Holy Cross Sixth Form College, Bury

Background
Holy Cross is a Catholic Sixth Form College and University Centre on Manchester Road in Bury, Greater Manchester. Miller Goodall Ltd (MGL) was appointed to undertake acoustic design duties for a new 3 storey teaching block and chapel. The development required a BREEAM rating of Very Good, and in order to achieve the relevant acoustic credits, the acoustic performance requirements of Hea 13 and Pol 8 within BREEAM Education 2008 were targeted. This required careful consideration of the impact of the design on acoustics to achieve the relevant criteria for indoor ambient noise levels, sound insulation between acoustically sensitive spaces and reverberation times in teaching rooms.

Action Taken
One of the key acoustic considerations with this project was the proposed building's close proximity to the busy and noisy Manchester Road. In order to satisfy both the indoor noise level requirements of BB93 and the ventilation requirements of BB101 *Ventilation of School Buildings*, classrooms on the noisiest elevation were provided with secondary acoustic glazing and mechanically ventilated.

The in situ airborne sound insulation of high performance moveable walls was maximized by careful detailing at junctions, including the provision of acoustic breaks in the floor slab beneath moveable walls to prevent flanking noise transmission. The selection of ceiling tiles with excellent sound insulation as well as acoustic absorption, reduced the transmission of noise through the relatively thin floor slabs while achieving the required reverberation time criteria.

Acoustics within the chapel were considered carefully, as the client wanted a space that was not too 'dry' for choristers but also not overly 'live' so that speech intelligibility was adversely affected. In order to achieve this compromise, a combination of surface finishes with very different properties was utilised. Strong early reflections near the chancel were achieved with timber panelling to side walls to enhance speech intelligibility, while acoustic absorption to the underside of the mezzanine floor reduced unwanted reverberation.

The use of quadratic diffusers on the rear walls helped scatter sound waves and prevent unwanted flutter echoes.

Acoustically attenuated 'wind catchers' were utilised within the chapel to provide natural ventilation to the space, while also achieving low ambient noise criteria.

Summary of Findings
On completion of the project, acoustic compliance testing demonstrated that project criteria had been achieved in the majority of spaces within the building, thereby allowing the BREEAM credits to be awarded.

For more information about us, visit our website at www.millergoodall.co.uk. If you would like to discuss how we can help your project, please contact Miller Goodall on 01204 596166 or email info@millergoodall.co.uk.