

## 7. Use of personal radio aids with soundfield systems

Soundfield is an increasingly popular system designed to improve listening conditions for all children in the classroom. It does this by providing a consistent level of sound from the primary source, usually the teacher, throughout the classroom at an approximate advantage of 10dB above the minimal background noise. It cannot provide the higher signal-to-noise ratio that is required for deaf children and should not therefore be seen as an equivalent replacement for a personal radio aid system.<sup>15</sup> Most deaf children who wear hearing aids or implants continue to need the superior signal-to-noise ratio provided by personal radio aid systems.<sup>16</sup>

A soundfield system does not alleviate the difficult listening conditions created by high reverberation levels or excessive background noise. These issues should be addressed before introducing soundfield systems by taking the corrective action set out in guidelines such as *Acoustic Design of Schools: Performance standards* (2014) which applies in England. This resource explains expectations of acoustic provisions and the steps that local authorities and schools in England need to take to ensure compliance with the School Premises Regulations (2012). This guidance replaces sections 2–7 of *Building Bulletin 93: Acoustic Design of Schools in England*. Visit [www.gov.uk/government/publications/acoustics-lighting-and-ventilation-in-schools/acoustics-lighting-and-ventilation-in-schools](http://www.gov.uk/government/publications/acoustics-lighting-and-ventilation-in-schools/acoustics-lighting-and-ventilation-in-schools).<sup>17</sup>

More detailed guidance is available from the Association of Noise Consultants' (ANC) and the Institute of Acoustics' (IOA): *Acoustics of Schools: A design guide*.<sup>18</sup> It provides some of the more technical information that was previously in Building Bulletin 93. Visit [www.ioa.org.uk/news/design-guide-schools-acoustics-published](http://www.ioa.org.uk/news/design-guide-schools-acoustics-published) and Canning (2010).<sup>19</sup>

---

15. Ross, M. and Levitt, H. Developments in Research and Technology; Hearing Assistive Technologies; Classroom Soundfield Systems. 2002. *Volta Voices* magazine. 9: 7–8.

16. Crandell, Smaldino, Flexer. 2004. *BATOD* magazine. January 2001.

17. Department for Education (DfE). *Acoustic Design of Schools: Performance Standards*. 2014. [www.gov.uk/government/publications/bb93-acoustic-design-of-schools-performance-standards](http://www.gov.uk/government/publications/bb93-acoustic-design-of-schools-performance-standards) (accessed 24 January 2017).

18. Association of Noise Consultants (ANC) and the Institute of Acoustics (IOA). *Acoustics of Schools: A design guide*. 2015.

19. Canning, D. The Essex Study. 2010. [www.batod.org.uk/content/resources/audiology/soundfield/essex-study.pdf](http://www.batod.org.uk/content/resources/audiology/soundfield/essex-study.pdf) (accessed 24 January 2017).

In Wales, building regulations are devolved to Wales and the unrevised *Building Bulletin 93* continues to be in use. Schools built and refurbished under the 21st Century Schools Programme must undergo a pre-completion test to demonstrate compliance with acoustic standards in *Building Bulletin 93*. If the building fails to meet the acoustic standard, remedial action must be taken, with further testing to ensure compliance.

In Scotland, the School Premises (General Requirements and Standards (Scotland) Regulations 1967 give statutory requirements for school environmental conditions. In addition, the Scottish Government's guidance, *School Design: Optimising the Internal Environment – Building our future, Scotland's school estate* (2007) is intended to assist local authorities in the development of design brief documents for a range of environmental conditions in schools, including acoustics. Both *Building Bulletin 93* and *Building Bulletin 101* are referred to in this document as “the starting point for design guidance”. While there are no specific regulatory requirements, there are areas of effective practice where *Building Bulletin 93* has been fully implemented in new school builds.

In Northern Ireland, an amended version of *Building Bulletin 93* was introduced in 2007. New build schools in Northern Ireland are required to be tested acoustically to ensure that the requirements in *Building Bulletin 93* have been met. Where the requirements are not met, schools are required to pursue remedial measures. The Department of Education will not fund these measures so it is imperative the acoustics of school builds are correct at the beginning.

Guidance is also available from the National Deaf Children's Society at [www.ndcs.org.uk/acoustics](http://www.ndcs.org.uk/acoustics).



© Comfort Audio

## QS12

**Where soundfield systems are used in conjunction with personal radio aids, equipment must be selected and set up to ensure that the performance of the personal radio aid system is not compromised.**

There can be a number of advantages for a deaf child when a personal radio system is combined with a soundfield system. However, such systems must be regularly and sensitively evaluated to ensure optimum use and benefit. This should include asking the deaf child's opinion. See the *Good Practice Guide for Radio Aids* for more information.



A Redcat soundfield system  
© PC Werth



A personal radio aid transmitter connected to the  
soundfield system  
© PC Werth