

# Case study

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For immediate release

## **Schöck software optimises Hollowcore connector usage**

The Schöck Isokorb structural thermal break for concrete-to-steel connectivity has been widely incorporated into the latest phase of the Islington Wharf project in Manchester. This landmark residential scheme, designed by Ryder Architecture, lies adjacent to the attractive waterside setting of the Ashton canal, just north of Manchester Piccadilly Station; and is the third phase of an established residential development. The project includes 220 new build dwelling units, comprising a mix of town houses together with one, two and three bedroom apartments, the tallest block being 10 storeys. They are all built around a central mews-style courtyard and the attractive 'buff-coloured' brick finished dwellings will each feature a balcony.

### **An Isokorb hollowcore combination**

To minimise any risk of thermal bridging at the balcony connections, the Schöck Isokorb structural thermal breaks have been designed in throughout the project. Block A is a conventional recessed balcony installation; but Block B had a number of different requirements. The Schöck Regional Sales Manager responsible for the project, Ashley Houlton, explains the situation. "One of the UK's largest manufacturers of prestressed hollowcore, Acheson & Glover, supplied the flooring and the diameter of the core allowed many of the Isokorbs to be cast easily inside. This involved casting in-lap reinforcement bars at AG's manufacturing facility and once on site, breaking out the cores to suit the balcony steelwork and introducing lap splice reinforcement within the hollow cores. The Isokorb products were then installed using a template to keep the spacing correct and to prevent any of the units twisting. The last step was to fill

the broken out cores with insitu concrete. However, in a number of cases, the balcony span was perpendicular to the Precast Planks and here AG Precast offered an unpropped composite PlateSpan system. This allowed a fast, flexible solution to accommodate the Schöck Isokorb units within an insitu topping”.

### **Eliminating undesirable vibration**

Another factor though was the relatively large cantilever depth. This can easily influence the natural frequency and therefore the vibration behaviour of the free cantilever steel balconies. To assess how prone to vibration the chosen solution might be, Schöck has a software package available which uses geometric and material variables.

This calculates the Natural Frequency of the steel balconies. Experience has shown that adopting a limit frequency of 7.5Hz for steel balconies not only eliminates the possibility of undesirable vibration, it also enables the design of cost efficient structures. This was the case at Islington Wharf, where the balcony geometry, especially the cantilever length and spacing between the connections was critical. By using the ‘Natural Frequency’ calculation software it was possible to optimise the overall number of connectors required.

### **Verifiable performance**

In addition to concrete-to-steel capability, the Schöck Isokorb range also provides solutions for concrete-to-concrete and steel-to-steel. The range meets full compliance with the relevant UK building regulations, has NHBC approval and offers LABC Registration. There is also the security of independent BBA Certification.

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## **Project Information**

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|-----------------------|--------------------------|
| Client:               | Waterside Places Ltd     |
| Principal Contractor: | Eric Wright Construction |
| Architect:            | Ryder Architecture Ltd   |
| Structural Engineer:  | BWB Consulting Ltd       |
| Schöck product used:  | Isokorb type KS          |

*For a free copy of the Schöck Thermal Bridging Guide and / or the Thermal Bridging Solutions brochure contact the company on 01865 290 890 or visit [www.schoeck.co.uk](http://www.schoeck.co.uk). The website also features an extensive range of downloadable software.*

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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.

## Images and Captions

[Islington Wharf.jpg]



*Project is alongside the Ashton Canal. Image courtesy of Ryder Architecture.*

[Installation Isokorb.jpg]



*A typical example of the Isokorbs in position. Schöck Ltd, royalty free.*