climate change and the impacts of rising energy demand.

Energy Efficiency

The GBCA supports initiatives that aim to improve energy efficiency and decrease greenhouse gas emissions associated with the built environment. Within the Green Star rating tools for buildings, the Green Star Energy category targets overall reductions to energy consumption and the greenhouse gas emissions associated with energy production. A reduction in energy use can be readily achieved through the design and construction or refurbishment of a building. Energy monitoring can also provide facilities managers with the tools to identify energy use patterns and reduce consumption by implementing effective energy management strategies.

Ene-2 Energy sub-metering credit aims to encourage and recognise the installation of energy sub-metering to facilitate ongoing management of energy consumption. Within the credit one point can be achieved where sub-metering is provided for substantive energy uses within the building and there is an effective mechanism for monitoring energy consumption data.

In Perth, the Australian Institute of Management (AIM) Katitjin Centre, achieved a 6 Star Green Star – Education Design v1 rating. The project achieved points in the Energy category in a number of ways including smart site orientation. This allows the Katitjin Centre to benefit from high levels of daylight penetration whilst also reducing the buildings thermal loads.

Renewable Energy

The GBCA supports the installation of diverse energy solutions and renewable energy solution. The Technical Report identifies that solar photovoltaic (PV) panels are an appropriate source of renewable energy within central Perth. The Green Star building rating tools provide detailed information to project teams seeking to claim the benefit of on-site energy generation under the *Ene-1 Greenhouse Gas Emissions credit*. *Ene-1 Greenhouse Gas Emissions* aims to encourage and recognise projects that minimise greenhouse gas emissions associated with operational energy consumption. Within the credit up to 20 points are awarded where it is demonstrated that a building's predicted greenhouse gas emissions have been reduced below the conditional requirement of the rating tool.

Another Perth building, 34 Parliament Place, achieved a 4 Star Green Star – Office Design v3 rating. This project achieved points within the Energy category in a number of ways, including being served by variable refrigerant volume fan coil units. These systems provide energy savings by matching the volume/flow rate of refrigerant to the heating or cooling loads required. A roof-mounted PV system produces electricity that contributes to the mains supply to the building. When the power generated exceeds the load of the building, the excess electricity is fed into the grid.

Local Energy Hubs

As identified in the Technical Report, Perth's central core is dominated by a high concentration of thermal energy demand. *Ene-5 Peak Energy Demand Reduction* credit aims to encourage and recognise projects that reduce peak demand on energy supply infrastructure. Up to two points are awarded where it is demonstrated that the project has reduced its peak energy demand by 30 per cent or the difference between the peak and average demand does not exceed 20 per cent.

In Perth, 167 Westralia Plaza achieved a 4 Star Green Star – Office Design v3 rating. This project achieved points within the Energy category in a number of ways including through the design of energy systems that reduce the demand on the grid by a minimum of 25 per cent during peak demand hours.

Transport Strategies

Within the Green Star building rating tools the Transport category aims to reward the reduction of pollution associated with car transportation and encourage the use of alternative transport options such as trains, buses, light rail and trams, cycling and walking. Reducing dependence on car transport is an important means of reducing overall greenhouse gas emissions.

Trans-5 Cyclist facilities aims to encourage and recognise developments that facilitate the use of bicycles by occupants and visitors. Within this credit one point can be awarded where secure bicycle storage is provided for 5 per cent of a building's occupants.

Mirvac's Perth office achieved a 4 Star Green Star – Office Interiors v1.1 rating and gained points within the Transport category with the inclusion of end-of-trip facilities. These included enough secure bicycle storage for 5 per cent of the building's occupants and accessible shower and change facilities.

Green Star – Communities

In 2009, the GBCA commenced work, in consultation with industry and all levels of government, on the development of a rating tool for sustainable development projects on a community scale; examining issues of economic, social and environmental importance. From this consultation five principles were identified that form the basis for best practice sustainable communities:

- Liveability
- Economic Prosperity
- Environmental
- Design
- Governance

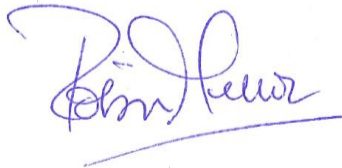
Stage 2 of the project involved establishing best practice benchmarks and metrics for assessing and certifying sustainable communities. A set of 35 credits was then developed and tested on a number of projects across Australia. The Green Star – Communities PILOT rating tool was launched in June 2012 and there are currently three Green Star – Communities projects registered in WA.

Green Star – Communities Guide for Local Government

The Green Star – Communities rating tool is a useful reference for councils in developing policies and planning protocols. The Green Star – Communities Guide for Local Government is a resource for local governments to assist them with understanding the rating tool and encouraging development projects in their local government areas that will enhance liveability, contribute to local economic prosperity and deliver sustainable outcomes. Please find a copy of the guide attached to this submission. It is also available on our website at www.gbca.org.au.

The GBCA commends the work the City of Perth has undertaken on the Technical Report and would be happy to contribute to any further consultation. The City of Perth demonstrates great leadership in sustainability through its work on developing policies and guidelines such as the Technical Report, supporting and encouraging sustainable development within the City of Perth, and also through its membership of the GBCA. Please do not hesitate to contact me, or Luke Farr, Advocacy Coordinator – Local Government on 02 8239 6200, or via email at luke.farr@gbca.org.au, for further information, or to arrange a meeting.

Yours sincerely



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