Sector
Education

Case study

Shaftesbury School
Aspiration Action Achievement

Shaftesbury School

Dorset

Primary objectives
- Reduce distraction
- Comfort

Product used
- Reverb panelling

Scope of work
- Sports hall

The school sports hall suffered from high levels of volume and echo, and needed updating to be acoustically fit for purpose as a multi-use venue.

Used for a multitude of different uses, Shaftesbury School's main school hall exhibited acoustic problems typical of 1980's designs, with wooden surfaces leading to unacceptably high levels of volume and echo.

Its multi-use construction meant that it needed to serve many functions: it was a PE classroom; it was a drama and music performance area; it was a canteen; it was a training area; it was the area for the daily act of collective worship; it hosted many different kinds of public event. However, surrounded by wooden panels, acoustics promoted unacceptably high levels of volume and echo and consequently posed many barriers and challenges.

With the further addition of retractable seating, Acoustic Comfort's Reverb application has transformed the entire area. The acoustic impact has been significant. Presentations by individuals or groups can now be heard within a sympathetic ambience and distracting noises completely absorbed.

This has served to generate a level of calm amidst large gatherings never before achieved, whilst enhancing the quality of sound for those presenting. Acoustic Comfort listened carefully to and quickly grasped their core values and these were effectively captured within the design work on the panelling.

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acoustic comfort
by screen solutions

Reverberation time test results

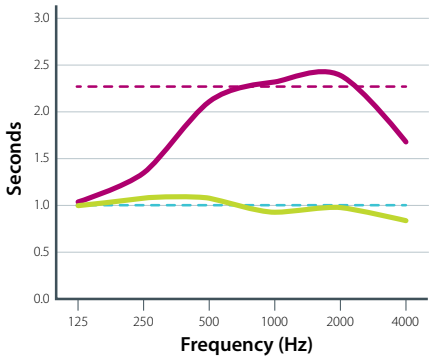
Test results show the acoustic performance in the hall before and after treatment with Reverb.

Reverberation is measured over time, using Reverberation time and Mid-frequency reverberation time scales. Optimum reverberation time depends on the use of the space. For speech a reverberation time of between 0.8 and 1.3 seconds is considered good.

Reverberation time (RT60) is defined as the time required, in seconds, for the average sound in a room to decrease by 60 decibels after a source stops generating sound.

Mid-frequency reverberation time (Tmf) is used to produce an average of the 500Hz, 1kHz and 2kHz bands.

Sport hall



Current RT
Current Tmf
Treated RT
Treated Tmf
Target Tmf

Reverberation times (RT60) and Mid-frequency reverberation time (Tmf)

Area	Frequency	125Hz	250Hz	500 Hz	1000Hz	2000Hz	4000Hz	Tmf
Sports hall	Before treatment	1.04	1.35	2.11	2.32	2.39	1.68	2.27
	After treatment	1.00	1.08	1.08	0.93	0.98	0.84	1.00
	Target	–	–	–	–	–	–	1.00

From the client

"Acoustic Comfort has achieved the transformation of our multi-purpose area from an outdated and outmoded facility to a venue fit for purpose in a twenty first century setting."

DJ Booth
Headteacher, Shaftesbury School

How acoustic absorbing panels work

The problem

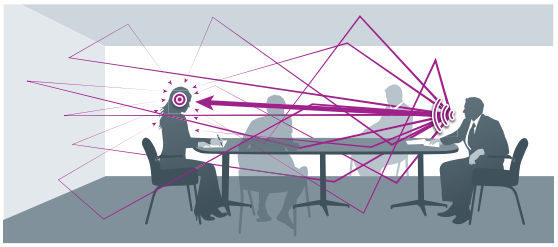
Poor speech clarity caused by reverberation – sound energy reflected back into the space it originated from.

A small amount of energy is absorbed, but the decay of sound pressure in the space is slow. This leaves the listener struggling to understand what is being said.

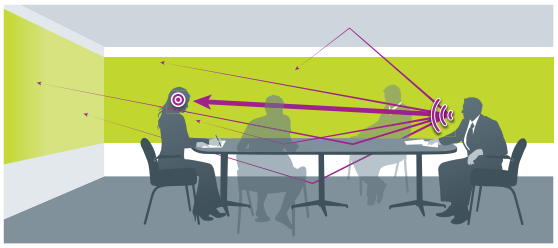
The solution

Adding sound absorbing acoustic panels reduces reverberation time by increasing the decay of sound pressure. Only a small amount of energy is reflected back into the space it originated from, improving the acoustical quality of the space and giving good speech clarity with no discernible reverberant distraction.

Without acoustic panels



With acoustic panels

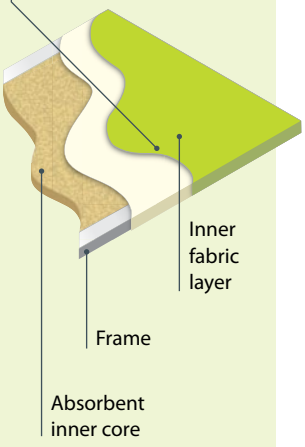


Intended path of directed speech
Path of reflected speech

Construction

Outer fabric layer

Pre-printed with your choice of image, using a dye sublimation process if required.



Screen Solutions | Defining space | **www.screensolutions.co.uk**

London showroom
45 Gee Street,
Clerkenwell,
London EC1V 3RS

Head office and factory
Beaufort House, Greenwich Way,
Peacehaven, East Sussex BN10 8HS
T +44 (0) 1273 589922
E sales@screensolutions.co.uk

Follow us
@ScreenSol
linkedin.com/company/screen-solutions-ltd

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