

Case Study:

World Trade Centre

Setmetrics Virtual Intelligence Platform (VIP) helped reduce the energy consumption of Melbourne's World Trade Centre (WTC) by a third over a year.

Saving over \$275,000 in utility costs, it also increased the building's National Australian Built Environment Rating System (NABERS) rating by 1.5 stars.

JLL elated with outcome

"We're very happy with the energy performance of the 30-year-old building since Setmetrics activated VIP," said Jones Lang Lasalle (JLL), the facility manager.

"We've been able to reduce our energy usage by over 33%, a result we could only dream of 18 months ago.

"VIP shows us what is impacting the building's performance at any time enabling us to almost immediately correct or change for energy use.

"Being able to predict how our energy use can impact our building performance in the future, means we can prevent cost blowouts. That's a huge advantage."

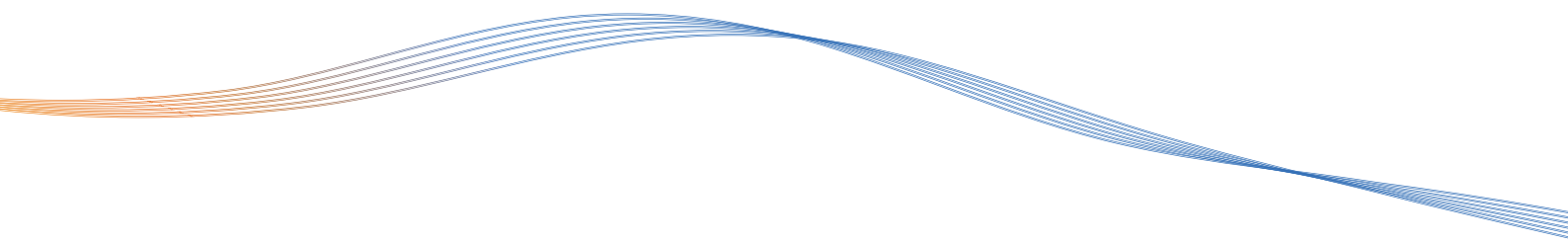
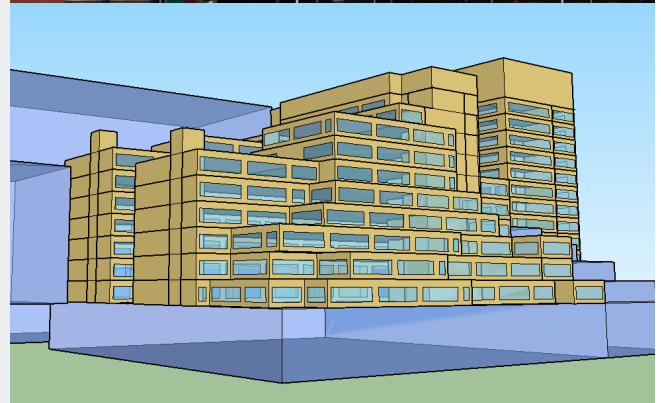
VIP 'digital twin' technology

Setmetrics CEO, Matt Connolly, said the WTC result epitomised the benefits of its new VIP Platform.

"Using our digital twin technology, we were able to identify trouble spots and recommend energy conservation measures very quickly," he said.

"That meant JLL was reducing energy consumption and making impressive savings as we proceeded.

"That's the beauty of VIP – there's no waiting and solutions are revealed relatively soon after the software is activated."



The World Trade Centre

Built in the early 1980s and opened in 1983, the World Trade Centre was recently relaunched as the new WTC Wharf. The complex on the north bank of the Yarra River occupies over 70,000 sq m of office space, comprising five office towers in total.

When JLL approached Setmetrics one of its key tenants, Victoria Police was due to renew its leasing contract.

JLL, the facility manager of the building owner, Asset1, wanted to offer the police a healthier NABERS rating and sought improvements which would make it a more attractive option for tenants.

The Goals

Setmetrics and JLL collaborated to define specific goals to reduce energy consumption and increase the NABERS rating of the whole facility. The goals were to:

- Establish a data aggregation process, collecting from multiple sources;
- Perform a deep data analysis and establish facility benchmarks;
- Establish a constant commissioning process;
- Establish a roadmap to further efficiencies;
- Provide easily accessible performance reports to JLL and the tenants.

