

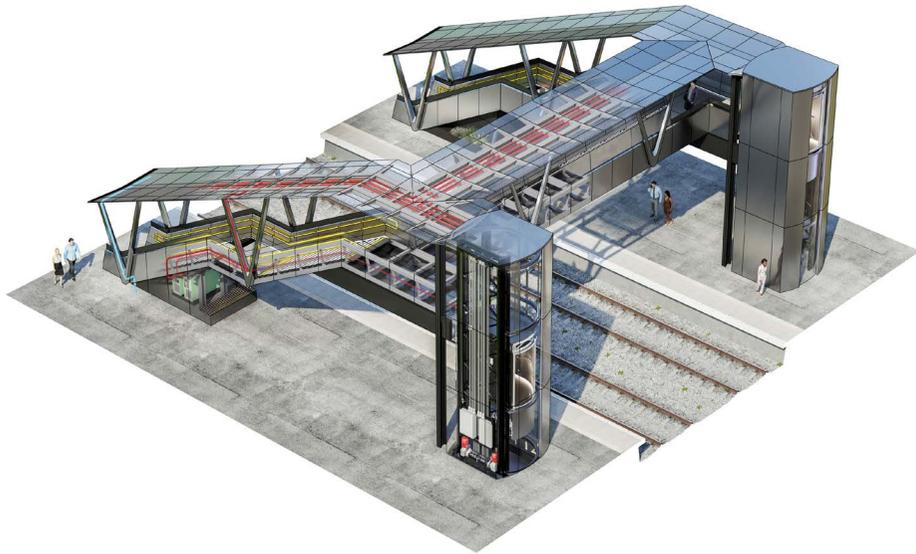
AVA Modular Railway Footbridge



Location: United Kingdom
Crosses: railway
Type: modular footbridge
Materials: stainless steel
Stainless steel use: frame with faceted cladding
Built by the AVA Consortium:

- Walkers Construction (Contractor)
- Expedition Engineering (Engineers and Lead Designer)
- Hawkins Brown Architects (Architects)
- X-Treme System (Manufacturer)
- SCX (Lift Supplier)

Photographs: courtesy of the AVA Consortium
More information: hawkinsbrown.com



AVA Modular Footbridge. Picture courtesy of the AVA Consortium.

History

The bald statistics for railway footbridges make sobering reading. It can take a year on site to build one. Only a third it costs to build each bridge goes on the materials and the creation of the structure itself - the rest is contractor and client costs. What is more, the fall back footbridge design has not changed for years.

Rather than being built in a steel fabrication yard from standard sections, then shipped elsewhere to be painted before being transported to site as a full span length, the Ava bridge is designed to be assembled in 1.2m long modules using structural elements cut from flat sheets of stainless steel and bolted together. The truss modules can be configured to suit the destination site, and fitted out with cladding, canopy, lighting and other mechanical and electrical services before being erected as close to finish as possible.

Over the last few years, Anthony Dewar, Technical Head of buildings and Architecture and his team at Network Rail have been making inroads into the way rail footbridges are designed and procured. The AVA footbridge is a radical modular design being developed by a consortium of companies.

The aim of the project is not just to slash capital cost by a third and construction and construction time by half, but to reduce whole-life carbon, cut maintenance demands and hence costs, and improve reliability. Boosting accessibility is the fundamental goal and with the cost of the average footbridge cut from £3.6M to £2.6M, the number of footbridges being built can be boosted without any budget increase.

Source: New Civil Engineer

Why stainless steel?

Ross Chipperfield from Quantum Infrastructure clarified they have used stainless steel, which is more expensive ... but the reason it's so much cheaper and better for the environment is these bridges don't need to be painted. Traditional 1970s bridges and even bridges in the new catalogue [of bridge designs used by Network Rail] have got to be painted once every 30 years... Every time that's painted, that's roughly £1.2m [a time].

A bead blast process is used to blast it - give it a beautiful aesthetic - but it doesn't need to be treated after that. It's vandalism-proof, rain-proof ... It's been used in the food industry for 40 years because they want machines to not rust ...