

leading timber engineering

SUSTAINABLE ARCHITECTURAL PROJECTS IN TIMBER

SPREAD YOUR IDEAS

WiEHAG
TIMBER CONSTRUCTION



Architecture
design & timber
engineering

Aesthetics &
efficiency in
perfect harmony

Dear Architects, Clients and Engineers

We love timber. With our pioneering spirit in engineering, we are expanding the horizons of this material and inspiring Architects, Contractors and Investors for a sustainable future. WIEHAG has built its reputation as a leader in exceptionally complex and high profile architectural projects throughout Europe. Renowned Architects and Engineers value our competence and skill.

Why is that?

Spread your ideas: At WIEHAG, creative ideas in design and architecture meet with implementation-oriented solutions and approaches in engineering and construction. Building on our experience and expertise, we show imagination and foresight, while never neglecting economic efficiency and required functionality. This defines our approach to exceptional projects.

Technology and Safety: WIEHAG combines structural engineering, design, and state-of-the-art production technology all under one roof. Using a holistic approach everything is coordinated & closely monitored, which creates the quality and safety that Contractors and Clients value.

Sustainability: Society is increasingly demanding that our actions follow sustainable paths and timber construction contributes positively towards this goal, because timber is a renewable raw material that helps to substantially save energy and reduce CO₂ emissions.

Anyone who has ever built with wood understands these outstanding properties.

Our built landscape is an investment, which over time shapes our culture and future generations, so we bear a great responsibility to positively impact both. We welcome the opportunity to advise and assist you in the realisation and delivery of your project.



Dr. Erich Wiesner, Owner and Managing Director

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Explore the
possibilities

Leading
Timber
Engineering

Redefining Architecture

We have made a name for ourselves internationally as Europe's leading specialist for load-bearing systems and complete roof structures using glue laminated timber. We have been a family-owned business since 1849 with over 170 years of experience in timber engineering and an export quota of over 70 percent.

Timber at its Peak

Aesthetics, functionality as well as economic profitability, all help make modern timber engineering more competitive than ever. Wood has a high strength to weight ratio and the advancement of joining technology, digital design, CNC manufacturing & installation methods has all contributed to an unprecedented level of efficient construction.

Optimized Complete Solutions

More design ideas can now be realised as enormous creative potential gains traction in numerous major international projects. This is showcased in timber structures built in a variety of sectors including stadiums, sports and leisure centres, conference and airport halls, railway stations and shopping malls, as well as multi-storey office buildings, towers and bridges.

"We play a decisive role in the international market with our proprietary design and manufacturing technology innovations, which include patented steel connectors for standard and customized applications."

Dr. Erich Wiesner, WIEHAG Owner & Managing Director





Crossrail Place

Canary Wharf, London, UK
Architect: Foster + Partners,
London

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Symbol of Innovative Architectural Art

Conceived as an iconic, grid shell timber structure over a stunning park in the heart of London's second financial district, Crossrail Place sits 7 storeys above the new Canary Wharf Crossrail Station as a state-of-the-art engineering masterpiece. An outstanding symbol of sustainability in the urban landscape, it is the largest engineered timber construction to date in the United Kingdom. Totally surrounded by water amongst the glass & steel skyscrapers, this 300 metre long structure unfolds in the form of a majestic ship. The architectural design comes from world-renowned Architects Foster + Partners.



"Our aspiration was to create a high quality eye-catcher in the centre of a world metropolis. Our Architects Ben Scott and Jonathan Rabagliati were responsible for the architectural planning. They developed nine different models, however all of them shared the wooden lattice structure."

