



I200 Buildings

530 Collins Street Energy efficient building upgrade Progress report, March 2009

About the 530 Collins Street project

Ensuring office buildings endure is the ultimate in recycling. In the past, buildings were often demolished when a tenant moved out to make way for a new building and tenant. Today, we're much more focused on saving our resources and using what we already have in more efficient ways.

One of the city's vacant office buildings, 530 Collins Street, is now being refurbished to meet contemporary standards, including the introduction of a variety of energy-saving initiatives.

Building owner, the GPT Wholesale Office Fund, reports that 92 per cent of its tenants rate sustainability as 'very important' or 'important' to their business.

The development is taking a broad view of the definition of sustainability. As well as reducing the environmental impact of building operations, improvements to the building at 530 Collins Street will include coffee shops, informal meeting spaces and a greater variety of food options.

Building targets

The target for the 'base building' at 530 Collins Street is to achieve a National Australian Built Environment Rating System (NABERS) Energy rating of at least 4.5 stars. An average office building in Australia has an energy rating of approximately 2.5 stars.

The 530 Collins Street redevelopers are looking at introducing a grid synchronised cogeneration system to augment energy efficiency. If this approach is successful, the building could achieve a NABERS 5.0 star rating.

The building will reduce its annual greenhouse emissions by 40 per cent compared to the industry average. The building's aging plant will be replaced with a new, more energy-efficient version.

Fast facts:

Building:	530 Collins Street
Built:	1989
NLA:	65,775 sqm
Owner:	GPT Wholesale Office Fund
Manager:	Jones Lang LaSalle
NABERS energy rating:	Current: Four stars, including 25 per cent Green Power 2007 Target: At least 4.5 stars
NABERS water rating:	Current: Three stars Target:
Implementation model:	Energy performance contract (with Honeywell)
Expected greenhouse savings:	4,700 tonnes/annum



I200 Buildings

Building services to meet targets

- **Hybrid energy system**

A hybrid energy system is at the core 530 Collins Street's new building services. This system will ensure best use is made of a high efficiency gas system, coupled with the reliability of grid based electricity.

- **High efficiency chillers**

New high efficiency chillers, coupled with variable speed drives will allow more efficient air conditioning systems to vary load and more effectively track the building energy load.

- **Building management system**

A new building management system will be introduced, including an energy manager utility. The new system will provide extraordinarily high levels of energy and water meter data analysis. The system will track the hourly performance of the building and major sub-systems, providing regular measurements to determine if the building is operating at five-star efficiency.

A clear business case

The building's owners, GPT, conducted a pre-feasibility study to determine what was needed to improve the building's general – and environmental – performance.

Considerations included:

- future carbon costs
- savings generated by more efficient equipment
- revenue improvements provided by a higher rating building

“The business case clearly illustrated that taking an energy efficiency view on plant replacement would deliver us multiple benefits: lower outgoings; a much reduced carbon footprint; and the opportunity to deliver even better value to tenants and prospective tenants.”

Martin Ritchie GPT Wholesale Office Fund Manager.

Things learned along the way

The buildings owners experienced some difficulties in finding advisers with experience in upgrading buildings to meet sustainability ratings above 4.5 stars.

“An important tip for anyone following in our footsteps is to make sure any consultants really are prepared to challenge the status quo and that they will be aggressive in considering efficiency options... (Consultants) must have appropriate skills and experience. As a start, ask them which high performance buildings they've worked on – and check their NABERS ratings.”

Martin Ritchie GPT Wholesale Office Fund Manager.

Energy performance contracts

Energy performance contracts are commonly used by government agencies. These contracts help improve property performances under well considered risk share agreements.

The 530 Collins Street project took this approach because:

- Actions focus on results: targets are agreed; performance is covered by a guarantee; and project risks are considered and allocated to the party best able to manage them.
- Engagement process is well defined with: a competitive tender process to help identify the right partner; proven standard contracts; and a best practice guide to help to guide participants through the process.
- Check steps allow parties to withdraw without undue penalty.
- Skilled contractors were available.
- An energy performance contract offered the fastest track to completion.

Where the project is at today

The redevelopment of 530 Collins Street is progressing well.

- Called for expression of interest from contractors that we could short list as appropriate
- Called for proposals from the short list, declaring a maximum project price (informed by our pre-feasibility study) and our targets.
- Selected our preferred contractor, Honeywell and negotiated a Detailed Feasibility Study (DFS) agreement with them.
- Honeywell along with their specialist contractors assessed and modelled the performance of many combinations of plant including chillers, cooling towers, cogeneration engines, variable speed drives and other efficiency measures. The DFS detailed a fixed price to undertake the full, integrated works with guaranteed outcomes included. In fact the guarantee comprises 4 parts:
 - NABERS performance
 - Energy (MJ) savings
 - Energy (\$) savings
 - HVAC system performance (comfort conditions)
- The implementation contract (a standard form contract available from www.aepca.asn.au) has been negotiated and signed. As of March 2009 Honeywell are completing detailed design.
- It is expected that major plant upgrades will be completed during 2009 and fully recommissioned before the start of 2010. A great challenge while the building remains tenanted.
- Monitoring and verification of performance will commence in 2010.