

Project Description of CUHK's YES Pavilion

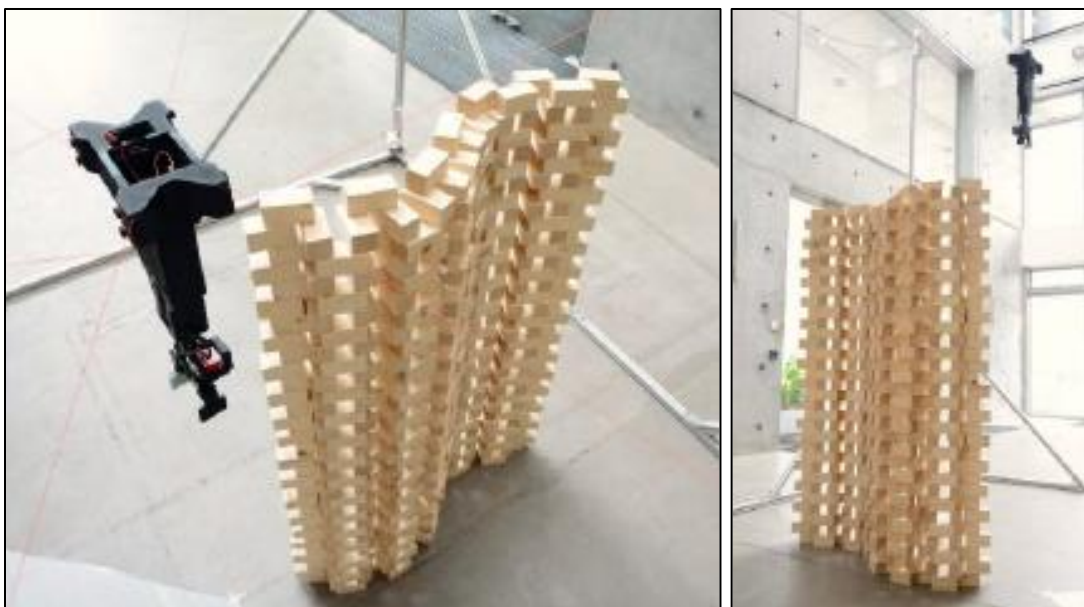
The Yard for Environmental Sustainability (YES), located on the CUHK main campus adjacent to Y. C. Liang Hall, is a free-cycling platform established in 2011 to encourage waste reduction and recycling on campus. In 2025, researchers from the **School of Architecture**, the **Department of Mechanical and Automation Engineering** and the **Centre of Robotic Construction and Architecture**, in collaboration with the **Social Responsibility and Sustainable Development Office**, have completed an exciting redevelopment of the popular yet ageing free-cycling facility, using innovative technologies and design solutions.



The new **YES Pavilion** is a design and construction project linking architecture, mechanical engineering automation, intelligence, structural engineering, industry contractors and environmental initiatives. It features a uniquely creative brick structure that helps the campus community to respond to multiple United Nations Sustainable Development Goals.



One highlight of this project is the application of computational design and robotics in the construction process. The innovative **CU-Brick cable-driven robotic system** precisely positions bricks at the correct location and orientation, enhancing efficiency in the construction of complex geometric structures. This is a new type of construction approach, with the YES Pavilion being **the first permanent real-world structure** with complex geometry to be constructed using the system. It marks the practical application of **intelligent construction technology at CUHK** and demonstrates the University's commitment to building a sustainable campus.



The project team has **partnered with local contractors and structural engineers** to facilitate the transition from laboratory prototypes to a full-scale construction project. This initiative is reshaping how architects and building contractors work – by rethinking the role of **data and computationally driven tools** to advance traditional construction techniques and explore new design possibilities for our future environments. The CU-Brick robotic system not only enables precise construction of complex structures but also operates effectively outdoors and in variable environments, bringing greater **flexibility and efficiency to the construction industry**. The team hopes to extend this technology to artistic architecture and complex structural projects, assisting architects in realising more **creative designs and preserving diverse architectural craftsmanship**.



The YES Pavilion is more than a new free-cycling platform on campus. It is a **prominent standing structure with enhanced aesthetics for students and staff to relax**, potentially becoming **a new campus landmark**. It will also serve as **a stop on the eco-tour** run by the CUHK Jockey Club Museum of Climate Change, promoting climate action in the University and the wider community.

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