

Gigantic shroud sets Euro record

Kier, Connect Scaffolding and Layher have joined up to develop the continent's largest ever temporary roof structure to refurbish Cambridge University's Museum of Zoology

SCAFFOLDING
KATIE BARKER

The Museum of Zoology in Cambridge is undergoing an extensive two-year refurbishment that includes creating a new entrance to the museum, gallery displays and storage areas for the museum's collections.

Throughout the programme, the museum will be shrouded in scaffolding to allow main contractor Kier to replace the roof and most of the cladding.

Kier is working with Connect Scaffolding and Layher for the scaffolding on the project, which includes the largest temporary roof structure in Europe to date.

The roofing system, a Layher Keder XL temporary roof structure, was built by Connect

Scaffolding and works alongside Layher's Allround access and support scaffolding.

"Layher had worked up the preliminary design for Kier and we had used Layher's Keder roof system successfully on several other jobs recently, including the Fitzwilliam Museum in Cambridge and an English Heritage project at Audley End House near Saffron Walden," Connect Scaffolding operations director Karl Degroot says.

The building's architectural style includes a series of step-ins and cantilevered elements that

had to be accommodated in the scaffolding design, with walkways of varying depths used.

Layher Allround has been erected around the structure to a total of 12 lifts and an overall height of close to 30 m, with buttress support scaffold used at important points – no physical anchors were allowed on most of the building fabric.

0
Cranes that can access the site

Lanes and no cranes

The project has had to work around occupied buildings and live pedestrian routes, while dealing with zero crane access and a confined city centre site.

"There are lots of challenges when working in a city centre environment surrounded by the general public, university staff and students and each day we are faced with new ones, but that's what makes it interesting," Mr Degroot says.

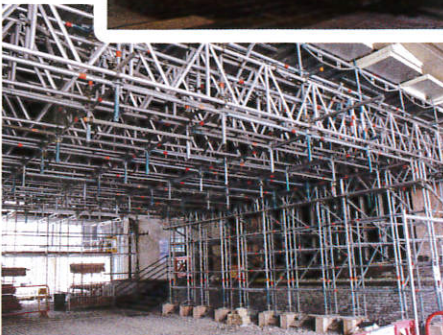
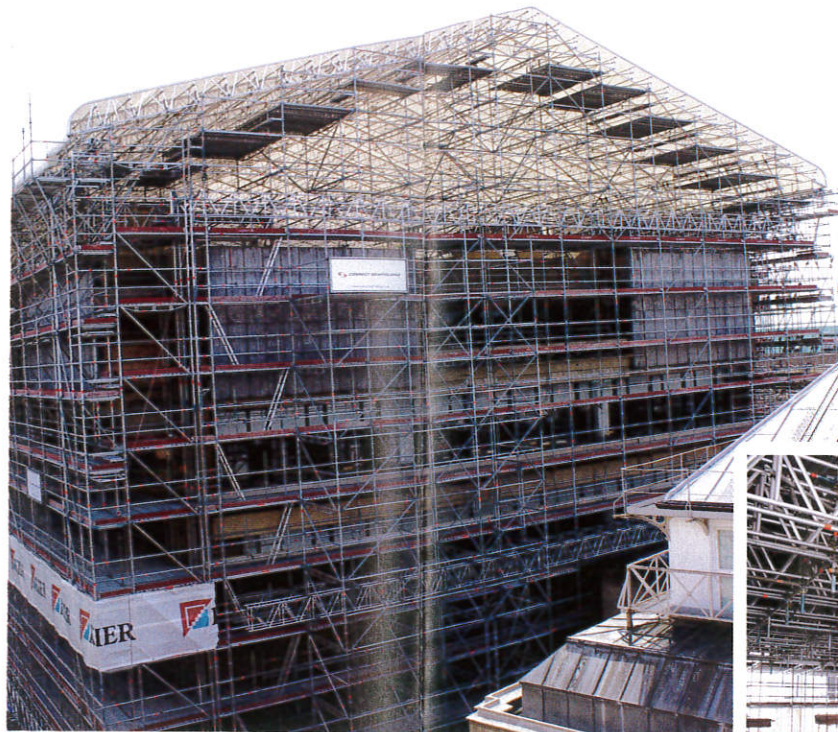
The large roof structure and

construction of the original building did cause the team some difficulty with the transfer of the tie loads.

