

## Transcript

Title: Swinburne Smart Building Energy Initiative

Creator: Smart Building Energy Initiative

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PROFESSOR KAREN HAPGOOD: This project is a really great example of what we do well at Swinburne. We're taking research and applying it here. So we're using two of our buildings as a model living lab for how we can generate energy and distribute it in a way that not only shares the energy but reduces the overall demand.

PHD STUDENT GOKUL SIDARTH: Our main objective was to convert every building within a university campus to be smart buildings that have the capability to communicate among each other, make intelligent decisions on how to save energy. In this project, we have enabled certain zones in two specific buildings in our campus to be intelligent enough to conserve energy and share the excess energy that it is generating on site with its peers.

ASSOCIATE PROFESSOR MEHDI SEYEDMAHMOUDIAN: We could save up to 30% of energy in the building, which actually translated into 200,000 AUD within the year for that specific large building. The project is the connection of the data analytics and monitoring systems. IOT-based sensing diagrams and renewable energy integrations.

PROFESSOR KAREN HAPGOOD: We have been working with a wide range of industrial experts, which include KIG, who were our solar installers. DCH from CSIRO has helped us with hosting our data and Braemac who are providers for National Instruments has provided us the hardware infrastructure for various sensors and also building the community microgrid emulator as a part of this project.

PROFESSOR ALEX STOJCEVSKI: Electrical Energy Systems is really the main focus of what we do as one of our expertise areas and brings in the electrical systems expertise, it brings in the computer scientists, it brings in the data analysts. And this is the reason why I think this project is a wonderful marriage of what we do in the school.

PROFESSOR KAREN HAPGOOD: One of the things that we need to drive engineering forward is diversity of thought, opinion and backgrounds. The things that really attracts people to engineering that aren't traditionally attracted is about sustainability, clean water, clean energy, and the impact of the work is the important part.

PHD STUDENT GOKUL SIDARTH: My involvement in this project as a software developer has been an exceptional journey, mainly considering the research team I'm working on with and the wide range of technological experts.

ASSOCIATE PROFESSOR MEHDI SEYEDMAHMOUDIAN: As a group, we have a very strong and diverse expertise in different areas of renewable energy integration, and we are very passionate and committed to providing viable low-cost energy solutions for our communities.

PROFESSOR ALEX STOJCEVSKI: the advantage that we have in the school is the fact that we have a school of science computing technologies and engineering technologies. It allows us to really work together for us. It really brings in that diversity and the synergies between the disciplines.

PROFESSOR KAREN HAPGOOD: Each of our energy focus projects as part of Innovative Planet are really a model for how we're going to do things across the world, not just at Swinburne in future. And so by demonstrating it here on a couple of buildings with real people, we can expand over time to beyond the campus, to cities and other parts of the world and demonstrate what we can really do with smart energy technology demand and use management.

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