Winner: David Morley Architects – London 2012 Water Polo Arena

The London 2012 Water Polo Arena not only looked fantastic, but was also a highly sustainable building thanks to the design by David Morley Architects.

The firm considers its designs to be of "natural consequence" and implemented this vision on the Water Polo Arena. The building's sloping roof was designed to work in tandem with the temporary wings of the adjacent Aquatics Centre, acting as the rippling splash from the diving figure represented by that structure.

Beyond the aesthetic qualities of the design, the physical components contributed to making this one of the most sustainable sporting venues ever built.

"An intelligent design with simple effective solutions, stripped back to the bare essentials. This is a game-changer for the flexible design and construction of an affordable sports stadium"

Judges' comment

The Arena was a kit of parts, likened to a giant Meccano set during the judging presentation, and components sourced from the supply chain on the premise of being returned and reused.

The roof was made by inflating phthalate-free PVC into huge 54 m-long by 10 m-wide cushions. This provided enhanced insulation and solar control as well as reducing the risk of condensation over both athletes and spectators. In addition, it meant that the roof was self-supporting and did not require a secondary structure.

This material was also used in sheet form for the outside cladding as, unlike other fabric materials, it can be folded without creasing. This allowed it to be brought on site in large panels and then re-used after dismantling.

The building was also compliant with the Disability Discrimination Act, providing unobstructed views for disabled spectators without the need for a lift.

This was achieved by exploiting the 3 m level change on the site, providing an entrance to the stand at a mid-point and minimising the excavation of contaminated soil.

Other innovations included the development of a natural ventilation system to heat the spectator areas, with an ‘airblade’ put in place to keep the temperature of the pool area lower for the athletes. All of the seats were made from 100 per cent recyclable plastic and the scaffolding frames for the seats will be returned to the supply chain for re-use at other events.

The judges noted the high levels of satisfaction from the client, the spectators and the athletes, with everyone who visited or used the venue impressed by the result.

Above all, the judges were impressed by the temporary nature of the design. They felt that the Water Polo Arena represented a new way forward for sports stadium construction, avoiding the creation of white elephants and making venue construction more affordable.

They felt the Water Polo Arena demonstrates an innovative way to build sustainable sports stadiums for major games or tournaments in the future and could create a step change within the Olympic movement itself.