

Project Advice Notice

88 Newton Road Wetherill Park Single Level – Net Zero Statement

Net Zero Statement – D3	29 April 2024
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A Net Zero Statement is prepared in response to the requirement under the NSW Sustainable Buildings SEPP for non-residential development. This Statement describes how a project will avoid dependence on fossil fuels and be capable of operating at net zero emissions by 2035.

Project Description

For consistency, the site is to be referred to by the following information.

Descriptor	Site Details
Street Address	88 Newton Road, Wetherill Park (identified as 94 Newton Road, Wetherill Park on the NSW Planning Portal)
Legal Description	Lot 1 in Deposited Plan DP1017259
Site Area	5.19 hectares (ha)

Brief Description

Demolition of existing buildings and structures, construction and operational use of a single-storey warehouse and distribution centre with ancillary office space and amenities, on-site parking, landscaping and access, and other associated works including bulk earthworks, site preparation works and site clearance, as well as augmentation and construction of servicing utilities.

The Net Zero Statement has been provided for guidance advice based on early design information, as directed by the client. ACOR Consultants have no further engagement and as such, accepts no liability if the design assumptions made based on DA documents ultimately are not achieved.

Detailed Description

The information provided in the table below provides context for the Net Zero Statement only in regards to the new building works.

Descriptor	Pro Details
Total Gross Floor Area	30,250m ²
Uses	Warehouse or distribution centre with ancillary offices
Warehouse Gross Floor Area	28,950m ² (inc. 100m ² dock office)
Ancillary Office Building Gross Floor Area	1,300m ²

Net Zero Statement Application

The development is the construction of a warehouse building with ancillary office spaces. Where a large commercial development has a prescribed office premises with a net lettable area of at least 1000m², a Net Zero Statement is applicable.

Net Zero Statement

For this project the Net Zero Statement will describe the elements to be addressed in designing for Net Zero operations by focusing on eliminating the use of fossil fuels, improving energy efficiency, generating renewable energy onsite and procuring 100% renewable energy for the remaining energy needs.

On-site Fossil Fuel Usage

No gas shall be provided to the proposed development, alternate electric powered equipment is being utilised across the site including the following systems:

- Electric hot water systems
- Electric provisions for future kitchen / kitchenette / kiosk
- Electric mechanical systems

If a standby diesel generation is proposed for the project, this shall not operate under normal operations conditions of the building and use will only be triggered when there is a power outage to the building. Hence, fossil fuel usage for the building shall only be used in extenuating circumstances only.

Energy Efficiency

Passive Design Features

Architectural documentation to include details on Passive Design Features includes building orientation and external shading features.

Insulation and Glazing Performance

ACOR has been informed that the project is benchmarking to a 5 Star Green Star Buildings pathway. To comply with the minimum expectation of Green Star Credit 22 Energy Use, the building's energy consumption is to be at least 10% less than a reference building. This will be achieved by incorporating the following:

- Appropriate window to wall ratios to ensure a good access to views, natural daylight, whilst balancing the thermal requirement of heat loss and heat gains.
- External solar shading appropriate to orientations.
- Appropriate thermal performance through selection of high-performance insulation.
- Window U-values and Solar Heat Gain Coefficients (SHGC) have been considered for the thermal zones. Tinted double glazed units recommended to be installed to façades to reduce solar heat gains whilst balancing visible light transmittance, as well thermal transmittance.

Airtightness

Airtightness is one of the environmental performance targets to be set and documented to satisfy the minimum expectation requirements of Credit 3 Verification and Handover for achieving a certified Green Star Buildings

rating. Airtightness strategies are to be incorporated into the design and be tested during construction and practical completion.

Technical Design Feature

The technical design features recommended to be implemented in improving the energy efficiency of the proposed building include:

- Selection of high-performance HVAC systems and heat recovery systems.
- LED lighting throughout the building.
- Installation of intelligent lighting control system utilising occupancy sensors and an addressable lighting control system to be implemented.
- A BMS to operate the mechanical systems within the building.
- An EMS installed throughout the building to allow for monitoring of the site's energy consumption.
- Selection of electrical based heated hot water systems such electric heat pump as well as installing insulation round hot water pipes.
- Installation of low flow fixtures to reduce consumption.
- Selection of higher efficiency rated appliances and equipment.

Renewable Energy Generation and Storage

ACOR has been informed that the project is benchmarking to a 5 Star Green Star Buildings pathway and is to achieve Credit Achievement under Credit 22 Energy Use whereby the building's energy use is to be at least 20% less than a reference building.

For this to be achieved PV will be required to be installed for the project, however, size of system and whether battery storage is to be installed are not yet defined.

As such, it is recommended during the design phase the project gains an understanding for the building's operational energy consumption, which is the first step in determining the size of PV system in the first instance. A detailed analysis of predicted energy consumption patterns in comparison to expected generation from the PV system should be sort from a professional during both the design and specification stages as part of the load analysis.

Battery storage should also be investigated for the project during the design stage to determine suitability of use as the electrical energy stored in the batteries may be used during blackouts or at night.

Estimated Energy Consumption and GHG Emissions for Energy Use

Energy modelling using an energy simulation software package to be used for estimating the energy consumption and GHG emissions for energy use is recommended to be carried out during the design phase. The energy model to incorporate the building's layout, building fabric and orientation together with the mechanical systems, lighting, heated hot water, occupancy profiles as per the Green Star Energy Consumption and Greenhouse Gas Emissions Calculation Guide.

Due to the level of documentation completed to date for the DA submission modelling to confirm annual energy consumption or emissions relating to energy using in the building, including direct and indirect emissions are not available at this time.

Yours faithfully,

ACOR Consultants Pty Ltd



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