

BATTLE McCARTHY ©

Consulting Engineers & Landscape Architects



PROJECT:

Lisbon Expo Composite Bridge

CLIENT:

Expo '98

ARCHITECTS:

Ideias do Futuro

BM SERVICES:

Structural Services

VALUE:

£1.5million (Approx)

DESIGN BRIEF

To design a composite footbridge for the Lisbon Expo '98 from ultra light materials.

DESIGN INITIATIVES/ACTIONS TAKEN

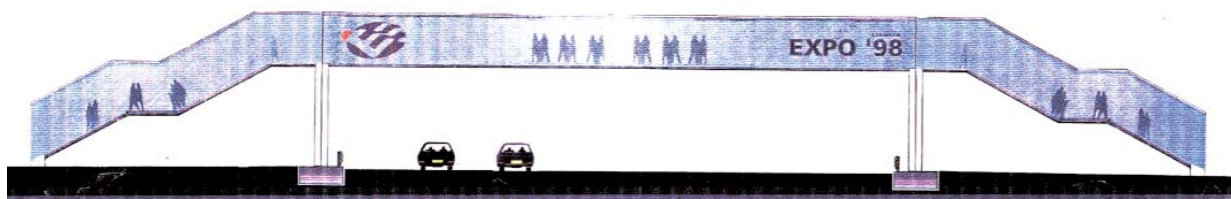
Research into new innovative building materials led to the rethinking of the urban pedestrian crossing to become a dynamic element, fundamental to the modern city.

Central to this was the need for the bridge to be easy to use whilst offering a creative design and image to be integrated into the urban landscape. For optimal efficiency of use the bridge needed to be easy to install and maintain with minimal disruption to pedestrian and vehicular traffic.

The advantage of using such composite ultra-light materials is that during the bridges useful lifetime they are longlasting, light and easy to handle but also can be readily recycled.

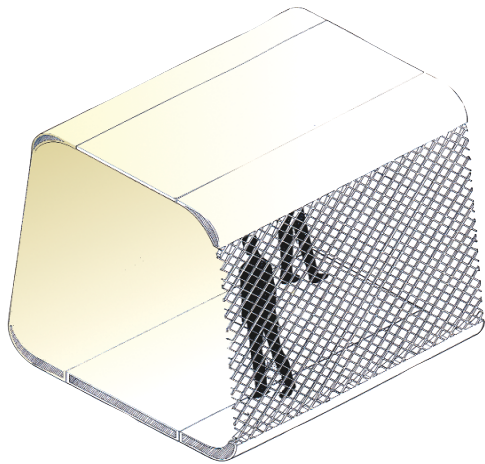
The structure of the bridge responded directly to the material characteristics, to create a longlasting structure which will withstand the forces of nature. Due its lightweight construction the forces of wind loading outweigh those of gravity. For this reason a lattice of structural members supported across just two columns was used to span 30 metres.

This structural strategy resulted in an efficient use of materials to produce a bridge of elegance, lightness and simplicity.



Elevation of bridge

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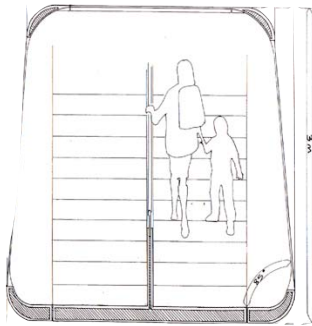
Mesh option



The composite carbon fibre footbridge



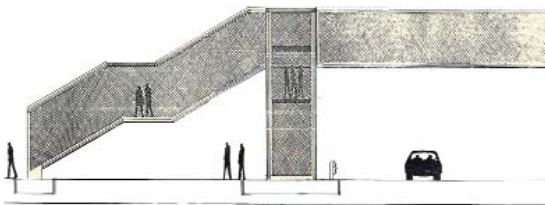
Open sides allow air to circulate



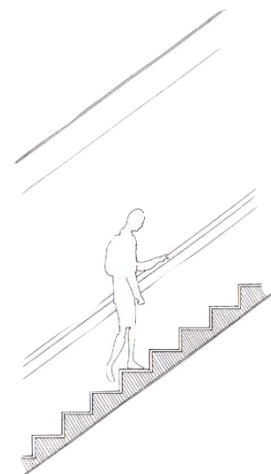
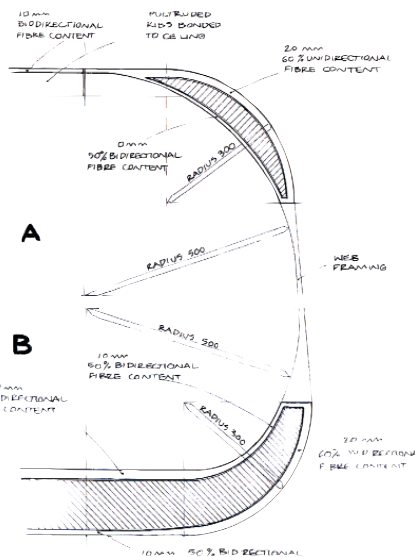
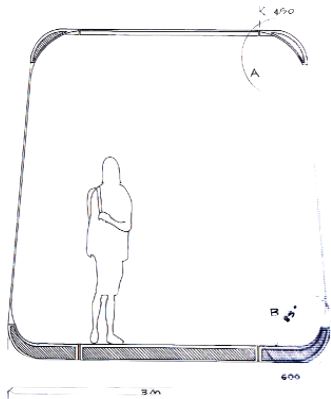
Practical design



Structural efficiency and design combine to form an elegant urban structure



Mesh option. Elevation with stair and lift



Bridge sections and details