

**WIEHAG**



# TALL TIMBER *BY WIEHAG*

**THE HIGH-TECH, LOW-CARBON SOLUTION  
FOR MULTI-STOREY STRUCTURES**

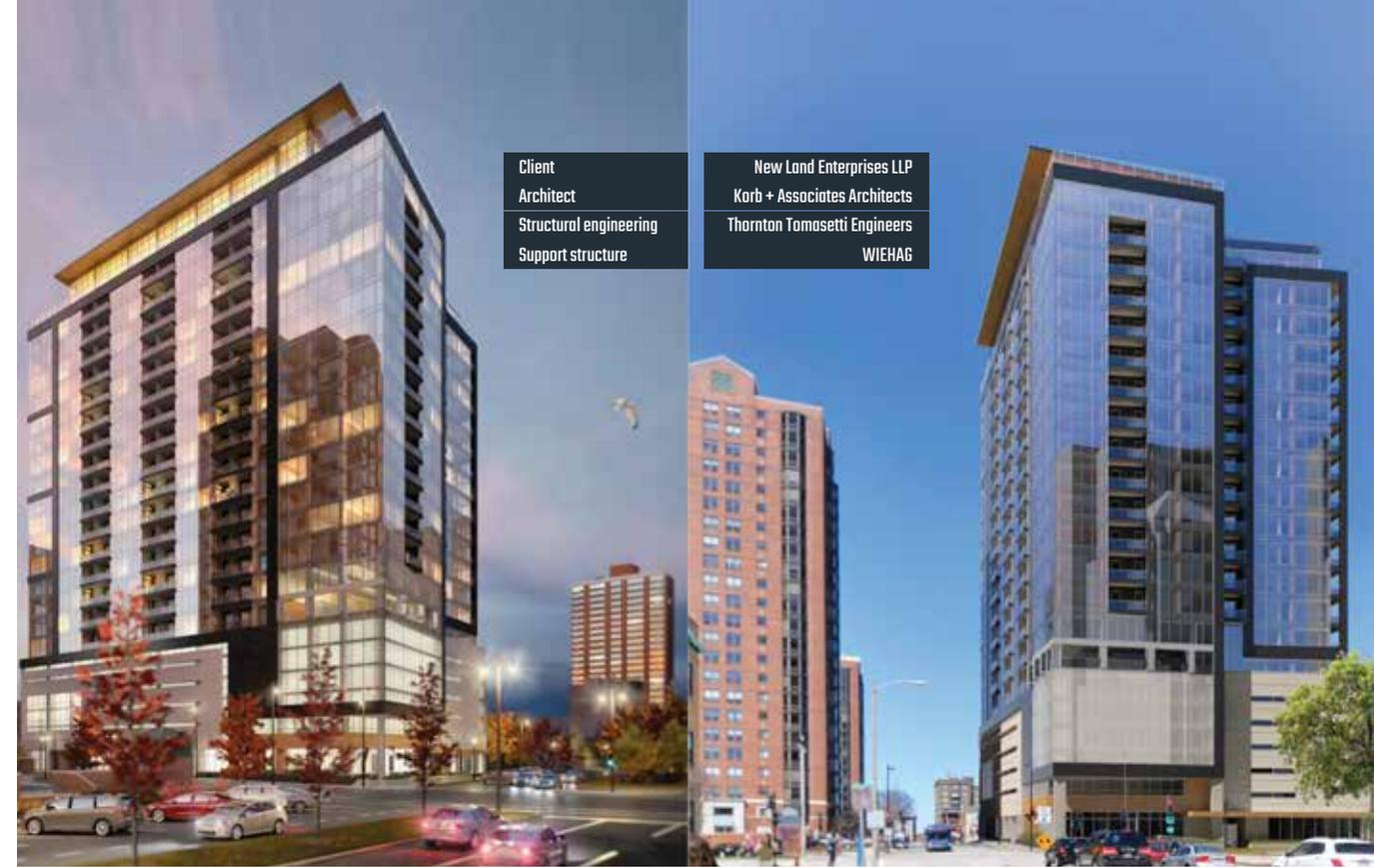
## MORE WOOD, LESS CO<sub>2</sub>.



