



Innovative solutions for the utilities industry: A case study on creating sustainable solutions, for unique environments.

Challenges

Haywood and Jackson were approached to devise a permanent solution for gaining access to the maintenance equipment housed in a pump station, situated approximately 10 meters below ground level.

Due to the nature of the spatial limitations, the solution must not only be designed to fit within a confined area, but also designed in multiple components, to enable ease of on-site construction of the solution to be carried out at the bottom of the pumping station.

Due to the nature of the environment, consideration must be given to the materials used and require to be durable and resistant to the environmental conditions within the pump house, which may include moisture, chemical exposure, and varying temperatures.

Furthermore, the design should incorporate features that comply with health and safety regulations within the utilities industry, to ensure the wellbeing of the client's workforce, and reduce hazards, to improve the overall efficiency of maintenance tasks being carried out.

At A Glance

Challenges

- **Spatial limitations**
- **Nature of environment**
- **Multiple component design and install**

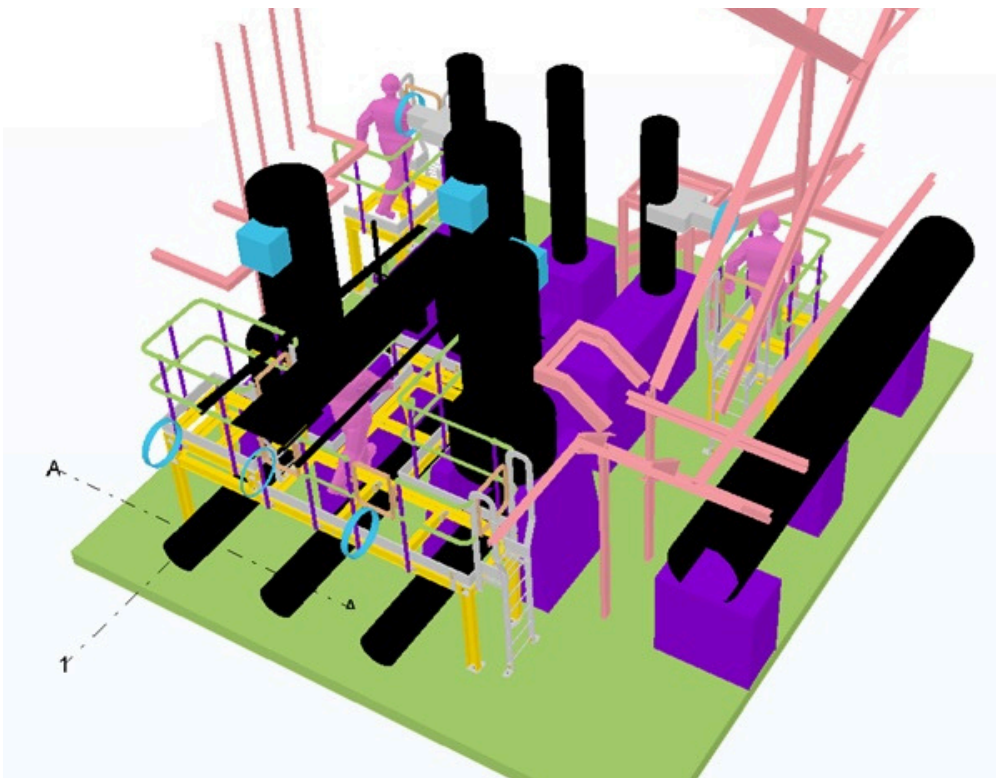




Solution

Firstly, the pump room area was scanned using a rotating 3D laser scanner, to replicate the exact space inclusive of the existing pipework and equipment. Once aware of the space, the design team decided to design a platform that the clients maintenance team could use for navigating around the pump house, safely, to ensure they could access equipment to carry out their maintenance tasks, efficiently and effectively.

The design team and the installation team meticulously planned how each section would fix together and how the components would be delivered, installed and constructed on site, so that they could start designing each platform section and accompanying components in parallel with the completed solution.



After 2 weeks of design, the steel platform and main support frame, handrail system and GRP floor grating was completed and handed over to the workshop to fabricate.

