

Offsite bespoke engineered stack replacement offers solutions in tight spaces.



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Harcourt House is a 15-storey tower block in Tamworth. Completed in 1967, it has 60 apartments and is one of six tower blocks on site owned by Tamworth Borough Council. This block had 6" cast iron soil vent pipes in-situ which were showing several signs of failure including splits within the cast and failing seals on the lower ground floor. Polypipe Building Services were brought in because tenants had complained of bad smells due to leaks, often created through waste build-up within the pipework.

But the age of the building meant that this was far from a straightforward project. The location of the original stack in a tight, awkward space meant that getting the new pipework in would be far from simple. The work was complicated further by changes to the layout of the flats down the years, including bathrooms being upgraded to wet rooms where the location of basins and toilets had been moved.

Polypipe Building Services Project Development Manager Deane Pearse

"The existing drainage system was in a bad way as most of the seals had gone on the lower ground floor where the cast was splitting, and there were complaints from tenants about stacks leaking. This is often because fats and oils stick to the inside of the stack and build up over the years."

CASE STUDY

Project

Harcourt House, Tamworth.

Client

Tamworth Borough Council.

Application

Live Stack Replacement.

Products

Terrain FUZE.

A more efficient solution

To ensure that they could offer the most efficient way of replacing the drainage stack, subcontractor Legionella and Fire Safe Services, spoke to Polypipe Building Services and identified the Terrain FUZE system as the ideal solution.

In total 60 Terrain FUZE stacks were used across this build with a number of different prefabricated configurations supplied. To tackle the awkward location of the original stack, the replacements were supplied in two halves per property which enabled the installer to drop it easily into this existing space. Being in two pieces also allowed for an expansion joint to be put in the middle of the stack which made it fully rotatable so the installation team could place the access door exactly where they needed.

To address the varying bathroom layouts, Polypipe Building Services provided a change to the seal adapters and some offsite engineered pipework solutions. These included cutting back of the boss as close to the stack as possible (to around 30mm) and elbows with as little as 94mm from centre line to centre line in some cases which would be difficult to achieve on site.

Importantly, the above modifications combined with the lightweight nature of the HDPE pipes meant that the installation team was able to complete the replacement work at a swift rate of two flats per day.



Polypipe Building Services Advantage Technical Manager Adam Cafer explains:

"If cast iron is used in stack replacements, then branches from the main stack can only be accommodated at 90 or 45 degrees, whereas in HDPE angles can be bespoke engineered to accommodate a range of fittings - often essential in existing tight spaces.

"In HDPE two connections can almost touch each other if necessary, and at Polypipe Building Services our Advantage team can mirror-weld these bespoke connections by hand. This process is helped by using 3D printed jigs plastic moulds can be created as cutting aids which allow us to create closer cuts which is safer than installers managing this on site and ensures a better-quality product."

Dannielle Bayliss, Operations Director at Legionella and Fire Safe Services, specialists in water compliance and fire protection who were the subcontractors on this site, said:

"We approached Polypipe Building Services when the cast iron drainage within Harcourt House needed replacing, and although originally the architect had specified 6" pipework the technical team at Polypipe Building Services were able to conduct flow tests which showed for the number of appliances within the building a 4" HDPE pipe could be used.

"It's the ability and expertise of the RMI team at Polypipe Building Services to overcome problems on projects like this which mean we will continue to collaborate with them going forward on similar projects like this, as these projects are always more complex than they seem."