

An Evaluation of the Effectiveness of the Acoustic Environment  
Created in a Purpose-built School Building  
Constructed in 2002

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October 2003

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*This dissertation is submitted in partial fulfilment of the requirements governing the award of the Master of Science in Educational Audiology.*

### Abstract

The importance of classroom acoustics has been recognised in a wealth of research, conducted in the past decade. There is a concern, that if classrooms are not of a sufficiently high acoustic standard, pupils will be hindered in their ability to access the curriculum. This concern is heightened in the case of hearing-impaired pupils, and as a result, the government has issued standards related to key acoustic considerations, such as reverberations times and background noise levels. (Building Bulletin 87)

This small-scale research study uses a case study approach to evaluate whether the required standards for classroom acoustics have been achieved in a purpose-built school building constructed in 2002. An across methods triangulation is used to survey the nature of the acoustics through measurement of reverberation times and unoccupied background noise levels, and questioning pupils and teachers related to their experiences of teaching and learning in two classrooms in the new building.

The results suggest that guidelines for reverberation time for mainstream classes as defined in Building Bulletin 87 (DfEE, 2000), have been met, but that the higher standards required for hearing-impaired pupils have not. It is also demonstrated that, for neither hearing nor hearing-impaired pupils, has the standard for background noise levels been achieved. It is inferred that this was due to a lack of consideration of the needs of hearing-impaired pupils at an early stage in the design.

These findings suggest, therefore, that despite a well established theoretical knowledge of the requirements for optimum acoustic conditions, current construction of new school buildings may still fail to meet the required standards and in turn may create an environment in which it is difficult for both hearing and hearing-impaired pupils to fully access the curriculum.