

NEC Data Centre @ Polaris Green



A powerful force protecting our planet

Beyond creating world leading ICT solutions, NEC is acutely aware of its corporate and social responsibility to preserve the global environment, and contribute towards building a truly sustainable society.

In Australia, the environmentally sensitive design of the new \$212m+ Polaris Data Centre provides a powerful example of NEC's commitment. It offers State, Federal and National enterprise customers' access to an advanced Tier 3+ facility that will significantly assist in protecting our planet.

Polaris: an environmentally and ecologically sustainable development

Located in the heart of the Springfield CBD in Queensland, the unique energy efficient Polaris Data Centre is a purpose built, state-of-the-art facility operating with high security N+2 redundancies to blue chip performance standards. It also delivers:

- Recycled water as the main supply of water supporting the cooling infrastructure
- Zone based smart lighting systems
- Rain water harvesting for watering, landscaping and lawns
- The greenest colocation hosting environment available so far in Australia - a place in which all mechanical, lighting, electrical and computer systems have been specifically designed to maximise energy efficiency and minimise environmental impact

EPA compliant

At every level of development, the Polaris Data Centre has worked closely with the Environment Protection Authority (EPA) to ensure all requirements relating to environmental quality are met. Here, some of the key design elements implemented include:

- Diesel tanks and associated storage
- Custom-building of emissions; optimised exhausts on emissions; optimised Diesel-UPS engines
- Control of water run-off
- Waste management systems

Other energy saving attributes of the Polaris Data Centre include:

- Rotary UPS systems which do not require batteries
- Recycled water is used to support the cooling towers
- High efficiency water cooling is used in lieu of air cooling systems
- All external walls and ceilings are insulated to minimise external temperature impact on the data floors
- Efficient lighting control zones are being used to automatically control lights

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Planning ahead to avoid obsolescence

The new Polaris Data Centre has been designed to support ICT loads from low density (less than 800W/SqM) to high density, up to 1500W/SqM. In addition, individual high-density racks up to 60kW can be accommodated.

Through the use of reticulated chilled water under the raised floor area, future high-density cooling solutions can be accommodated at either the rack or server level.

The floor loadings and availability of redundant risers (4 x pods) also enables future fit-out of more efficient, and/or modern services infrastructure as it becomes available during asset lifecycle replacement periods.

NEC - a contributing member of The Green Grid.

'The Green Grid' is a global consortium of organisations dedicated to advancing energy efficiency in Data Centres and business computing ecosystems worldwide.

As a contributing member, NEC is actively involved in developing industry-wide recommendations on best practices, key metrics and technologies that will influence both developers and end users of Data Centre services to seek solutions that minimise environmental impact.

Polaris is simply one example of NEC's commitment to improved methods of monitoring and managing energy and power usage in Data Centres everywhere - to create truly Green Hosting Environments.

The design and operation of a Green Data Centre calls for advanced technologies and strategies that preserve our planet through:

- Minimising the carbon footprint of the building
- Using low-emission building materials, carpets and paints
- Incorporating sustainable landscaping
- Operating waste recycling systems
- Installation of catalytic converters on backup generators
- Implementing alternative energy technologies such as photovoltaic, heat pumps, and evaporative cooling
- Utilising hybrid or electric company vehicles.

The following facts highlight the importance of putting these Green measures into practice:

- Power consumption at the rack level has increased by a factor of 8 in the last 10 years
- Today, the cost of power/cooling is higher than hardware costs and is expected to continue rising
- Rack kW requirements have increased from 3 to 5, and Data Centres are now being built to a 10kW requirement
- If being green is important to your corporate responsibility, partner with NEC for shared values.



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