



corus

Corus Colors

Edgbaston Cricket School

Case study





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Edgbaston Cricket School

Birmingham

Architects: David Morley Architects and Bryant Priest

Contractor: Moss Construction

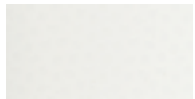
Subcontractor: Unique Industrial Roofing

System manufacturer: Kingspan

System type: Composite

Profile type: Trapezoidal

Colorcoat® product:
HPS200® (roof)



White



The brief

When David Morley started work on the first of the new generation of cricket schools at the MCC in 1995 there was no clearly defined building type or model on which to base design standards and forms. Two crucial factors were identified, the quality of the playing surface and the need for high levels of illumination, preferably with little variation. There has been a lot of research into playing surfaces but the standard response to the lighting question was to fill a 'black box' shed with high levels of electrical illumination to twice those required by other indoor sports. This resulted in poor internal environments and high energy bills. Morley's response at Lords was to introduce daylighting strategies through the

roof. This proved to be successful in terms of internal environment and energy use.

Following this success which the chief architect at the Sports Council remarked upon as 'exemplary', the London based practice seemed the ideal choice when the Warwickshire County Cricket Club decided to build a new Cricket School at its Edgbaston ground in Birmingham. Built predominantly from steel the building is ground-breaking in the way that the building envelope is manipulated to provide low-energy daylight conditions in a demanding indoor sports-hall that has to meet international standards.

Design

The new school is the first step in a general improvement of the whole Edgbaston ground. Until now, the cricket ground, in a purely physical sense, had turned its back on the local community with the near side of the stands and car-parking being the only visible elements of the club. The building is first visible from Pershore Road, a main arterial route into Birmingham city centre.

The new Cricket School now gives the club a street and a community presence for the first time with the materiality of each elevation chosen to reflect its surroundings. The scalloped pre-finished steel façade facing on to the playing area evokes the ribbed surface of cricket pads, whilst the west façade is clad in terracotta tiles linking the scheme into the local urban fabric. Local artists Mark Renn and Mick Thacker have etched these tiles with a map of the world and a poem by Simon Rae in stainless steel letters also adorns this wall.

Internally, the space is divided up within the simple rectangular volume into a large hall where the cricket

nets are situated. The nets sub-divide the hall into a number of wickets but these can be drawn aside to allow the hall to be used for 6-a-side indoor cricket matches. At the front of the building facing eastward towards the cricket ground are the secondary activities: reception, shop, changing room, toilets, seminar room and bar stacked up in a three storey block. Placing the ancillary spaces all at one end of the building allows the spectator galleries and terraces to gain good views over the playing area.

The rest of the building is a lightweight volume with the flank walls punctuated by aircraft hangar type doors allowing easy access to the hall and allowing the hall to be opened up in good weather for improved natural cross-ventilation. The roof is a key element, its configuration resulting from a design for optimum lighting conditions and the development of a structural form that creates an appropriate level of visual interest from below. The primary structure of the building comprises a series of steel trusses spanning the hall and corresponding to the module of the paired cricket nets beneath.



Innovation – design for daylighting

The initial brief suggested that a uniform lighting level of around 1200 lux was needed over the playing surface. In the design of the MCC building a number of roof solutions were considered including a translucent roof that, with 24% translucency, would produce the right lighting levels. However variable sky conditions could not be effectively controlled and the designers and their clients were concerned about batsmen being unable to see cricket balls speeding towards them in excess of 100 mph. Consequently, the tried and trusted northlight solution was implemented. Commonly used in factories built between the wars, the concept uses light from the diffuse part of the sky as it is easier to control. The partially glazed roof negates the requirement for artificial light under all but the gloomiest of circumstances. The overall structural solution has been designed around this key function of the roof.

The choice of a pre-finished steel roof, combined with the northlighting allowed the seamless integration of these two fundamental portions of the roof using Colorcoat HPS200® in white as the roof was an obvious choice continuing the cricket metaphor and providing best guaranteed performance. The use of bright white lining enamel on the internal face of the roofing allowed for improved reflectivity of both natural and artificial light.

