

## Springfield Primary School, Sale

Complete	Area	Client	Architect
2014	UK England	Kier Construction	Ansell & Bailey

Springfield Primary School is a local authority school in Sale, Trafford. Located close to the town centre, the original building was constructed in 1905, but had become unfit for purpose and was unable to accommodate the number of students wishing to attend.

The new build extension included the addition of junior classrooms, group rooms, staff rooms and offices, a plant room and a learning resource centre.

As a non-designated heritage asset, the original period features of the traditional school were maintained, including octagonal chimneys and terracotta entrance portals.



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## Services provided

Sandy Brown was appointed by Kier Construction to provide acoustic advice in relation to the proposed new build extension at Springfield Primary School, which included providing guidance on:

- environmental noise and façade assessment planning
- room acoustics
- reverberation times
- sound insulation and separating elements
- acoustic finishes
- building services noise and vibration.

## Special acoustic features

There have been many studies that highlight the association between higher noise levels in schools and lower academic performance. Poor acoustics also lead increased amounts of stress for both teachers and children. Yet, in modern learning spaces the design preference for hard materials and a desire for flexible, open plan learning spaces create a louder environment. In designing schools, therefore, a number of acoustic factors need to be taken into consideration. These include:

- noise ingress from outside
- building services noise
- reverberation time
- noise transmission between rooms
- areas used for particular activities, such as music, drama or sports.

For the proposed development at Springfield Primary each of these was considered in line with relevant standards and design guidelines, including:

- Building Bulletin 93: Acoustic design of schools – a design guide (2003)
- Building Bulletin 101: Ventilation of school buildings – Standards, Regulation, Design guidance
- BS 8233:1999 Sound insulation and noise reduction for buildings – code of practice
- BS4142 Method for rating industrial noise affecting mixed residential and industrial areas.

Ambient noise surveys were conducted to determine external noise conditions and inform the advice for design of the building envelope. This included consideration of the glazing and lightweight roof construction that are a feature of the extension's design and how these could be incorporated while achieving appropriate background noise within the building.

In certain areas required linkages between spaces meant that BB93 standards of sound insulation would not be appropriate. Alternative acoustic design standards were therefore proposed and agreed with the client and end user. One of these areas was the learning resource centre's break-out area which was accessed directly from classrooms, offices and the school's reception. Working with the end user enabled the use of the space to be defined and alternative performance standards developed.

By providing clear design specifications and liaising with the project stakeholders on all aspects of noise and vibration control, problems in relation to acoustics were ameliorated at an early stage.

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