

11/2/22

npc Anthony Henry s204, 99 Alexander St Crows Nest NSW 2065

## RE: Responses with regard to Western Sydney Aerotropolis Development Control Plan 2021 requirements

Dear Anthony,

we refer to the queries raised with respect to the AMRF development at Bradfield with respect to how the project meets the requirements in Section 11 of the Aerotropolis DCP Phase 2, as it relates to energy, reducing waste and supporting the circular economy through design and construction.

Below provides detail of how the Performance Objectives of Section 11.1 and 11.2 are met.

### Section 11.1 Energy

## PO1. Incorporate a diversity of renewable energy systems to ensure all buildings can achieve a 100% renewable energy supply by 2030.

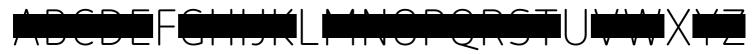
The building is targeting Living Building Challenge, 6 Star Green Star Buildings and achieving net zero operational energy by 2030. It is also aiming to outperform a five star NABERS Energy rated office building with the same scale. Strategies to achieve these objectives are:

- Passive design strategies including significant facade shading, internalised thermal mass and green roof elements to reduce energy consumption of the buildings
- On-site energy generation: Around 50% of the roof will be covered by PVs. The PVs are sized to provide and indicative capacity equal to 100% of net demand based on performance equivalent to a 5 star NABERS Whole Building rating. The project's total module area is estimated to be around 1044 sqm with the tilt angle of 33.4°, North. The electricity production for the first year is estimated to be around 334,673 kWh which is higher than the NABERS energy consumption benchmark for an office building with the same scale, 166,657.9 kWh per annum. Considering the project's energy consumption targets, to require less energy energy than the NABERS energy rated building, it can be concluded that 100% of the proposal's office building's energy demand will be met by the PVs and the excess electricity generated will be used for the process loads as well as landscape lighting which were excluded from the electricity demand calculation of the building.

# PO2. Utilise the roofscape of the buildings to improve environmental performance of buildings and Aerotropolis as a whole including energy generation.

Around 50% of the roof will be covered by solar panels, and the integration of PV panels and green roof is being considered for enhanced performance of the PV panels as well as ecology enhancement and urban heat island benefits. Initial assessment considers the location of the solar panels to be minimally impacted by overshadowing from adjacent buildings considering the reasonable building separation between the buildings. The solar panels will be chosen to be suitable for use considering the approximate flight path.

PO3. Where possible, provide gas services as an alternative energy source to assist in reducing reliance on electricity for heating and hot water.



This criteria will not be achieved as the building is targeting net-zero operational energy and all electric building strategies will be integrated, and therefore no gas will be used in the building for any purposes.

#### Section 11.2 Reducing Waste and Supporting the Circular Economy through Design and Construction

## PO1. Building design and construction techniques minimise waste and ensure efficient construction.

The building is targeting Living Building Challenge which requires to source a proportion of the materials locally. In accordance with the SSDA Design report prepared by Hassell on pages 39-43, materials selected for the project such as timber and remmed earth have the ability to be sourced within Australia with the ambition to source these materials as close to the site as possible. Circular economy principles has been taken into consideration for the design, construction and end of life of the building. The building is designed to be timber framed using prefabricated construction technique which will result in reducing construction waste. The building can be disassembled and relocated to a new site at the end of its life.

### PO2. Reuse and recycle construction and demolition waste, aiming for zero waste to landfill.

In accordance with SSDA Design Report prepared by Hassell on pages 39 and 41, timber and rammed earth are the main structural materials of the building which both offer the benefit of recycling and reuse. Furthermore, green recycled aluminium will be used where applicable. These materials directly support the circular economy, are low waste and embodied energy. The project as part of its Green Star commitments will deliver 90% diversion of construction waste from landfill. There is no demolition associated with the project.

#### PO3. Support the delivery of a circular economy across the Aerotropolis.

The primary materials of the building structure, timber and rammed earth directly support the circular economy. The building will be an exemplar for the adoption of these highly circular materials that will create new supply chains and encourage mass adoption. The contractor will be required to provide a detailed life cycle management plan prior to the construction certificate.

We believe the project will represent and exemplary outcome and demonstrate market leadership in each of these areas as it seeks to achieve the highest possible green building certifications of the Living Building Challenge and 6 star Green Star.

Please do not hesitate to contact me should you require and further information.

Regards,

Matthew Jessup Director