

Portal frames for logistics expansion

FACT FILE

St Modwen Park Stoke Central

Main client: **St Modwen Logistics**

Architect: **RPS Group**

Main contractor: **Winvic Construction**

Structural engineer: **Nolan Associates**

Steelwork contractor: **Severfield**

Steel tonnage: **1,060t**



The warehouse incorporates integrated office space.

Steel construction is playing a leading role in a number of redevelopment and logistics projects in Stoke, including a four-span warehouse for the National Veterinary Services, which is rising up on the site of a former steelworks.

Big changes are afoot in Stoke-on-Trent, as a number of major redevelopment schemes are either underway or in the pipeline.

Much of the work is being undertaken or planned for Stoke city centre and Hanley, but the area of Etruria, which is located between the two, is also the location for a considerable amount of investment.

The construction of warehousing logistics space is one of the leading drivers of this city-wide investment. Etruria is the location of St. Modwen Park Stoke Central, which is part of the wider 300-acre Festival Park development. The park is already home to a number of major **distribution centres** as well as office space, including Bet365, who have their purpose-built steel-framed headquarters building here (see NSC May 2016).

The majority of warehouse projects are designed and built as steel-framed structures and highlighting the sector's importance, developer St. Modwen Logistics has invested £65.5M to support regeneration in Stoke-on-Trent through the construction of more than 40,000m² of warehouse space in the past 18 months, with a further 44,500m² currently under development. The significant investment in the area builds on the £56M Levelling Up commitment, announced by the Chancellor in his autumn Budget last year, to support restoration work and encourage employment within the region.

Work is currently continuing at St Modwen Park Stoke Central and the latest scheme is a 20,900m²

steel-framed warehouse which will be home to Stoke-based National Veterinary Services (NVS).

St. Modwen Logistics recently signed a pre-let deal with NVS, which means main contractor Winvic is working closely with both companies to ensure the warehouse space meets the needs of NVS to supply and distribute products to animal health practices across the UK.

As well as the main warehouse space, which has a 15m haunch height, the project also includes an integrated three-storey 2,248m² office block and a 284m² two-storey transport hub.

Externally, Winvic has delivered the enabling civils and infrastructure works to create the development plateau and is installing all underground services, drainage and an attenuation pond. Soft landscaping will also be undertaken and parking created for 235 cars – with 20 per cent electric charging points – and 51 HGVs.

Winvic started onsite earlier this year and preparatory works also included the installation of pad foundations that allowed the **steelwork erection** programme to begin in June.

According to project engineers Nolan Associates, the site had previously been cleared of any buildings and a ground remediation programme had been undertaken across the entire plot. The re-engineered ground was consequently very hard and meant any excavation on the site was quite arduous.

“The areas for the pad foundations had to be ripped up, using a special excavator attachment,

prior to any excavation,” says Nolan Associates’ Andy Williams.

A new steel-framed structure being constructed on this brownfield site is apt, as it continues the plot’s connection to the material. The site was once occupied by Shelton Bar, which in its heyday had a 10,000-strong workforce and included five coal mines, a steelworks and rolling mills, blast furnaces and a bi-products factory. Half of the facility was closed down in the late 1970s, with the remainder finally ceasing operations in 2000.

Working on a **design and build** contract for the steelwork package, Severfield has **fabricated**, supplied and erected the steelwork for the project.

The main warehouse is a four-span **portal-framed** structure, with a total length of 175m. The structure is based around a perimeter column spacing of 8m,



Steelwork contractor Severfield used three mobile cranes for the entire erection programme.



Future plans may include a further smaller warehouse to the east of the NVS distribution centre.

while internally the design incorporates a hit-and-miss column configuration. This means the columns are spaced at 16m intervals along the three valley lines, thereby creating extra column-free floorspace.

Each 30m-wide span is formed with two spliced rafters, which were assembled on the ground and lifted into place as a complete section. Because of the hit-and-miss layout, half of the roof rafters are not directly supported by internal columns, but are instead connected to adjoining rafters via high-level hip beams that transfer the loads to adjacent columns.

Using a combination of three mobile cranes – one 90t-capacity unit and two 70t units – for its entire steelwork erection programme, Severfield initially erected the main office block, which protrudes outwards from the warehouse structure and forming

an L-shape on plan.

Scheduled to complete in November 2022, with early access-provision in October, the project has been designed with Winvic's input to the St. Modwen Swan Standard, which puts the environment, sustainability and employee wellbeing at its core. The sustainability features include an EPC Rating 'A', a BREEAM 'Very Good' rating, a hybrid air source heat pump and a carbon neutral envelope system.

Danny Nelson, Winvic's Head of Industrial, Logistics and Distribution, commented: "We've worked with St. Modwen Logistics for many years now and it's motivating for our whole team to be appointed again, especially just a couple of months after we started on a significant four-warehouse scheme for the developer in Derby. As always, we

will be delivering the scheme to the St. Modwen Swan Standard, which focusses on sustainability, while also driving the scheme safely, skilfully and swiftly in order to handover in November this year."

Jake Shilston, Development Director at St. Modwen Logistics added, "The St. Modwen Swan Standard focuses on responsible building practices and core to this is our commitment to delivering sustainability, net carbon reduction and improving the wellbeing of those who work on our parks and live nearby. We continuously strive to improve the quality of our parks and know Winvic shares our ambitions to meet the needs of our customer, NVS, their employees and the local community. Through a true partnership, we have every confidence in delivering another high-quality building at St. Modwen Park Stoke Central." ■



Steelwork erection progresses on the four-span portal-framed structure.