

# Case study



## Schöck meets high load cantilever walkway challenge

**Kidwells Estate, on the outskirts of Maidenhead in Berkshire, is undergoing major regeneration involving seven new blocks, which are part timber clad and vary from three to six storeys of structural concrete frame. Long cantilever walkways that service multiple flats are a feature of the new development and the unusual design demands of the walkways presented a technical challenge for Schöck, who supplied the structural thermal breaks.**

The former Kidwells Estate, now known as Parklands, is a landmark £27.1 million project, scheduled for completion later this year. It is a scheme for One Housing and replaces seven 1960s built apartment blocks. The redevelopment will provide 204 new mixed tenure high quality homes, consisting of 75 homes for rent to existing and new tenants, nine shared ownership homes and 120 homes for private sale. On completion the development will provide three and four bedroom family homes; as well as one and two bedroom apartments. One Housing manages over 15,000 homes across 27 London boroughs and surrounding counties; and in the last three years has delivered more than 1,500 new affordable homes, with plans to build a further 3,600 by 2019 to help meet the housing shortage.

Schöck, who supplied the structural thermal breaks at Parklands, were faced with an unusual technical challenge as a result of the unconventional requirements concerning the cantilever walkways. The challenge came about because the design consideration, both aesthetically and for the benefit of residents and visitors, required the availability of as much natural light as possible in the areas around the cantilever walkways.

To meet this requirement, extensive light wells have been introduced at regular intervals along the length of the galleries. These wells are effectively a series of elongated spaces, which separate the walkways from the building for large sections. As a result, there are far fewer structural connection points between the walkways and the building than would normally be anticipated, so the connectivity opportunities are very limited.

The walkways themselves are cantilever concrete construction into internal reinforced concrete frame; and because of the restricted connectivity point opportunities, the Schöck structural thermal breaks had to resist a much greater shear load than would be the case with a more conventional design.

In addition to this, the support condition of the external columns and edge beams also had to be taken into account and there was a limitation too on slab thickness for the dowel connections.

The solution required a relatively unusual combination of products and Schöck resolved the various issues by designing in its type HPC Isokorb. It is a product utilised only if horizontal, tension and compression forces are present in the design and additionally it is necessary to integrate the type QP90+QP90 Isokorb as well, for linear or point connection to support high shear loads. Schöck type SLD Q50 heavy duty stainless steel dowels were also incorporated to enable the transfer of vertical shear forces and allow two directional lateral movements at the expansion joints. The result was a completely secure thermally insulated load-bearing connection at all of the restricted, but key structural points.

The Schöck Isokorb structural thermal break range enables connections to be made between concrete-to-concrete, concrete-to-steel and steel-to-steel – and the many different unit types available, combined with their ability to enable the transmission of shear, bending moment, tension and compression forces, also means that the options available effectively run into hundreds when the different combinations are taken into account.

All units provide BBA Certification and LABC Registration and meet full compliance with the relevant UK building regulations.

The requirement described in BRE IP1/06 – a document cited in Building Regulations Approved Documents Part L1 and L2 and Section 6 in Scotland – that the temperature factor used to indicate condensation risk (fRSI) must be greater than, or equal to, 0.75 for residential buildings, is easily met by incorporating the Schöck Isokorb.

*A comprehensive 236 page 'Technical Guide' is available, which displays in detail the complete range of thermal break applications for all construction types – concrete-to-concrete, concrete-to-steel, steel-to-steel and concrete-to-timber.*

