



ENS Acoustics  
consulting

## ACOUSTIC CONSULTING

Environmental Noise Solutions (ENS) is an independent acoustic consultancy specialising in noise in the built environment.

We undertake projects that encompass small, local development projects and new school developments through to major developments including large residential developments and hotels.

Our consultants all have a broad range of experience, both in the public and private sector, and who all work to our high standards of delivering the best possible service to our clients in a proactive and responsive manner required by the modern, commercial environment we all work in.



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## The Pub Conversion

### DELIVERING THE SOLUTIONS YOU NEED

We are regularly commissioned by architects, developers and contractors to review and verify their designs prior to the residential conversion of a public house. Concerns over existing floor and wall constructions; concerns over proposed proprietary wall and floor solutions all lead to the requirement for independent, specialist acoustic design advice that considers not only the individual elements of the conversion but the building as a whole.

## flexible solutions for residential developments

### Part E – Resistance to the Passage of Sound

With all residential conversions there is a need to satisfy the minimum sound insulation testing requirements of Part E of the Building Regulations, namely at least 43dB for airborne sound and at most 64dB for impact sound.

We have recently completed the acoustic design element for the conversion of a large public house in Lincoln converted into a mixture of simplex and duplex apartments. In addition to the usual acoustic challenges associated with any conversion, public houses are also notorious for containing large amounts of steelwork, usually over the main lounge supporting the floor above. As anyone who has listened to the 'singing' rails at the railway station as a train approaches, steel is a very good conductor of sound and as such needs to be treated appropriately for acoustics when found in a building that is to be converted for residential use.

Through judicious use of isolation techniques and party wall and floor designs it is possible to mitigate against the impact of steel within such buildings such that a good level of sound insulation can be achieved allowing a great deal of our 'building and social heritage' to be retained rather than just demolished and built over.



## THE ON GOING PROJECT

The project involved the design of separating wall and floor details where ancillary issues such as flanking under timber floors and along continuous timber floors was considered, recommendations for the use of either dynamic batten floors or independent ceilings was given to allow for service runs within new apartments whilst also addressing the needs of Part E of the Building Regulations.

Issues associated with an existing 'web' of steelwork was also considered and mitigation measures were designed to ensure the steelwork penetrations through party walls did not degrade the sound insulation properties of the of the party walls and party floors above.

We also took time to explain to our clients the differences between the various acoustic parameters such as  $R_w$ ,  $D_{ntw}$ ,  $R_w+C_{tr}$ ,  $D_{ntw}+C_{tr}$ , all of which, if incorrectly applied to any design, can lead to acoustically poor performing partition walls and floors being constructed.

The conversion is currently underway and is expected to be completed in 2011.

For further details about how ENS Acoustics can help you with sound insulation and acoustics for any residential conversion that needs to satisfy the stringent requirements of Part E of the Building Regulations, please contact:

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