



ExCel Conference Centre ETFE Rooflights

Client: ExCel Conference Centre Year of Completion: 2010

Architect/Designer: Grimshaw Architects Main Contractor/Customer: Sir Robert McAlpine

As part of the Phase 2 construction at ExCel Conference Centre, Architen Landrell was contracted to design, manufacture and install three ETFE cushion rooflights each covering an area of 25m x 25m (615sqm each) - currently the largest ETFE cushions in the world!

A skylight with integrated venting was the design brief at ExCel Phase 2, so when Grimshaw Architects and contractors Sir Robert McAlpine approached Architen Landrell they had already considered a wide range of options. When asked about the scheme, Grimshaw Architects describe it as intending to look ephemeral and unfinished, commenting that there is an emphasis on internal special relationships and a more playful approach.

In contrast to glass or even traditional tensile fabric structures, ETFE cushions offered an exciting opportunity to integrate an element that was aesthetically different and to create an ultimately modern and clean looking space. The rooflights allow a light and open feeling to be created in the exhibition space below, let in maximum natural light and serve as a surface for internal uplighting.

In addition, Grimshaw Architects had used ETFE in the past and therefore understood the intrinsic benefits of the material, including its light weight, high translucency and flexibility as a material.

As the largest individual ETFE cushions installed in the world the size of the cushions in itself posed a challenge for manufacture and installation. Nearly 2000sqm of material was patterned, cut and welded in our factory before being transported to site for installation.

Extensive research and development was also carried out in order to design and build state of the art air venting actuators concealed in the structures heading. The actuators are self monitoring i.e. they constantly adapt their position and speed of movement to maintain a level heading and avoid twisting. In the event of a fire the conic shape of the ETFE cushions helps to create a chimney effect and draw smoke up and away from the exhibition floor; at which point the actuators, even without a power supply, will open and ventilate the fumes.

...see <http://www.architen.com> for more information.

Location:
London, UK

Category:
Exterior

Market Sector:
Exhibition

Scope Of Works:
Design
Engineering
Research and Development
Manufacture
Project Management
Install
Maintenance

Fabric Type:
ETFE

Design Style:
Conic
Inflatable

Function:
Roof