*A new free 'Thermal Bridging Guide' is also available on request*

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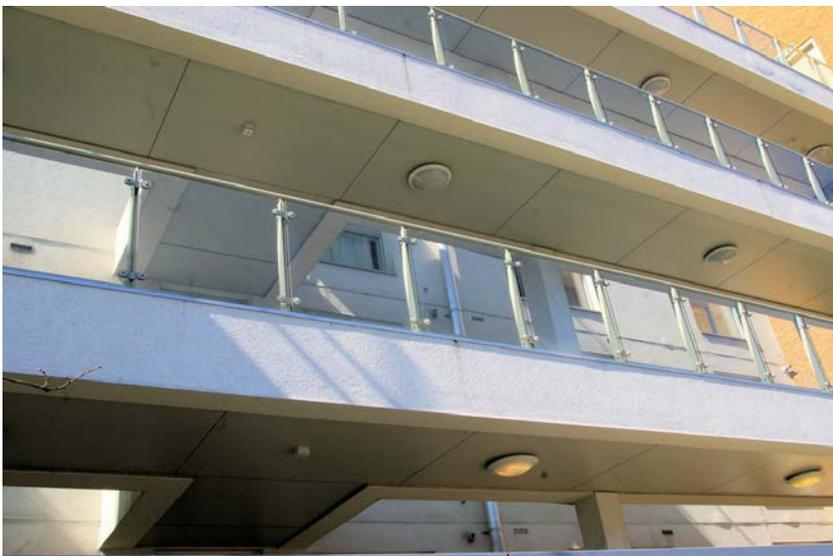
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**Notes to the editor**

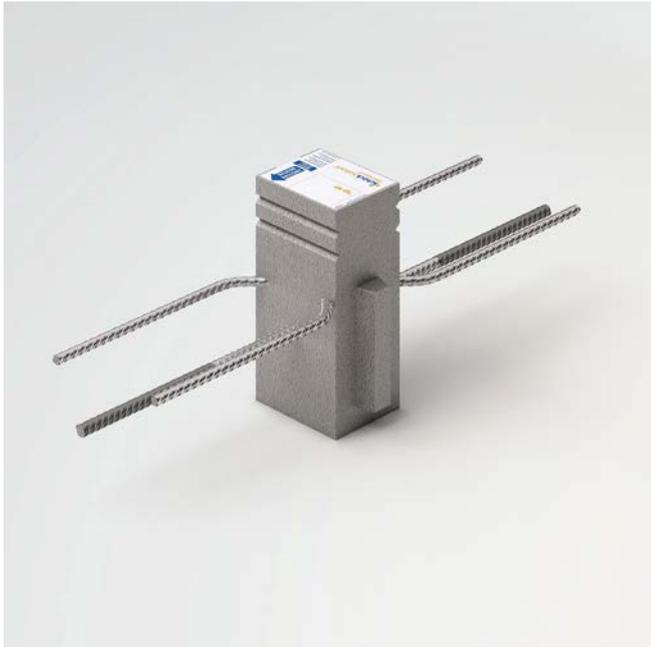
**A leading European supplier**

Schöck has grown to become Europe's leading supplier of innovative structural load bearing insulation products. The main product is the Schöck Isokorb – a thermal break for various types of cantilever constructions in new buildings and for renovation. Its headquarters are at Baden-Baden in southern Germany and there are subsidiary companies in Great Britain, France, Austria, Switzerland, Italy the Netherlands, Belgium, Poland, Hungary, Russia, Japan, Canada and the USA. Sales teams and partners operate in many other European countries and also Australia and South Korea. Schöck is committed to providing the highest level of technical back up and comprehensive customer service to the construction industry.

