



THE UNIVERSITY OF  
**WAIKATO**  
*Te Whare Wānanga o Waikato*

Case study

# University optimises energy usage data to deliver savings

**centrica**  
Business Solutions

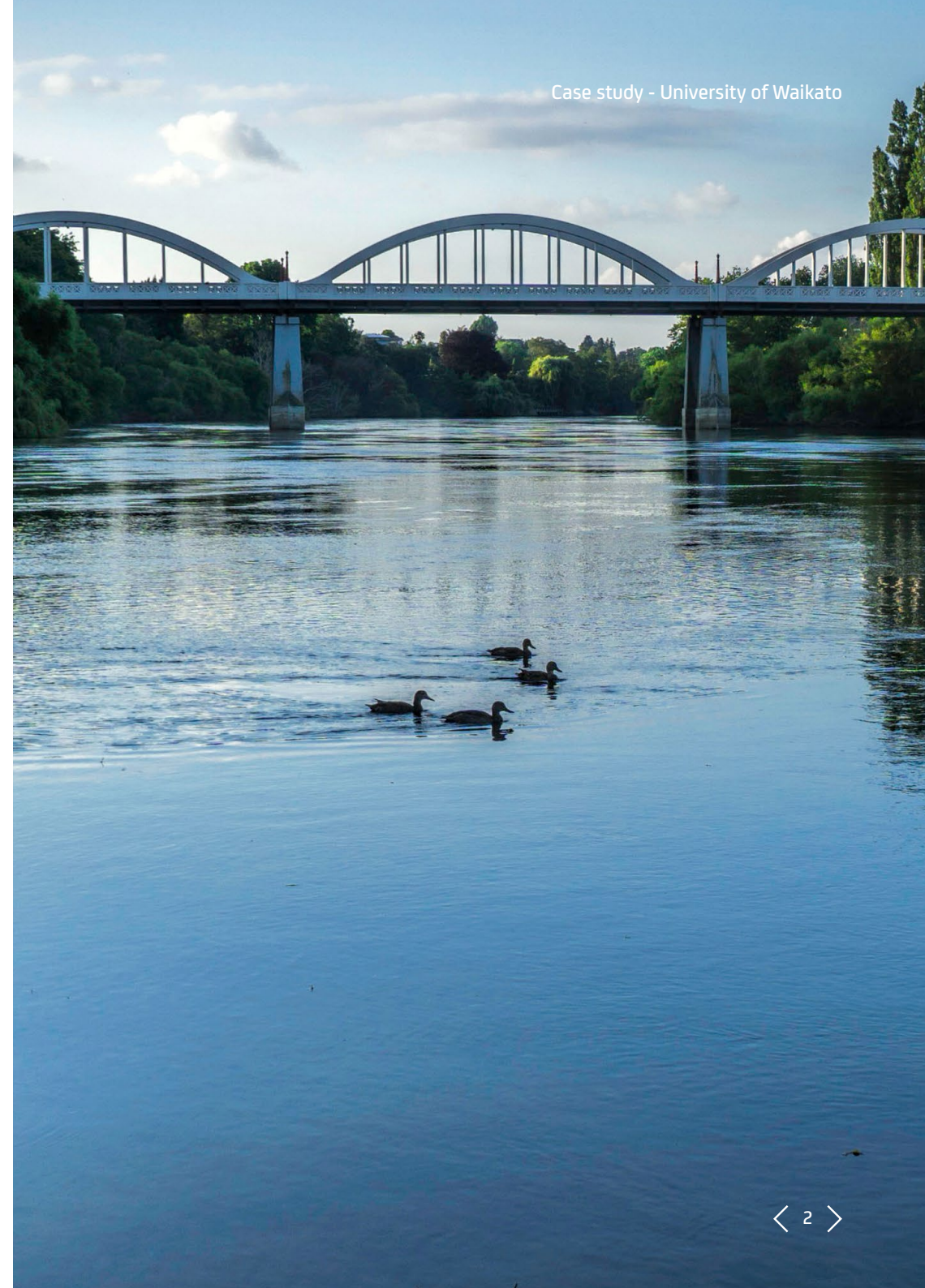


## University of Waikato deploys PowerRadar™ and wireless sensors to bolster its carbon-neutral strategy

The University of Waikato (UoW), based in the North Island of New Zealand, was established in 1964 and specialises in management, education, engineering and more recently, nursing. The main Hamilton campus covers around 68ha and is complemented by a second campus in Tauranga, around 80km away. Together, they host around 12,000 students and 1,500 staff.

