

## Appendix E - Sustainability Strategy



# Technical Note



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Arup have been engaged to develop the sustainability strategy for the proposed Ningaloo Lighthouse Resort. As stated in the Ningaloo Lighthouse Holiday Park Local Development Plan at Provision 12, "the use of renewable energy sources, and wastewater reuse is encouraged where feasible". The statements summarise the approach and principles established to deliver a highly sustainable development;

- Power generation:** The principle of developing the power generation strategy has followed three steps- Step 1) Optimise the passive strategies to encourage natural ventilation and daylighting throughout, Step 2) Develop energy efficient systems and 3) Then assesses the renewable energy options. These three steps ensure that energy efficiency buildings are optimised and the systems that supply the buildings are efficient.

To understand the specific micro climate of the site and then to use that data to establish passive design strategies for the building has influenced the installation of two weather stations on site. These weather stations have measured site specific wind speed/ direction, humidity and dry bulb climatic conditions. This data has then been used to identify spaces that will need air conditioning or spaces that are comfortable without air conditioning.

The overall power generation strategy will include a contribution from solar and the future of integration battery and fuel cell technology.

- Water capture and management and waste water disposal:** Water is a precious resource and we intend to provide a blackwater treatment plant on the site that recycles the waste water to a Grade A standard that can be used for WC and urinal flushing and irrigation.
- Waste Management:** We have assessed a number of innovative waste management systems including the recycling of organic waste for a fuel source for gardens. We intend to integrate a smart waste educational plan for all visitors to the site and encourage the use of organic waste recycling through on-site initiatives.

## DOCUMENT CHECKING

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