Even though using only northlight, further control to diffuse the light levels and even them out across the interior was necessary. Fireproof sculpted fabric blinds are used for this purpose. A canvas with good shape forming characteristics was selected, and these diffusers are suspended from the roof and each runs the length of the building. These elements also make a vital contribution to the acoustic environment which would otherwise be excessively reverberant. Critically, Morley has continued to develop this manipulation of the building envelope to optimise internal conditions in a number of indoor sports facilities demonstrating the versatility of the pre-finished steel.



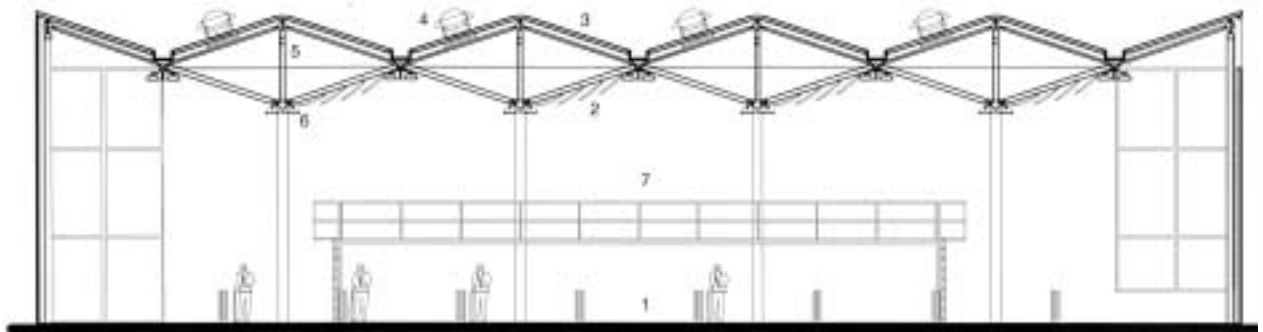
Construction and details

There are two significant features of this building beyond the overall urbane elegance in its particular setting – the cleverly detailed folding hangar doors and the attention to detail of the roof design in terms of integration of form, material, structure and environment. The careful attention to detail of opening size, position and modulation is clear but the detailing of the roof cover and the elegant connections to structure are also an important part of the overall integrity of the building.



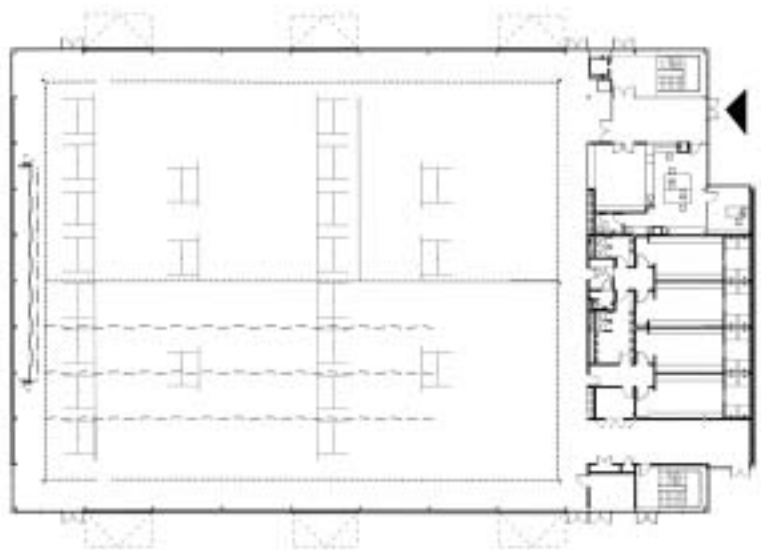
Awards:

