

Room Acoustics

AWN Consulting is a multi-disciplinary engineering consultancy with offices in Dublin and Cork. Its acoustics team is the largest and most experienced of its kind in Ireland.

AWN Consulting offers specialist services in relation to room acoustics assessment and design.

Room Acoustics

The correct acoustic environment within a space is often essential for its proper enjoyment and function. For example, clear communication of speech in a lecture hall or court room; good quality musical clarity within a venue or theatre; a pleasant acoustic environment within an office, atrium, shopping mall, or restaurant.



The primary parameter for assessing the quality of room acoustics is the Reverberation Time , which is a measure of how long it takes for sound to 'die away'. For example, a large, reflective space such as a church would typically have a long Reverberation Time and a small, furnished space such as a bedroom would typically have a short Reverberation Time.

AWN offers its clients a range of different services in order to help optimise room acoustics. Firstly we can help establish an appropriate design goal for the space in question. Once the design goal has been established we can assist in the selection of room finishes and propriety acoustic treatments and products, such as wall panels and ceiling tiles, in order to achieve the design goal. This is achieved through creation of a detailed acoustic model of the space, or through desktop calculations using empirical formulae.

Modelling Software

In order to predict the acoustic environment within a specific space AWN use a leading proprietary acoustic modelling software package, i.e. ODEON. This software allows a detailed 3D model of the space to be created and the surfaces and fittings within the space to be assigned acoustic properties.



Using this model detailed assessments of the room acoustics can be undertaken in collaboration with the client to establish which acoustic treatments and products best suit their needs not only in terms of acoustics, but also aesthetics and price.

Desktop Calculations

For smaller less complex spaces where a detailed acoustic model may not be necessary AWN can undertake desktop based calculations of the Reverberation Time in order to assist our client in ensuring that their space has the ideal acoustic environment.