Valentin Wiesner  
Erich Wiesner

When it comes to global climate targets, the industries in the built environment sector must recognise their responsibility and make a contribution. In light of the long time horizons in property development, a far-sighted approach with regard to planning and design decisions is vitally important. For the built environment, 2030 means now. Solid wood that originates from sustainable forests and can be reused circularly has been demonstrated to be one of the most effective options for reducing greenhouse gas emissions in the fields of real estate and construction. As one of the world's leading companies in solid wood construction and technology, WIEHAG is determined to play its part in reducing emissions from the building sector and helping shift the building industry towards a sustainable future.

As a project partner, we are a specialist in contributing our competencies and expertise to a collaborative planning process from start to finish. With our extensive experience, we can support architects and developers on their path to sustainable buildings by providing solid wood construction. With over 170 years of experience and continuous close cooperation with academic institutions, WIEHAG remains a pioneer and sets standards in returning wood to the building ecosystem.



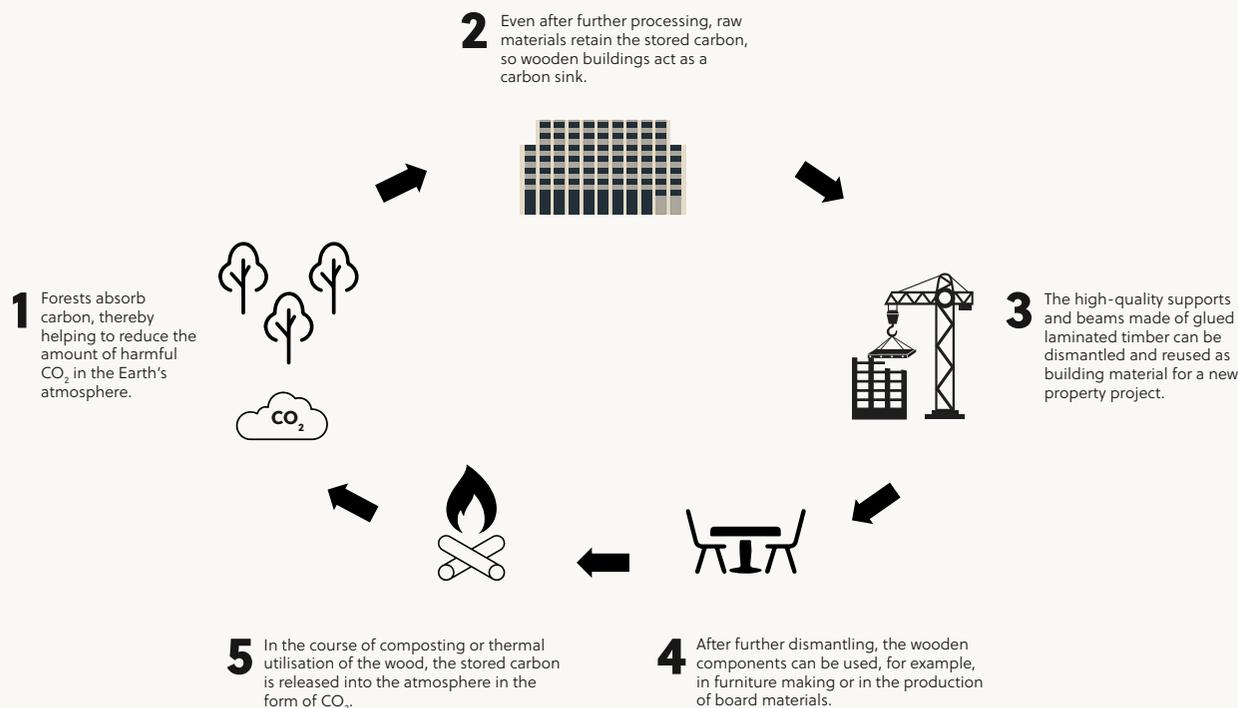
Client  
Architect  
Structural engineering  
Support structure

New Land Enterprises LLP  
Korb + Associates Architects  
Thornton Tomasetti Engineers  
WIEHAG

## ASCENT TOWER MILWAUKEE, USA

- With a height of 86.6 m, the Ascent Tower is currently the world's highest hybrid wooden building.
- Over the six parking decks made of concrete rise another 19 storeys in timber construction, which contain 259 apartments/units.
- WIEHAG manufactured around 2200 m<sup>3</sup> of glued laminated timber for supports and beams, supplying them as finished kits (including connectors and surface coating) to the construction site. This allowed the construction period to be shortened by approximately 25 %.
- Around 50 % of the timber support structure is visible.