"Finding a suitable tie solution has been challenging," Mr Degroot says. "Scaffolds are generally set with ties on a 4 m x 4 m grid, but that wasn't possible in the case."

"A common solution to overcome this is to use buttressing, but again due to the restricted area at the base that also wasn't possible."

"We could only tie to the



"There are lots of challenges in a city centre surrounded by the public, uni staff and students and each day we face new ones"

KARL DEGROOT,
CONNECT SCAFFOLDING

main concrete columns supporting the floors, as these were on wide centres.

"We worked with Kier and Layher to come up with a solution using RMD soldiers and prefabricated steelwork to form a series of box ties around the columns for the load transfer."

The Allround system the team used on this project is built from lightweight material and includes built-in rosette connectors, minimising the number of

"It has been a real collaborative approach, which makes problem-solving easier"

KARL DEGROOT,
CONNECT SCAFFOLDING

components needed, which has safety benefits particularly in an occupied location.

Assembled by hand

"This is also an important factor with the Keder temporary roof, because the entire structure had to be assembled by hand from a wide-stepped gable," Layher senior design engineer Simon Lewis says.

"Roof truss components were raised by one of three Geda Hoists and fixed in position at one gable end, before being rolled out on nylon wheels set on a scaffolding track to create space for the next truss to be assembled."

"Once fully installed, the Keder XL sheeting was then pulled across the roof one bay at a time to complete the structure, with the result providing protection from the weather and a naturally lit working environment."

To ensure all of the site team were familiar with the system, Connect and Layher instigated training for staff. "Prior to starting

See more online
View more images from the Museum of Zoology project at cnplus.co.uk/special-reports

the work our teams were given instruction on the Keder XL roof system at Layher's Training centre in Letchworth," Mr Degroot says.

"Only through proper training, mentoring and behavioural safety programmes can we minimise the risks and work at height safely."

And it was through working closely together that the team managed to develop the scaffolding solution for this project.

"As the operation director I am involved in all aspects of the project," Mr Degroot says.

"Our team at Connect worked closely with Layher's technical department and Kier projects and engineering teams. It has been a real collaborative approach, which makes problem-solving that much easier and working together more enjoyable."

construction news

IN ASSOCIATION WITH

Layher.

More Possibilities. The Scaffolding System.

30 m
Height of Layher Allround on the project

DOES YOUR SCAFFOLDING COMPANY COMPLY?



NASC



TG20:13

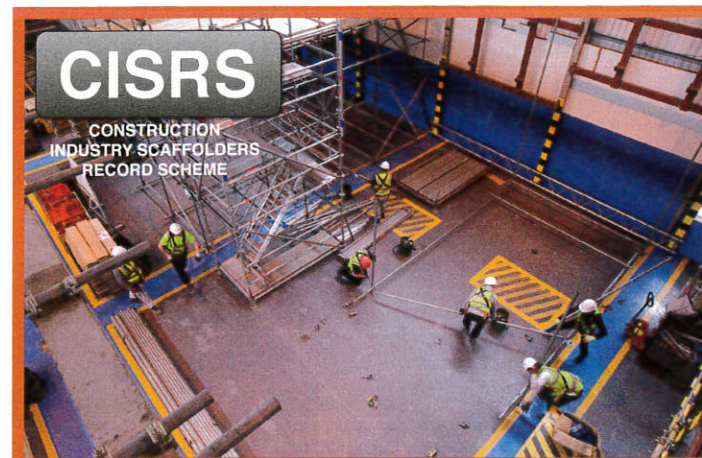
From 1st July 2014
NASC recommends all scaffold structures should be supported by TG20:13 or a bespoke scaffold design.

TG20:13
ANDROID APP NOW AVAILABLE

Order your copies now at:
www.nasc.org.uk

CISRS

CONSTRUCTION
INDUSTRY SCAFFOLDERS
RECORD SCHEME



BE AWARE!

FROM JULY 1st 2014 CISRS BASIC
SCAFFOLD INSPECTION TRAINING SCHEME
(SITS) WILL BECOME A 3 DAY COURSE

Existing CISRS inspection cards will remain valid until their expiry date.

For further information go to:
www.cisrs.org.uk