Consultant Advice

From:	**Michael Lewis**	**Date:**	**30 Jul. 19**	**File No:**	S25504\148\G-\21\ca190730s0016	**Pages:**	2
Project:	**Qantas Flight Training & Simulator Centre (Tender No. 9760)**					**No:**	**G-006**[1.0]

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Sustainability – Response to Comments on SSDA Submission

This Consultant Advice provides NDY's comments to the following responses received from the Secretary's Environmental Assessment Requirements (SEARs) submission, and in support of the SSD 10154 for the development of a new flight training centre at 297 King Street, Mascot.

Respondent: Department of Planning Industry & Environment

Respondent Comment to be Addressed.

2. Design and Built Form

- *The EIS (pg 42) is overly reliant on the trigeneration plant when justifying the development with regards to the principles of ecologically sustainable development under the design excellence provisions of the Botany Bay Local Environmental Plan 2013. The trigeneration plant is existing and further emphasis should be placed on elements of the proposed development to demonstrate how the principles are achieved.*

NDY Response.

Any measures that replicate the provisions already proposed to be utilised from the trigeneration plant would be unnecessary duplication. By connecting to the trigeneration plant, the proposed building has avoided significant amount of embodied energy from large mechanical plant (chillers, boilers) and avoided introducing refrigerants to the building that typically have Ozone Depleting Potential (ODP) and Global Warming Potential (GWP). Connecting to the trigeneration plant will also benefit the trigeneration plant by adding significant base load to the plant thus improves the plant's efficiency.

The efficiency that the building gets from the trigeneration plant will exceed the efficiency that can be gained if the building installed dedicated chillers as a building this size can only justify installing air cooled chillers that are not as efficient as water cooled chillers. There are significant benefits from district level cooling thus this should be encouraged through the planning process.

Unfortunately we do not believe that the installation of PV is viable due to the risk of possible reflectance directly under the flight path, which may impose hazard to the planes.

The building also includes other measures to further improve the greenhouse gas and energy efficiency, such as building fabric thermal performance that meets or exceeds the Deemed to Satisfy Requirement of Section J of the National Construction Code (NCC) 2016; High efficiency and area specific mechanical systems to provide effective and energy efficient solutions; Energy efficient lighting (typically LED) with lighting controlled by motion and/or daylight sensors; Energy efficient equipment selections; Controls measures to ensure equipment is switched off after hours.

The above is outlined in Section 7 of the Greenhouse Gas, Energy Efficiency and Ecologically Sustainable Development Report. Due to the preliminary stage of the development, energy saving benefit from efficient equipment selection have not been included in the calculation.

Measures have been detailed in Section 7.2 of the report, including Level 2 classrooms to use chilled water FCU's to enable on and off switching to match occupancy, additional outside air fans will be paired with CO2 sensors to reduce unnecessary usage of fans, Main AHU's to be paired with CO2 sensors to turn down where necessary, low temp VAV system for sim bays, air conditioning equipment (fans and pumps) selected will have energy efficiency ratios in excess of the minimum DtS requirements stated in NCC Section J and zoning for air conditioning system set per each thermal zone (each perimeter and central).

In addition to the greenhouse gas and energy efficiency measures outlined above, the project also addresses the Ecologically Sustainable Development (ESD) principles by following the wholistic approach of design initiatives and benchmarking against the Green Star Design & As Built v1.2 framework. Whilst a formal rating is not currently targeted, the Project intends to achieve the design intent of a number of credits. These are outlined in Section 8 of the Greenhouse Gas, Energy Efficiency and Ecologically Sustainable Development Report.

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