### FROM TREE TO BUILDING AND BACK AGAIN...



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*Our global orientation, our many years of international experience in different projects and our great engineering expertise give us the competence to deal with different technical standards and guidelines at local level.*





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*First-class project planning is the key to success in timber construction. To ensure that our comprehensive expertise flows into the planning process as early as possible, it is essential for us to be involved from the outset.*



## OUR HOLISTIC APPROACH

### COLLABORATION FROM THE OUTSET

Timber construction is different and requires different approaches to planning and building than those employed previously. The ideal way to ensure quality and cost-effectiveness is to involve and integrate all project participants in the planning phase at a very early stage. The expertise and knowledge of a highly experienced timber construction company, such as WIEHAG, represent a decisive advantage.

### COMPREHENSIVE TECHNICAL SUPPORT

Be it investors, planners or general contractors: We offer our clients engineering consultation and engineering expertise of the highest standard. From concept design through to structural analysis. Only in this way can timely technical optimisations, detailed solutions suitable for timber construction and easy-to-assemble designs result in cost savings.

### CONCENTRATED IMPLEMENTATION SKILLS

Production, technology and project management under one roof: Everything is interlinked and coordinated. A constantly self-optimising system. This is the basis upon which we can implement large but also complex projects. Our in-house engineering office plays a crucial role here. It comprises more than 20 experts in structural analysis and design engineering. Use of various CAD programs enables successful application and further processing of existing data via various interfaces, including BIM.

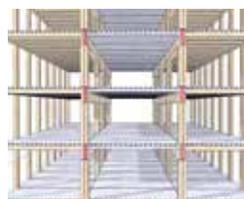
### SUSTAINABILITY – LOCALLY AND GLOBALLY

Decades of timber engineering experience, the numerous implemented projects and the collaboration with science and research give us the assurance and confidence to construct unique timber buildings, both locally and internationally. Now reinforced with concentrated ability in multi-storey timber construction. Our references show the way to the future of sustainable building.

## TIMBER PIONEER FRANKFURT, GERMANY

- The Timber Pioneer is the first office building with a hybrid wooden design in Frankfurt, at the heart of the European Quarter.
- Over eight storeys (15,000 m<sup>2</sup> total floor area), high ceilings, natural wood surfaces and flexible division of space create the ideal conditions for individual office concepts.
- Planned and built as a timber-frame structure with supports, joists and mounted double beams, upon which the bolted prefabricated concrete components are located.
- The high degree of prefabrication enabled an assembly rate of 1000 m<sup>2</sup> per week.
- In total, 2000 m<sup>3</sup> of wooden parts were installed.

Client	UBM Development & Paulus Immobilien
Support structure	WIEHAG
Architect	Eike Becker



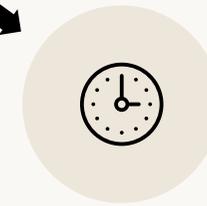
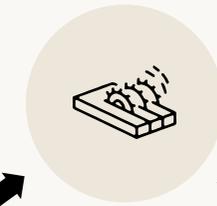


#### TECHNICAL PROCESSING

In-house structural engineering and 3D CAD, BIM interfaces

#### PRODUCTION & PREFABRICATION

One site for all parts



#### PROJECT MANAGEMENT

and site management on site

### WIEHAG BENEFITS

#### ASSEMBLY SUPPORT STRUCTURE & FAÇADE

Longstanding experience



#### LOGISTICS

Shipments & approvals

## TEAM 7 WELT RIED, AUSTRIA

- A pioneering timber office building project in Austria.
- The general contractor is WIEHAG. The services provided encompass technical consultation, the support structure, including engineering, and the entire building shell with flexible façade design.
- Four-storey timber construction in a skeletal design with solid wooden ceilings and slotted curtain façade; approximately 6200 m<sup>2</sup> of usable space.
- Rapid building progress thanks to high degree of prefabrication; the construction process was organised such that the façade could be constructed simultaneously, thereby protecting the building from moisture.
- The generously proportioned entrance area is spanned by two lattice girders with a length of 25 m.



