Case Study: **Hammersmith Academy**

This purpose built, state-of-the-art academy specialises in Creative & Digital Media and IT for 11-18 year olds.

Hammersmith Academy, London W12

The brand new high-tech Hammersmith Academy, located in London W12 on the site of an old detention centre, opened its doors to the first intake of pupils in September 2011, and was officially declared open by the Lord Mayor of the City of London in March 2012. The Academy, the latest addition to this burgeoning group of educational establishments, is sponsored by two Livery Companies – The Mercers' Company and The Information Technologists' Company.

AAD was selected to provide acoustic consulting to the project; the company has extensive experience within the fields of broadcasting, music establishments and educational institutions, making them a natural choice. Phil Mansfield of AAD was the principal consultant, heading up a small team of acoustic design experts.

"A large proportion of the building is mechanically serviced, and consequently there is a substantial amount of mechanical plant on the roof," explains Phil. As the building is in close proximity to a senior citizen's care home and other residential property, it was subject to some stringent noise control criteria to meet local planning requirements.

The Sports Hall, immediately above the theatre

Inside the building, the most notable acoustic challenge was the fact that the sports hall was positioned on the second floor, directly above the theatre. The Building Regulations' design guide pertaining to schools sets out sound insulation, maximum noise level intrusion and control of reverberation for each room within a school; although the standards are reasonable, they are not as high as AAD believed was necessary for the Hammersmith Academy.

The AAD team was concerned that if insulation levels were limited to those specified by the design guide, acoustic disturbance through the floor was highly probable. With this in mind, they advised that sound insulation criteria significantly exceeding the design guide's minimum requirements should be provided.

The theatre on the ground floor of the Academy, lies directly beneath the large sports hall – see above

A double-height Media Studio

Consequently, a substantial scheme of noise control was applied between the theatre and the sports hall, in the form of a sprung acoustic floating floor, improving both airborne and – importantly, in the case of the sports hall – impact sound. Additional sound insulation to the ground floor was provided by means of a multi-layered acoustic barrier plasterboard ceiling, also on springs. This, in effect, meant a floating layer on top and a floating layer underneath, with the base structure in between. The required outcome was thus achieved: "When we tested the acoustics recently," comments Phil, "we were almost unable to generate enough noise in the sports hall to measure the level of sound coming through into the theatre."

A sound insulation of about 70dB was achieved between the theatre and the sports hall (Building Regulations require 55dB). Significantly, impact sound was similarly reduced to an almost negligible level.

Specialising in Creative & Digital Media and IT means that Hammersmith Academy has a complex array of specialist rooms which need to meet stringent acoustic criteria, including a media studio, a recording studio with a control room, editing and music suites. AAD was able to ensure that the sound insulation and reverberation control of all these areas exceeded requirements.

“This carefully designed new four-storey building, both flexible and adaptable, challenges students to learn and improve. Its innovative 21st century design creates an exciting and inspiring learning environment.” *Gary Kynaston, Head Teacher, Hammersmith Academy*.

Client: **Hammersmith Academy Trust**
Architects: **BH&M Architects**
Main Contractor: **Wates Construction**