

## VICTORIA STATION, LONDON

### TATA STEEL BUILDING SYSTEMS



The Grade II-listed original roofs over the Eastern 'Kent' side of London Victoria Station had protected travellers for 150 years, but required extensive renovation. Network Rail commissioned an up to date solution, complementary to the original design, featuring 10,000 square metres of Panels and Profiles' products.

London Victoria Station is one of the busiest railway terminals in the UK. Victoria is the start or end for over 70 million journeys a year. There are effectively four railway stations on the site: two serving main line routes in south eastern England, one underground station serving the District and Circle Lines, and one deep-level tube line station.

The station has dedicated platforms for passengers travelling to Gatwick Airport on Gatwick Express Services. The area around the station has also become an important interchange for other forms of transport: a local bus station is in the forecourt, and a terminal for nationwide long-distance road coaches at Victoria Coach Station is nearby.

The station has a segmental tied arch roof with light iron tie rods arranged polygonally between radian iron struts. It comprises two spans, the first of which is 38 metres by 138 metres; the other is 39 metres by 117 metres.

After 150 years of protecting the travelling public from the elements, the original pitched roofs on the concourse and two main barrel-vaulted roofs over the Eastern 'Kent' side of the station had reached the end of their working lives.

The £35 million roof refurbishment at London Victoria presented special challenges, as Alan Clarkson, Project Manager for main contractor May Gurney, explained. "This was a complete structural refurbishment, not just cosmetic. We were working to original 1860s drawings, which were all found to be incorrect as the work progressed. The biggest challenge was in enabling the station to continue normal operation during the refurbishment, isolating it from the roof works.

"To facilitate this, a temporary roof was constructed under the existing structure to prevent debris from falling onto the station concourse. It also helped that the project was undertaken in 1200 square metre phases. Panels and Profiles products were part of the formal project proposals from a very early stage."

Installation contractor Everlast Waterproofing Limited fitted R46 profile to the two approximately 40-metre span, over 100 metre long main barrel-vaulted roofs, to a 26 metre radius curve, incorporating stippolyte obscure glazing, to match the original patent glazing system.

The replacement roof featured R46 profile in double-sided Colorcoat HPS200 Ultra®, with a Goosewing Grey finish on the external face and a Straw finish on the internal face. The R46 profile was selected by Network Rail due to its ability to span approximately 2.8m from purlin to purlin.

On the concourse, the existing felt roofing laid on timber purlins was replaced by steel purlins and C19 profile in Colorcoat HPS200 Ultra® in Goosewing Grey, laid over purlins at nominal one metre centres, with an internal PM13 profile in Colorcoat HPS200 Ultra® in Straw, providing a like-for-like tongue and grooved boarding effect when viewed from the underside. The existing translucent corrugated sheeting was replaced with stippolyte glazing mounted within a patent glazing bar system.

The internal colour choice of Straw was arrived at following extensive research into the concourse colour scheme, to ensure that replacement colours accurately interpreted the original Victorian paints. Colour matches were also achieved on decorative spandrels, gutter mouldings, the maintenance access system, columns and low-level canopies.

Backed by a Confidex® Guarantee and available in 40 standard colours, Colorcoat HPS200 Ultra® pre-finished steel combines outstanding performance with unrivalled reliability and impressive sustainability credentials.

Made in the UK to ISO 14001, for a lower carbon footprint, Colorcoat HPS200 Ultra® is the most durable pre-finished steel on the market. It incorporates advanced coating technology, providing superior corrosion resistance, especially in challenging environments like the station, with twice the colour and gloss retention of standard plastisol products.

**TATA STEEL**

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