WHERE PANE MEANS GAIN

To match its illustrious neighbours, 8-13 Lime Street in London's City has been designed with an eye-catching glazed facade. But the location presented more than a few obstacles. **Elaine Knutt** reports

A City office project that has the Lloyd's building, the Gherkin and the sleek new Willis Group tower as near neighbours needs a confident public face. Accordingly, at 8-13 Lime Street, architect Rolfe Judd designed bold curved glass screens to face Lloyd's, generous windows slotted into a traditional stone facade, and glazed-in terraces to the upper floors.

None of this would be a problem on a roomy business park site. But factor in the City's narrow street pattern that limited access and the use of scaffolding, plus a nearby pub cellar that restricted loadings, and window and curtain walling supplier English Architectural Glazing and contractor ISG had to deal with a number of design and installation challenges.

EAG's £3.2m glazing package included stick-built curtain walling for the ground and first floors, curved glazing from ground to the 8th floor, unitised windows for offices on floors two to six, and a glazed mansard terrace on the 7th and 8th floors. The supplier used aluminium sections and components from Schüco, glass from German company Rickerts, and an ingenious new piece of kit – an 'EMU' robotic arm that significantly simplified installation.

'Everything was all worked out in advance. The whole process took 18 months to negotiate before we came on site last September,' says Lee Sharp, EAG's project manager. 'There's a lot going on, considering it's a job the size of a postage stamp!'

The dramatic 5m wide by 2.6m high curved sections facing Fenchurch Street presented several challenges. EAG and ISG's original preference was for a unitised curtain walling system, due to the relative ease and speed of installing the pre-finished units. However, butting up curved and straight sections on the ground, first, seventh and eighth floors would have resulted in two sets of 300mm-thick glazing bars meeting, spoiling the architect's clean, spare aesthetic. EAG therefore opted for a stick-built system in the form of Schüco's FW60 SG facade for both the curved and straight units.

LEARNING CURVE: *the architects' visualisations (above and above right) show the glazing challenges that faced EAG*

The requirement for low-emissivity film posed the next problem. Conventionally, curved glass is used with a softer, malleable film, but this creates a slight colour difference when positioned next to straight sections coated with less flexible film. So EAG specified a new product, Guardian's Neutral 61 – a low-emissivity film that can be applied to both curved and straight glass. 'Every indication is that it's a perfect match,' says Tim Robertson, project architect at Rolfe Judd.

The 40 straight panels for the first floor curtain walling were installed using an ergonomic manipulation unit or EMU. A motor-driven robotic arm with a 1,000kg lifting capacity, the EMU sits on the floor slab and 'pokes' its rotatable head outside so the vacuum suckers can be attached to the glass panel.

'The EMU significantly reduced the work, otherwise we would have needed a specialist scaffold. I'd say it cut down work by three quarters,' says Sharp. 'On straight runs with workably sized panels, it might be easiest to position the panels by hand. But if you've got a heavy lift, the robot takes out a health and safety risk.'

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Lee Sharp, EAG

On floors seven and eight, EAG used a simpler, manually-operated Glasboy to position smaller panels transported in the site hoist.

The five floors of unitised Schüco SU90 windows posed more challenges. To avoid scaffolding the site, the construction team decided to fully pre-assemble the windows and