# NEW ATLAS

### ARCHITECTURE

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# Asia's largest timber building an eco-friendly class act

**By Adam Williams** May 19, 2023





*Gaia is the latest innovative sustainable building to be constructed in Singapore's Nanyang Technological University* NTU Singapore

## **VIEW GALLERY - 7 IMAGES**

Work was recently completed on what's being hailed as the largest mass timber building in Asia. Designed by Pritzker Prize winner Toyo Ito & Associates, the project features impressive green design, including solar panels that produce more electricity than it needs.

#### Asia's largest timber building an eco-friendly class act

Gaia was created in collaboration with RSP and is located in Singapore's Nanyang Technological University, directly adjacent to Heatherwick Studio's Learning Hub and near to the Wave, which was also designed by Ito. It only reaches a height of six floors, but has a length of 220 m (721 ft) and a floorspace of 43,500 sq m (roughly 468,000 sq ft). To put that into perspective, the tallest timber tower, Mjøstårnet, reaches 18 floors.

The building takes the form of two slightly separated and gently curving rectangles joined at multiple points. Structurally, it consists mostly of sustainably sourced mass timber, which is made up of a roughly equal mixture of CLT (cross-laminated timber) and Glulam (glued laminated timber). However, like a lot of modern timber projects we've reported on, it also has some concrete reinforcement too. In this case the concrete was used for the staircase cores, toilets and ground floor slabs.



*Gaia was constructed using trees from sustainably managed forests, so new trees were planted to replace those that were harvested for the build* NTU Singapore

The building serves as home to the Nanyang Business School and contains a 170 seat auditorium, 12 lecture theaters, 13 seminar rooms, and classrooms. The interior design is attractive, with the natural wood left exposed. Generous glazing, including skylights, ensures that natural light permeates within. In a nice touch, some brick from a previous building that stood on the site has been used in the construction too.

Gaia has received Singapore's Green Mark Platinum (Zero Energy) green building award, which celebrates buildings that create as much or more energy than they require. Solar panels installed on the rooftop reportedly produce 516,000 kWh of power annually and its exterior sports shading fins at key points on its facade to reduce solar heat gain. It also has multiple open areas, terraces, and air wells to promote ventilation.

According to NTU, Gaia's energy efficient design means that it produces approximately 2,500 fewer tonnes (2,755 US tons) of CO2 per year compared to a standard building of its type and size.

Sources: Toyo Ito, NTU