

Not all plain sailing

It may be building of the year, but there was lot of blood, sweat and tears getting the River and Rowing Museum to its present glory says **Carolynne Dear**

The River and Rowing Museum in Henley-on-Thames, Oxfordshire, has caused something of a stir since it opened last winter. It has already been named Building of the Year in England by the Royal Fine Art Commission and Museum of the Year by National Heritage. Other accolades include a Civic Trust Award, an American Institute of Architects (London) Award and a RIBA Regional Award.

It stands on the banks of the River Thames and hosts exhibitions on the history and ecology of the Thames and the sport of rowing – Henley having hosted the infamous royal regatta since 1839.

The museum is unique in that, unlike most museums, it grew from a concept rather than a collection of artefacts needing an exhibition space.

"We had four objects in the beginning," said Francesca Jones, property and personnel manager. "So we were hardly crying out for premises to house them, but the Town Council saw it as a positive addition to the town."

The earliest drawings for the building were sketched out in 1989, but a series of delays culminated in the project being refused funding from the national lottery. The Lottery Commission believed, rightly as it turned out, that the money could be found elsewhere. Fortunately a number of local businesses stepped in and contributed the necessary cash and the project was launched in 1993. The total cost came to £17.5 million, with building services taking a sizeable share of £6.5 million.

The land, on the south side of the Thames, was originally an overflow car park for Mill Meadows and was leased to the Museum by Henley



Earliest drawings started...

August 1989

Work begins...

October 1993

Tenders go out...

1994

Shell completed...

June 1996

External fit-out completed...

February 1997

Tailoring and modifications...

On-going

Museum opened...

August 1998

Official royal opening...

November 1998

Town Council. The land is part of a flood-plain which led to certain construction restrictions. The local water authority stipulated that in the event of the land flooding, the flow of water and river debris should not be impeded. This meant the building had to be built on stilts with nothing hanging from under it. The initial plan had been for a services trench below the building, but this had to be shelved in favour of vertical service pipes feeding into the building.

In fact it was a constantly changing brief that was one of the main challenges for consulting engineers Furness Green Partnership. The original plan was to have limited building services, with heating and natural ventilation and no air conditioning.

"This just goes to show how naive we were initially," said Steve Green of the Furness Green Partnership. "Once the museum professionals were involved, the building services

requirements changed immensely."

One of the more drastic changes was the decision to air condition the building. Some of the exhibits included very old wooden boats – such as a Saxon log boat dating back to the fifth century – which require a constant, humid climate for preservation. Air conditioning became a 'must', along with a "sophisticated" Trend controls system to ensure a constant temperature. The humidity requirement is 50 per cent, plus or minus five per cent, and the temperature requirement is 21 degC, plus or minus one degC.

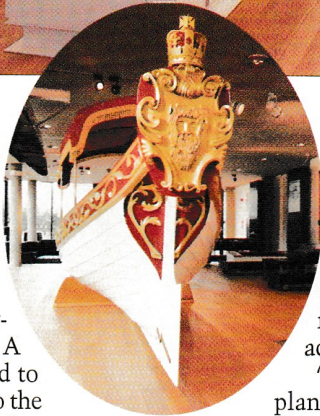
"To complicate matters further, we also have clothes on display, uniforms and suchlike, which require constant humidity. These items have been placed in sealed glass display units with silicon gel to keep them dry," added Ms Jones.

The Museum is partially glazed on the ground floor to achieve a light, airy feel, but the majority of the building is built from untreated, kiln-dried oak to give it a boathouse feel. The glass, most of which is north-facing, has UV filters and awnings have been added to any south-facing glass walls to prevent solar gain.

David Chipperfield, the architect, decided on a rustic, natural look to be in-keeping both with the content of the museum and the local environment.

Because the Museum is located on what is essentially a flood plain there

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 were no power cables when work began. Mr Green first asked for a low voltage supply from the local electricity company, but they advised that a sub-station would be required. This has been built in the car-park, concealed behind trees. A sewage pumping station also had to be added to duct the waste back to the pipes under the nearest main road.

Inside the building, the initial designs had to be drawn and re-drawn. One of the biggest headaches for Mr Green was the amount of detail required for the ceilings. They are constructed of re-inforced concrete slabs, which, he says, was simple enough. But the real test was to achieve the clean, linear effect specified by the architect which meant ensuring all the recesses for the lights and smoke detectors were exactly centred at the pinpoint where the edges of the slabs met.

On the ground floor there was no need for air conditioning, and under-floor heating was eventually chosen because it is discrete. The system was provided by Wirsbo. A pad of thermal insulation was laid on the raised concrete floor. Loops of Wirsbo pePEX polyethylene pipework were laid at 300mm centres and connected to the flow and return sides of the boiler via the manifold. Aluminium plates were also laid to encourage a more even distribution of heated air, rather than "hot spots" along the pipes. The tem-

perature must not rise above 26 deg C or drop below 20 deg C.

The eating area on the ground floor was originally intended to be a fast food restaurant and the air flow calculations and ventilation requirements were calculated accordingly.

"But as with all the best laid plans for this project, everything changed. It was decided a coffee shop would be more in-keeping with the feel of the Museum and consequently the area had to be re-designed," said Mr Green.

There are three galleries on the first floor – the Thames Gallery, the Treasures Gallery and the Schwarzenback Rowing Gallery. This area is air conditioned and has radiators to meet the heating requirements. Because there are no false ceilings and very few service voids, the services plans had to be much more detailed than Mr Green first anticipated. The heating plantroom is at ground level and the ventilation and cooling plant is in the valley between the two peaked roofs of the building.

According to Hiross, who supplied twelve packaged air conditioners and a chiller, the specification for the internal units was "extremely exacting" due to the reverberant nature of the oak floors. The room units have been installed in partitioned enclosures running the length of the exhibition galleries and the chiller is in the roof valley.

Architect:

David Chipperfield Architects

Main contractor:

Norwest Holst Construction

Consulting engineers:

Furness Green Partnership

Structural engineers:

Whitby & Bird Mechanical

contractor (phase one):

MIH

Mechanical contractor (phase two):

Wildens

Underfloor heating:

Wirsbo

Air conditioning:

Hiross

Boilers:

Hoval

Timber for shell:

Henry Venables of Stafford

The most dramatic change to the services brief came with the premature arrival of Building Two.

"Phase two was a bit of a wish as the funds wouldn't stretch far enough," said Ms Jones. "Then one of the major sponsors stepped in and told us to get on with it."

Because phase one had been completed, a separate, independent set of services had to be installed in the second section, which is linked to the original building by a walkway known as the 'Bridge of Bridges'. It houses an education centre for visiting school parties on the ground floor and the Henley Gallery, chronicling the history of the town and the royal regatta, on the first floor. Mr Green was unable to specify under-floor heating at ground level as there is a caretaker's flat directly underneath. Five air conditioning units have been used in this phase and the chiller is located in the plant room rather than on the roof. The limited space inside the room meant a chilled water buffer was included to limit the number of starts needed per hour.

"Unfortunately some of the plant is visible from the decking outside. It couldn't be avoided as phase one was designed and built without any knowledge of phase two," said Mr Green.

The Museum opened in the winter and the final modifications are now more or less finished. Mr Green says he is pleased to have been involved with the project, despite the headaches caused by the constantly changing brief and the demands of the architect.

"I think we've all learned a lot. I for one now know that a museum's services needs are much more specific than I first thought."