



Reef HQ Energy Audit



Summary

Reef HQ Great Barrier Reef Aquarium is the Great Barrier Reef Marine Park Authority's (GBRMPA) national education centre for the Great Barrier Reef and is the world's largest living coral reef aquarium. Reef HQ hopes to reduce its carbon footprint by reducing energy usage. An energy audit was funded by the Great Barrier Reef Climate Change Action Plan program to support existing energy management strategies and identify new ways to reduce energy consumption.

Background

Climate change is a major long-term threat to the health of the Great Barrier Reef. The GBRMPA is dedicated to supporting projects that will reduce and mitigate the impacts of climate change, such as reducing CO₂ emissions. As part of the GBRMPA's efforts to reduce its own carbon footprint, Reef HQ has spent a great deal of time exploring their energy usage and possible energy reduction measures.

Lighting and pumping requirements to support the world's largest living coral reef aquarium, means that Reef HQ has substantial energy requirements and therefore the potential for high carbon dioxide (CO₂) emissions (Figure 1 shows a small exhibit at Reef HQ).

In 2005, Reef HQ implemented Phase 1 of an energy reduction strategy. This involved identifying and adopting energy reduction methods. Some of the energy efficient changes implemented included altering lighting and changing the aquarium pump system. In 2008, Reef HQ identified further possible changes which were also incorporated into their management strategies.

Objectives

The GBRMPA advises industries and communities about ways to reduce their energy usage and carbon footprint.

Reducing the GBRMPA's own carbon footprint will allow sustainable energy use initiatives to be showcased and will further promote the GBRMPA as a positive climate change role model.

Project name: Energy Audit at ReefHQ
Project number: 4.2A.416.3.07
Outcome: D
Year: 2007-2008

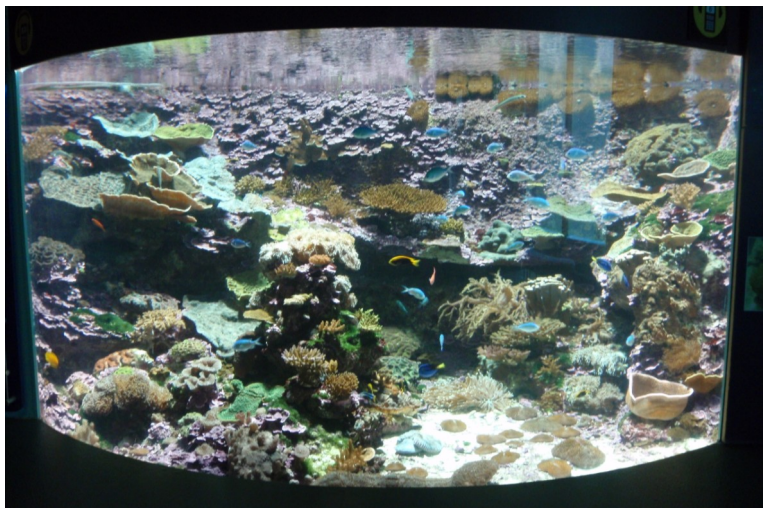


Figure 1: ReefHQ Exhibit

Reef HQ is a major education and tourism centre and is in a prime position to communicate energy reduction techniques with visitors and the community.

Activities

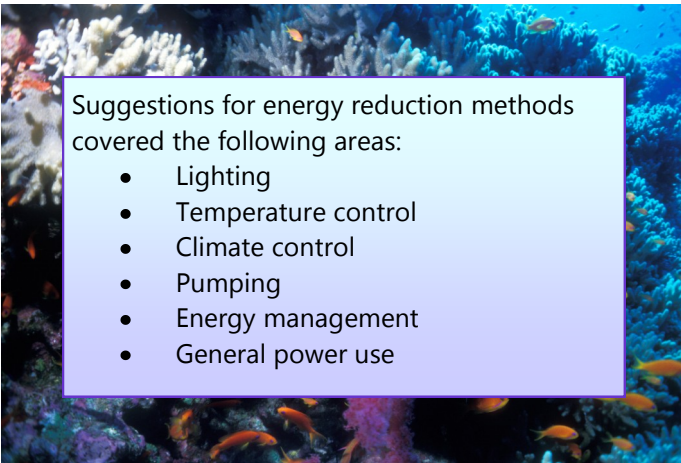
In 2008, the GBRMPA (through the Climate Change Action Plan program) supported an energy audit for Reef HQ to assess current energy strategies and initiatives and to recommend additional changes. The company Ensign was contracted to undertake this project as they specialise in sustainable energy and water solutions. Ensign facilitated an energy assessment workshop involving staff from Reef HQ and the GBRMPA Climate Change Group. They also undertook an audit of Reef HQ's existing infrastructure and energy management plan. The audit consolidated and verified the priorities for the existing strategy, reviewed all major energy and water systems in Reef HQ and suggested new initiatives for achieving energy efficiency.

Ensign then developed a cost-benefits analysis which was used to identify priorities for action to be taken.



ReefHQ will undertake education activities to share results of initiatives with the wider community.

ReefHQ is continually striving for greater energy efficiency, and the information gained from this audit will be incorporated in a five year plan for further improvements in energy efficiency. Reef HQ is leading the GBRMPA's energy reduction efforts and these examples are being used by the GBRMPA in discussions with stakeholders about the impact of climate change on the Great Barrier Reef.



Suggestions for energy reduction methods covered the following areas:

- Lighting
- Temperature control
- Climate control
- Pumping
- Energy management
- General power use



Outcomes

Ensign found that that existing ReefHQ energy reduction measures were effective and appropriate. The energy audit consolidated information from various areas for easier access by ReefHQ staff. All audit results and outcomes have been summarized in a report and shared with the GBRMPA Green Office Committee.

*For further information contact the:
Climate Change Group
Great Barrier Reef Marine Park Authority
PO Box 1379, Townsville Qld 4810
07 4750 0759
www.gbrmpa.gov.au*