WHITE COLLAR FACTORY
REHAU Thermally Activated Building Structure
REHAU PROVIDES COOLING FOR LANDMARK OFFICES
150km of REHAU pipework installed

REHAU's Thermally Activated Building Structure (TABS) system has been installed to provide low energy passive cooling at White Collar Factory, a new 237,000 sq ft landmark office development under construction in Old Street by developers Derwent London.

This is the largest installation of REHAU’s concrete core cooling solution so far in Europe and has been completed by specialist installers Anders Heating Company Ltd.

REHAU TABS was specified by consultants ARUP as part of a programme to deliver a flexible, practical building which can achieve 25% reductions in operational carbon emissions over a typical office building and both a BREEAM Excellent and LEED Platinum rating. Designed around the principles of reducing artificial heating, cooling and lighting, White Collar Factory deliberately echoes many of the adaptable, well-built industrial buildings of the past which have been converted so successfully into contemporary work spaces. Alongside the thermal mass structure, it features tall ceilings, a passive façade and flexible floor plates.

In TABS, REHAU’s PE-Xa polymer pipework is embedded within the concrete floor slabs. Chilled water is circulated through the pipework and it creates a ‘cathedral effect’ where the thermal mass of the building absorbs the heat generated and provides radiant cooling in return.

As well as being more sustainable and energy efficient than conventional air conditioning, it is also quieter, has no moving parts which could fail and generates less air movement providing a better working environment.

Anders Heating Company Ltd has installed more than 150km of REHAU pipework in the building within every slab across all 16 floors. The natural exposed GGBS (Ground Granulated Blast furnace Slag) concrete has been incorporated into the design scheme, with 3.5m floor heights and perimeter blade columns providing additional thermal mass.

Anders Heating Company Ltd’s team completed each floor slab installation to a seven day programme, working closely with M&E contractors Michael Lonsdale Group and main contractors Brookfield Multiplex.

A key reason for the specification of the REHAU TABS system over alternative concrete cooling options was the integral Everloc compression sleeve jointing and fittings system. This is used on all of REHAU’s pipework solutions, from underfloor to district heating, and provides a permanent, leak free joint with no O-ring and no pre-preparation of the pipe required.

The brass compression sleeve fittings are safe to use within the embedded floor slab, allowing repairs to be made if the pipework is damaged on site during the construction programme. More than 16,600 Everloc joints have been installed at White Collar Factory – all with a 10 year consequential loss warranty.

The low carbon cooling system works in conjunction with opening windows in the building and with a mechanical energy input in the perimeter zones which will be required only when outside temperature is below 14º or above 25ºC.

As well as the REHAU TABS, AHMM- designed White Collar Factory incorporates a series of renewable energy technologies including a 300m² array of photovoltaic panels and a 100m² solar thermal array. As a result, the project has been used as an exemplary case study by the Government’s Technology Strategy Board.