health in CONSTRUCTION leadership group

Balfour Beatty

Build to Last
Lean. Expert. Trusted. Safe.

Case study:
Health by Design

Summary

Acting as a sub-contractor, Balfour Beatty was able to influence both the Principal Contractor and Principal Designer during the design phase to eliminate the need for the installation of service brackets by introducing precast Unistrut as an alternative design option.
New Construction Design and Management (CDM) regulations require teams to collaborate internally and externally in the design phase to improve health and safety. The regulatory guidance also state that 'processes giving rise to large quantities of dust', should be eliminated from the project where possible, and 'chasing out concrete… for the installation of services' should be reduced where practicable.

Unistrut allows the service brackets to be fabricated and set up pre-pour, completely eliminating the need for drilling into concrete. At a stroke, the team tackled the dual risks of dust and Hand Arm Vibration Syndrome (HAVS) at the top of the control hierarchy, eliminating worker exposure by substituting a different method of work.

Problem statement

Balfour Beatty Kilpatrick were contracted to do some M&E work.

The project's initial design had included installing service brackets, by drilling holes into the concrete to secure them. This design option would have required operatives to repeatedly drill holes into concrete.

This process would result in high levels of vibration exposure to operatives, as well as exposure to respirable crystalline silica dust. These issues would have been compounded by the fact that much of this work would be done at height, and required drilling upwards bringing with it obvious safety hazards for the operatives while working at height.

Solution / what you did

In addition to eliminating exposure to vibration, construction dust and noise the use of the precast Unistrut on the project reduced time spent working at height by 75%; further reinforcement of the fact that safe work can still be fast work and that Zero Harm brings benefits to productivity as well as health.

Key challenges faced

Challenging the original design and influencing both the Principal Designer and principle contractor to change the existing design.

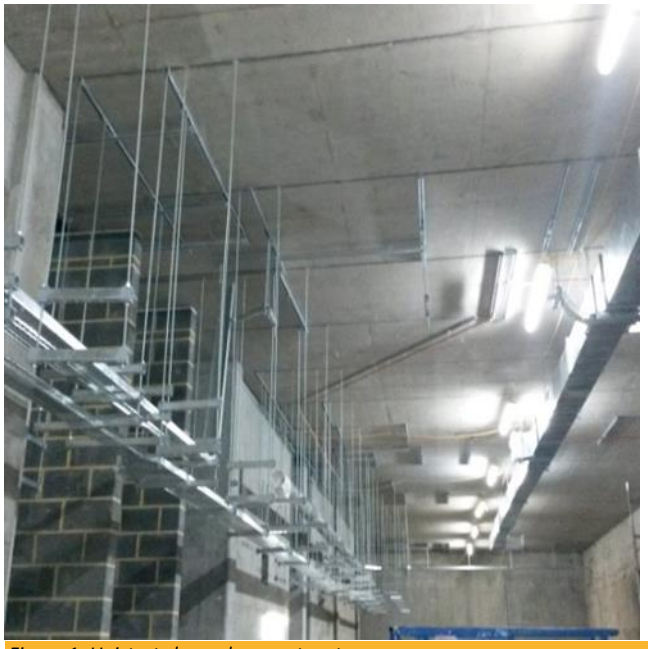

Figure 1: Unistrut channel support system

Outcomes and benefits

- Eliminated the requirement for employees to drill into concrete creating silica dust.
- Eliminated exposure to vibration though drilling process.
- Eliminated the risk of employees developing upper limb injuries from drilling overhead.
- Significantly reduced the man-hours working at height on the project.
- Improved the productivity due to reduced requirement for labour in order to drill the holes manually.

Measures of success

Positive feedback from project management and employees on the effectiveness of the unistrut solution along with the willingness to share the initiative at every opportunity and commitment to use unistrut and similar initiatives on all future projects

Lessons learnt

Early engagement and collaboration with all levels of supply chain can reap benefits where elimination of risk is

concerned. In this instance Balfour Beatty although only a subcontractor were able to influence both the Principal Contractor and the Principle Designer to alter the specification of the original design and implement a solution which significantly reduced both health and safety risk improving budget or programme performance

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