

Property Managers with large portfolios have the challenge of balancing tenant needs with the dynamic demands of building performance and ratings, often for geographically distributed properties.

Auckland's Harbour Grounds is one such example. The precinct's seven waterfront buildings provide more than 88,000 sqm of office space and accommodate a workforce of around 7,000 people.

By partnering with BraveGen, the owners of Harbour Grounds have achieved dramatic improvement in the operating performance of their buildings. Tenants have saved over \$3 million in operating costs and avoided 2,700 tonnes of carbon emissions. For the building owners, the energy efficiency improvements won the Energy and Emissions Reduction Project of the Year at the 2018 EECA awards. Ongoing initiatives continue to improve NABERSNZ ratings on all buildings, with one on track to achieve 5.5 stars.

The combination of BraveGen's consulting team and market leading software have also delivered additional benefits including; improved office air quality and thermal comfort, increasing staff wellbeing and creating a catalyst for staff involvement in sustainability initiatives.

BAYLEYS

**4 STAR
PLUS**

★
NABERSNZ RATINGS
FOR MULTIPLE
BUILDINGS

UP TO
32%

ENERGY
COST
REDUCTION

**2,700
tonnes**

CO₂-e
AVOIDED

Background

Building performance expectations have changed; from fixed environments, to dynamic spaces that respond to changing usage needs, all whilst ensuring tenant comfort. The seven Harbour Grounds waterfront buildings cover more than 88,000 sqm of office space and are the working base for around 7,000 people.

The large-scale project to improve the energy performance of the portfolio began in 2014. The goal: to benchmark the energy consumption of each building, optimise performance through monitoring, analysis and upgrades, and ultimately achieve a NABERSNZ rating of up to 5.5 stars. The NABERSNZ rating fitted well with the owners' vision of positioning the buildings as high-quality energy efficient office space for tenants.

Approach

BraveGen's team of specialist engineers designed, specified and installed remote monitoring equipment and connected to existing sensors. Data is gathered for electricity, gas and water across the sites and consolidated in BraveGen's cloud analytics platform.

Sub-load metering provides continuous 15-minute data enabling continuous monitoring to target specific end uses as needed. The on site data is securely transferred to BraveGen's cloud platform, securely hosted on Amazon Web Services (AWS) and accessible 24/7.

BraveGen automatically collects sensor data, enriches it and correlates it with production data (e.g. hours of operation, heating and cooling degree days, air requirements) efficiently adding onsite context and meaning to the data. The data is tested, validated and analysed by BraveGen's team of data scientists and engineering experts with specific experience in the property sector. This enables BraveGen to target, identify and prioritise practical solutions (e.g. lighting and HVAC).

After BraveGen was chosen as the energy partner for the project, early utility monitoring showed that significant energy savings were needed to achieve the desired NABERSNZ levels. It was quickly agreed with the large, and growing portfolio, a monitoring and targeting approach would yield the most cost effective way to achieve and sustain long term property performance.



"BraveGen's monitoring, together with new analytical and modelling tools, has given the project team valuable insights into building performance that we have never had before"

Craig Stephens / Goodman engineering and building services manager (original owner)

BraveGen provides extremely detailed reporting on energy consumption, the performance of individual building components, and how they work together. This visibility enabled the project team to make data-driven decisions and target improvements, resulting in optimisation of building control systems performance and the upgrade of some plant.

This work has had flow on effects to staff wellbeing, in the form of improved workplace amenity and raising tenants awareness and commitment to sustainability behaviours and initiatives.



Outcomes

The BraveGen team established an energy baseline early in the project. Against this baseline, 20 GWh of energy savings have been achieved so far. Analysed on a sqm basis, energy consumption has reduced up to 32%, with further savings to come.

Since 2014, tenants have saved \$3m in operating costs and avoided 2,700 tonnes of carbon emissions. Savings have been found in both the newer and older buildings and NABERSNZ ratings improving across the board. Electrical and architectural upgrades have also led to improved building amenity and increased workplace comfort and staff wellbeing.

