

Sustainability: still absent from the higher-education agenda

Most engineering degree courses in the UK are failing society's need for 'sustainability literate' professionals, says **Sara Parkin** of Forum for the Future. Fortunately there are a few good examples which should be turned into standard practice for everyone.

In February 2008, UK secretary of state for innovation, universities and skills John Denham made a major speech on higher education but he did not mention sustainable development. Indeed in the past 12 months, with the much-heralded chickens of too many years of unsustainable development crash-landing into the UK government's roost, not a word on the matter has left the lips of Denham or his universities minister Bill Rammell.

Crash: climate change is getting worse, with what looks like an 80% cut in carbon dioxide emissions needed rather than 60%. Bang: resources are running short and energy and food prices are rising. Wallop: the financial sector is falling into a black hole of its own making. Yet listen to the leadership of the UK's post-school education sector and one would think this drama was taking place on another planet.

Engineering students demotivated

Out in the real world, the story is very different. Being 'competent' with regards to sustain-

ability is an increasingly important part of most jobs and is set to become even more so, something the Engineering Council (UK) recognised back in 2005 when it redrafted its standards for engineers' registration. New sustainability guidelines are also in the pipeline.

A survey of 2330 engineering undergraduates in years 1–4 carried out by the engineering faculty at Imperial College London in 2007 found a main reason students wanted to join the profession was 'a desire to make a difference to the world'. They thought engineering was the best way to follow their ambitions.

However, after four years' study, although the ambition still burned brightly, the students' belief in an engineering career as the best way to achieve it had steadily declined. It is all very well providing a world-class technical education, but to what end if it feels disconnected from doing good in the real world?

The demotivating effect of engineering education is confirmed by Liz Meddings, a building services engineer with Arup. 'When I got my engineering degree, the last thing I wanted to do was be an engineer, so I went into insurance. That quickly bored me, and my interest in sustainability led me to give engineering a go. Now I cannot imagine being anything else,' she says.

University teaching inadequate

Last year Meddings teamed up with civil engineering graduate Tim Thorne (pictured), on Forum for the Future's *Engineers of the 21st Century* programme¹ to see if her experience was typical. They surveyed 500 graduates who had been in work for 2–10 years and found that 72% would have liked more about sustainability in their degree, with 60% saying it should be integrated into the whole course and not just a module.

They also found that most engineers do need to know about sustainability, in particular energy efficiency, in their job, but nearly a quarter were taught nothing at all about it. Of those that were, 40% said their lecturer's knowledge was inadequate.

Another poll of 25 000 UK students was carried out in 2007 by Forum for the Future in

partnership with Ucas, the UK clearing house for university applications. Entitled *The Future Leaders Survey*,² this revealed that, after architects, applicants to engineering courses believe more strongly than any other group that learning about sustainable development will help them get the job they want when they leave university or college.

Something important is happening here. More young students are selecting to study engineering as the best way to fulfil their sustainability aspirations. This is fantastic news for a profession that has been worried about recruitment in general, and also for a society needing all the help it can get to move quickly to a low-carbon, low-waste way of living. So why are so many are finding their university degree inadequate?

Current predictions are that there are roughly 100 months left to get on track for a massive reduction in greenhouse gas emissions. This makes John Denham's sustainability deaf ear appear grossly irresponsible. What messages do vice chancellors get? What is the point of spending lots of money in schools selling an engineering career to young people if their experience at university disappoints?

Models for standard practice

Fortunately there is some excellent sustainability-literate teaching going on in the UK. Some of the government's higher-education funding should be spent on turning these examples into standard practice for all.

References

1. See <http://www.forumforthefuture.org/files/Engineers21C2007.pdf> for further information. Accessed 16/09/2008.
2. UCAS and FORUM FOR THE FUTURE. *The Future Leaders Survey 07/08*. UCAS, Cheltenham and Forum for the Future, London, 2008. See <http://www.forumforthefuture.org/files/FutureLeaders0708.pdf> for further details. Accessed 16/09/2008.



Civil engineering graduate Tim Thorne getting hands-on sustainability experience with the UK's new Ultra personal rapid transit system

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