Goodwood sculpture exercises engineers

A giant, eye-catching wall display of Ford racing cars, weighing 55t, was commissioned for this year's Festival of Speed, held at Goodwood House. The largest structure of its type ever put on show at Goodwood, it celebrated the centenary of the Ford Motor Company and the 10th anniversary of the festival.

The display was created by architectural and sculptural designer Gerry Judah: structural engineering was the responsibility of consulting engineers Dewhurst Macfarlane & Partners. Three Ford GT40 racers, the famous sports car that won first, second and third places at Le Mans in 1966, were hung from the 36m-high wall.

Gerry Judah has been producing exhibits with hanging cars at Goodwood for 7 years. 'This latest display captured Ford's great moment of victory at Le Mans', he said. 'The engineering of the support system was very complex and although it was not part of the display itself, a key aim of the design was to make it visually appealing and interesting to passing festival visitors.'

The 28m-wide structure was built using prefabricated steel trusses for support, clad with polycarbonate sheets spanning 4m between box section purlins. The cladding weighed 15t and the structural steelwork 40t. The entire structure was supported at the back by a series of four corded props which came to a single point at ground level, taking wind loadings from front to back only and some of the dead load. Lateral stability was provided by cable cross bracing, transferring loads down to the foundations.

The magnitude of the possible wind loadings on such a large structure was a major engineering design consideration for Dewhurst Macfarlane & Partners, who were commissioned at the design concept stage. 'By introducing 20% porosity in the cladding, we were able to reduce the maximum wind loading by as much as 60%', said Gennady Vasilchenko, the firm's Project Engineer. 'Reduced wind pressure co-efficients meant that we could use a lighter structure and foundations.' A special wind testing programme was carried out by consultants N.J.Cook/Anemos Associates to verify the design assumptions. By reducing the wind loadings, it was also possible to use standard prefabricated structural elements provided by contractor Edwin Shirley Staging, who uses them for pop concerts throughout the world.

Foundation design for the wall sculpture was also a challenge. Made ground was encountered up to 2.5m below the surface, due to ongoing construction activities at the festival site over 10 years. Recent experience had shown that pad foundations were the best way to support the structure. A ground investigation was necessary to establish the bearing capacity of the soil and its passive resistance, since the shear forces and overturning moments on the foundation pads were high. It was conducted by Ian Farmer Associates. Generally, cast *in situ* concrete pads were formed 2m wide, 4m long and 2.5m deep.

Total budget for the sculpture was £300 000, with £12 ,000 allocated for the structural steelwork.

FREng award for IStructE members 'is evidence of quality'

Seven IStructE members/fellows have earned one of the highest accolades in the field of engineering: fellowship of the Royal Academy of Engineering.

They are: Andrew Beeby (F), Allan Mann (F), Graham Owens, Faith Wainwright (F), Paul Westbury (M), Chris Wise (M) and Alan Powderham (M).

Chief Executive Keith Eaton said: 'I have extended warm congratulations to our members who have gained this important recognition. Given that the limit on numbers elected FREng in a given year is 50, the Institution's total of seven is a reflection of the quality and high standards we hold.' Additionally, Paul Westbury is the youngest ever FREng (see interview in Young Members' Newsletter, 17 June issue).

Sir Alec Broers, President of the Royal Academy of Engineering, said: 'Britain is privileged to be the home of some of the world's best engineers. The Academy is working hard to ensure that these people are recognised and that their skills are utilised for the greater good of the country.'

Thousands use IStructE's findanengineer.com service

In the 3 months since IStructE launched its newest service, Findanengineer.com is proving to be a great success. The website, which went live in April, has received around 10 000 hits on the individual company entries on the site.

More than 400 structural engineering firms from across the UK are registered with the directory, specialising in every aspect of the profession from basements and bridges to subsidence and structural inspections.

IStructE Chief Executive Dr Keith Eaton said: 'IStructE is committed to providing high quality services to its members and the early success of Findanengineer.com shows what an excellent package this website is for all concerned.

'Consumers searching for the right structural engineer are better able to trust the reputation of the companies their search generates because only firms that employ at least one chartered member of IStructE are able to sign up to Findanengineer.com.

'For our members the benefits are clear', he continued. 'Ten thousand potential leads have been generated in just 3 months for their businesses as a direct result of their membership of IStructE.'

Findanengineer.com

Library: summer stocktake means restricted service

During July, August and part of September the Library staff will be engaged in assessing the book stock and weeding out items which are surplus to requirements.

Some members will recall when this exercise was last carried out a sale was subsequently held, giving members the opportunity to purchase these items. We do not anticipate that the same amount of material will be generated as last time, but we hope there should be some opportunities to pick up a bargain or two later in the year, so look out for future notices in *The Structural Engineer*.

The stocktaking will mean that certain sections of the stock will not be accessible at times, or access will be limited. It is probably not advisable to visit us with the intention of browsing the stock, or working quietly in the library over this period. We should be able to offer an (almost) normal lending and photocopying service over the summer.

However, the librarians will not be available to carry out searches for information, to suggest items on a certain subject etc. The library catalogue will continue to be accessible via the web, and staff at the Institution of Civil Engineers should be able to help with most information requests.

Please use the Library direct line only, until further notice: (tel: 020 7201 9105; fax: 020 7201 9118; email library@istructe.org.uk).

We will announce when we are able to return to our normal service later in the summer.