



Lords Cricket School

The Project

Cricket is normally confined to the summer months. Out of season or in bad weather, cricketers come indoors to practise in cricket schools. Until recently, Lords Cricket School at the world-famous Marylebone Cricket Club (MCC) offered few comforts.

Now, thanks to a £2 million investment, the recently-opened school in London's St. John's Wood will provide a perfect indoor environment. Designed by David Morley Architects with consulting engineers Price & Myers, the provision of natural lighting was a key factor.

The Company

Price & Myers was founded in 1978. Based in London and with offices in Nottingham, they provide a high quality structural design service. The practice is committed to working with architects to produce notable buildings and the MCC's new cricket school is no exception. David Morley Architects won the project with Price & Myers through a limited design competition.



The Problem

According to Darrell Morcom, consulting engineer at Price & Myers, the roof (a series of parallel barrel vaults spanning 48.6 metres) represents an important breakthrough in cricket school design. Working on the north light principle, inclined opaque panels shield the sun. Transparent panels and fabric louvres allow the diffuse north light to enter whilst shielding direct sunlight. Carefully integrated interior lighting ensures year-round use.

"The main roof structure is formed from five one-way spanning trusses 2.4 metres deep. The roof was analysed using SuperSTRESS. With uniform loads, the analysis was straightforward. However, under asymmetrical loadcases we found a complicated pattern of deflections in each 7.2 metre wide bay." said Morcom.

One of the major design objectives was to keep the roof structure as light and slender as possible for maximum daylight penetration. Other constraints included four full height aircraft banter style doors on both sides. Because of the doors and an adjacent British Rail tunnel the principal loads from the roof are carried on the two short ends of the building.

The Solution

SuperSTRESS frame analysis program has helped ensure that the roof's architectural concepts have been fulfilled.

Using SuperSTRESS, a series of detailed analyses were run. The first step was to analyse a single bay to determine the stiffness required under symmetrical loads. Different arrangements of members were closely examined. SuperSTRESS allowed the entire roof structure to be modelled. This was invaluable in predicting the overall deflections, especially along the eaves and on the large cantilever canopy.



"When considering deflections on a roof with a large number of members and uneven loadcases, It's not easy to predict what's going to happen. SuperSTRESS helped us understand the interaction and assess the differential movements. We needed to be sure that the roof would react in the way we expected it to; SuperSTRESS helped provide the necessary confidence in the roof performance."

In understanding the behaviour of complex structures, Morcom finds that SuperSTRESS' graphical input of structures is intuitive. This helps, he says, those colleagues who use it only occasionally. But when questions do arise, the right answers are not far away, Morcom says the Integer Hotline, manned by experienced engineers, is a very helpful service.

Opened in August 1995 by HRH The Duke of Edinburgh, the new cricket school is now providing world class indoor training facilities. For Price & Myers, other equally interesting projects have also relied on SuperSTRESS. Recent activities include a design entry for a 90 metre span bridge in London's Docklands, a series of interesting staircases and a 5.5 metre long boardroom table for a blue-chip client. SuperSTRESS is, not surprisingly, considered a valuable all-rounder.