



Case study

Nova Victoria, London

Client: Land Securities

Architect: PLP Architects, London

Main contractor: Mace

Structural engineer: Robert Bird Group

Steelwork contractor: Severfield Ltd

Tata Steel products: Celsius® 355 structural hollow sections for the steel-frame; ComFlor® 51+ composite floor deck and RoofDek D100 structural roof deck

Year: 2016

Opposite London's busy Victoria Railway Station, a new and vibrant office, retail and residential scheme known as Nova Victoria has taken shape with steel construction playing a leading role.

The first phase of this prestigious development started in June 2013 and includes 44,600m² of offices and 7,500m² of retail and restaurant space accommodated within two landmark steel-framed high-rise buildings.

The structures are called Nova North and South and are 15-storeys and 21-storeys high respectively. Both will have ground and first floor retail and restaurant space and are topped by complex inclined roofs.







The challenge

Robert Bird Group required a composite metal deck flooring system that minimised the on-site programme.

It was also essential that the flooring solution was capable of achieving the long spans required, some of which are up to 16m long.

“Long span steelwork supporting steel decking was the best option to create premium offices as it meant we could halve the number of internal columns and have more flexible space.” says Robert Bird Group Managing Director, David Seel.

The solution

Tata Steel has played a major role in the delivery of these two landmark structures. While Celsius® 355 structural hollow sections are used for bracing of the steel-frames, the floors have been formed using the ComFlor® 51+ composite metal decking flooring system, and RoofDek D100 was used to support the roofing system.

The metal floor deck construction of both Nova North and South consist of metal deck construction and used 55,000m² of Tata

Steel’s ComFlor® 51+ in 1.2mm gauge. The ComFlor® 51+ profile was selected as it is light weight and provides a virtually flat soffit that can achieve optimum spanning capabilities.

ComFlor® 51+ is suitable for conventional composite construction where the deck is placed onto the top flange of the steel support beam, increasing the composite beam efficiency to achieve long spanning capabilities. ComFlor® 51+ provides the best available composite deck fire performance for both slab and beams.

ComFlor® profiled steel deck has been specifically designed for rapid installation, making it a safer form of construction and ideal for city centre sites such as Nova Victoria.

ComFlor® 51+ is a cost-effective flooring solution that enables the beams to achieve the project’s long spans, some of which are up to 16m long.

It removes the need for temporary propping, which in turn led to quicker installation and reduced the overall construction programme.

Tata Steel products:

ComFlor® 51+ is a traditional dovetail re-entrant composite floor deck. This profile provides an excellent mechanical key into the concrete slab, offering a strong shear bond performance, which is augmented by cross stiffeners located in the profile trough. ComFlor® 51+ presents a virtually flat soffit and a relatively thin slab is required to meet fire design requirements.

RoofDek has the widest range of structural roof decking manufactured in the UK, with decks ranging from 32mm to 210mm deep, in addition to structural liner trays. RoofDek D100 offers a cover width of 700mm with a single span of over 5m and a double span of over 7m.

Celsius® is the ultimate choice for a true hot-finished structural steel hollow section. Offering a stronger, lighter, more cost-effective and aesthetically appealing structural steel solution to meet and exceed the most demanding and challenging applications.

“We always get excellent service from Tata Steel and the deliveries are always on time which is very important. Also, ComFlor® profiles are designed to obtain good load optimisation, allowing up to 1,400m² of the decks per load, and this means less deliveries which reduces congestion in and around the site.”

Severfield Contracts Manager, Martin Clyne

ComFlor® also provides the contractor with quick and easy off-loading, which ultimately frees up valuable crane time allowing for an efficient fast track building programme.

The steelwork erection and installation of metal decking of both blocks was staggered, with steelwork contractor Severfield making use of the project's six tower cranes for all of its unloading and lifting duties. No extra craneage was required on this already busy London site.

Around 398t of Celsius® 355 have also been used on the Nova Victoria project. The hot-finished structural hollow sections were predominantly used for temporary stability bracing on both buildings as well as forming V-shaped columns that adorn the two main entrances.

Each column was fabricated, by Severfield, in individual two floor sections with endplates. Each section was then delivered to site and built on top of the preceding section as the building rose.



Complex sloping roofs

Complex inclined roofs adorn both Nova North and South, with the latter building having by far the most complex steel-framed roof as it slopes in two opposing directions.

To erect these high-level steel lattice structures a huge piece-count of individual steel members has been lifted into place to form wedge-shaped prisms. Much of the roof steelwork is galvanized because it will be left exposed to the elements.

Nova North has an inclined roof and flat architectural featured roof grillage. The roof extends from levels 10 to 15, all of which are plant spaces with the exception of one upper floor that has office space.

Topping Nova South are two inclined roofs, containing plant levels from 10 to 15 and then upwards from 16 into an architectural peak at level 21. Again, the uppermost level

of this block also contains plant areas. Roofing contractor Jelt Constructive Builders installed 250m² RoofDek D100 to support the project's roof elements.

Jelt's Managing Director Eamonn Smith said: “We used RoofDek as a base for our roofing product as it is easy to install, which really helped because on the Nova South building we had to install the product on a 45 degree pitch.”

For more information and design advice on ComFlor® composite floor decks, please contact a member of our Design Team:
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For technical advice on the application of Celsius® 355 for your project, please contact our Customer Technical Services Team:
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