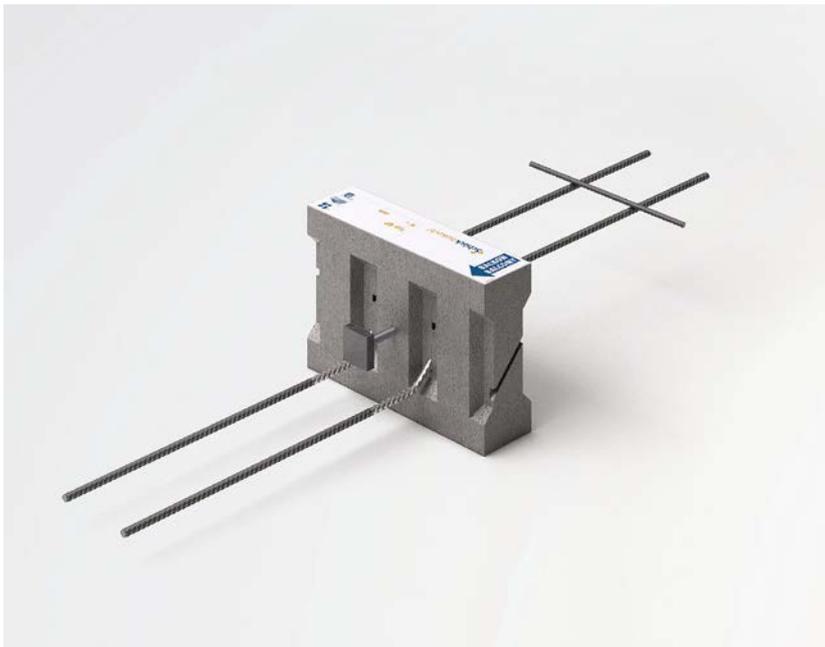
**All images: Schöck Bauteile GmbH**



***External views of the connectivity points***



**QP10 module**



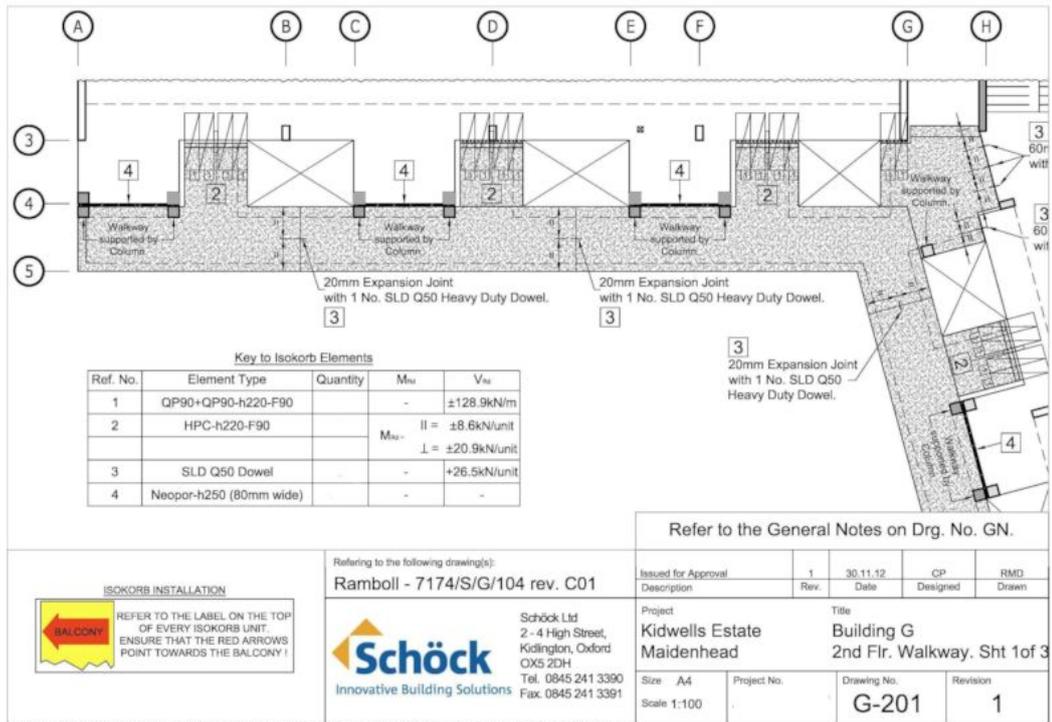
**HPC module**



***Secure thermally insulated load bearing connections between the outer wall and the walkways***



***Street view of a three-storey development***



**Detail of a second floor walkway**