Walk on Maintenance Floor – Flexibility in Design

The walk on maintenance floor comprises 2 layers of 18mm thick Marine plywood supported on 200mm deep cold formed steel sections. The cold formed steel sections have a maximum span of 3.5m with the floor designed for a safe working load of 3.25kN/m².

The design criteria had to cater for two cases:-

- 1. Permanent Loading This was for maintenance of equipment with low capacity occupancy with hand tool up to working live load of 1.5kN/m².
- 2. Construction Stage This was designed for high level erection of duct works and cables with the use of MEWPS up to a capacity of 3.25kN/m².

Photographs of the installation and finished floor are shown below.



The main obstacle overcome with this proposal was that of producing final setting out information for all service penetrations through the deck. This involved numerous co-ordinations meeting between the services & structural engineers and the preparation of detailed 3D co-ordinated models. The services design had to be progressed significantly earlier that would have been normally expected. The principal benefit this provided to the project was that the deck provides a working platform to enable the building services installations to commence very early on in the construction sequence, whilst the building envelope and shell were still being completed in parallel.

BENEFITS

The following points summarise the main safety, quality, cost benefits associated with this initiative

- Additional holes in the finished steelwork offered flexibility for beam locations.
- Eliminating site drilling reduces working at height.
- Installation time was significantly reduced.
- Openings in the floor can be easily formed without significant amount of work.
- Lightweight floor imparts minimum loads onto the structure
- Works completed in a quality controlled environment.
- Minimal disruption to activities being carried out within the building.
- Cost savings achieved through reductions in installation time and disruption.

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