



Scunthorpe Leisure Centre: concept, philosophy and appraisal of an award-winning innovative timber grid sports destination

Fergus M^cCormick

Technical Director
Buro Happold
Bath, UK

Fergus.

McCormick@BuroHappold.com

Fergus has designed and delivered some of the most high profile complex and award-winning engineering projects of recent years.

Dr. Shrikant Sharma

Leader of SMART
Buro Happold
Bath, UK

Shrikant.Sharma@burohappold.com

An engineer, numerical analyst and software developer rolled into one, Shrikant leads the SMART Solutions team, who are dedicated to computational innovations to solve engineering challenges.

Dr. Al Fisher

SMART Senior Analyst
Buro Happold
Bath, UK

Al.fisher@burohappold.com

Al previously studied for his masters and PhD in civil and architectural engineering at the University of Bath where he developed novel approaches to advanced surface modeling and CFD.

Summary

The paper is reflective of a design and delivery process through an interesting project in Scunthorpe in the North of England. The project is a community leisure centre and these buildings are often square and rectangular and uninspiring. The paper describes how a deliberately inventive and ambitious architecture was conceived to which the engineers responded also ambitiously with free form timber shells yet one which would respect also structural engineering logic of funicular shapes, and minimum volumes.

Keywords: Sports, leisure, responsive, timber, destination, innovation, SMART, green, sustainability, geometry;

1. Introduction

The Scunthorpe Leisure Centre is an award-winning local sports destination in the North of England. The project has comprised the leisure building itself and the surrounding masterplan of the local park. Buro Happold was invited by Andrew Wright Architects to join him in a competition for the project.

The paper describes the philosophies of structural engineering and architecture invoked during the competition phase. These were to break away from the box-like structures commonly employed for this type of project and enable a more enjoyable, visually striking building which would create a destination for the local community. One philosophy was to embrace aspects of green roofs to the building, to 'replace' soil and greenery taken by the building footprint. Further, the team strove to develop a timber based roof solution to advance sustainability measures. The timber grid built on work undertaken on a series of other projects, but has proved the most successful and largest realisation. The design evolved as a series of separate roof shells over a series of different parts of the centre such as the swimming pool and the squash courts. The shell roof forms have been optimised to assume rational forms and minimise the amount of structural material required with triangulated joint lines visually expressing the distribution of forces within the structure. The main challenges were in developing and controlling geometry where a series of different roof shell grids meet at unique and different ways.