

CASE STUDY CS14

Project: Building 3 Service Gantry

Location: Titchfield



Fast Facts

Project Client: Eaton Corp (UK)

Project Manager: Forward Projects

Principal Designer: Ove Arup

Principal Contractor: n/a

Project Value: £15.9k

Project Duration: c.12 months

Project Mandate

Identify an optimised solution for treating the existing dilapidated services gantry whilst making provision to retain the availability of the services it provides and not adversely affect continued site operations.

Background

The Eaton Titchfield Site is a large multi-building site comprising factories and office buildings. The site is served by a network of electrical and mechanical services and in one part of the site, these services are carried overhead by a 30m long service gantry.

However, concerns were raised over the safety and stability of the service gantry as structural elements had become so corroded that a separate temporary scaffold structure was subsequently installed to support the whole gantry. Eaton requested that options be identified for a permanent long term solution to the treatment of the gantry. Left untreated, the risk was that the gantry and scaffold could ultimately fail with undesirable consequences.

Solution

The plan was to follow a five phased approach to the project as follows:

1. Prepare a Client Brief
2. Optioneering and Feasibility Study
3. Detailed Design
4. Implementation
5. Close Out

Scope of Services

For our initial appointment we were tasked with preparing the client brief and selecting the design consultants by competitive tender, overseeing the production of the report and presenting the options for Client approval.

Structural Risk Assessment

The existing fabric of the service gantry had become so corroded that elements of the structure were no longer continuous, and left unsupported, would have certainly collapsed. However, the scaffold system installed to support it was a temporary measure, with no specific planned maintenance regime in place. The existing services on the gantry included HV electrical services, high pressure air lines and many smaller electrical and signal/communications cables. Very few of the services had been scheduled, and in many cases their termination points were also uncertain.

Added Value

The strategy adopted was to stand back from the initial problem and look at the wider requirement for the provision of services and use of the buildings in the immediate vicinity. At the time, Eaton was also running a demolition project on one of the adjacent buildings currently served by the gantry, so our strategy looked for alternative routes to supplying the services, and not just an alternative gantry solution.

The final optioneering report provided a comprehensive list of all the services and their terminal points on the gantry along with a recommended strategy that mapped out new routes for the services facilitating the complete removal of the dilapidated service gantry. Schematics were included that showed the reader exactly how the new strategy could be implemented.

As well as overseeing the production of the report, we were also closely involved as a third party reviewer of the document to ensure it

addressed the original mandate and could be used as the main scope definition document for the next phase of the project.

Stakeholder Engagement

One of the key factors to making this report a success was working closely with Eaton to identify and understand the future requirements of the stakeholders involved. The optioneering team ensured that local building owners and users were consulted about the risks and proposed a strategy to ensure 'buy-in' to the alternative solution.

Finally, a presentation was held after issue of the report to share and challenge the conclusions in an open forum.

Industry Standard

All works completed were fully compliant with the latest British Standards and ACOPs.

Conclusions

The report was delivered on budget and the client was extremely satisfied with the conclusions and was seeking to implement the next phase (detailed design) of the project strategy.

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