



Mega factory

The vast monopile manufacturing facility will be the first of its kind in the UK.

Being built on the site of the former Redcar steelworks, structural steelwork is helping to create the world's largest monopile factory.

Located on the south bank of the River Tees and standing 40m-high and measuring 800m-long, the £450M SeAH Wind manufacturing facility will, on completion, be the world's biggest monopile factory and the first of its kind in the UK.

Comprising a 93,324m² main monopile manufacturing building, a 3,873m² administration office, maintenance station, paint facility and site-specific power stations, the scheme will also include a range of staff welfare facilities.

The project's design is said to respond directly to the challenges of creating a space with an optimal capacity for monopile construction, and the layout has been carefully developed to achieve a configuration which satisfies SeAH Wind's operational requirements, ensuring each space

is interconnected efficiently and safely, with all disciplines operating under one roof.

South Korean manufacturer SeAH's factory will comprise high-quality factory space to produce up to 200 monopiles every year. Forming the foundations for offshore wind turbines, the huge piles will be up to 120m in length, 15.5m in diameter and weigh up 3,000 tonnes.

The monopoles are initially fabricated from flat plates that undergo rolling and welding to create short tubular sections. These sections are then welded together to form the finished monopile.

To help staff this process, SeAH is developing a training programme with local colleges in order to help local young people develop into tomorrow's welders.

Once the piles are manufactured, they will be

transported directly from the factory to Teesworks' new South Bank Quay facility before heading to the North Sea, where they will be installed using specialised pile driving equipment.

Located on a 90-acre plot, the factory forms part of the wide-ranging Teesworks scheme, which is redeveloping the land formerly occupied by the Redcar steelworks and described as the largest brownfield site in Europe.

Tees Valley Mayor Ben Houchen said: "Our steel built the world from the Sydney Harbour Bridge to Canary Wharf. Now from our proud past we're building a bright future in the industries of tomorrow – and we're making use of what we do best.

"This once again shows how SeAH and the firms we're bringing to the Teesworks site are fully behind having a local workforce at the heart of making Teesside the green energy capital of the UK."

Further enhancing local involvement with the project, a £100M-plus deal between SeAH, British Steel and Severfield was signed prior to construction works beginning. This has ensured

Watch a video of this project on the newsteelconstruction.com website.



Visualisation of the completed factory.

Group fabrication facilities, showing the strength and scale of its operations.

To manage the scale of the project, Severfield has deployed 150 people to work onsite to ensure everything runs smoothly and it meets the ambitious programme. At times, the site teams have erected vast amounts of steelwork per week, with as much preassembly being undertaken at ground level where possible to speed up the construction process.

Manufacturing facilities need large open-plan column-free spaces for their production areas and this vast factory is no different.

With a maximum width of 210m, the structure has four spans at its widest point, but just one single span for nearly half of its length. A series of large steel trusses, supported on lattice columns, form much of the overall structure.

As well as erecting the steelwork, the site teams have also managed to work around the delivery of significant amounts of heavy machinery from Korea, requiring agility to adjust the build sequencing to accommodate these deliveries and maintain the demanding build programme.

Almost 400 people are now working on the site. Many more jobs for the plant will come online towards the end of this year – with 750 direct jobs

in total and 1,500 forecast to come through the supply chain.

Chris Musgrave OBE, Chairman of Teesworks, says: “It’s fantastic to have SeAH Wind at Teesworks, and to have British Steel as the supplier and Severfield as the metal fabricator are massive boosts to our wider steel industry.

“This will further secure jobs at Lackenby and shows Teesworks, and firms like SeAH, are committed to ensuring local labour is used so we make the best use of what we have nearby.

“Teesside and British Steel remain at the forefront of UK steelmaking, and we look forward to working with our partners both on this huge project and beyond in the continued levelling up and transformation of the area.”

Summing up, Cllr Alec Brown, Leader of Redcar and Cleveland Borough Council, says: “There is a huge affinity with British Steel for many families in Redcar and Cleveland and it is excellent that the company is contributing to a major development on the Teesworks site.

“The development will be transformational for our borough and we look forward to SeAH Wind employing hundreds of people and providing work for many more in the construction sector and supply chain.” ■

FACT FILE

Monopile factory, Teesworks

Main Client: SeAH Wind

Architect: Ashton Smith Architects

Construction Manager:

K2 Construction Management

Structural engineer: Clarkebond

Steelwork contractor: Severfield

Steel tonnage: 35,000t

steel from the nearby Teesside Beam Mill at Lackenby, near Redcar, is used in this giant development.

Overall, British Steel is supplying approximately 35,000t of tonnes of steel under the agreement. Recycled steel from former steelworks sites is also being used in the construction to help create the new facilities from the ashes of the old.

Ben Cunliffe, British Steel’s Commercial Director for Construction, says: “We’re extremely proud that our steel manufactured at Teesside Beam Mill is going into this hugely impressive development by SeAH Wind, and we are delighted to play our part in the exciting regeneration happening on our doorstep in Teesside.

“While we have, a rich heritage having supplied many iconic buildings across the globe, we’re focused on the future and delivering the high-quality products our customers require.”

Commenting on the build programme, Severfield says the client needed an extremely fast-paced project delivery, requiring a tightly controlled connection design and detailing programme. This required output from all of its

Coordination has been key during the erection programme, as the steelwork is being installed around other trades and operations.