*We take an all-embracing approach to timber construction and have organised our resources accordingly. To this end, support for the interfaces and integration with all other trades is a matter of course for us.*

Lattice girder with a span of 25 m for the entrance area



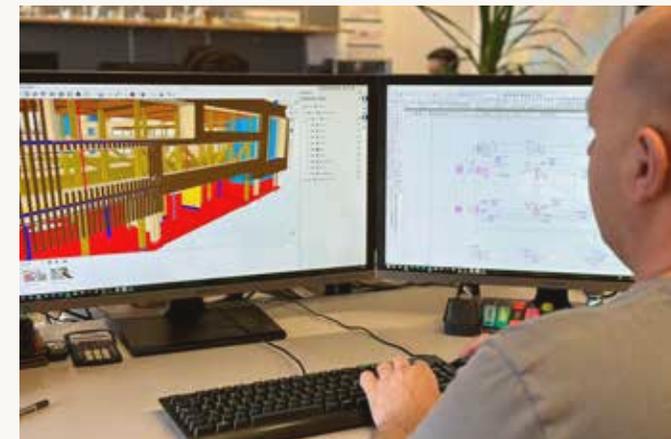
Client  
Architect  
Support structure and building shell

Team 7  
Matulik  
WIEHAG

## PROJECT MANAGEMENT

- Our core business is the project business. The WIEHAG organisation is founded on project implementation. All procedures and processes are described in a project management manual.
- At a very early stage, a project manager is appointed, who bears responsibility for the client as the main point of contact.
- All the trades involved work with our 3D model – from the architect to technical planners through to the contracted trades and the fitters on the construction site.
- We collaborate closely with subcontracted partner companies, many of which we have longstanding relationships with. Involving us at the design stage is beneficial for planning timber construction.

Organising and managing large construction sites are core strengths of WIEHAG project management.



# PRODUCTION OF GLT COMPOSITE PARTS FOR MULTI-STOREY TIMBER CONSTRUCTION

## CUSTOMISED PRODUCTION

One of WIEHAG's core capabilities is the production of composite parts from glued laminated timber. Components up to a depth of 2 m, a width of 1 m and a length of 50 m can be bonded using special press modules. A separate, completely mechanised line with planing and CNC machining has been installed to manufacture components for high-rise construction. Parts are transported carefully between the systems, in order to ensure high surface qualities.

## HIGHEST PRECISION LEVELS

The CNC system is designed to meet the specific requirements of multi-storey timber construction. This allows parts to be produced with highest levels of precision, which can scarcely be achieved by other materials. In a further step, add-on parts and fasteners are attached and, if necessary, a coating applied. The final step is packaging. Shipments by truck or container are planned precisely to ensure an efficient installation procedure on the construction site.

## CONSISTENT QUALITY ASSURANCE ALL ALONG THE VALUE-CREATION CHAIN

The entire process, from the blank lamella to the ready-bound component, is monitored by Quality Control and ensures the required standard at the highest level.

WIEHAG specialises in the production of block-glued components and composite parts for multi-storey timber construction. Joining takes place precisely on state-of-the-art CNC systems.



Client	Nanyang Technological University
Architect	Tayo Ito & RSP
Support structure	WIEHAG

