



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 ESP, 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 ESP'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.

 **HARBOUR
GROUNDS**

**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

ESP'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 ESP's cloud analytics platform, ESP Hub.

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 ESP's Hub cloud platform, securely hosted on Amazon Web Services (AWS) and accessible 24/7.

ESP Hub 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 ESP's team of data scientists and engineering experts with specific experience in the property sector. This enables ESP to target, identify and prioritise practical solutions (e.g. lighting and HVAC).

After ESP 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.



"ESP'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)

ESP Hub 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 ESP 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.

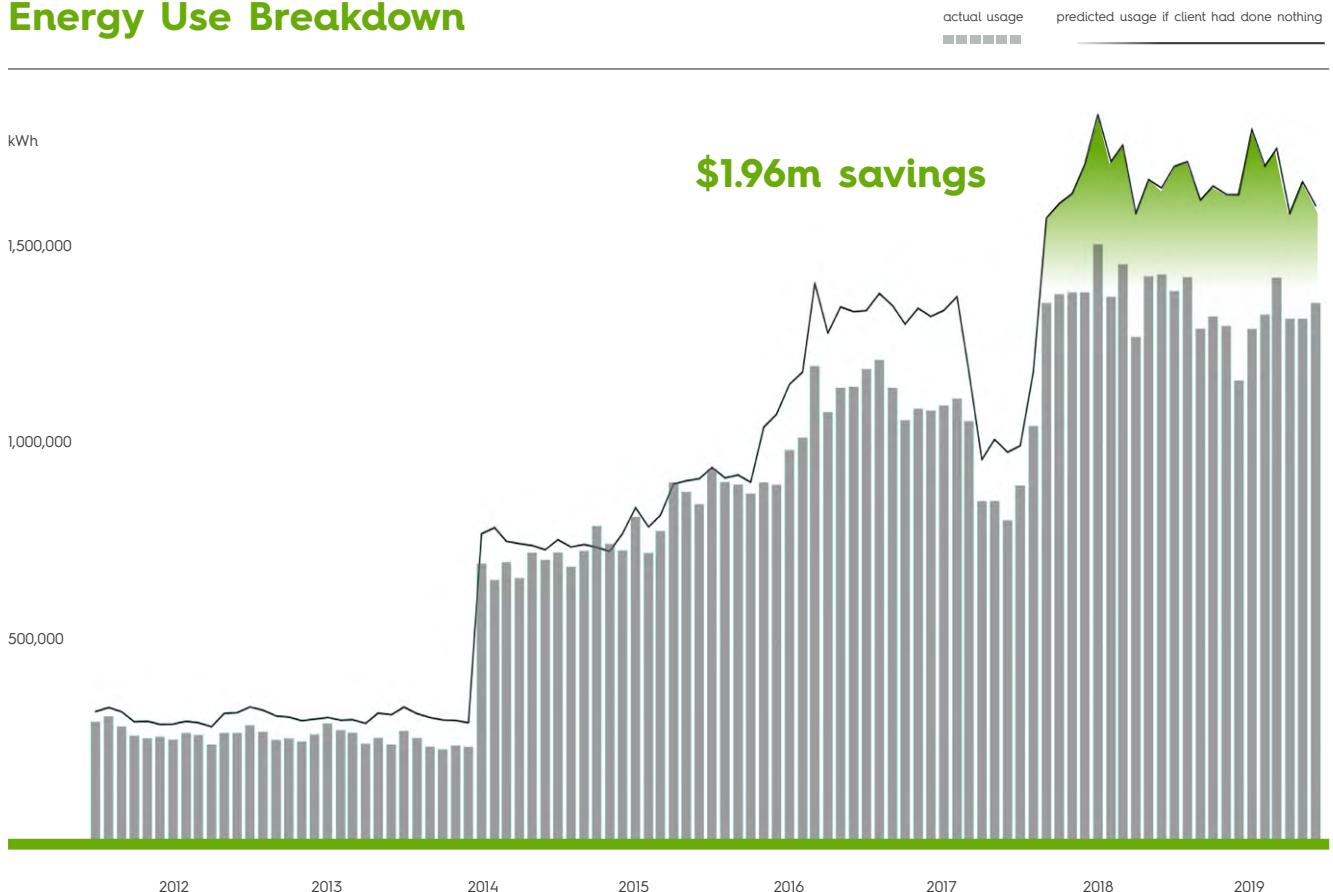
"NABERSNZ is a first important step in delivering a benchmark for a building so we can plan and grow from there. We believe adopting environmentally sustainable practices like NABERSNZ is the right thing to do and we see it as a win-win outcome on every level."

Ryan Carter / Portfolio Manager,

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



Energy Use Breakdown



Why Partner With ESP

ESP is an award-winning, New Zealand owned and operated expert in energy efficiency and decarbonisation. ESP's digital services and solutions will enable you to find and make issues visible, enable stakeholders to take action, change behaviours and ultimately make an impact.

We have helped organisations like yours integrate sustainability and energy efficiency into your business to achieve operational excellence and reduced operating costs for over 15 years.

ESP provides an end-to-end service including carbon, energy and water optimisation. Our unique strength is our market leading digital toolsets and expert engineers. Combined, these provide the most cost-effective way for businesses to achieve and maintain their sustainability goals.

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

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

Analytics

Data collection is automated with Hub, ESP'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.

ESP 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

ESP 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 [ESPHQ.com](https://www.esphq.com) or call our team today to discuss how we can help deliver your sustainability goals.

ESP is the trading name of Energy Solution Providers Limited.

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