Lord Norman Foster

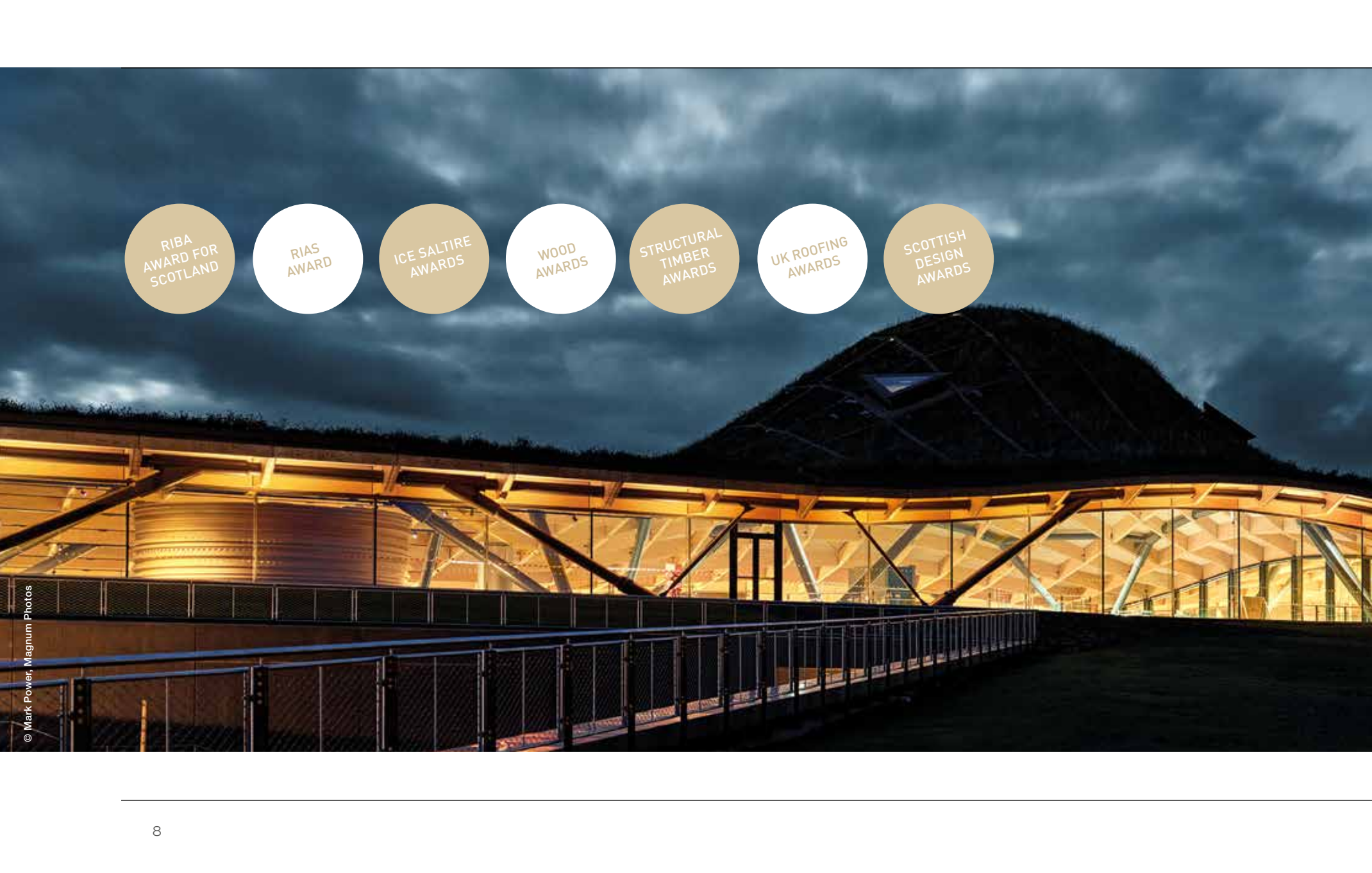
1,000 m³ of PEFC-certified timber were processed into 1,414 timber beams in WIEHAG's state-of-the-art CNC production plant. The complicated logistics included WIEHAG constructing temporary floating timber pontoons to enable installation of the package.

The stunning design of the grid shell roof includes double curved Glulam beams & cantilevers out 30 metres above the waters of the North Dock of the river Thames.

The seven-storey rail station boasts 9,000m² of commercial and retail space, which include cafes, restaurants, theatres, and a shopping mall capped by a landscaped park on the uppermost level – all of which provide for an attractive and bustling atmosphere.

The exceptional finished product is the culmination of precise structural modelling, state-of-the-art CNC production, and high levels of quality control throughout each stage.





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An Outstanding Roof Construction for an exceptional Scottish Whisky





One of the Most Complex Roof Structures in the World

"Following the natural topography of the gentle hilly landscape of the rugged North, we embedded the distillery in the form of five adjacent domes into the landscape."

Graham Stirk, Senior Partner, Rogers Stirk, Harbor + Partners



The Macallan Whisky Distillery

Speyside, Scotland, UK
Architect: Rogers Stirk Harbour + Partners, London

The Macallan – Considered by many the Rolls Royce among whisky brands. The Macallan Whisky Distillery in the Speyside region of Scotland brings together the expertise of Architects Rogers Stirk Harbor + Partners, Engineers ARUPs, Main Contractors Robertson, the beauty of the rolling hills of Scotland and a striking dome roof construction. The state-of-the-art distillery and visitor centre are housed under the five undulating domes covered with grass and meadow flowers. The project was completed in three and a half years.