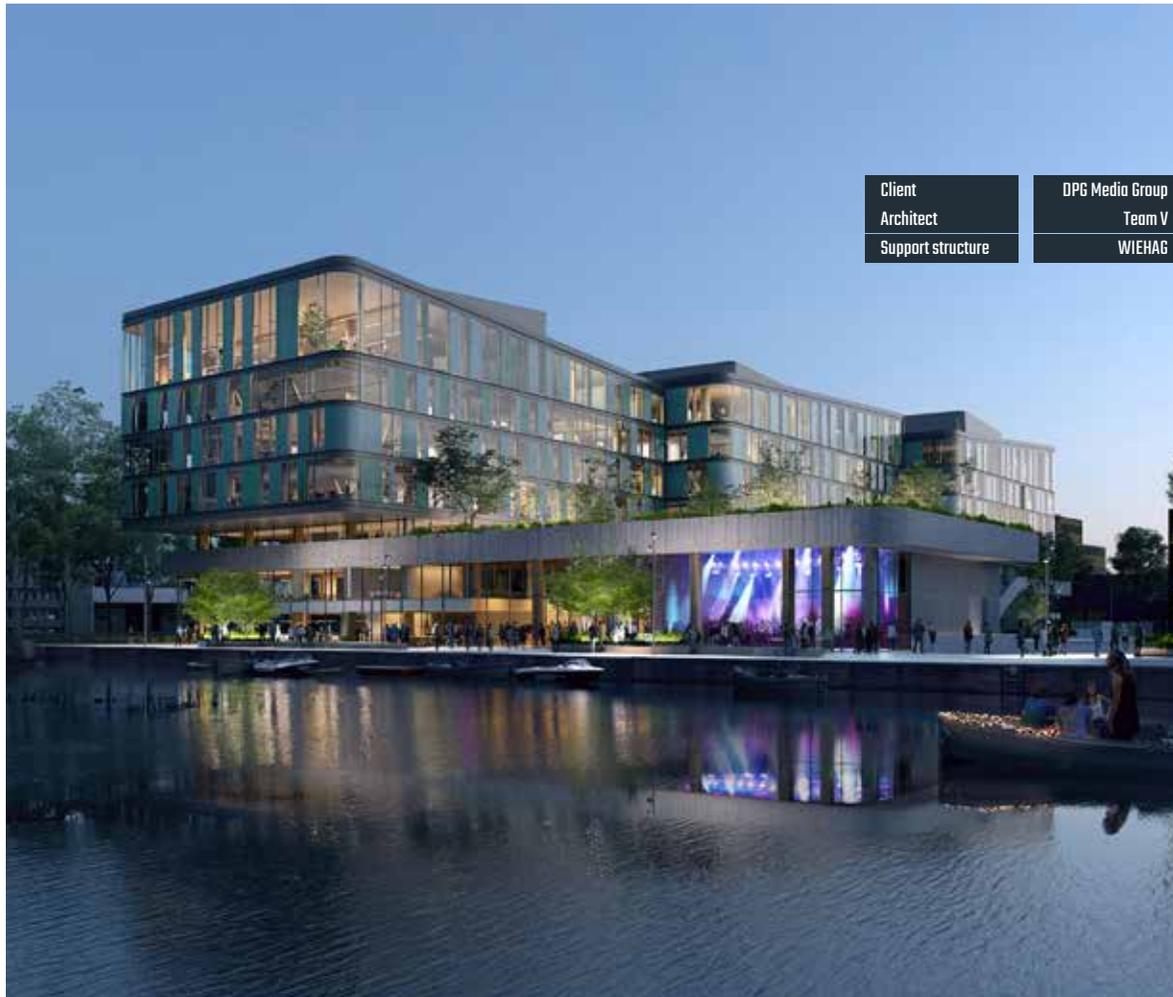
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*We built Asia's largest timber construction at the same time as the Ascent Tower, the world's tallest hybrid wooden building. WIEHAG's capacities are organised to implement multiple major projects simultaneously.*

## NANYANG TECHNOLOGICAL UNIVERSITY (NTU) SINGAPORE

- With the erection of a new faculty building in timber construction, the city state of Singapore has marked a milestone for the future of construction. The aim was to massively reduce CO<sub>2</sub> emissions.
- The faculty building for the Business School comprises six storeys and more than 40,000 m<sup>2</sup> of floor space. Around 6000 m<sup>3</sup> of glued laminated timber and 7000 m<sup>3</sup> of CLT were used here.
- The parts, 1900 supports and 1660 beams, were conditioned, finished, surface-treated and fitted with connecting parts at the plant. They were delivered to the construction site in shipping containers.





