

Making it happen: strengthening the appeal of engineering to young people

Tim Watson (GM) won the Kenneth Severn Award with this entry which urges the profession to promote engineering to young people and their parents

Let's face it – our engineering profession has never been strong when it comes to public relations. Perhaps the stereotypical engineer is marginally more marketable than our accountant counterpart but, make no mistake, some are beginning to argue the very opposite. Why is it that fewer and fewer young people are attracted to engineering? Why is it that we never seem to hear our children, nieces and nephews say 'When I grow up I want to be an Engineer?' Indeed, we do have a problem.

The stereotypical engineer has evolved in the public eye as a middle aged male who sits behind a desk punching numbers into a computer all day. The stereotype is seen to lack social skills and non-technical interests – little wonder why young people see the discipline as static and unexciting. I am a young structural engineer who is in the early stages of an exciting and satisfying career. I feel I'm the exact opposite of the stereotype, and it is clear I am not alone. So, we have the work ahead of us – how exactly can we stem the tide and strengthen our appeal?

At the heart of our problem is perception – the public's idea of what constitutes an engineer. Perhaps more subtly, the perception of the importance of our work is also under question.

As a professional body we need to address these basic fundamentals – 'what do we do' and 'why should it be interesting to young people?' Mission impossible? Definitely not – we need to address the basics and change the perceptions that have led us to our present situation.

To determine how to achieve this goal, we need to take a step back. We need to reflect on our profession. At a

conceptual level, we need to define in simple terms the role of an engineer. Our profession has become incredibly diverse – from structural engineering to software engineering, mechanical, chemical, aeronautical, the list goes on. Diversity equals options which many consider engineering's greatest endearing asset. I feel diversity clouds the public's perception of what an engineer does. We are problem solvers, we make it happen or sculpt our lives – we don't just undertake structural analyses for the latest high rise steel/concrete construction etc. We need to get these basics right before thinking about marketing strategies and the like.

'Is there an engineer inside all of us? I think there is – and more importantly I see it as one of the keys in improving the all important public perception of our profession'

Let's go back yet another step. How many of us played with wooden blocks as a young child? How many of us, male or female, played for hours on end with Lego? or Meccano? How many of us have incredibly strong childhood memories of building and playing in tree houses? Even when we play the letters game 'Hangman', we draw the figure in a structurally sound

way, even including the supporting braces.

A quick stroll through a toy store and it soon becomes clear that everyone is an engineer at one point in their lives. Is there an engineer inside all of us? I think there is – and more importantly I see it as one of the keys in improving the all important public perception of our profession.

Advertising approach

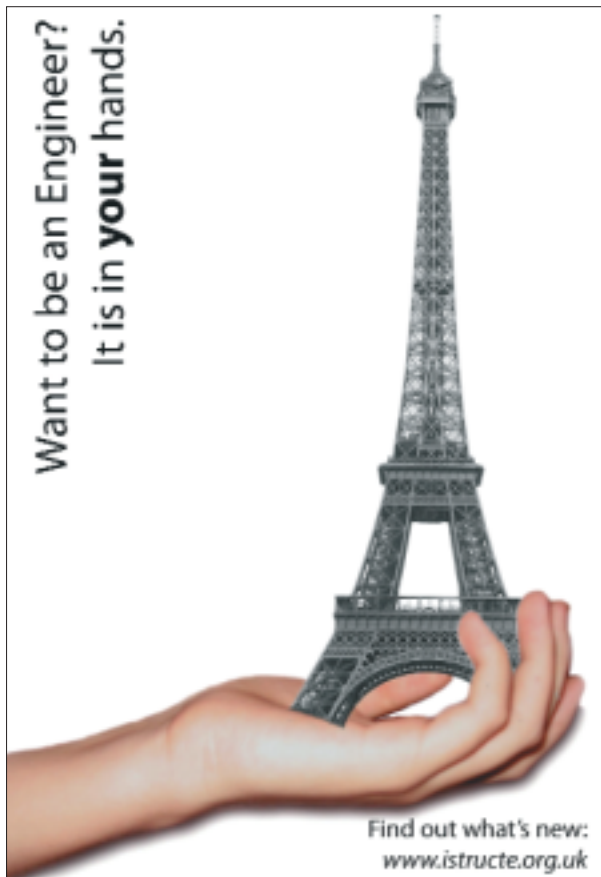
Microsoft has adopted a similar approach in marketing its business productivity software known as the 'MS Office' software suite. One of the advertisements that come to mind shows three young children pretending to be pilots whilst sitting in a tree house. The camera zooms away and the outline of a Boeing 747 appears, somewhat abstractly, around the tree house. The aspirations and dreams of these young children are instantly captured, and, more to the point, all of us watching can instantly relate to what we are seeing.

