**AWARD**

**LONDON 2012 VELODROME**

**Olympic Park, London**

**Architect**

Hans van der Heijden Architects

**Structural engineer**

Expedition Engineering

**Steelwork contractor**

Watson Steel Structures Ltd

**Main contractor**

Billington Structures Ltd

**Client**

Olympic Delivery Authority

With its distinctive double-curling roof, London’s 2012 Velodrome has become one of the most recognisable and popular venues on the Olympic site. According to Andrew Whalley, chairman of Expedition Engineering, the innovation was to use a very lightweight structural solution to achieve Higham’s “very unique and parabolic” concept for the 6,000-seat building. Although the team considered using steel arches, it always favoured a cable-net solution, which had already been used in the UK on such a large scale. The structure consists of six concrete rings for the lower bowl, and stainless steel for the cable- net upper bowl, topped by an undulating steel perimeter ring, which contains the roof cells. This uses a mixture of box trellis profiles and ‘Cladding Elements’ arranged in pairs at 6m centres. It is pulled down from the outer cable-stayed structural system to the seating bowl structure, before being tied back to the perimeter ring with fin-tensioners and to the steel skeleton in the roof covering through the seating area and east side of cladding.

The Velodrome achieved a “terrific” overall rating, centred on the 5.0 “very very good” rating for engineering excellence. The judges were impressed by the use of lean, durable, degradable concrete in the seating areas.

According to chair of the judges, David Lazenby, “It’s a great refinement of the Velodrome, as part of the VeloPark cycling complex, will remain on the Olympic Park as part of the Velodrome. It’s an incredible elegant, a very very good building.”

**AWARD**

**London Shakespeare Theatre in Stratford-upon-Avon**

**Stratford-upon-Avon**

**Architect**

Ralph Erskine Architects

**Structural engineer**

Buro Happold

**Steelwork contractor**

Ilex Urban Regeneration Company

**Main contractor**

Graham Construction

**Client**

Stratford-upon-Avon District Council

It took approximately 1 million man-hours to complete the £12.5 million rebuilding of the Royal Shakespeare Theatre in Stratford-upon-Avon. The complex project upgraded the facilities to present-day standards, while creating a new main auditorium with the intimate dimensions of a small-scale theatre.

The new theatre opens later this year, and will also accommodate events such as weddings and corporate hospitality. As a result, the project won an award for its "terrific overall rating" and "many excellent features.

The theatre is a major cultural facility that will attract visitors from around the world. It features a new, state-of-the-art auditorium that can seat up to 1,000 people. The design team worked closely with the Royal Shakespeare Company to ensure that the new auditorium met their needs.

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MCLAREN PRODUCtIOn CENTRE

Woking

Structural Engineer
Structural Interface

Main Contractor
Sir Robert McAlpine

Client
McLaren Entertainment

The judges praised the clarity of purpose and concise execution of the single-story structure with a flat roof and strong visual identity, the judges said.

The Walbrook was constructed in a phased manner, with the facade of the building being added in stages. The judges were impressed by the use of composite floor slabs, which allowed for the structural steel columns and beams to be spaced out to create larger internal spaces. The judges also noted the use of steelwork, says the contractor’s director of steelwork Hulme, director of steelwork development at Foster + Partners, "The judges praised the clarity of purpose and concise execution of the single-story structure with a flat roof and strong visual identity, the judges said."
In order to realize this design, and fulfilling the brief that it should look nothing like a traditional bridge, the design consists of two concentric geometric shapes epitomized on a bed of steel "roof" columns – a reference to the smooth circularity of the earth. The design within the large circular space for the infrastructure is configured many times over.

The judges praised the "impressive geometric forms and proportions, and the complex assembly seamlessly designed as a whole site." The judges were particularly impressed with the ingenious design and attention to detail, in order to reduce both site wastage and unnecessary transportation of equipment.

The judges also commented on the potential for this design to be made using "off-site" fabrication, making it "the type of design that can and should become a new benchmark in the UK."