Client	DPG Media Group
Architect	Team V
Support structure	WIEHAG

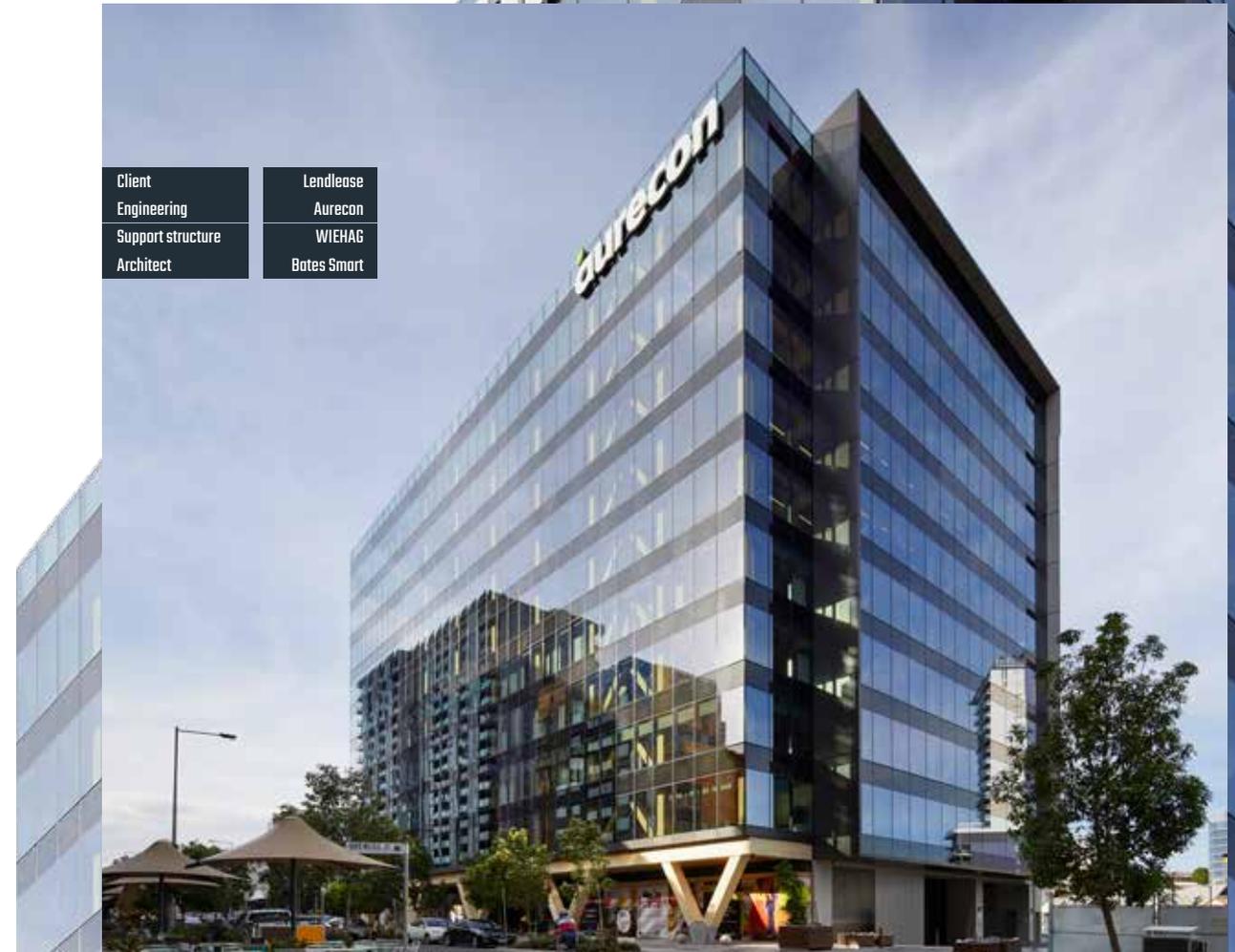
## DPG MEDIA GROUP AMSTERDAM, NETHERLANDS

- The new DPG Media office building in Amsterdam comprises seven storeys and more than 44,500 m<sup>2</sup> of floor space.
- The total of approx. 1050 supports and beams were conditioned, finished, surface-treated and fitted with fasteners at the WIEHAG plant, then transported by truck to the construction site.
- All the supports and beams are large (double and triple) block-bonded components.
- A total of 25,500 m<sup>2</sup> of CLT boards were collected from Stora Enso in Ybbs, surface treated at the WIEHAG plant, then transported by truck to the construction site.
- The CLT boards were factory fixed to the GLT beams in sections at the plant so that they could withstand the high façade loads.



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*General contractors and construction companies need experienced, reliable partners for timber engineering. For DPG, we took charge of designing, manufacturing and installing the entire timber package – glued laminated timber and CLT.*



Client	Lendlease
Engineering	Aurecon
Support structure	WIEHAG
Architect	Bates Smart

## 25 KING BRISBANE, AUSTRALIA

- With a height of 46.8 m (nine storeys), 25 King is Australia's tallest office building made of wood.
- It is a modular building based on a grid of GLT columns and beams.
- The project was implemented successfully with the WIEHAG Glulam Kit: production drawings, production of the glued laminated timber trusses, GLT beams, GLT supports, GLT hybrid beams with beech LVL and GLT hybrid beams with Accoya, production of the custom-made steel connecting parts, production and pre-assembly of the steel connecting parts.
- 1400 m<sup>3</sup> of GLT was installed in 1240 individual parts.



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*Our international logistics experience is a key factor in the success of our projects. Based on comprehensive 3D planning, we optimise container transport and coordinate delivery with the installation team on site.*

**WIEHAG**

FOR THE BUILT ENVIRONMENT,  
**2030 MEANS NOW.**



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**SCAN ME**