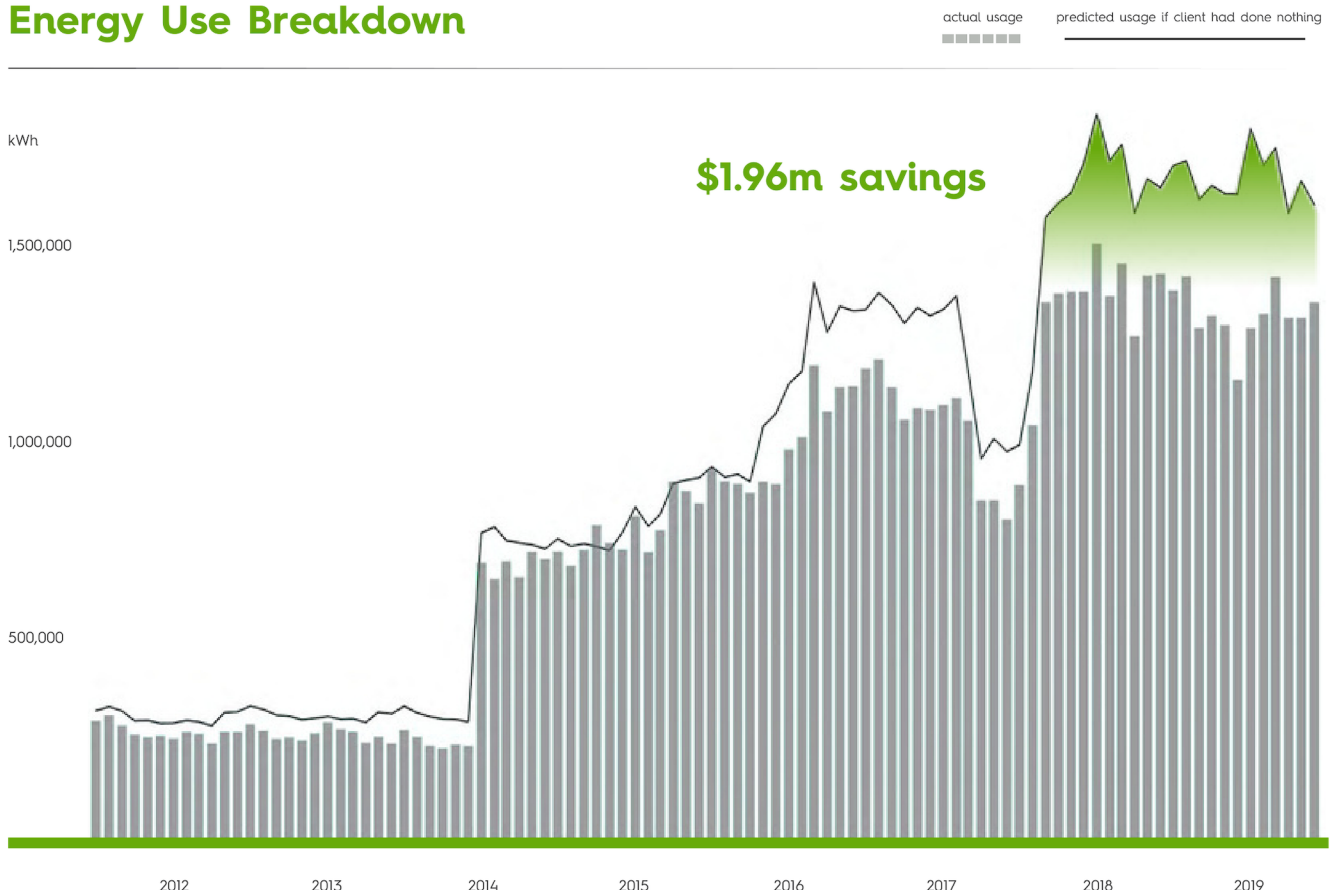
NABERSNZ is a first important step in delivering a benchmark for a building so we can plan and grow from there. We believe adopting environmentally sustainable practices like NABERSNZ is the right thing to do and we see it as a win-win outcome on every level.

Ryan Carter / Portfolio Manager,

151 Property (Property Manager for Bayleys House, one of the buildings within Harbour Grounds)



Energy Use Breakdown



Why Partner With BraveGen

BraveGen is an award-winning, New Zealand owned and operated expert in energy efficiency and decarbonisation. BraveGen's software will enable you to more effectively collect, manage, analyse and report on your carbon emissions data.

We have helped organisations like yours integrate sustainability and energy efficiency into your business to cut carbon emissions as well as costs, helping you to make impact and take climate action - not waste time doing climate admin.

The time is now. The climate is changing, and we must change with it. Legislators, investors, stakeholders, staff, consumers and the global community all expect more from businesses on their journey to carbon zero. BraveGen will help you meet - and surpass - those expectations.

Monitoring

We supply and install high quality IoT sensors across a wide range of devices, including but not limited to;

- Pumps
- Motors
- Fans
- Temperature
- Refrigeration units
- HVAC
- Boilers
- Compressed air
- Lighting
- HVAC
- Lifts
- Compressors

As New Zealand's leader in energy and water monitoring, we have been recognised with a range of awards including;

FINALIST /

NZI Sustainable Business
Network Awards 2015

WINNER /

EECA Business Service
Excellence Awards 2016

FINALIST /

AUT Business School Excellence
in Business Support Awards 2016

Analytics

Data collection is automated with BraveGen's cloud analytics platform, then enriching and correlating the data with various other data sets including our own data warehouse, to provide unparalleled industry benchmarking and best practice guidance.

BraveGen currently works with:

- over 150 companies across 1,000+ sites,
- managing over 576 Gwh of energy
- (equivalent to 76,000 Kiwi homes), saving over 413m Kwh in energy use delivering over
- \$60 million in savings; and helping to avoid
- 49,000 tCO2-e (equivalent to 11,666 cars driven on Kiwi roads for one year).

Next Steps

BraveGen solutions and consulting provide the most cost-effective results - for the long term. Our focus is on creating actionable initiatives for our clients so you can focus on delivering outcomes.

Visit bravegen.com or call our team today to discuss how we can help deliver your sustainability goals.

BraveGen is the trading name of Energy Solution Providers Limited.

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