As a full-service provider, WIEHAG carried out the detailed design, production, logistics, and installation of the huge 12,300 m² roof, which stretches over a length of 207 metres and consisted of 1,798 single beams, 2,447 roof elements and 380,000 individual components. The exceptionally complex installation was executed using a number of innovative methods including WIEHAG using massive temporary props made of block-laminated glulam. Natural materials such as wood, stone, and meadow flowers for the green roof were favoured throughout, and furthermore, the Macallan Distillery was built using low-energy construction and with sustainable water management.



Architectural Visions of Wood with Free Form Timber Construction

Bread Museum 'Paneum'

Asten, Austria
Architect: Coop Himmelb(l)au, Vienna

The striking freeform shape is made possible by a self-supporting cross-laminated timber (CLT) construction using elements that were prefabricated to a very high tolerance in WIEHAG's state-of-the-art CNC production facility. In addition to the stunning aesthetics, this type of construction also provides an impressive load-bearing capacity, durability, energy efficiency, and short installation times amongst its advantages.



"Wood creates a special atmosphere in the interior. We specifically rejected smooth surfaces in favour of showcasing the complex forms that are feasible in wood."

Wolf D. Prix, Architect

Timber constructions are the future, whether in urban spaces marked by high-rise construction, in logistics halls or in spectacular architectural landmarks. An impressive example of wood's aesthetic and structural possibilities can be found in the 'Paneum' in Asten, Upper Austria. The futuristic bread museum of baking powder giant, Backaldrin, is constructed in cross-laminated timber and was the vision of Architect Wolf D. Prix of Coop Himmelb(l)au. WIEHAG acted as general contractor and also provided its expertise for the structural engineering and construction.



5 KING

Brisbane, Australia
Architect: Bates Smart

"5 King is the latest example of high-performance workplaces setting new benchmarks in environmentally sustainable building practices."





25 King Street Timber Office Tower

WIEHAG delivered the WIEHAG Glulam Kit for this project:

- the shop drawings, manufacture of glulam beams, glulam columns, glulam bracings, glulam hybrid beams with Beech LVL and glulam hybrid beams with Acwcoya.
- manufacture of bespoke steel connectors
- factory assembling of all steel connectors (bespoke and system connectors) to ensure a safe and quick installation on site as there are only steel to steel connections.

All was shipped by 40' containers where WIEHAG did the fully detailed 3D container load plans to maximize the volume of glulam per container. To make loading and unloading of the container as practical and safe as possible we placed the whole timber kit on a timber slide. We produced 1240 single pieces which are a total 1367 m³ of glulam and fitted into 48 containers.



The Import Building

East India Docks, London, UK
Architect: Studio RHE, London



An engineered timber atrium at the heart of a London office building

The solid timber atrium within an existing 10 storey office building is constructed using Glulam & cross-laminated timber (CLT) and is a model of sustainability, quality and efficiency in timber engineering. WIEHAG's package was for detailed engineering, production, logistics and installation, and included a design that offered 90 minutes fire resistance.

The challenge was to install the engineered timber elements through a very narrow entrance and was further complicated by full scaffolding and the building remaining in use throughout the refurbishment. To meet these particular demands, the smallest possible timber members were prefabricated in WIEHAG's high-tech manufacturing plant in Austria. WIEHAG once again sets new standards in timber quality, cost efficiency and in the realization of architectural requirements. The Architects Studio RHE have transformed the Import Building into a modern, light-flooded atrium in engineered timber construction, with overhanging balconies for offices, cafes and bars.

Scope:

- Glulam columns and beams
- CLT – walls, -floors, -roof elements and -steps

Fire protection: Fire resistance class R 90

Timber: Spruce painted in light oak



Swimming Pool Freemen's School

Surrey, Great Britain
Architect: Hawkins\Brown

"Freemen's School's new swimming pool is a welcoming retreat that engages with the mature woodland setting through the use of natural materials and colour schemes."

Adam Cossey, a partner at Hawkins\Brown

Hawkins\Brown chose materials and construction methods to complement the building's natural setting. The primary structure is a portal frame constructed from glue-laminated timber and CLT roof and wall slabs.





Located at the City of London Freeman's School in Ashted, the swimming pool building boasts an exposed timber frame that incorporates windows looking out onto the surrounding woodland.



The design when first viewed appears simple but quickly the complexity becomes apparent – the offset ridge forms an interesting mixture of angles & shapes which perfectly suit the high tolerance engineered timber products WIEHAG used to form this structure.

Whilst WIEHAG did not supply the steel structure over the event space they worked with the design team and steel fabricator to ensure all interfaces between the steel and the timber were taken care of, and WIEHAGs package included nearly 5 Tonnes of steel connectors which as well as being galvanised were C4 coated when exposed.