At A Glance

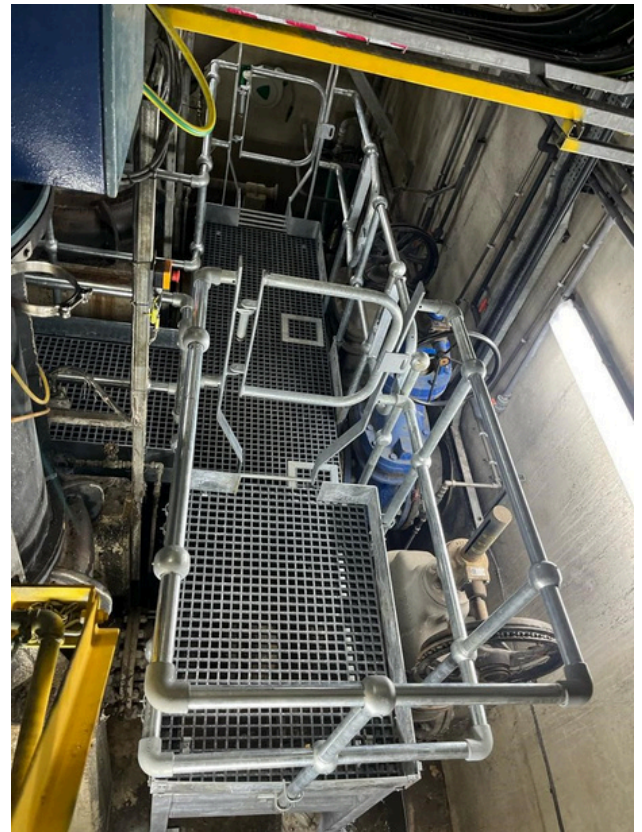
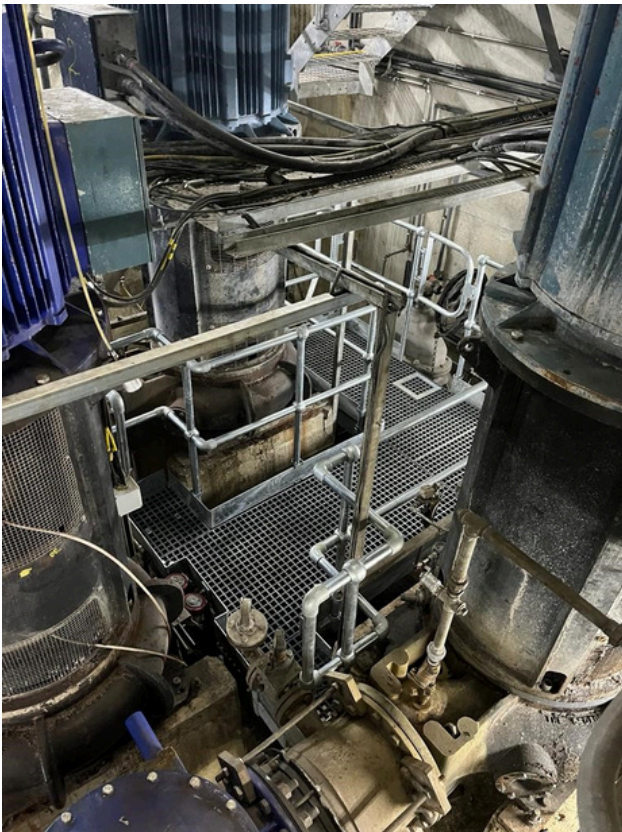
Solution

- **3D laser scan project space**
- **Design, fabrication and installation coordination plan**
- **Design and manufacture multi-component platform**
- **Delivery, onsite install and safety checks**

Solution

Throughout fabrication, Haywood & Jackson adhered to their quality process, which is inclusive of factory production control for CE marking of structural steel, ensuring that the design was executed correctly to ensure perfect fitment.

Once the platform in its entirety had been manufactured, the installation team transported the components to the site location. Using an existing overhead pendant crane, components were lowered down into the pumping station, in batches, to allow a smooth installation. After the installation was complete, a visual inspection was carried out, inclusive of a bolt check before handing over to the client.



Outcome

With a balance of precise design, early installation coordination, manageable component sizes, durable materials, and adhering to health and safety standards, Haywood and Jackson successfully provided and ensured a practical, safe, and long-lasting access platform solution to allow the maintenance team to competently inspect and maintain plant equipment on their premises.

Project Client Feedback

"We were asked to provide an access platform in a tight and difficult to install environment (a defined confined space) with little access and high noise levels from the operational plant that couldn't be switched off.

We always look to our supply chain for better smarter ways of working & H&J certainly did by firstly 3d scanning the basement which had several benefits firstly there was only one site visit to get the information required to allow the design to be produced to a bespoke nature i.e. made to measure.

Secondly it also meant that drawings were quickly produced to incorporate exact requirements and submitted to the client for comments. From the approval of the design, materials were procured reducing wastage, so better for the environment then assembled off site to assure the fit when it got to site.

Then the platform was dismantled into component parts a lift plan was produced detailing how each piece would be lowered to the basement floor then reassembled sequentially in position this meant using United Utilities onsite pendent crane and required an operator to be trained to use it.

Ultimately this reduced the amount of time onsite and the amount of time working in a noisy confined space environment overall, a win-win for all. I would highly recommend the initiative approach from H&J on this project to deliver a quality product efficiently to the satisfaction of the client"

Nick Wilbourne - Costain - Project Engineer

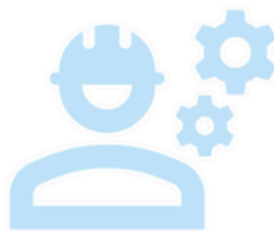
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