

Case Study



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Schöck chosen for major Passivhaus residential scheme

The Chester Balmore project, near Highgate in North London, is part of Camden Council's community investment programme and will deliver 53 new homes, a GP surgery and shops. Once a 1970's estate, the previous blocks on Chester Road and Balmore Street were in poor condition and refurbishment was not a cost-effective option. Rick Mather Architects developed the project, which consists of three elegant brick-clad blocks, housing a collection of studios and one- to three-bedroom flats, all set around a landscaped courtyard. It is claimed to be the UK's largest residential scheme so far to meet the Passivhaus standard, a design standard that will see energy costs throughout the development reduced by up to 75 per cent.

To achieve Passivhaus standard, projects, at design stage must show high levels of insulation with good use of solar and internal heat gains, plus excellent air tightness – and minimal thermal bridges – which are a frequent cause of increased heat and energy loss, damp walls and mould formation. One of the most technically advanced and effective countermeasure against thermal bridging is the Isokorb range from Schöck. It not only thermally separates components from one another, but also acts in a structural capacity as well.

The particular Schöck thermal break module specified for this Passivhaus scheme is the latest generation Isokorb for concrete-to-concrete applications – the type XT – for which the Passivhaus Institute in Darmstadt has awarded the "low thermal bridge

construction" certificate and confirmed its suitability for Passivhaus construction. A major reason for the superior performance of the XT type is the thickness of the insulation body. This is increased from the standard 80mm thick to 120mm, providing an even more efficient solution. The type XT not only improves thermal insulation performance by up to 30% in comparison to the standard range, it also improves impact sound insulation by around 50% as well. High quality stainless steel bars with improved tensile strength are an integral part of the unit and while the same load-bearing capacity is maintained, there is a smaller rod diameter and therefore a reduction in the thermally conducting cross-section, resulting in a further increase in the insulation performance.

Tim Paul from Rick Mather Architects comments: "Balconies offer practical and aesthetic advantages for residents, but they have not always been a popular choice in the context of high efficiency Passivhaus design. However, the advanced technology and superior performance of the Schöck Isokorb XT range offers such a high level of insulation, that we had no problem in incorporating balcony design into the Chester Balmore project"

The Schöck design team is always on hand to provide specifiers, structural engineers and contractors with a high level of technical support. Additionally, this now includes a discretionary in-house thermal-modelling capability, a service utilised very effectively for the Chester Balmore project.

The type XT has already seen considerable success in Germany, not least for its sound insulation characteristics. For the first time in Germany there is now a stated minimum standard requirement for balconies. Previously this only applied to covered balconies, but the Schöck Isokorb XT has the advantage that it conforms to the minimum requirements for impact sound protection – without any additional floating flooring on the balconies.

The Isokorb 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 (British Board of Agreement) 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.

In addition, there is also compliance with the Government Standard Assessment Procedure, SAP 2009, concerning CO2 emissions from buildings and respectively heat losses through non-repeating thermal bridges. Here, the lambda values of the Schöck Isokorb enable energy loss in various connective situations to be reduced by as much as 84% to 91%.

To find out more about the Isokorb® product line and the company, visit www.schoeck.com or call +49 7223 967 144.

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approx. 4,850 characters (with spaces)

Project Photographs

[Chester Balmore.jpg]



To achieve Passivhaus standard, property at design stage must show high levels of insulation with good use of solar and internal heat gains, plus excellent air tightness – and minimal thermal bridges – which are a frequent cause of increased heat and energy loss, damp walls and mould formation.

Source: Michael Revans

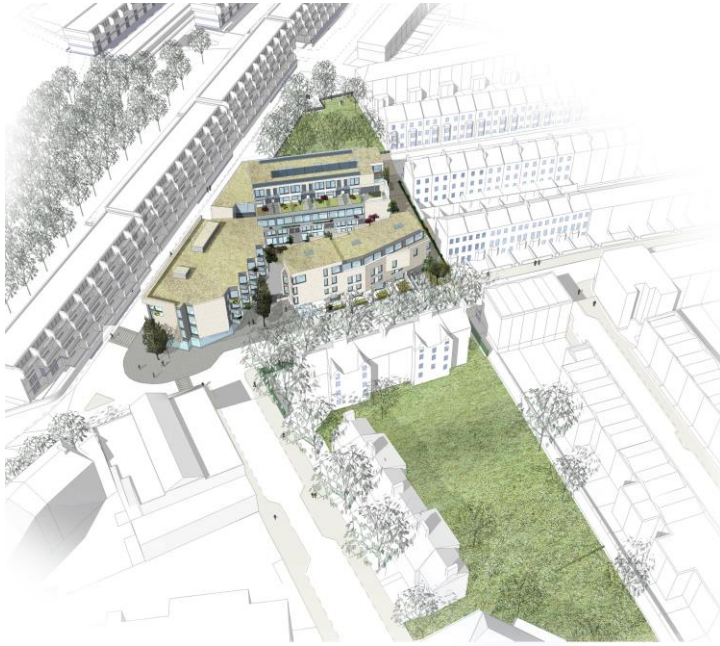
[Chester Balmore Balconies.jpg]



Schöck Isokorb not only thermally separates components from one another, but also acts in a structural design capacity as well.

Source: Michael Revans

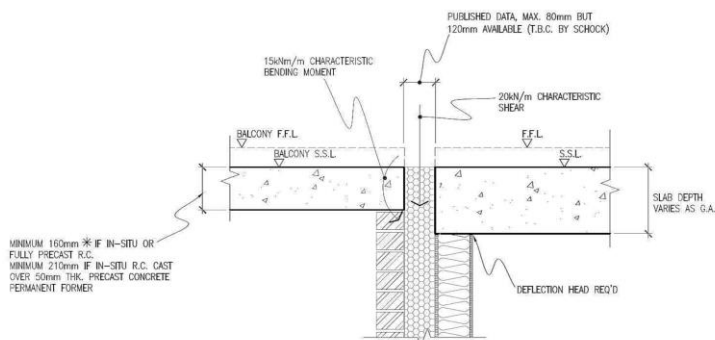
[Chester Balmore Aerial.jpg.jpg]



Rick Mather Architects developed the project, which consists of three elegant brick-clad blocks, housing a contemporary collection of studios and one to three bedroom flats, all set around a landscaped courtyard.

Source: Rick Mather Architects

[Example of balcony connection.jpg.jpg]



Balcony Connection Detail Where Balcony Sits Within Depth of Structural Slab

The Schöck Isokorb type XT not only improves thermal insulation performance by up to 30% in comparison to the standard range, it also improves impact sound insulation by around 50% as well.

Source: Rick Mather Architects

Media Inquires:

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