FROM FINS TO BALUSTRADES & BALCONIES

Structural and architectural metalwork, Gants Hill, for Guildmore Ltd.

Description: Glazed balconies, staircase balustrades, feature fins and roof parapet steels.
Location: UKNI (Gants Hill)
Type: Residential, Commercial
D4S Services: Structural Engineering & Construction Engineering
Main contractor, Guildmore, was responsible for the construction of a mixed-use development in Ilford, east London, comprising 25 residential apartments and ground floor community facilities. The site raised the challenge of building above the eastbound bore of the Central Line, its location being in near proximity to Gants Hill Underground station.

Architectural metalwork features prominently in the development’s design. To the front roadside elevation, feature fin steel runs the full height of the building, either side of the main entrance. And to the rear elevation, steelwork and glazed balconies overlook the courtyard. The roof steelwork, parapet structure and internal staircase balustrades were all supplied and installed for the development by our client Kingsmith Steel Ltd.
D4S SCOPE

D4S was commissioned by Kingsmith Steel Ltd to provide Structural Engineering and Construction Engineering services for this Metropolitan Housing Trust project in Gants Hill. On paper this was a straightforward task for us but, unfortunately, the project’s original structural engineers were unable to complete the project. This lack of available information meant, somewhat unusually, we were asked to retrospectively design and check the existing steelwork. So we took what existing designs there were from the original structural engineers and created and developed the necessary design and details to a full fabrication construction level. This also included all the steel-to-steel and steel-to-concrete non-standard connections and fixings.

Whilst designing the concrete fixings, D4S also took on the responsibility for some of the existing reinforced concrete slab designs. To complete this aspect we had to take into consideration the existing reinforcement locations to ensure the post drilled fixings wouldn’t clash or reduce the integrity of the reinforcement. Architectural metalwork features prominently in the development’s design and as part of the overall commission we also had responsibility for designing the building’s balconies, including their glass balustrades and metalwork fixings.

SCOPE OF SERVICES

- External feature steelwork design
- Balconies design
- Secondary steelwork design
- Steel connection design
- Steel-to-concrete connection design
Due to the lack of existing structural engineering information, Gants Hill offered us an interesting opportunity to take on greater responsibilities than normal. To fulfil our new remit we took existing design assumptions, retrospectively developed them into construction design calculations, then used them to design and detail all the architectural feature steel and metalwork.

Due to the specific circumstances of this project, the fabrication programme was extremely fast-paced and required everyone on the design and construction teams to collaborate and work much closer than usually expected for this type of work.

In summary, despite unforeseen pressures, we were able to realise all the features envisaged by the architects and designers and the building was successfully completed to our client’s satisfaction.

“Thanks for the excellent service that you provided us on our Gants Hill Project, it’s a pleasure to work with multi-disciplined structural engineers that provide first class steelwork calculations and design.”
Main Client: Metropolitan Housing Trust
Main Contractor: Guildmore Ltd.
Steel Fabricator: Kingsmith Steel Ltd