

Data, the key to major sustainability changes at 6&7 Eden Park Drive

Building overview:

- 6&7 Eden Park Drive, Macquarie Park NSW 2113
- Built in 2008
- Five-level commercial twin towers
- Lettable area of 18,184m²
- Owned by Altis Property Partners
- Managed by CBRE

Summary

Data analytics is the key tool driving major sustainability changes at 6&7 Eden Park Drive, with the property achieving a 5.5 NABERS Energy rating in 2020, and a place in the top 13% of sustainable commercial assets in Australia.

Altis Property Partners, owner of 6&7 Eden Park Drive, set a high bar for the property as part of a wider company initiative. Managing agent, CBRE recognised the need for a more considered approach to the sustainability targets and engaged CIM to help optimise operations.

By using CIM's PEAK platform, CBRE was able to pinpoint building faults and inefficiencies in real time and resolve issues quickly, resulting in an initial 13% saving of electricity consumption year-on-year. This is equivalent to preventing the greenhouse gas emissions from 60 cars driven over one year or the annual emissions from 32 homes.

KEY RESULTS



13%
annual electricity
reduction
(301MWh)



9%
annual gas
consumption
reduction (129GJ)



280 tCO₂
annual emissions
saved, equivalent to
60 cars or 32 homes



5.55
NABERS
Energy rating
(increase from 5.1)



Top 13%
sustainable
commercial building
performance



Challenge

Commercial buildings account for more than one third of global carbon dioxide emissions. These emissions are mostly caused by large scale heating, ventilation and air conditioning (HVAC) systems used to maintain building comfort.

Commercial real estate services company CBRE manages the operations and maintenance of 6&7 Eden Park Drive on behalf of Altis Property Partners, an independent Australian real estate investment manager. CBRE and Altis recognised that balancing building comfort and sustainability requires a holistic approach to building management, backed by data.

“The environment is changing, tenant’s desires are changing, investor requirements are changing and so our management of assets must change as well. ”

- Ethan Lock, Altis Property Partners



CIM’s building analytics platform integrates building intelligence, machine learning and technical engineering support in a way that is smart, simple and transparent.

“The environment is changing, tenant’s desires are changing, investor requirements are changing and so our management of assets must change as well,” said Ethan Lock of Altis Property Partners.

“We see a clear need to make our buildings more sustainable, and the initiatives at 6&7 Eden Park Drive reflect our responses to that need.”

6&7 Eden Park Drive was successfully collecting and storing data on energy use, but this data was not being used to optimise energy consumption or machinery operations.

“Initially we had trouble with this building,” said Ken Forsstrom, Building Operations Manager for CBRE. “A lack of collaboration between onsite teams and contractors was leading to machinery issues, which in turn resulted in inefficient building operations and tenant complaints.”

“To meet Altis’ expectations for this building, everyone needed to work as one team toward the shared goal, and we had to find a better way to exploit the data we already had. ”

- Ken Forsstrom, CBRE

CBRE Challenges

- Siloed contractor operation
- Inefficient and malfunctioning HVAC equipment
- Lack of data analysis to initiate operational change.

CBRE Goals

- Improve machinery reliability
- Optimise energy consumption
- Decrease operational expenditure
- Achieve goals with low or no capital expenditure.

Solution

In March 2017, CBRE engaged building analytics technology firm CIM to provide building tuning, optimisation and engineering expertise through the PEAK platform. CIM's PEAK platform automatically collects and analyses property data to identify opportunities to improve building performance. The data provides visibility into equipment operations and energy consumption, enabling faster and more informed decision making.



Building intelligence

smart



Machine learning

simple



Technical engineering support

transparent

“At 6&7 Eden Park Drive, PEAK captures and analyses 3,274 data points every 15 mins”, said Scott Beaman, Senior Engineering Manager at CIM. “317 individual pieces of equipment are monitored including chillers, pumps, AHU, VAV and fans.

“Ultimately, we have a large, real time data set that our proprietary algorithms analyse to detect faults, issues and opportunities,” Beaman added.

CIM's engineers prepare recommendations for tuning and servicing existing equipment, then assist CBRE to implement those recommendations by helping to manage contractors or re-program equipment.

“The data has enabled us to tweak everything related to system performance and measure the efficiency impact and tenant comfort,” said Forsstrom. “We've modified the control strategies for the condenser water pumps, chilled water system and boilers, and made inexpensive upgrades to LED lighting to improve the efficiency performance of the property.

“Previously, it was tricky linking any fluctuations in building energy use to work we had carried out on the building. Now we can use PEAK to drill down into the data and clearly associate energy and cost savings to specific modifications,” Forsstrom explained.



Results

By applying a data-driven approach to building management, CBRE and Altis achieved a major NABERS Energy milestone at 6&7 Eden Park Drive through low or no cost solutions. This is in stark contrast to the typical major capital investments made by real estate investment trusts in an effort to make buildings more sustainable.

“Within the first year, the PEAK platform helped us to reduce our annual energy consumption by 13%,” said Forsstrom. “We’ve maintained those savings four years later even though we’ve since leased out more building space and occupancy rates have increased by 8%.”

“ This approach has saved us a lot of time and money whilst helping us to work smarter as a team. We wouldn’t have seen these improvements without the support of our base building contractors. ”

- Forsstrom, CBRE

“Collaboration on sustainability initiatives will maximise their impact,” added Lock. “At 6&7 Eden Park Drive, we were part of a collaborative effort, with Altis setting the vision, CBRE understanding the key problems, CIM providing solutions and the base building contractors undertaking the work.”

Gaining an additional half a NABERS Energy star on a modern building is no easy feat, demonstrating CBRE and Altis’ commitment to continuously pushing for the highest levels of sustainable performance across their assets.

PEAK

CIM’s award-winning PEAK platform integrates building intelligence, machine learning and technical engineering support to improve efficiency, sustainability and comfort across property portfolios. PEAK was recognised as “Best in Class” by the CSIRO following a 24-month independent evaluation of building analytics technologies.

- ✓ Simplifies and accelerates the end-to-end process of fault detection, diagnosis and problem resolution
- ✓ Automatically collects and monitors live building data, and leverages algorithms to pinpoint, highlight and prioritise inefficiencies
- ✓ Facilitates a collaborative workflow with stakeholders to quickly resolve issues
- ✓ Provides visibility and insight to optimise site and portfolio performance.

We look forward to hearing from you.

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