

## Millfield Music School and Auditorium



**“This was an especially challenging education project, on account of the stringent acoustic separation requirements and central campus location.”**

*Dave Berry, Associate*

### Overview

The prestigious Millfield School, Somerset, required a new building to house both its music classes and an auditorium for performances. It was important to keep the two areas discrete within the one structure, so acoustic separation techniques were applied at the structural engineering consultancy stage.

### Project Description

The form of this project was determined by two factors: classroom size requirements and the acoustic performance across the three-storey structure. The project included a 250-seat capacity auditorium comprising a timber-glulam frame spanning up to 20 metres - creating a soft harmonic environment for musical performances - together with rehearsal and teaching facilities.

The building is split between the Concert Hall/Foyer areas and the music school for acoustic separation purposes. The form of the two sections is also vastly different resulting in two distinct structural solutions for each. The main hall and foyer have a braced glulam timber frame supporting the roof, and glazed elevations with stability provided by the feature curved wall and a braced bay adjacent the music school, whereas the internal walls of the music school form a natural rigid cellular structure with a robust/solid wall and floor construction of masonry partition walls and concrete floor slabs.

With the exception of the IT rooms and internal percussion practice rooms, all of the music school classrooms and rehearsal rooms are naturally ventilated. To reduce noise break-out into adjacent rooms, the windows project from the elevations and double thickness plasterboard dry-lining is finely detailed and sealed at all junctions.

### Project Overview

#### Client

Millfield School  
DKArchitects

#### Location

Street, Somerset

#### Project Value

£4.5m

#### Service Provided

Structural engineering consultancy  
Civil engineering consultancy

#### Added Value

Careful engineering created discrete zones of acoustic separation, necessary for this multi-purpose project.



Floating floors were specified in the main percussion/drum rehearsal rooms due to their proximity to the auditorium.

The auditorium is cooled by a displacement air system that is piped underground from the plantroom on the music school side, into a fresh air plenum beneath the precast concrete auditorium seating arrangement.

Close co-operation was required between the architect, M&E, acoustic and structural consultant teams to achieve the necessary air flow through the main performance space - vents were required beneath the seating and at discrete locations within the walls. Further co-ordination and structural challenges were presented by the acoustic requirements for adjustable perforated, curved ply timber acoustic deflection and by the heavy retractable draping system to the rear of the auditorium.

### Pictures

1. The curved SW elevation
2. Main entrance foyer
3. Entrance foyer and curved feature stair elevations
4. View from foyer balcony

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