Each and every one of us can relate to our childhood engineering experience – we need to use this universal idea to re-energise our profession. A well targeted and directed marketing campaign could achieve this goal.

Looking further afield, the business and accounting profession in Australia funded a series of national media advertisements to address the public's perception of the accounting profession. Focussing on using our early childhood memories of engineering, our profession could undertake a similar campaign. These advertisements could spearhead a series of strategies throughout all levels of schooling including our A-level students. A central, revitalised, website would be critical to such a campaign, offering a

Below: Childhood memories provide a powerful message





portal to what is new and exciting in engineering. Our University faculties in conjunction with our professional body could take the lead in this redevelopment of a central website. The images in this document provide some conceptual advertising examples.

Celebrating engineering by using images of well-known structures provides a persuasive marketing message



Celebrate engineering

Beyond this advertising approach, what else can be done? We need to celebrate our people and our engineering efforts. Engineering needs its highly visible heroes – like the Bill Gates of the business world. These heroes motivate young people and provide inspiration. It seems there are plenty of successful engineers and amazing projects – the problem is that

we generally don't seek recognition, except, maybe, from peers. The current situation is more likely to see the media following an engineer in a failing project rather than celebrating an outstanding success or development. Our profession needs to turn this around.

It is difficult for young people to consider a career in engineering when there is little or no exposure to engi-

2005 KENNETH SEVERN AWARD: HOW TO ATTRACT YOUNG PEOPLE INTO ENGINEERING

Dr Allan Mann writes on behalf of the Papers Awards Panel:

For many years we have had an annual award, the Kenneth Severn, for any paper where the grade of membership of the author(s) was Associate-Member at the time of submission. Alas we've had no candidates and to solve this problem, the Papers Awards Panel last year suggested a change in rules whereby the President would suggest a title and we would offer incentives of cash and publication. The Panel has been delighted with the response which saw 11 enthusiastic young engineers take up the challenge of writing on 'Making it happen: strengthening the appeal of engineering to young people'.

We have had to choose a single winner but the Panel was so impressed by the quality of papers received that it would seem an awful shame if we failed to summarise the competitor's views on this important topic. Why is it important? Most of us will have seen various worrying statistics: the decline of school science, the poor take up in maths, the significant percentage drop in graduate applications and the closing of engineering courses. Should we care? Of course we should, we're a profession priding ourselves on service and commitment to the community and we have future generations to think of. That said, all our contestants seemed puzzled as to why the appeal of engineering was apparently so weak to those of an age making their minds up about what to study, what university courses to apply for and what careers to target. As one writer put it 'engineering is appealing it's just that youngsters don't know it'

There was consensus on what to do:

- Influencers are parents, teachers and peers and we have to get the message across that engineering is a challenging, exciting, rewarding and incredibly diverse career not set aside just for the 'brightest and best' but with opportunities for all. The community out there just does not understand what we do. As Tim Watson wrote: 'we make it happen' but how do you convey that concept?
- Young people are naturally concerned about their future and we have to let them know what an enormous number of career paths are open to them. It may be a shame if engineering graduates decide to pursue interests elsewhere but it's a positive message that diversity is possible.
- There was feeling that we need to widen the appeal. Several wrote about male bias and the need to raise opportunities for young women (if they think it is bad now, they should have seen it 30 years ago!). Likewise, minority groups were felt to be under represented.
- There was great enthusiasm for bolstering our public image by a sustained media campaign with ideas for the press, the web and so on. That image needs to be positive, youngsters need to be attracted by the possibilities of creativity, working in teams, doing something to create a better environment and a better world. The forthcoming Olympics was seen as a golden opportunity to show off our skills and inspire. We see ourselves as an international Institution and one candidate reminded us of the opportunity to share Olympian ideals between China and the UK.
- Perhaps surprisingly there were few groans about pay and 'status' but we were nevertheless reminded that in society where students face the reality of having to borrow and pay back loans, the prospect of a steady career with sensible rewards is highly attractive. But the industry has to tackle the perceptions that ours is a long hours, low paid profession.
- There was almost universal support for the need for young engineers to get into schools and tell pupils what engineering was about so that youngsters could make an informed choice about their future. Many of our contestants are clearly active in this task and find it rewarding.
- Likewise there was almost universal support for the benefits accrued by offering young people at school and university opportunities for site visits, work placements and work experience and firms were encouraged to do their bit.

