

135% RETURN ON FITMACHINE INVESTMENT

CUSTOMER CASE STUDY - THE UNIVERSITY OF QUEENSLAND

"The technology presented to us by MOVUS is 100% useful. It provides our maintenance team a cost-effective solution that monitors our equipment 24x7 and alerts us to possible abnormalities that could result in downtime and additional cost."

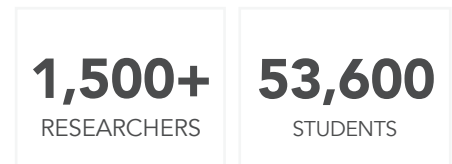
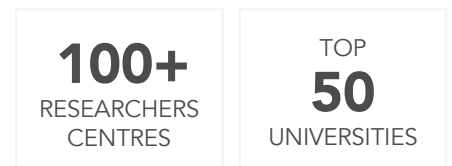
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📷 CASE STUDY SNAPSHOT

- ✓ The University of Queensland (UQ) deployed MOVUS FitMachine solution to monitor several chillers in their St. Lucia campus, in Brisbane, Australia
- ✓ UQ has recently signed a five-year contract with MOVUS to ensure the continuous monitoring of its existing and newly purchased critical assets including pumps, motors, fans and chillers
- ✓ FitMachine not only provided the 24x7 monitoring required, but also detected abnormal behaviour in one of the chillers that could have cost the university in excess of \$250,000 in asset repairs and rebuild



ABOUT THE UNIVERSITY OF QUEENSLAND



For more than a century, The University of Queensland (UQ) has maintained a global reputation for delivering knowledge leadership for a better world.

The most prestigious and widely recognised rankings of world universities consistently place UQ among the world's top 50 universities.

UQ has also won more national teaching awards than any other Australian university. This commitment to quality teaching empowers their 53,600 current students, who study across UQ's three campuses, to create positive change for society. UQ's research has global impact, delivered by an interdisciplinary research community of more than 1,500 researchers at their six faculties, eight research institutes and more than 100 research centres.



THE SCENARIO

The University of Queensland had a failure in one of their critical assets, so the maintenance team procured a cost-effective condition monitoring solution to avoid similar situations in the future. UQ maintains several chiller stations which are responsible for delivering chilled water for 24x7 air-conditioning to the majority of buildings in their St. Lucia campus. MOVUS deployed FitMachines® on 22 critical chillers

– including centrifugal and screw type chillers – ranging from 450kW to 1,500kW. Due to their wide temperature variations, the maintenance team needed visibility into their performance across different seasons throughout the year and times of day. One of the screw-type chillers was retrofitted with a variable frequency drive (VFD) prototype aimed at reducing the chiller capacity to cater for low load periods during colder winter months.



FITMACHINE® IN ACTION

MOVUS FitMachine detected abnormal behaviour in the vibration signature from the screw-type chiller with VFD prototype implementation during the first cold nights of the winter season, between 10pm and 4am (outside standard working hours).

Upon further investigation, the maintenance team at UQ found that the vibration signature (RMS) and temperature signature from the data graph of the building management system also started to change from the same date that the vibration anomaly was detected by the FitMachine. It was discovered that two components within the chiller control system required further fine-tuning to accommodate for the lower load conditions.



OUTCOMES FOR THE UNIVERSITY OF QUEENSLAND

COST SAVINGS WITH REPAIRS AND MAINTENANCE

UQ saved up to \$100,000 in repair costs by discovering and preventing machine failure ahead of time. In drastic circumstances where a chiller would have to be rebuilt, the cost incurred could exceed \$150,000.

135% RETURN ON INVESTMENT

Based on the avoided repair cost alone, The University of Queensland realised 135% return on their FitMachine investment.

EXTENDED ASSET LIFE EXPECTANCY

The early warnings from the FitMachine solution allowed the maintenance team to further investigate the reason behind the variation in vibration signature and take the necessary steps to rectify the impact of the VFD prototype implementation on screw-type chillers.

REAL-TIME ASSET PERFORMANCE DATA

FitMachine solution provides UQ with 24x7 machine condition monitoring and alerts, as well as assisting with identifying faults. If the FitMachine solution wasn't deployed on that specific chiller, it would have taken longer to discover the issue or it could have led to failure during maximum cooling demand.

