



Woolston Wastewater Treatment Works Southampton

Location
Southampton

Client
Southern Water

Engineer
4Delivery/Harry Peers

Architect
Adams Hendry

Tonnage
900

The original wastewater treatment works site dates back to 1966 and it required a complete redesign in order to improve odour control, meet new higher environmental standards and to fit in with the redevelopment of the area too.

Due to the Spitfire aircraft history in Woolston, and it being home to the first prototype back in 1936, the architects made the decision to create a structure that resembles the complex shape of a Spitfire wing.

As part of a £100 million scheme to transform the old Woolston Wastewater Treatment Works, we were contracted to design, supply and construct the steelwork for all three of the new enclosure structures to form a state-of-the-art water recycling plant.

The three enclosures (Primary, Secondary and Sludge buildings) all have complex non-regular geometry and a curvature to replicate the Spitfire. Each of the enclosures also has internal overhead cranes with the roofs constructed from bespoke trusses to provide a clear internal envelope for the plant and services inside. While looking iconic, this posed its own challenges during the technical design stage, which featured some complex steelwork geometry. The design of which would not have been possible without the use of BIM and importing various models into the Tekla model as this allowed for a detailed co-ordinated fabrication model to be created to match the complex shape.

The construction of the steelwork for the enclosures proved challenging due to the site being confined and there being very limited laydown space, this was overcome by carefully planning for only specific just in time (JIT) deliveries being sent to site. We also had to work simultaneously alongside other trades - all while the existing and new sewage works remained operational. The roof trusses were assembled on the ground at site and lifted into position as a module, measuring approximately 35m in length. There was also a 18m-long pipe bridge between the primary and secondary building that was slewed into position after being assembled as a module on site.



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