Overall, the Panel derived very great pleasure reading the essays submitted and all the applicants are to be congratulated. They were: Nyree Ambarchian, Leonie Baker, Maela Le Nen Davey, Alexandros Feretzakis, Li Hao, Tobias Hodsdon, Ben John, Charles Kennedy, Robin Thorpe, Phillip Ward, and Tim Watson.

We look forward to next year's competition and the title will be announced in early October 2006.

Shortlisted entrants

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| Nyree Ambarchian (Haskoning UK Ltd.) | Leonie Baker (Whitbybird) |
| Alexandros Feretzakis (Halcrow Yolles) | Li Hao (Jacobs Babbie) |
| Tobias Hodsdon (Buro Happold) | Ben John (Mott MacDonald) |
| Charles Kennedy (Rivers State University, Nigeria) | Maela Le Nen Davey (Plymouth University) |
| Robin Thorpe (Gifford) | Phillip Ward (Cambridge University) |
| Tim Watson (Jenkins & Potter Consulting Engineers) | |

neers and their undertakings. A well known example is the Swiss Re building in London (commonly known as The Gherkin). People on the street would probably be aware that the bulk of the praise has been awarded to the architect, Lord Foster, for an architectural triumph. The average person would not, however, know of the engineering firm Ove Arup & Partners, which played a significant role in the design and construction of this outstanding structure.

The London Eye is another notable example. The tourist blurb mentions the husband and wife architectural team who came up with the concept and design. Where do we see the exposure of the engineers? Such a dynamic and imposing structure provides a dramatic example of structural engineering at its most innovative.

We need to use these examples to strengthen our image and our relevance in today's society. We need to celebrate our famous engineers as well as highlight recent engineers to help change the perceptions generated over the last few decades.

Celebrating our profession requires a fundamental change in the mindset of our professionals – our professional body should drive this cultural change to provide the incentives to engineers to engage the public more effectively.

What can our young engineers offer

to solve the problem? As a recently graduated structural engineer I think back to when I chose an engineering career path. Something that wasn't clear to me was the potential of the qualification. My university colleagues and I have been fortunate to travel widely and work on significant projects. From my position now I really can see how engineers make it happen. This was not at all obvious from my vantage point before University.

'Now I really can see how engineers make it happen. This was not at all obvious from my vantage point before University'

Showcasing young people in targeted marketing efforts (to careers counsellors, careers based web sites etc) would help entice young talented minds towards engineering. Young students should have this information at their fingertips – it changes perceptions and builds appeal. As mentioned previously, a revitalised, central website is

vital to support this change.

Not only is this lack of understanding and perception a direct problem to young people trying to navigate the maze of career options, it is also a major hurdle for parents trying to guide their children. If the parents are not informed, then it is unlikely the child will be encouraged.

This is confirmed in a survey published by the EEF in the West Midlands that concluded: 'Pupils are four times more likely to be influenced by their parents over all career choices than any other source'. It is therefore clear our strategy must be multifaceted – we need to expand the horizons of young people and address parent perceptions at the same time.

To conclude, we can see the engineering profession must spend time and money and apply its thinking and problem solving skills, (for which it should be renowned), to vigorously promote itself via a variety of mediums. It is not 'can we afford it', but 'can we afford not to' progress down this path. Failing to implement an invigorating marketing plan will see the mean age of those in the profession continuing to rise alarmingly. Act now, attract more high level students, increase graduate numbers, and see the profession strengthen and gain the attention and accolades engineering justly deserves. se

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