

# Gateway Building

## Defying gravity

RISE loves a challenge and when we first saw plans for this building, we thought 'Brilliant, what an opportunity to showcase our speciality: defying gravity!'

This unique P-shaped structure will house a two-storey flat working as a pure cantilever. And there's no cheating: we won't hide ties or columns within the neighbouring structure. Our challenge is to defy gravity – and we will RISE to it.

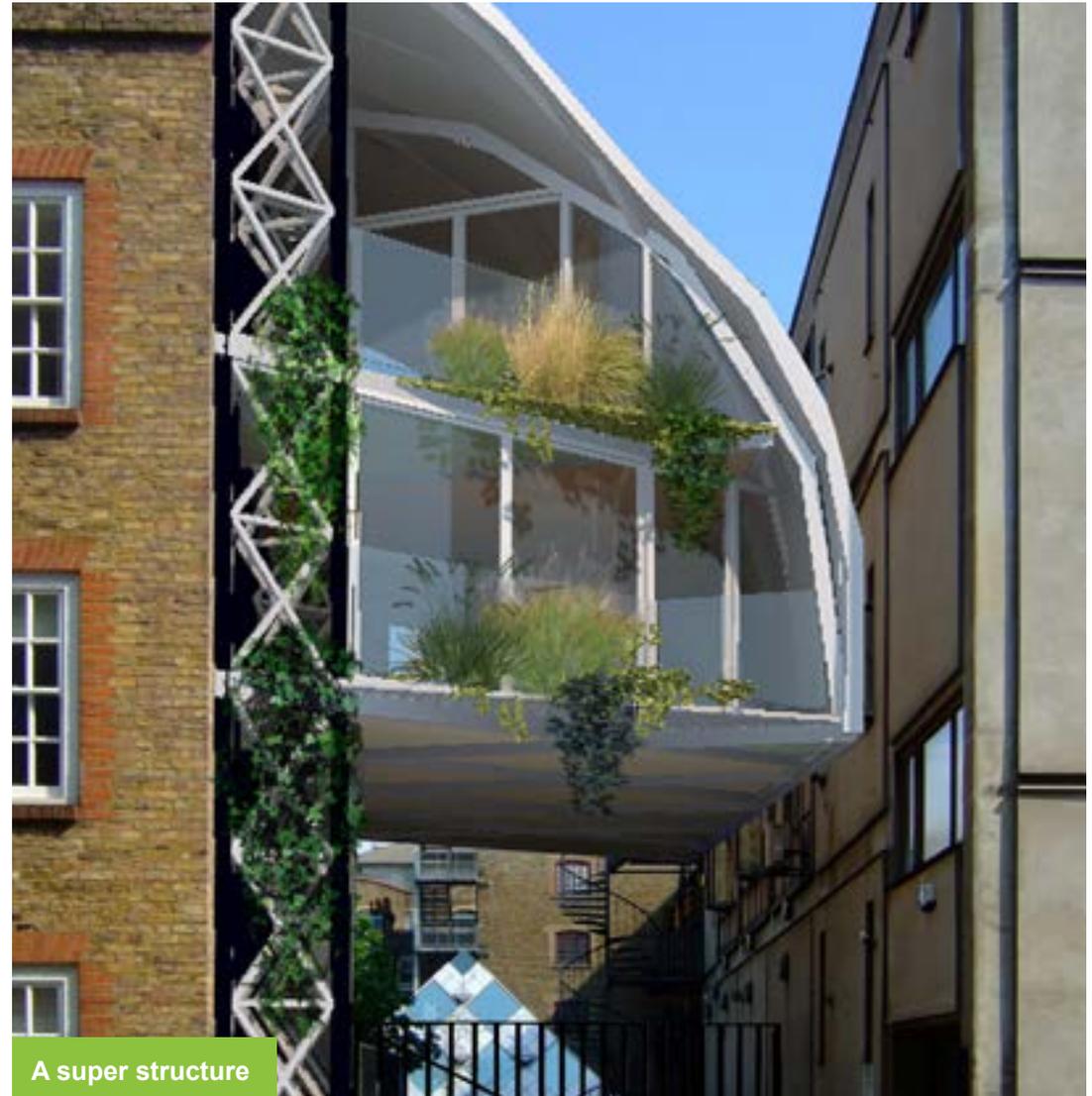
The steel columns will be formed by three trusses. Interconnected cantilevering from the ground to the top of the building, supporting the curved roof and two cantilevering floors at first and second floors.

All the main structural beams will criss-cross, which further increases our challenge because it lengthens the span of the elements. By alternating the direction of the joists and following the criss-cross pattern of the beams, RISE will be able to distribute the loads evenly between the floor beams, making the design much more efficient. By leaving the underside of the floor exposed, the interlaced beams will be visible, contributing to the architectural visual statement.

**Client:** Private

**Project cost:** £700,000

**Architect:** Dransfield Owen Designs



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For the feasibility study, various options were presented to the architects, showing how the depth of the trusses and of the structural elements would affect the performance of the building. Furthermore, it became apparent that the stiffness of connection between the ground floor slab and the columns will be critical in making this building stable. The ground floor slab will be supported by piling – probably screw piling – to be as close as possible to the existing building, while allowing service to go through the piles without much ground disturbance.

RISE not only rose to this challenge but also produced a solution that enhances the visual statement made by the architects.