

# Structural Awards 2016: taking structural engineering to new heights

The winners of The Structural Awards 2016 were announced on 11 November during a ceremony held at The Brewery in London. Over 380 people attended the event, which was hosted by BBC presenter Clive Myrie.

On the night, the Institution presented its ultimate accolade – **The Supreme Award for Structural Engineering Excellence** – to the Grandview Heights Aquatic Center in Surrey, Canada, engineered by Fast + Epp.

The Center boasts the world's most slender, long-span timber catenary roof. The undulating roof shape reduces the amount of air to be heated and dehumidified, cutting operational costs, while ingenious steel tube columns in the facade serve a double function: resisting wind loads and acting as ventilator ducts.

The Awards judges said: "We were struck by the undulating roof, which elegantly balances structural form with building use and celebrates the expressed materials. The adoption of timber in catenary permitted a structural depth of just 300mm for a 55m span – a design which defies convention and demanded design excellence."

For full details of this year's winners and shortlisted entries, visit [www.structuralawards.org](http://www.structuralawards.org).

## Awards winners

**Supreme Award for Structural Engineering Excellence & Award for Community or Residential Structures**  
**Grandview Heights Aquatic Centre (Surrey, Canada)**  
*Fast + Epp*

**Award for Sustainability**  
**5 Broadgate (London, UK)**

*BuroHappold*  
Housing the European trading operations of Swiss bank, UBS, this 13-storey building is the largest single let office space in Europe. The structure is a steel frame with concrete floors on profiled metal decking, founded on a 1.75m thick reinforced-concrete raft.

**Award for Education or Healthcare Structures**

**Blavatnik School of Government (Oxford, UK)**  
*Pell Frischmann*

The new home for Oxford University's School of Government features high-quality exposed concrete throughout. Its unusual form, established through a series of stacked, off-set cylindrical and square volumes, creates a variety of different spaces. The whole building is designed to encourage openness and communication.

**Award for Pedestrian Bridges**  
**Elizabeth Quay Bridge (Perth, Australia)**  
*Arup*

Elizabeth Quay is part of a bold plan to revitalise central Perth. This striking 22m high cable-stayed bridge is the project's centrepiece. The design benefited from the use of a range of digital tools.

**Award for Sports or Leisure Structures**  
**Etihad Stadium Expansion (Manchester, UK)**

*BuroHappold Engineering*  
The project to expand Manchester City Football Club's stadium with a new South Stand saw engineers required to modify an existing cable-net roof with complex geometry and load paths, while providing continued rain protection to fans. Eighty-five per cent of materials used for the expansion were locally procured.

**Award for Small Projects**  
**Formby Helical Stair (Formby, UK)**

*Webb Yates Engineers*  
A breath-taking, two-storey stone staircase that springs from one landing and sweeps unsupported through 320° to the next. The total weight of French Combe Brune limestone making up the stairs is approximately 6.6t.

**Award for Small Practices**  
**Expo2015 Hive (Milan, Italy & London, UK)**

*Simmonds Studio*  
A highly complex sculptural structure that was the centrepiece of the UK Pavilion at the Milan Expo 2015. The Hive consists of 60 000 unique aluminium parts, formed in a structural system of 31 stacked layers

of alternating radial and circumferential trusses.

**Award for Structural Heritage**  
**Mount Stewart House (County Down, Northern Ireland)**

*Mann Williams*  
This fine house was in need of a thorough overhaul. Significant structural problems included the 8m span of the first-floor joists, the sag in the gallery round the octagonal hall, and partial failure of a large timber truss.

**Award for Infrastructure or Transportation Structures**  
**Transformation of Birmingham New Street Station (Birmingham, UK)**

*Atkins/AKTII*  
Birmingham New Street Station was officially re-opened by the Queen in November 2015 after a five-year, £750M transformation. The new roof comprises an EFTE inflated cushion system supported off curved steel tubular arch beams, which in turn are supported off two dramatic wishbone truss arches.

**Award for Arts or Entertainment Structures**

**Stavros Niarchos Foundation Cultural Centre (Athens, Greece)**

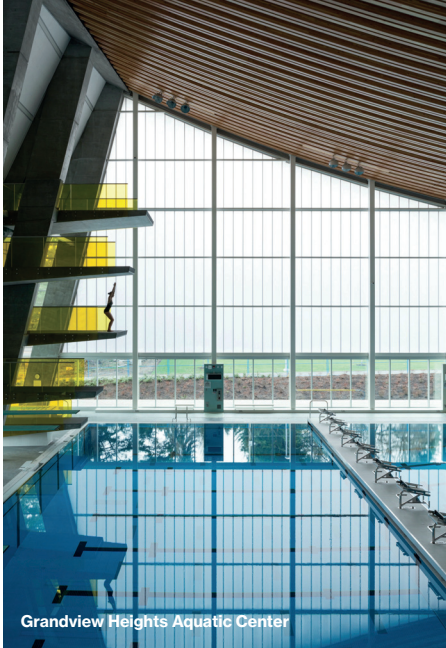
*Expedition Engineering & OMETE*  
A new home for the Greek National Library and National Opera, the Centre features a number of engineering innovations. A super-slender, lightweight ferrocement canopy roof is raised on slender columns over the whole building, and carries a huge solar panel array.

**Award for Commercial or Retail Structures**

**Torre BBVA Bancomer (Mexico City, Mexico)**

*Arup*  
The Latin American HQ of the bank, BBVA Bancomer, and the tallest completed building in Mexico. The architecture clearly expresses the engineering of the





Grandview Heights Aquatic Center

EMA PETER



5 Broadgate



Blavatnik School of Government

EDDIE JUMP



Elizabeth Quay Bridge

ARUP



Etihad Stadium Expansion

BURO HAPPOLD



Formby Helical Stair



Expo2015 Hive

HUFTON-CROW



Mount Stewart House

NETWORK RAIL



Transformation of Birmingham New Street Station



Torre BBVA Bancomer

MARK GORTON

structure. Engineers designed for Mexico City's low-frequency earthquakes by placing the structural frame on the exterior of the envelope. This eccentrically braced megaframe acts as an external protective skeleton, carrying all the building's lateral wind and seismic loads.

### 2017 Awards

Next year will see the 50th anniversary of The Structural Awards, with entries opening in January. Don't miss your chance to participate in this celebration of the profession's achievements. Visit [www.structuralawards.org](http://www.structuralawards.org) for more information.



Stavros Niarchos Foundation Cultural Centre

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