Annual Report
on SDG6 Clean Water and Sanitation

6.3 Water usage and care

6.3.4 - Does your university as a body apply building standards to minimise water use? (relevant standards to be indicated)

Thaksin University integrates water-efficient and environmentally sustainable design principles into all new construction and renovation projects in alignment with its 2023–2027 Strategic Plan and Green & Sustainable Building Policy. Each new facility is required to comply with Thailand's TREES (Green Building Standard) and the national Green Campus framework to ensure safety, resource efficiency, and sustainability in both structure and operation. The TSU Entrepreneurship and Learning Centre (TSU ICON) at Songkhla Campus exemplifies this policy. The eleven-storey concrete building, located beside the campus lake, is designed as a carbon-neutral learning ecosystem that integrates energy- and water-saving systems, including automatic low-flow faucets, water-leak sensors, rainwater-harvesting tanks, and grey-water reuse for landscape maintenance. Its open, ventilated spaces reduce the need for mechanical cooling while promoting natural lighting and community learning under the Social Innovation University concept. In addition, the TSU Premium Dormitory complex at Songkhla Campus, comprising two five-storey buildings (200 units), was designed to provide safe, comfortable, and sustainable living for students. The dormitory employs in-room water-saving toilets and showers, a separated wastewater treatment line, and a rainwater-recycling system for cleaning and gardening. Energy-efficient lighting and partial renewable-energy sources are also integrated to reduce water use in cooling systems. Green spaces and co-working areas enhance Life-Long Learning and Green Living in harmony with the natural campus environment.



Promoting Water Conservation through Institutional Collaboration

Thaksin University's Phatthalung Campus collaborated with the Office of the National Water Resources to organize an initiative engaging university administrators, staff, students, and school pupils in water conservation. Activities included discussions on developing a model educational institution for water resource management and extending good practices to surrounding communities. This initiative demonstrates the university's commitment to promoting water-saving awareness and stakeholder participation, providing supporting context for institutional water

conservation efforts.



Standards-Based Rubber-Coated Fabric Liners for Water Retention

Thaksin University's Faculty of Engineering, through its Rubber Technology Transfer Centre for the Community, developed rubber-coated fabric liners for swimming pools and aquaculture ponds. The initiative addresses cracking in concrete ponds and punctures in plastic liners, which compromise water retention. In collaboration with a community enterprise, the research team supported improvements to rubber formulations. The university reports that the natural rubber-coated fabric liners passed testing against Thai Industrial Standard TIS 2733-2559 and have entered commercial use. This initiative supports durable water containment and offers a practical approach to addressing leakage in community water infrastructure.


ทีมวิจัยคณะวิศวกรรมศาสตร์ ม.ทักษิณ
ประสบความสำเร็จการผลิต "สระว่ายน้ำต้นแบบจากผ้าเคลือบยาง"
ลดปัญหาและสร้างรายได้ให้ชุมชน



Similarly, at Phatthalung Campus, the TSU Life Long Learning for all Building of the Faculty of Education, valued at 57.91 million Baht, adopts a modern Sino-Portuguese architectural style reflecting local cultural identity and green-building innovation. The facility incorporates water-saving sanitary fixtures, automatic control systems, and a rainwater collection system reused for cleaning and irrigation. Its landscape design employs native, drought-tolerant plant species and natural drainage to minimize freshwater consumption while creating a comfortable and inclusive learning atmosphere that fosters lifelong learning and sustainability awareness.

In parallel, the some Faculties integrates water-resource conservation into curriculum and research. Courses such as Micro-scale Chemistry and Safety and Green Chemistry train students to separate metal water such as Cu^{2+} and Fe^{2+} from contaminated water through advanced crystallization and precipitation techniques. The treated water is then analyzed for residual toxicity and reused for non-potable purposes such as laboratory cleaning and floor washing. These practices not only develop students' understanding of chemical sustainability and analytical methods but also reinforce the University's commitment to water reuse and pollution prevention within laboratory and building environments.

Under the Phatthalung Model Project, TSU collaborates with the Ban Na Community Welfare Fund in Sri Nakharin District to design and construct "Happy Toilet" units for elderly and bedridden residents. These sanitation facilities are designed with water-saving toilets, grab bars, and safe, low-maintenance plumbing systems that minimize water use while ensuring hygiene and accessibility. This project, supported by national innovation and community-development funds, exemplifies the application of building standards for water conservation in community contexts, improving quality of life and promoting sustainable sanitation practices. Across all facilities, Thaksin University monitors water consumption using digital Power BI dashboards for monthly performance tracking and continuous improvement. These initiatives demonstrate the

University's strong commitment to applying technical building standards that ensure safety, efficiency, and sustainability.



Supporting evidence:

Thaksin University Strategic Plan 2023-2027

- https://www.tsu.ac.th/home/files/%E0%B9%81%E0%B8%9C%E0%B8%99%E0%B8%81%E0%B8%A5%E0%B8%A2%E0%B8%B8%E0%B8%97%E0%B8%98%E0%B9%8C%E0%B8%A1%E0%B8%AB%E0%B8%B2%E0%B8%A7%E0%B8%B4%E0%B8%97%E0%B8%A2%E0%B8%B2%E0%B8%A5%E0%B8%B1%E0%B8%A2%E0%B8%97%E0%B8%B1%E0%B8%81%E0%B8%A9%E0%B8%B4%E0%B8%93_%E0%B8%A3%E0%B8%B0%E0%B8%A2%E0%B8%B05%E0%B8%9B%E0%B8%B5_2566-2570.pdf

TSU ICON in the process of construction until present

- https://www.tsu.ac.th/home/details.php?aNum=20240821100819&gid=2&id=3941

Premium Dormitory

- https://www.tsu.ac.th/home/details.php?id=5332

TSU Water Consumption Reporting System

- https://app.powerbi.com/view?r=eyJrIjoiMWFhNDI2N2QtZTUwMS00ZDNhLThmNDktNzE0ZWI0Y2FkN2M2IiwidCI6IjNkYTdmOTQ3LTY3NTAtNDYzMC04MDk2LWJiYTlmNzZlMjZhOCIsImMiOjEwfQ%3D%3D