

Modular Staircases

The designers were contracted to design and supply 4No 19m high staircases to the perimeter of a waste water treatment plant. The main challenges were limited time on site, lack of site room, a change of direction and the staircases being located over a moat.

To resolve these challenging aspects. It was decided to design the structure as a modular scheme allowing the stair units to be pre-assembled off-site and then transported to site. This allowed the modules to be erected on site in a single day giving the client immediate access to the waste water treatment plant. A further challenge was that the two staircases facing a new property development had to be aesthetically pleasing so elliptical perforated aluminium panels to represent a ships funnel were used. Again erection of these panels at site needed consideration due to time and access restrictions so it was agreed with the cladding contractor to use a Rain screen system. This consisted of a grillage support frame fixed to elliptical rails ready to accept the simple hanging of 280 Lightweight Aluminium Panels.

Key Points

- Staircase Pre-Assembled Offsite with handrail, flooring and treads to reduce on-site working time.
- Modules built up vertically on temporary steel frames (Concrete foundations not required).
- Detailing Lifting and Transport documents were produced by the designer for the Modules.
- Modules top & tailed with 2No Cranes to lie I on its side on a trailer for transport to site.
- Staircase Erected at site in Modules in a Single Day providing instant use as an Access Stair.
- Rain screen-Lightweight Aluminium Panels fixed to support steelwork for quick and simple erection.



Offsite Assembly



Topping and Tailing



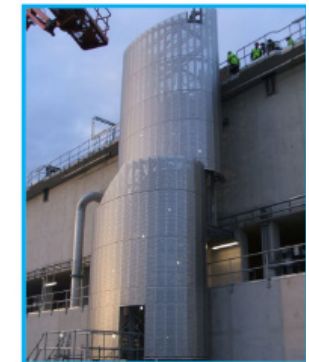
Loaded on the Trailer



Erected Stair Units



Cladding Grillage



Fixed Panels