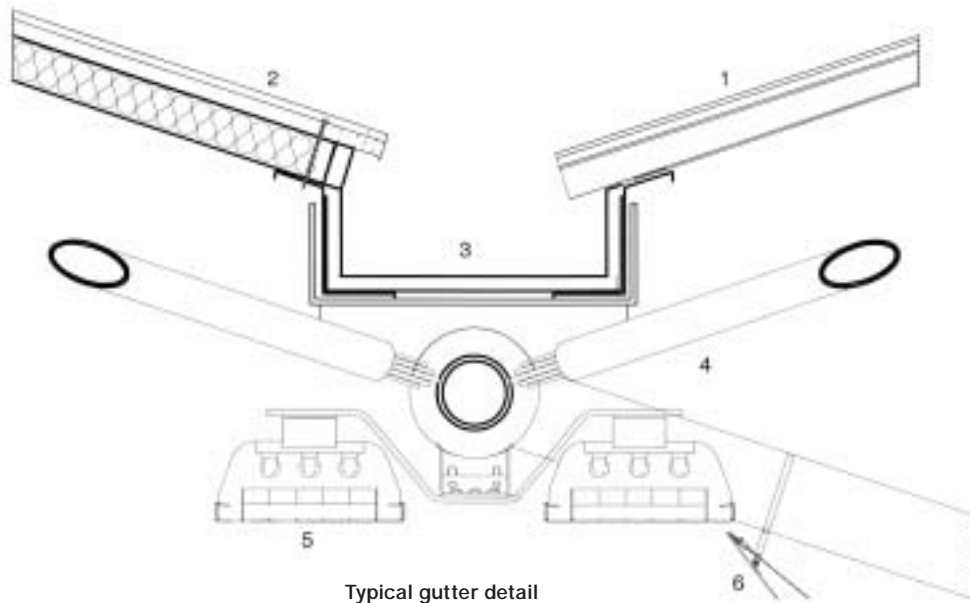
- 12th *Colorcoat Awards* Winner – Innovation and Best Overall Building



Cross section through playing area

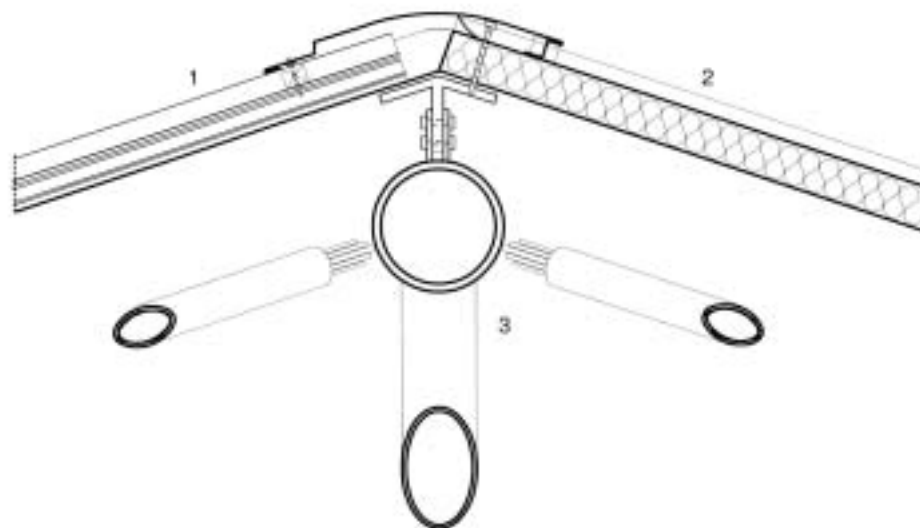
- 1 Playing area
- 2 Roof blinds
- 3 Roof lights
- 4 Metal roof panels
- 5 Steel truss
- 6 Artificial lights
- 7 Umpires gallery





Typical gutter detail

- 1 Double glazed rooflight
- 2 Double skin cladding with insulation
- 3 Insulated gutter and maintenance walkway
- 4 Steel roof truss
- 5 Purpose made fluorescent lighting
- 6 Fabric louvres



Typical ridge detail

- 1 Double glazed rooflight
- 2 Double skin cladding with insulation
- 3 Steel roof truss