The London 2012 Olympic Stadium forms the centre piece of the largest new park created in Europe for a century. Designed with an 80,000 capacity for the Olympic and Paralympic Games, the Stadium is designed such that it can be dismantled down to a 25,000 capacity venue if required for its longer term use.

BuroHappold Engineering worked as part of ‘Team Stadium’ an integrated design and construction team. Through collaboration and innovation the team created a simple dismantleable superstructure with an innovative lightweight cable supported roof. Lifting the roof’s inner tension ring from its temporary scaffolding structure to its final position could not have been achieved without the ingenuity and integration of the whole team.

Sustainability played a huge part in informing the Stadium’s design and construction, to meet the ODA’s high targets and priority themes. The embodied energy consumed in manufacturing the Stadium’s elements was far less than other Olympic stadia, due to the compact design. Where possible the team reused existing materials, for example, the Compression Truss to the roof was constructed by using 4000 tonnes of unwanted gas pipeline found in a yard in Yorkshire. The permanent building services installation has been designed to exacting standards for limiting carbon emissions during operation. Completed two months ahead of the contract completion date and under budget with an outstanding safety record, the Stadium provides world class facilities for athletes, management and international press and broadcast media.

Commitment, innovation and close collaboration between architecture, engineering and construction has resulted in an elegant, bold, inspirational, efficient and sustainable Stadium that reflects the Olympic principals of respect, friendship and excellence and above all supports and provides the foundations to the vision “to build a better world through sport”.

CLIENT
Olympic Delivery Authority

DESIGN AND BUILD CONTRACTOR
Sir Robert McAlpine

ARCHITECT
Populous

LANDSCAPE ARCHITECT
HED

SERVICES PROVIDED BY BuroHappold
Structural engineering, building services engineering (MEP), bridge engineering and civil structures, infrastructure and utilities engineering, ground engineering, environmental consultancy, fire engineering, inclusive design, security and technology, sustainability, computational analysis, lighting design

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