

12

RESPONSIBLE CONSUMPTION AND PRODUCTION

Research

Using Domestic Timber to Develop Cross-Laminated Timber Buildings

In the past, Taiwan's architecture and urban environment were closely connected to the steel and cement industries, resulting in overly uniform construction and pavement materials. NYCU's "Domestic Timber CLT (cross-laminated timber) Building Development" project aims to address this problem, as well as the large volume of waste generated by urban renewal and even the large volume of CO2 emissions from construction projects. The project uses domestic CLT to create efficient and strong building structures. In addition to drastically cutting construction time and the amount of labor needed to complete a project, this technique also allows for the timber to be disassembled and reused, allowing building materials to be recycled in densely packed cities, providing an eco-friendly and highly efficient urban renewal option. Taiwan's tree farms will also be able to achieve a positive forest ecological cycle through the production and consumption of wood. Developing CLT building units can showcase the adaptability and strength of domestic timber for construction, and lead to a review of existing wood construction laws and create an emerging industry chain that integrates tree farms, techniques, and even innovative design. This can make Taiwan's forestry industry more visible on the global stage and raise awareness about sustainable building materials, thereby improving urban architectural environments.

Developing Innovative Energy-Saving Facade Units for Smart Green Buildings

To boost the recycling and reusing of resources, NYCU's "Innovative Energy-Saving Facade Units for Smart Green Buildings" used the concept of upcycling to develop more practical products with more diverse functions using recycled plastic materials, while developing value-added re-engineering projects and interdisciplinary collaborations for the industry.

Local Sustainable Actions at Sixth Fuel Factory

In the spirit of "small and slow," the NYCU Institute of Applied Arts' neighborhood outreach program created participatory sustainable lifestyle designs for the local community around the Sixth Fuel Factory site. The program included using recycled materials to build and operate a canteen, a community chicken coop, and a food scrap collection for chickens. The project also promoted slow food movement, inviting "Xiangshan Farmer's Market" to set up regular stalls, promoting eco-friendly pesticide-free farming, and sharing fresh seasonal produce and healthy homemade food products with locals. The project also celebrates military village cuisine, and it opened a community canteen; in addition, it regularly holds "Work together, Eat together" events, and other activities to build a community network and promote eco-friendly living at Sixth Fuel Factory. Through these "Small and Slow, Micro to Macro" sustainable actions, NYCU aims to achieve the vision of rejuvenating the history and landscape of the Sixth Fuel Factory.

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3153
Students who chose the Course Units

77
Course Units

Social Impact

Eco-Friendly Production and Consumption Cycle

"NYCU's Center of Industry Accelerator and Patent Strategy" (IAPS) is committed to creating an entrepreneurial ecosystem of transnational and cross-industry collaboration. "The IAPS" assisted the social enterprise Blueseeds, which was recognized by B Lab's "Best for the World 2021" list in the community category, to establish ESG mechanisms and the application and promotion of blockchain technology in agriculture to demonstrate corporate social responsibility, enhance its corporate image, and exert social influence. Blueseeds is committed to promoting natural farming, placemaking, and a profound organic lifestyle, using new business models to facilitate good production and consumption cycles.



Student Cultivation

Campus Environmental Protection, Plastic Reduction, and Beach Cleanups

The Yang-Ming Campus' Mentor Course Service Learning Program and the Chiao-Tung Campus' Service Learning Courses all feature activities that are closely connected to environmental protection issues. The Eco Designer Club launches various campus environmental protection activities, including campus plastic reduction campaigns, campus mountain cleanups, flea markets, reusable chopstick rental, and eco-friendly beeswax wrap DIY workshops every semester to advocate for reducing single-use items. The Club also organizes seminars on issues like recycling of leftover food on campus. Each semester, many students participate in beach cleanups and marine waste monitoring in Shimen and Nanliao. These activities, along with seminars held before the beach cleanups, provide proper information about beach cleaning and the marine environment, allowing students to take action and experience first-hand the impact marine waste has on the environment, thereby encouraging them to change their behaviors.

Stewardship

Gifting Duplicate Books to Create a Circular Knowledge Economy

"Protecting teachers and students' right to access educational and research resources" has always been part of the NYCU Library's mission of resource equality. Aside from actively collecting and archiving domestic and foreign academic resources,

the University also attracts donations of brand new or second-hand books from various institutions or members of the public. The library donates any duplicate copies of high-quality books to create a circular knowledge economy, and to make it easier for financially disadvantaged readers to expand their book collections. In addition to the library, NYCU campus book stores also sell used books on consignment, promoting respect for intellectual property rights and increasing the circulation of second-hand course books.

Shared Transport

To encourage the use of shared transport, NYCU has established four YouBike stations across the Chiao-tung Campus since 2017, making it the campus with the highest density of YouBike stations in Taiwan. Two car sharing stations have also been installed at the Yang-Ming Campus. Additionally, the University approved an unmanned electric scooter rental service trial program in 2020, setting up electric scooter bike and e-scooter sharing stations across campus. Promoting the use of shared transport not only saves energy and reduces carbon emissions, it can also encourage the use of public transport and change transportation habits.

57
Publications in SCOPUS

2.3%
Percentage of All Taiwan Publications

Green Consumption

The University practices green procurement, giving priority to recyclable, low-pollution, and resource-efficient products with environmental protection labels, as well as goods and services provided by disability welfare institutions, groups, and shelters to implement eco-friendly sustainable consumption. The University's green procurement ratio for designated projects has exceeded 96% for five consecutive years, even reaching 100% in 2020. In addition to procurement regulations, the University also organizes Earth Day green consumption campaigns to promote environmental protection labels and green consumption.