

# NVA CASE STUDY: ROGIET PRIMARY SCHOOL

Application:

Cross Ventilation

Requirement:

39dB Dnew, BB93

Key Products/Services:

Environmental Report

Consultancy

NAT Vent Attenuator

Partners:

White Design

Willmot Dixon

Awards:

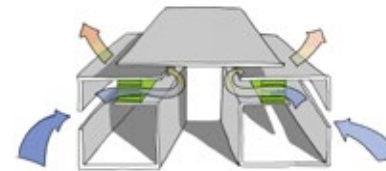
BREAM Excellent



**MACH**  
PRODUCTS

Rogiet Primary School is a timber frame building, located between the M4, M48 and in close proximity to the intercity train between Swansea and London. Such a site is acoustically challenging before even considering natural ventilation. By performing an environmental survey of the site, MACH Acoustics successfully implemented natural ventilation through careful consideration of building placement and well executed cross ventilation.

## Cross Ventilation.



The key to naturally ventilating this building was to use cross ventilation rather than single sided ventilation. This design step required the open areas within the facade to be 50 - 75% smaller than required for single sided ventilation - this design change made it possible to use natural ventilation.

Through McCanns (the M&E consultants) a BMS system was used to control the windows rather than to opt for a manually operated system. Windows under manual operation tend to be fully extended/ opened to  $\approx 150\text{mm}$ , rather than partially open. A BMS system adjusts the required openings to the exact level, significantly reducing openings by 5-25mm. The result is greatly reduced noise ingress from the building facade.

## NVA Bulkhead.



A simple, clean bulkhead containing the Nat Vent Attenuator is an excellent way to install and achieve BB93 performance requirements.

Its lightweight design allows the MF system to be the supporting structure but it can also be enclosed in purpose built ducting within the bulkhead, as specified in this project.

## Sustainable Acoustics

**Bristol** Trelawney House, Surrey Street, Bristol, BS2 8PS

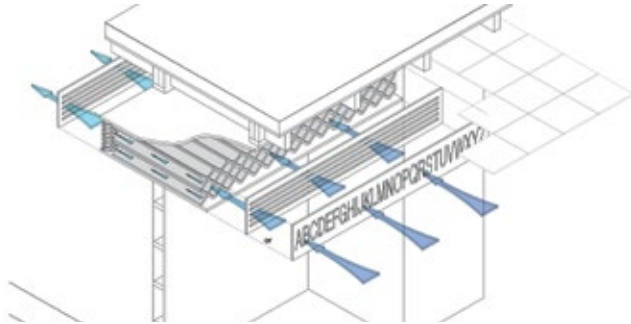
**London** 11 Sandycombe Road, Richmond-upon-Thames, Surrey TW9 2EP

phone/fax 0117 944 1388

email [info@machacoustics.com](mailto:info@machacoustics.com)

[www.machproducts.com](http://www.machproducts.com)

## Design.



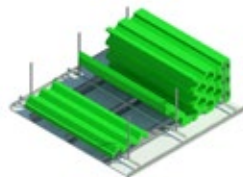
MACH Acoustics believe that a corridor wall should provide a physical and acoustic separation between two spaces. Working with White Design, Willmott Dixon and McCanns a bulkhead detail was built to incorporate the NAT Vent Attenuator.

The NAT Vent Attenuator is a product specifically designed to achieve BB93's acoustic requirements and BB101's ventilation specifications. A 1200mm NAT Vent Attenuator was installed into a bulkhead, formed from plasterboard and a timber. Using a product that was specifically designed to meet the requirements set down by BB93, means that acoustic separation across corridor walls was not comprised below that experienced on schools which do not use cross ventilation.

Rather than fitting standard grill on the classroom openings, a CNC cut alphabet provides the same function whilst enhancing the teaching space - an example of truly bespoke design options that the NVA offers.

## Sustainable Acoustics

**Bristol** Trelawney House, Surrey Street,  
Bristol, BS2 8PS  
**London** 11 Sandycombe Road, Richmond-  
upon-Thames,  
Surrey TW9 2EP  
**phone/fax** 0117 944 1388  
**email** info@machacoustics.com  
[www.machproducts.com](http://www.machproducts.com)



## Install.



With the plasterboard and timber bulkhead constructed into the classroom/corridor partition, installation of the NVA was a quick and simple process.

The NVA arrives on site arranged in its tessellated form. Installation requires flipping alternate sections to create the honeycomb shape, then inserting into the bulkhead, horizontally stacking each section - that simple. Any alterations for services and be easily accounted for. Finally, grills are installed either end of the vent.



## Result.



The school met all BB93 requirements and BB101 ventilation specifications. Not only this but the finished design was pleasing and in tune with its environment.

Head-teacher, Kathryn Evans, said: "There was an echo in the old school building and you could always hear the hum of the motorway outside, but there's nothing like that now. Our new building is very quiet, and it's had a big impact on the children - they are so calm."

