

Acoustic engineer

Acoustic engineers are concerned with sound and vibration and how they can be managed in the built environment. In this article, Nick Treby describes how he became one.

I really enjoyed science when I was at school – physics especially, but also chemistry. I always looked forward to practical sessions, where we would get to investigate all sorts of things just to see what happens.

I did a lot of music too. I played brass instruments, sang and even gave lessons. And as I reached A-level age, I was curious about the science behind music. Why do I sound better when I sing in the shower, than when I sing in a normal room? What makes the trumpet and the saxophone sound so different? Why does the police car siren sound change as it drives past you? I knew science could answer these questions, but I wasn't sure how.



Nick Treby preparing to measure the acoustic performance of a room

Careers advice

I asked a careers adviser how I could make my interest in science and music into a job. She looked confused – she didn't know. But a few days later she sent me the prospectus for Southampton University's Engineering Acoustics and Vibration degree. I read it, and was very interested. I phoned up and asked if I could visit in the summer before applying. They said yes, and so I went and was

shown round what I now know to be the world famous Institute of Sound and Vibration Research. I saw their anechoic chambers, a demonstration of noise cancelling (before you could buy noise cancelling headphones in shops, the computers to do this filled a small room) and all sorts besides.



Acoustic engineers are concerned with managing vibrations such as those experienced by workers in the construction industry.

I did apply, was offered a place and after three years very hard work, came out with a degree. Though the subject is unusual, there were lots of options for me next. I could have gone on to research noise from jet engines as we try to make aeroplanes quieter. I could have worked in the motor industry helping with audio systems and trying to make the car engine and exhaust sound just right, and be quiet for the occupants. I could have gone to design loudspeakers and hi-fi equipment, design sound for computer games, record TV and radio with the BBC but I decided against all these.

Instead, I chose to become an Acoustic Consultant. We provide technical advice on noise and vibration for anyone who needs it.

Working with others

Mostly, I work with the construction industry, getting the acoustics of buildings just right. I have been working on every type of building you can think of – homes, schools, offices, theatres, cinemas and hotels, working with architects, mechanical engineers, structural engineers, interior designers and all sorts of other people, many of whom have science background, to help get things right.



Nick monitors traffic noise levels at the roadside.

I've worked in some odd places too. I have had to spend four days 150 miles east of Aberdeen – on an oil rig in the North Sea, helping to make sure that the accommodation where the riggers sleep is quiet enough; tricky when they are drilling for oil just a few metres away. I've worked on football pitches, calculating whether all the shouting will disturb the gardens and homes of the people who live nearby.

I've worked in public inquiries, helping argue whether planning permission should or shouldn't be granted, and in court dealing with some people who had complained about a church's clock chime and wanted it stopped, even though it had been

happening for 300 years. We managed to keep the clock chiming there!

I was on TV for the clock chiming case, and I've helped *The One Show* as well, when they were researching a feature on noise issues from HS2, the proposed superfast train service from London to Birmingham.

I've been doing this job for 20 years now, and I've worked for companies in London and Bedfordshire, and been able to travel all over the world. I've been all over the UK and Ireland, Europe and the Middle East. In the last year my colleagues have been to the USA, Australia, Chile and Canada, amongst other places.



Football stadia, opera houses, country churches – acoustic consultants work in a wide variety of locations.

Day to day, my job is varied. I never quite know what I'll be doing next. It is terrific fun working in all these different places, on a huge variety of projects with all sorts of interesting people.

It comes from a good set of basics. Science and mathematics are the core of what I do, and then with a bit of experience and training, you never know where they will take you.

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Look here!

Nick Treby worked on the acoustics of one of the venues for the London 2012 Olympic games. Read his CATALYST article here: <http://www.catalyststudent.org.uk/cs/article/291>