

Off-site prefabrication delivers off-the-scale results.



Sky Gardens is one of a number of exciting buildings which are re-shaping Leeds and creating new high-value neighbourhoods for the city. The project is now transforming a 0.93-acre brownfield site, including a Grade II-listed former mill, into a vibrant residential destination.

The 34-storey tower will provide 284 residential 1, 2 and 3-bedroom apartments and host a residents' lounge and gymnasium at level 30 that offers panoramic views across the Leeds cityscape. When completed, Sky Gardens will be one of the tallest residential buildings in Leeds.

Comprehensive drainage and water supply solution (Terrain FUZE, Terrain PAPA, MecFlow Fusion and MecFlow Press) delivered through the Advantage Off-site Prefabrication Service.

**34-storey residential tower
284 apartments**

CASE STUDY

Project

Sky Gardens, Leeds – drainage and water supply systems.

Client

Briggs & Forrester Living.

Application

Drainage – soil & waste, water supply – boosted cold, heating, hot & cold plumbing, plantroom.

Products

Terrain FUZE, Terrain PAPA & Pleura, MecFlow Fusion, MecFlow Press, Advantage Off-site Prefabrication Service.

At Sky Gardens in Leeds, Briggs & Forrester Living takes full Advantage of a new approach to drainage and water supply system development.

Working with Briggs & Forrester Living, Polypipe Building Services (PBS) has designed and fabricated a set of innovative drainage and water supply systems which both enhance the building's performance, while streamlining project implementation and creating commercial value for both the contractor and developer.

The full scope of what PBS could offer Sky Gardens was highlighted by a factory site visit, with a tailored presentation for the Briggs team on the benefits that prefabrication could deliver for the project.

Close cooperation between Briggs & Forrester and the Polypipe Advantage Design Team enabled the development of highly effective and cost-efficient systems.

The drainage system developed for Sky Gardens is prefabricated from Terrain FUZE, an HDPE system which offers excellent benefits in terms of impact, corrosion, abrasion and chemical resistance. The system also incorporates advanced components such as Polypipe's PAPA and Pleura AAV valves, which mean that the risers do not require a space-hungry secondary ventilation stack to balance changing pressures.

On the water supply side, Sky Gardens uses both of Polypipe's MecFlow ranges. MecFlow Fusion provides the risers and manifolds, while Mecflow Press was used for the runouts and branches to the apartments.

Sky Gardens also uses a modular prefabricated plant room assembly made from MecFlow Fusion.

MecFlow Fusion is a multi-layer PPRCT system that delivers impressive strength and durability and uses a range of advanced welding techniques to create strong ultra-reliable joints.

MecFlow Press uses a three-layer composite pipe (PEX-AL-PERT) and advanced fittings with designed-in features that ensure secure jointing.

The systems installed within Sky Gardens vividly demonstrate the benefits of using a prefabricated approach. For example, the bespoke Terrain FUZE drainage stacks were installed in just nine hours as opposed to the normal 73!

The modular plantroom also delivered some impressive benefits. Whereas a conventional system, using separate components and requiring on-site fabrication and assembly, would need 215 on-site operations - the plantroom module used at Sky Gardens consists of 13 prefabricated sections and was put together with just 10 electrofusion couplings – that's a 93.5% reduction in on-site processes.

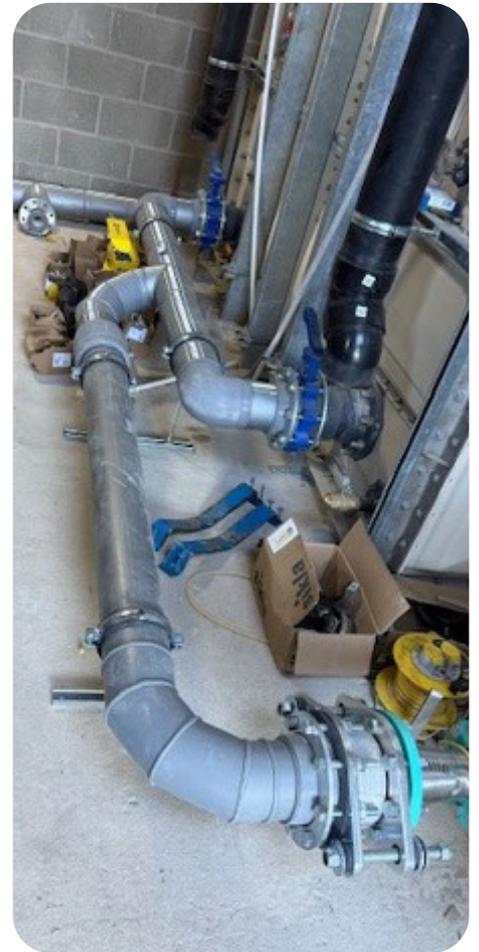
Prefabrication also suited the urban setting of the project (which had an extremely tight footprint with little room for storage of components and equipment) as system elements could be called-up on a floor-by floor basis and craned direct from delivery vehicles to the installation point.

Phil Christie, Key Account Manager at PBS for Added Value Solutions, sums up what Polypipe and Briggs & Forrester Living have achieved at Sky Gardens.

"Sky Gardens allowed us to stretch our legs in terms of adding value through prefabrication and product innovation.

"Briggs & Forrester are the ideal customer. We've collaborated a number of times before. We understand how each other works and know what we can achieve together.

"We've stepped up and delivered benefits with significant commercial returns. When you can routinely reduce drainage stack install time by 80% and create a plant room set-up that only requires 10 electrofusion couplings, you know you're making a difference."



Chris Johnson, Mechanical engineer at Briggs & Forrester Living, comments:

"It really is a very different way of doing things. Prefabricated sections lifted straight from the lorry to where they'll be installed, plant rooms assembled with just a few connectors. No waste, no on-site storage, no hot works. It has to be the way forward and it's all made possible by close cooperation between us and the manufacturer at a very early stage."