As with any operation on this scale, energy costs are a critical consideration, and when the university's new power contract caused costs to triple, it decided to reassess its options.

It needed a way to reduce energy consumption across its sprawling campus, which consists of multiple building types from different periods. There was also an opportunity to cut greenhouse gas emissions and contribute to the university's goal to become carbon neutral by 2030.



## Precise monitoring, real-time results

The University of Waikato's energy supplier, Genesis Energy, one of Centrica's accredited partners, introduced the university to PowerRadar, a real-time energy management and insights platform. Staff immediately saw the potential to supplement the information from their building management system (BMS) and provide greater depth of data and real-time insights.

"PowerRadar is very flexible; you can monitor anything," explains Yann Lemonnier, Energy Graduate at University of Waikato. "We don't have many energy meters across the campus, especially in the older buildings, but with PowerRadar we can monitor what we want very precisely. You can even do real-time tests and see the results straight away, which helps us so much."

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Yann Lemonnier, Energy Graduate  
University of Waikato

## Technical overview

Genesis Energy worked with the university to install Centrica's patented wireless energy sensors at the main Management School building, enabling the university to carry out initial trials.

The project revolved around understanding the campus's energy consumption and the building's schedule. Genesis Energy and UoW scoped out a plan to deploy the sensors at the Management School building in November 2021, to measure and monitor seven floors of the building on sub-mains level, as well as their chillers, pumps and air handling units. Readings from sensors are then fed into PowerRadar for easy access by university facilities staff.

During the project, Genesis was given access to view the data in PowerRadar by UoW to provide data analysis and consultation that resulted in multiple savings opportunities. This helped the university's facility team to understand if the mechanical services were working per the base schedule and determine chiller and pump efficiency as well as determine if there was any residual load.

“With PowerRadar it's been so easy to make huge energy savings and reduce costs and carbon emissions as well. It's been our go-to for the last 12 months.”

Brett Mundell, Technical Services Manager  
University of Waikato

## Key insights highlight the way ahead

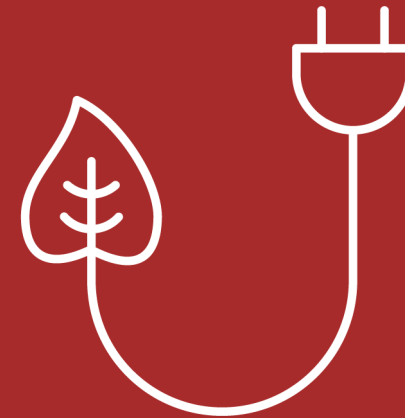
PowerRadar delivered numerous valuable insights, including that the pumps running the building's chilled water supply were running almost all day, every day, even when the chiller itself was not operational. A simple adjustment in the BMS cut the pumps' weekend operating times, when demand is significantly below normal, to a maximum of just two hours resulting in \$12,600 of energy savings per year.

Issues with the chiller itself were also highlighted. "We instantly noticed that the chiller was on a different base schedule to some of the other schedules," says Brett Mundell, Technical Services Manager at University of Waikato. "That gave us insights into how the BMS was operating, and we could alter those schedules to be a lot more efficient."



All these insights together empower the University of Waikato facility team to lay plans ahead for the future that match its long-term goals. Every little bit counts in the larger picture of delivering savings and strengthening the net zero strategy. “With PowerRadar it’s been so easy to make huge energy savings and reduce costs and carbon emissions as well. It’s been our go-to for the last 12 months,” Mundell continues.

The university now plans to roll PowerRadar out to other buildings on its campus, the first of which is the Student Centre, which includes the university’s library and 24/7 computer labs. Looking further ahead, staff plan to incorporate budgets and targets into the graphs produced by PowerRadar, while a longer-term objective is to use it to better understand requirements when replacing older or less efficient equipment.



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