The Ogden Trust

making physics matter

Phizzi professionals

Shami Smith-Sandhu

School

I studied maths, further maths and physics at A-level, and developed an interest in the practical application of maths and physics to real-world problems. With this, alongside a fascination for building design, I took the opportunity to study BEng Architectural Environment Engineering at the University of Nottingham.

What next?

After graduating, I joined a large engineering consultancy as a graduate fire engineer and worked there for two and a half years. I also started a part time Master's degree, studying Fire and Explosion Engineering at the University of Leeds. In 2016, while finishing my Master's, I was invited to help build a new, independent fire engineering consultancy – Astute Fire – in Central London.

Why physics?

I realised during my GCSEs that physics can be found in absolutely everything we do. As I went into my A-levels, I knew I wanted to learn more about the subject and how we can better apply its theory to everyday life. Physics and STEM have played a big part in my career. I can't imagine that solving practical problems using scientific theory will ever grow old.

And now?

I am an Associate at Astute Fire. I use my understanding of fire dynamics and human behaviour to solve complex building design problems. I mentor junior colleagues to develop their knowledge of fire science, building design and construction, and our regulatory frameworks. Project highlights include: The Shard in London; two airports in Oman; and a hotel in Dubai.

Physics in practice

Physics is so important in building design, especially for something as critical as fire safety. I need to understand and apply the principles of thermodynamics; the science of combustion; the physical properties of building materials and much more. I'm planning to do a PhD researching the construction of accessible extra-terrestrial spaces such as the Voyager Station Hotel (look it up!).

Advice for young scientists

Be proactive and curious. There's always more than one way to solve a problem. Some of the best work I've ever seen has come from people having a crazy idea on how to approach an age-old problem that 'already had a solution'.

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