The Process

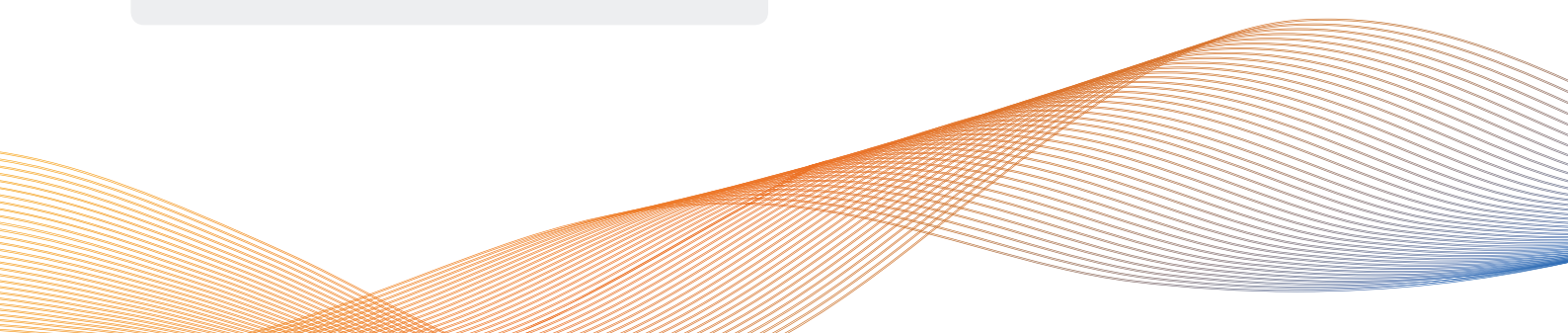
The process to achieve these goals comprised **four steps** – data collection and analysis, modeling and prediction, defining tactics and measuring savings.

Setmetrics conducted a deep analysis of the WTC's energy consumption, creating benchmarks for every meter and building a highly accurate model of energy use. The model allowed Setmetrics to predict energy use in the building under a range of different operations scenarios and combinations of potential improvements.

The next step was to identify the optimal improvements, or energy conservation measures (ECMs). Setmetrics collaborated with the WTC team to identify a variety of ECMs ranging from operational changes to settings and controls, to more comprehensive plant upgrades. Each ECM was modeled by Setmetrics and potential outcomes calculated and analysed.

Finally, a roadmap of insights and improvements was presented to the WTC management team.

Of the 20 ECMs proposed, 6 were successfully implemented and 7 more highlighted for future consideration. The savings from the 6 ECMs have been tracked using Setmetrics' best practice measurement and verification processes.



The Outcome

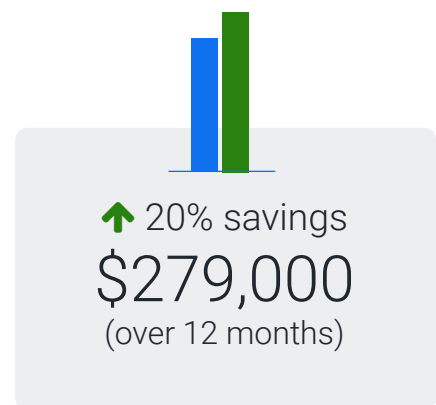
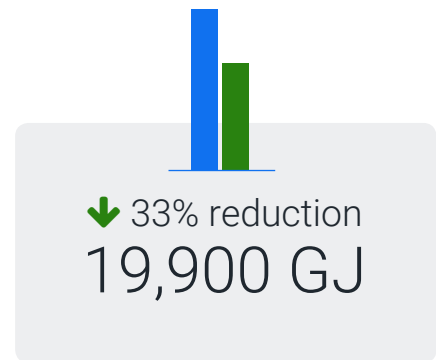
The WTC recorded an impressive reduction in their total energy consumption of 33% over the year, equating to a saving of almost 20,000 GJ. This resulted in an increase to the **NABERS Energy rating of 1.5 stars**.

Despite facing an increase in energy costs in recent years, the WTC has still achieved measurable utility savings of \$279,000, of which around \$110,000 is a direct result of the implemented ECMs. This equates to around **\$18,000 saved per ECM**. The cost of implementing the improvements has already been recovered from the savings as the ECMs had an average **payback of under 3-months**. The remainder of the savings can be attributed to broader behavioural changes within the facility.

Another direct outcome of the reduction in energy consumption was a 33% abatement of carbon emissions, totaling **3,800 tonnes of CO2-e** over the period.

The process also involved regular reports being generated by the VIP platform providing easy and immediate access to performance information.

As the process continues, VIP remains in constant **'hunt and detect'** mode and further improvements and savings are anticipated.



Building designs and technology have made great strides in terms of improving energy efficiency in recent years. The WTC provides an excellent example of how the latest sophisticated data collection and analysis systems can take efficiency to the next level.