

CASE STUDY

How Randwick Council achieved >40% energy savings at Lionel Bowen Library



Randwick City Council has set a number of ambitious environmental sustainability targets for its operations, including targets for reduced greenhouse gas emissions. Energy efficiency is a key strategy for achieving these goals, as set out in the [100% Renewable Energy Roadmap](#) completed in early 2020.

The Lionel Bowen Library is one of Council's largest energy-using facilities, consuming 7.8% of Council's total electricity demand in 2017/18. This was after the implementation of a 30 kW solar array on the library in 2013, as well as efficiency measures including VSD control of the cooling tower fan and voltage optimisation of the main incoming supply.

Concurrent with the development of the 100% Renewable Energy Roadmap, Council initiated a project to roll out LED lighting at selected sites, including the library. In late 2019, new time control measures were also implemented to optimise HVAC operation.

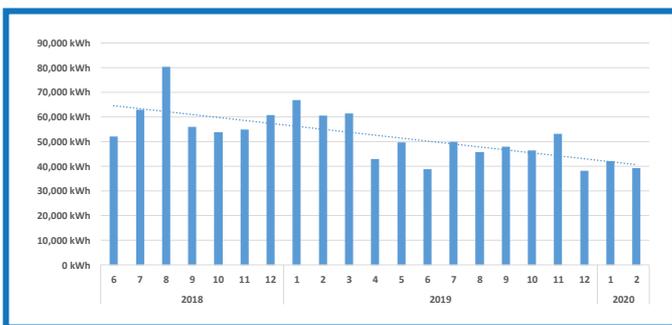
The combined impact of the LED lighting and air conditioning system control changes has been to reduce the library's electricity consumption by nearly 40% when comparing similar periods of 2017/18 with energy consumption in early 2020. This saving is illustrated below in two charts.

There are plans to implement additional measures at the library that will see even more energy savings achieved and more renewable energy. The combined impact of these changes over time could be a reduction in grid electricity supply to Lionel Bowen Library of 60% compared with 2017/18.

The energy saving measures implemented at Lionel Bowen Library are just a few among nearly a hundred actions that, when implemented over the next several years will see Randwick City Council realise its goal to reach net zero greenhouse gas emissions by 2030.

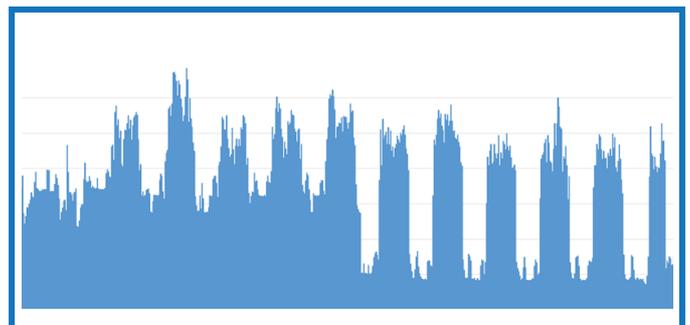
Impact on energy consumption

Monthly electricity consumption
June 2018 to February 2020



This shows monthly electricity consumption from June 2018 through to February 2020, with the steep downward trend in monthly electricity use evident.

Lionel Bowen Library energy demand
1-wk November v 1-wk December 2019



This shows daily load profile data and clearly illustrates the impact of the air conditioning timer upgrade on night energy demand between November and December 2019.