StoraEnso

Partner of Stora Enso

URBAN

GAIA, Nanyang Technological University (NTU) Singapore, Singapore

GAIA throws a spotlight on what is possible to achieve with sustainable materials and innovative construction methods for their latest campus facility.

The six-storey landscaper is now the largest timber building in Asia. Understandably for such a large-scale project, the quality of the wood and trust of the partnership were top considerations in selecting Stora Enso to provide 7,700 m³ of sustainable Sylva™ CLT Walls, Floors and Roofs by Stora Enso's mill in Ybbs Austria.

The design brief was to create a world-class large-scale timber building which inspires the human senses and stimulates learning. This incredible timber structure invites you into a creative space for learning with it's exposed structural wood elements. At Nanyang Technological University (NTU), students are encouraged to spend significant portions of their syllabus interacting with professors, other students and industry partners. The design supports this learning model, with each of the 25 classrooms fully equipped with the latest technology to enhance the university's collaborative learning approach.

Sustainability

Shipping the PEFC-certified wood from Stora Enso Ybbs, Austria took 29 shipments in 230 containers from Sep 2019 and June 2021. This emitted 1,024 tonnes of greenhouse gases (wood is so light to transport, especially by sea). 5 845 tonnes of carbon dioxide (the leading cause of climate change) were removed from the atmosphere when the trees were growing and while stored in the building. More than all of the trees harvested to build Gaia have already been replanted in sustainably managed forests making Gaia a renewable building.

Moisture protection

All Sylva™ CLT Walls, Floors and Stairs were pre-CNC cut, to speed the construction time and precoated with insecticide coating. The coating successfully protected the wood during the construction phase from insects, termites, fungi, and basidiomycetes (brown and white rot) in humid and wet climate. And provided the additional benefit of added protection during transport, site storage and installation as materials arrived pre-treated and ready to install (without the risk of infestation while being stored or waiting for local labourers to apply treatments on-site).

At the mill, Stora Enso also added larch ply on both faces. The larch for the narrow edges was added in Singapore. Lifting plates were also installed in Singapore. All FINs were also pre-coated at the warehouse before installation.

Awards

NTU Gaia has received several architectural awards! Here are some notable ones:

Architizer A+ Awards 2024: Gaia won the Sustainable Institutional Building (Jury Winner) award.

Singapore Good Design (SG Mark) 2024: Gaia received the People’s Choice Awards 3rd Place.

Taiwan Golden Pin Design Award 2024: Gaia was recognized in the Architectural Design category.

Archello Awards 2024: Gaia was longlisted for the University Building of the Year.

BCA Project of the Year Finalist 2024: Gaia was a finalist for this award.

SIA Architectural Design Awards 2023: Gaia won the Institutional Projects (Educational and Community Buildings) award.

BCA Green Mark Award Platinum (Zero Energy) 2021: Gaia received this prestigious award for its sustainable design.

UNESCO's grand prize for architecture and design 2024

General

Delivery year

2022

Building type

Education

Area (m²)

42,000

Storeys

6

Units

460

Photo credit: Steeltech Industries PTE Ltd

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Products

Products and Services

Sylva™ CLT Floors and Roofs, Sylva™ CLT Walls, End Grain Sealer, Insecticide , Preinserted lifting devices

Product quality

INV/NVI and BVI (BVI including larch special surface on both sides).

Product volume (m³)

7,775

Photo credit: Steeltech Industries PTE Ltd

Team

Partner of Stora Enso

Eurban

Developer

Nanyang Technological University

Architect

Toyo Ito & Associates, RSP Architects Planners & Engineers (Pte) Ltd
RSP Architects Planners & Engineers (Pte) Ltd

Structural Engineer

Aurecon Group
Specialist Timber Engineer: CadMakers (since July 2020)

MEP Designer

Squire Mech Pte Ltd

Main contractor

Newcon Builders (Pte) Ltd
Timber Subcontractor: Steeltech Industries PTE Ltd

Photo credit: Steeltech Industries PTE Ltd

Others

Total construction development cost (€)

113,000,000