

7 AFFORDABLE AND CLEAN ENERGY



In 2019, the annual electricity consumption of original buildings was reduced by

900,000 kWh.

6.5 citations per paper in 2019.  
Above the average (5.5) in Taiwan.

In 2019, NCTU offered

68 related courses.



## Energy management

Since 2015, NCTU has launched the energy conservation program and introduced the ISO/CNS 50001 energy management system. Three buildings have obtained ISO/CNS 50001 Taiwan Accreditation Foundation (TAF) international standard verification, and five buildings have obtained the Taiwan's Ecology, Energy Saving, Waste Reduction, and Health (EEWH) certification. Engineering Building Five primarily has been rated as EEWH diamond-level, the highest level in EEWH. NCTU has the following energy conservation methods: (1) aiming at high electricity consumption buildings and promoting the energy conservation improvement project of Energy Services Company (ESCO); (2) lighting improvement by replacing conventional power consumption tube lights with electronic fluorescent lamps or LED lamps; (3) air conditioner improvement by changing conventional low energy efficiency ratio (EER) air conditioners into devices with environmental protection or energy-saving labels; (4) changing the conventional motors of cooling towers and air conditioning water pumps; changing the motors of exhaust systems into the variable-frequency drive motors; and (5) developing the user charge management mechanism and the reward and punishment mechanism for each building to enhance the awareness of teachers and students to save energy spontaneously.

## TSMC x NCTU Energy Education Center - Energy Education Program

The TSMC x NCTU Energy Education Center started in 2017. This center is open to the public for making reservations to visit and it is also available for the relevant departments at NCTU for research and experiment purposes. It aims to disseminate the concepts of sustainable energy, smart living, social engineering and architecture technology. The TSMC x NCTU Energy Education Center can be used as an experimental laboratory for architectural technology. The center attempts to convey sustainability by each guided tour under the themes of "Innovative Technology, Comfortable Life, Environmental Cycle". In addition to passing down the professional knowledge, the center's construction cost depended on the precise module design, construction method and material evaluation. It can also provide practical modules for people who are interested in copying.

