

# WORKING ON WATER

**SOLID TIMBER FRAME** specialist EmanuelHendry Ltd has faced some technical challenges since coming on the scene in late 2007. But until its latest project, the construction site rising and falling 7m a day and the risk of workers developing a sailor's roll were not among them.

The Douglas fir-framed pier house the company was commissioned to help engineer, prefabricate and erect sits on a steel pontoon on the Thames in Wapping.

"A floating building site did make life interesting," said Jasper Emanuel. "The tidal movement is so great on the Thames that sometimes we were sitting on the silt giving a solid foundation, while at high tide we were level with the quay and moving with the flow of the water. When you stepped back on shore you felt you were still afloat."

The 19.5x7.3m structure is designed to form a social hub for Hermitage

A new solid Douglas fir framed building at Tower Bridge in London is literally on the river. Mike Jeffree reports

Community Mooring, a group of 18 restored historic boats, some of which have been converted into homes by their owners. And it's the brainchild of Anna Versteeg of Ivanov Versteeg Architecture, who lives in one of the vessels.

"As we're a co-operative and a charity, the pier house also had to be of use to the wider community," she said. "So as well as common services for the boat owners, it's a classroom space for local students to come and study the Thames and its history. All this helped shape the design; it had to be right aesthetically and as green as possible. Weight was obviously also very important. For all these reasons we went for a timber frame."



Left: the pier house at high tide. The pontoon rises and falls with the Thames 7m a day



Above: a Howe truss runs the length of the building. The entire frame is in west country Douglas fir from Pennymoor Timber of Tiverton

Initially Versteeg approached off-the-peg timber building suppliers, but that didn't work out and the commission for the frame eventually came Devon-based EmanuelHendry's way via slightly off-centre word of mouth.

"The contact was via an architect we work with whose brother is a boatbuilder!" said Emanuel.

While some timber framers might have indulged in sharp intakes of breath when they realised the technical and logistical issues the project involved, for EmanuelHendry they were part of the attraction. It's precisely the sort of off-beam structure it was created to take on; "using traditional timber frame methods, but in off-beam applications or with a modern twist".

The company was set up by Emanuel with his brother, Oscar, and Joel Hendry.

"We came from different directions, which is why we can take on a range of projects," said Emanuel. "I came to timber frame via a carpentry apprenticeship and years in construction, Joel's background is green oak frame and Oscar worked for North American timber builders, so his experience is big building and big timber."

To date EmanuelHendry's work has included private homes, among them a full-blown "ecohouse", and restoration, such as putting a new oak framed roof on a Devon longhouse. It has also developed a reputation for shelters for schools, hospitals and private customers.

A running theme through all projects are strong eco credentials and traditional woodworking technique;

mortice and tenon joints and pegging throughout. At the same time, stressed Emmanuel, the company is not "just knocking out medieval-style house frames".

"We're applying traditional techniques in new ways and to modern design," said Emanuel, before adding, "although we can do medieval-style frames if wanted!"

The pier house exemplifies this new twist on old techniques approach. The building, which will house a laundry room, bike storage and office, as well as the classroom space, is single storey with a shallow pitch roof. The Douglas fir frame comprises 150x150mm vertical posts, 200x150mm wall plates and 175x75mm common rafters, with the 150x125mm sill plate in oak.

The design departure for EmanuelHendry was the use of a Howe truss for the ridge. Commonly found in bridges, this comprises horizontal top and bottom cords running the length of the building linked with a zigzag of vertical and diagonal pieces.

"The client wanted the structure visible on the interior right up to the roof," said Emanuel. "That meant avoiding too many tie beams and collars to give a clean appearance. With the engineers Price and Myers we decided the Howe truss was the solution. The vertical timbers in it are in tension and the diagonal in compression, so what you get is more strength for less wood."

Adding to the interest of the project, the 14m<sup>3</sup> of Douglas fir frame had to be delivered to the quayside on hand-pushed trolleys and time was tight. From drawing to delivery the frame took two months. It was prefabricated in three weeks and erected in two to three days.

The building will be finished with a boxed tin roof, while the walls will comprise vertical larch cladding on counter battens over a breather membrane and board, insulation, with an interior skin of plasterboard. And it will score extra eco points with a water source heat pump.

"Depending on funding, we are also thinking about putting wind turbines on the mooring piles," said Versteeg, "and we're talking about using a tidal power generating system. The lack of current at low tide is a problem with this, but we haven't given up on it."

Green is also the colour of another project EmanuelHendry has gone on to since the pier house. The Blau shelter, a 10x5m curved-roofed Douglas fir structure, will house the Biodiversity Pavilion at the Ecobuild Exhibition at Earls Court (see p34). Emanuel is hoping, in particular, it might catch the eye of contractors and specifiers involved with the London Olympics. The Games will undoubtedly need shelters for athletes and spectators and the company believes it has the technical and environmental credentials for the work. Whether they'll need specialist contractors with sea legs remains to be seen, but the rowing and sailing venues are expected to pull in some of the biggest crowds... |



The roof of the 'Blau shelter' which will form the Ecobuild Biodiversity Pavilion. Developed with Timber Design Ltd and Gilkicker Ltd, the shelter has been developed for the mass market