

Isokon Building, Glasgow

Client: Robertson Construction
Contractor: Dunne Building & Civil Engineering
Location: Glasgow, Scotland
Products: Airodek / Alshor Plus

Case Study

Two of RMD Kwikform's high-productivity aluminium systems more than proved their worth by dramatically reducing the construction programme for the 13-storey Isokon building in Glasgow, UK. Alshor Plus been used in conjunction with Airodek for the construction of the 4,680 square metres of insitu concrete floors, resulting in substantial time, labour and cost savings.

"RMD Kwikform was able to demonstrate that by using the combination of Alshor Plus and Airodek they would enable us to achieve the desired one-week cycle for each floor," said Dunne's Managing Director, Gordon Dunne.

The solution also cut construction costs on the Isokon project by minimising the craneage requirement and reducing the amount of skilled labour required. The simplicity of the shoring and formwork system is such that the work was completed within a shorter contract period by unskilled labour with no previous experience of the systems.

The project utilised Airodek panels with dropheads, supported on Alshor Plus. This quick-strip technique allowed the Airodek panels to be struck at an early stage in the concrete curing process, leaving the shoring and the dropheads in place to support the soffit. The panels and beams were then removed and reused on subsequent floors, further reducing the amount of soffit formwork required for the project. The Alshor Plus falsework remained in place to provide the necessary back propping.

This combination of Alshor Plus and Airodek enabled a grid size of 3m x 1.8m to be used throughout the building. This cut the number of components required to complete the work and, consequently, the overall cost for the contractor. It also made a major contribution towards reducing the time required to erect and strike the formwork and shoring and minimised the contractor's transport and storage costs.

A major safety feature of the RMD Kwikform solution was that the Alshor Plus shoring and the Airodek panels and supporting Airodek beams were all able to be erected from below, a much safer option for site personnel than having to position the panels or plywood from above.

"The decision to use Alshor Plus for this project was greatly influenced by the system's minimal number of loose parts and the incorporation of several time

and cost saving features that are unique to the system," commented Gordon Dunne. These include aluminium spigots that allowed fast and secure outer leg to outer leg connection, and blade-and-pocket connection between the legs and frames that provided the quickest possible connection. Other innovations include extended grooves in the long screw jacks that make adjustment quick and easy.

Around the perimeter of the building, the Airodek panels and beams were uniquely supported directly off Alshor Plus. These cantilevered sections were given the additional restraint of diagonal down ties that incorporated RMD Kwikform's Rapid Bar Ties. The upper ends of these diagonal ties were mushroom-bolted to the inner end of the Airodek beams, while the lower ends were bolted directly to the concrete floor to transfer the load. Decking beam handrail sockets were located on the outer ends of the cantilevered beams to support decking beam handrail posts and handrails.

Slab support for areas around columns and stairwells used Airodek infill beams that supported the 19mm plywood formwork. These were the only instances where it was necessary to use loose plywood formwork during the construction of the floor slabs.

