The unique residential building Bridport House represents green urban architecture of the future. It marks the first time that cross-laminated timber (CLT) has been chosen in the UK for an entire multi-storey structure, including the ground floor, which is traditionally constructed from concrete. Commissioned by the London Borough of Hackney and designed by Karakusevic Carson Architects, Bridport House offers altogether 41 maisonettes and apartments. It is considered one of the tallest residential timber structures in the world. The groundbreaking building with its innovative design replaces an old block of flats built in the 1950s.

The environmental advantage of using timber as a main construction material is that it stores carbon dioxide from the atmosphere as the wood grows. Construction with timber is the most sustainable way of building. It significantly reduces the global amount of CO₂.

According to the calculations for Bridport House, each apartment contains 30-40 m³ of timber, which is equivalent to more than 30 tonnes of CO₂. In addition, the wood used by Stora Enso Building and Living always comes from sustainable sources. It is PEFC certified, which is one of the two main internationally recognised certification schemes.

- Building type: Multi-storey residential building with 41 units
- Location: Bridport Place, Hackney, London
- Owner: London Borough of Hackney
- Architect: Karakusevic Carson Architects
- Main Contractor: Willmott Dixon ltd
- Wood construction and assembly: EURBAN ltd
- Quantity of CLT: 1,100 CLT boards, about 1,576 m³, 30 deliveries
- Construction time: 12 weeks, from October to November 2010
The wood-framed Bridport House, located in Hackney, London, is orientated east-west, with all apartments benefiting from morning or evening sun. Family units with private entrances are located on the ground floor. The upper floors provide a range of 1-3 bedroom apartments. All apartments are well lit with natural daylight thanks to large windows.

Generous balconies with excellent daylight are provided in all 33 apartments located on the upper floors. All of the ground-floor family apartments have private patio gardens. The key objective of the design team was to achieve a practical and economical layout using the flexible CLT building system, which presents no limitations to the architecture, design or style of a building. CLT boards were prefabricated according to the architect’s designs.

In Bridport House, solid timber is successfully combined with other building materials such as brick, aluminium and copper, which were used in the architectural details.

The main contractor, Willmott Dixon, consider CLT an ideal solution to the very specific issue of weight. “The large Victorian sewer running beneath the site of Bridport House made it unsuitable for a traditional and heavy concrete frame structure,” explains Terry Waite, Site Manager, Willmott Dixon.

Waite also highlights that cross-laminated timber from Stora Enso offers many additional advantages apart from its light weight, air-tightness, acoustics and minimal assembly time. Because of CLT’s dimensional stability, the material was also used to form the lift shaft instead of steel or concrete. Safeness and fire performance are additional benefits. The frame structure is long-lasting and would be suitable also for earthquake zones due to its strength. The massive wood creates a healthy indoor climate since solid wood regulates room air humidity to the optimal level for health. “Cross-laminated timber is a massive timber material that does not bear extra risk in the case of fire. The outer parts would char, protecting the bulk of the material and bringing no danger of structural collapse,” Waite comments.

The short, only 12 weeks’ assembly time on the site was possible due to the prefabricated CLT boards, which are simple and accurate to put together. EURBAN estimates that the assembly time is half that of conventional reinforced concrete. According to EURBAN’s professionals, CLT is an attractive and competitive alternative to concrete or steel. Even 10+ storeys are possible with the flexible material. When building with timber, the process is less likely to be interrupted in bad weather conditions, such as temperatures below zero. Because construction was faster, the disruption the site caused to the neighbours was also reduced.

“Using environmental materials we were able to meet the sustainability objectives and in the end real construction costs remained under budget.”

London Borough of Hackney

“CLT offers total freedom to design architecture that will stand the test of time.”

Karakusevic Carson Architects

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