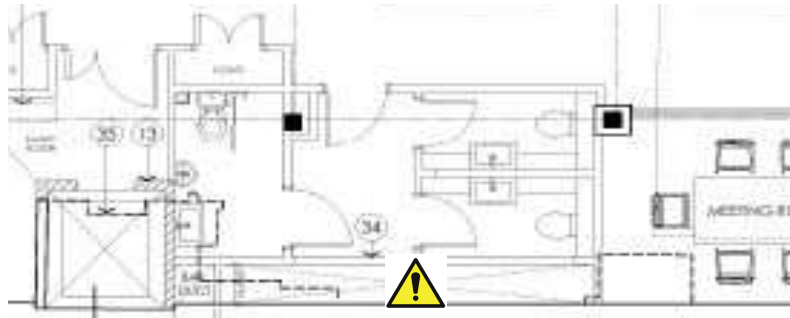




Managing Internal Riser Ducts - Design Examples

The Problem / Challenge

A designer was alerted to the difficulty of effectively safeguarding floor openings before the installation of service risers. The programme would require the installation of services after the riser openings had been formed.



Large duct at party wall, fall risk highlighted



1. Sleeved services



2. Large metal mesh



3. Small cast-in metal mesh prevents falls in open areas (though standing on it as pictured may not be advised)



The Risks

Holes in the floor can be created that the contractor has to manage, leading to a potential fall risk or trip hazard. This has previously led to the deaths of construction workers.

The Solution

The designer alerted the contractor to the issue at tender on drawings. Where it was possible, the risers were kept adjacent to walls, making them easier to protect. Co-ordination between M & E designers and structural designers was required to reduce the size of riser openings. Sleeves or ducts were cast in ready for services. The concrete frame contractor was also consulted to cast mesh into the floor plate (See 3 above). Because they had been appointed early, the M&E contractors could be consulted to agree their preferred solution.

The Benefits

There was a significantly reduced reliance on scaffolding or coverings that could be easily moved. The M&E contractors could work within risers without the need to use ladders over voids.

Key Points

The concrete frame designers coordinated with the Mechanical and Electrical designers as early as possible to minimize risks and the size of riser openings. Casting in sleeves and mesh helped to eliminate fall risks. The offsite preassembly of services further reduced the need to work at height.