WIEHAGs program for their works was 8 weeks design, 7 weeks production (incl shipping) & less than 3 weeks installation on site.

125m³ of Spruce Glulam forming 12 full portals and 9 half portal frames, each with a different offset ridge to create the striking building shape.

1,800m² of Spruce CLT forming walls & roof, including CLT roof slabs over the steel frame to the event space.

The benches along the sides of the pool are also in CLT are help complete the neat lines of the internal structure.





"A milestone of sustainable architecture"

Helmut Poppe, POPPE*PREHAL Architects

iLogistics Center

Fischamend, Austria
Architect: POPPE*PREHAL, Steyr

- 4.200 m³ timber
- 20m high
- 110m wide
- 194m long
- Storage space: 10.610 m²
- Construction Time: 365 days

The newly opened iLogistics Center of the Cargo-partner Group is situated near Vienna and contains 11.600m² of multi use warehouse space

A total of 4,200 m³ of wood were used in the construction. The wood-based implementation allows a cost-effective temperature control between 15 ° C and 26 ° C (+/- 2 ° C), a constant humidity of up to 70 percent, low operating costs and significant savings in CO₂ emissions.



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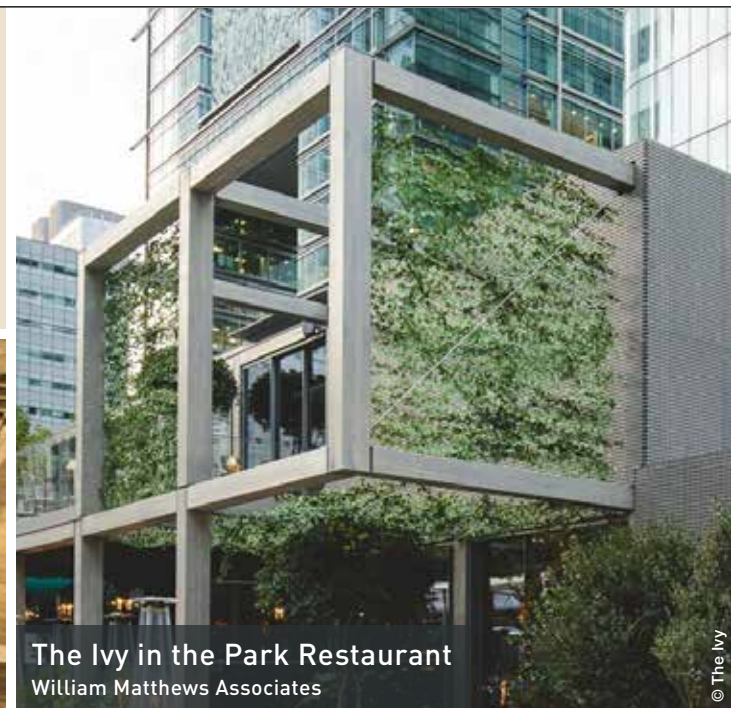


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Abbey Wood Crossrail Station
Fereday Pollard



The Ivy in the Park Restaurant
William Matthews Associates



Center Parcs Longford Forest
Holder Mathias architects



Ice Park Eilat
Feigin Architects



Gibson Hotel, Dublin
Scott Tallon Walker

© Donal Murphy



St George's College Activity Centre
Scott Brownrigg

© Scott Brownrigg

WOOD - FLAWLESSLY ECOLOGICAL

At WIEHAG, we attach great importance to the sustainability of the entire value-added chain from the forest to the final product. We are committed to sustainable management practices including forestry management, manufacturing processes, and logistics.

The FSC® and PEFC™ seal of approval confirm our dedication to environmentally friendly policies and procedures, which we hold in equal regard to our achievements in architecture and innovation.



ref eren ces

CROSSRAIL PLACE, CANARY WHARF, LONDON, UK | MACALLAN WHISKY DISTILLERY, SPEYSIDE, SCOTLAND, UK | THE IMPORT BUILDING, EAST INDIA DOCKS, LONDON, UK | BREAD MUSEUM 'PANEUM', ASTEN, AUSTRIA | CARGO PARTNER, FISCHAMEND, AUSTRIA | SWIMMING POOL AND TEACHING AREA, FREEMEN'S SCHOOL, ASHTEAD, UK | ABBEY WOOD CROSSRAIL STATION, LONDON, UK | SUBTROPICAL SWIMMING PARADISE, CENTER PARCS, BALLYMAHON, REPUBLIC OF IRELAND

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