

# Island Life

**BLAKER ISLAND – A SMALL MAN-MADE ISLAND HOUSING A WORKING LOCK ON THE BOW BACK RIVERS AT STRATFORD – HAS BEEN TRANSFORMED INTO A NEW, ENERGY EFFICIENT, RESIDENTIAL DEVELOPMENT DESIGNED AND DELIVERED BY ARCHITECT AND DEVELOPER ROBERTS & TREGUER USING STORA ENSO CROSS LAMINATED TIMBER (CLT).**



The new development provides seven spacious, modern homes with private outside space and views over the Olympic Park and surrounding waterways. The scheme, which is built using Stora Enso PEFC-certified CLT, comprises a five storey apartment block known as The Warehouse, and Howard's House – two semi-detached town houses, built either side of a listed and refurbished 1930's lock keepers house.

Roberts and Treguer's design concept for Blaker Island has been driven by a desire to provide high quality, low energy homes whilst preserving the history of the area. The project team carried out extensive research into the development of the lock keeper's island and Bow Back Rivers from 1755 through the 2012 Olympics up to the present day and this story is reflected by the new homes and the scheme's varied streetscape.

Inspiration for The Warehouse is taken from the local vernacular of traditional warehouses to be found on the rivers and canals of Stratford. The building is very generously proportioned with just one three-bedroom apartment on each of the ground, first and second floors and two two-bedroom penthouses on the third and fourth floors. The design for Howard's House is based on the original home of 19th Century chemist and amateur meteorologist Luke Howard which was originally situated on the island, but demolished in 1934. Howard is known as the 'Namer of Clouds' for having developed the nomenclature system for cloud classification which is still used today. Though having the external appearance of one single house, Howard's House is comprised of two spacious three bedroom homes.

Airtightness details for both new buildings are designed to 0.6 ACH and using CLT for the superstructures has helped to achieve this. Windows are triple glazed and junction detailing between window and CLT wall panels has been carefully considered. Energy efficiency is further improved by a compact unit in each dwelling which combines mechanical ventilation heat recovery (MVHR) with an air-source heat pump to provide ventilation, heating and hot water. It is estimated that over a 60-year period a typical dwelling will save 192 tonnes of CO<sub>2</sub> compared with a typical UK home.

Weight was also a key consideration in the specification of CLT. "We were going to be adding a lot of weight to an existing structure and this was a key factor in the material specification," explains Bachir Nebia, Contracts Manager at Roberts & Treguer. "The island has river walls all



around it which are owned by the Canal Trust and we carefully considered the potential impact on them of increased weight.

“CLT is a more lightweight structural material than traditional construction materials and this enabled the project team to reduce the weight of the superstructure while still creating spacious, sustainable and energy efficient homes. We worked closely with G-frame Structures and timber engineer Furness Partnership on the detail design and the G-frame team developed quick and efficient solutions for the crane and installation strategy.”

“Because the site is a man-made island surrounded by water on all sides, other more traditional methods of construction were less feasible,” adds Lee Murphy, Managing Director of G-frame Structures. “In terms of overcoming such complex site constraints, CLT provided the perfect solution because it is lightweight, fast and efficient. The installation strategy we developed involved the erection of a 100 tonne mobile crane adjacent to the site which we used to lift in a self-erecting IGO50 mini tower crane to the island. This enabled the G-frame team to

safely, quickly and efficiently install Howard’s House and the Warehouse apartments in just six weeks.”

These factors were key considerations for the structural design and CLT panels were specified to be liftable by the IGO50 mini crane. Brick slip cladding further contributed to achieving a lighter overall weight for the buildings as well as allowing for walls to be formed from the CLT wall panel, insulation and cladding without dramatically increasing thickness.

Sound separation at The Warehouse was achieved by the use of double-layer CLT walls around the full height central core which houses the lift shaft and staircase. The two walls are separated by only a 90mm space and to overcome the inaccessible nature of this element of construction, G-frame Structures used discreet connections which also contributed to the overall internal aesthetic of the building.

Internally, CLT has been left exposed throughout both buildings, a design decision embraced by buyers of the new homes who each made an offer on first viewing. “Buyers love to see and feel the wood and

we found that they have a very positive attitude to timber as a construction material,” says Bachir. “One of the key parts of decision making when buying a home is the need for a comfortable, healthy living environment which are the same qualities usually associated with wood. For an architect, CLT retains the sensory qualities of wood while enabling new forms, applications, and expressions in timber architecture – an architecture of continuity, simplicity, and precision.”

“CLT is a very versatile material suitable for use across a wide range of applications and offers a great deal of scope for creative design and architecture,” says Gareth Mason, Business Development Manager at Stora Enso. “Blaker Island demonstrates the way in which building with CLT can overcome challenging conditions and blend into a historically sensitive setting, whilst achieving a highly contemporary internal aesthetic.”

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**IMAGES:**

01-04. The Blaker Island scheme is on an unusual site and has been driven by a desire to provide high quality, low energy homes whilst preserving the history of the area. Courtesy Roberts & Treguer