

Engineering a brighter future



President of the Association of Consulting Engineers of Ireland (ACEI), Richard Crowe, speaks to Public Works about the challenges ahead for the engineering sector and the importance of a long-term plan for future development

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With Ireland's economic prospects improving, it is important that the anticipated increase in the roll-out of infrastructural development is married to a long-term plan to ensure investment creates value for money, and to achieve ongoing environmental and economic sustainability.

"The key is planning," says Richard, who is also managing director of Nicholas O'Dwyer Consulting Engineers.

"We are now looking at a national planning framework that's due for discussion this year in the Dáil, and I think joined-up thinking is what is needed to develop infrastructure in a coherent way. This framework will need to take a long-term approach to spatial planning, balanced regional development, and good connectivity between rural and urban areas in terms of transport and communications.

Recently, Engineers Ireland has called for a single central infrastructure body or commission that will be charged with prioritising and driving these initiatives, and we would strongly support that."

Recruiting talent

Richard says it is important to sustain the business that consulting engineers in Ireland have developed in overseas markets during the recession, and to continue to look outwards so that the industry will be sustainable. He aims to continue initiatives commenced during his predecessor, Kevin Rudden's presidency, which put the focus on future developments and technologies coming into the industry and which can respond to the need for recruitment over the next number of years. "There are very few graduates coming out this year in civil engineering. This is a reflection of the recent past when people felt that there weren't many job prospects here in engineering, due to the economic downturn. With that fallout in numbers



A model for future growth

Utilising available technologies will be key to companies maximising the development opportunities expected as Ireland's economy gets back on track, writes Dr Sarah Ingle, chartered engineer and secretary general, ACEI

As the economy improves, cranes are appearing again on skylines around Ireland. This is good news for the country and also for the construction sector. However, although the pipeline for consulting engineering projects has increased, there is a severe industry skills shortage at all levels that is currently being addressed by ACEI, Engineers Ireland and others. Along with technical qualifications, key attributes needed by professionals in the sector include project management, teamwork, collaboration, and presentation skills. The working environment is also changing for consulting engineering firms which are crucial to the sustainable development of Irish infrastructure and buildings. As outlined in the ACEI conference earlier in the year, building information modelling (BIM) and

associated software developments have the potential to revolutionise the industry. Many firms have upskilled their staff to utilise the 3D technology on small and large projects and Irish engineers are welcoming the cost savings in materials waste and the time saved in minimising re-work. Using BIM and related technologies also means that Irish companies can bid for design tenders abroad where these are utilised, as well as work collaboratively with colleagues and teams in other offices. It is an exciting time to be involved in the consulting engineering industry. Third-level applicants are strongly encouraged to consider enrolling in one of the wide variety of construction-related engineering programmes in order to avail of a broad range of career opportunities for suitably qualified women and men.

we are facing a challenge with regard to recruitment," Richard explains. Following Engineers Ireland's recently published report, *The State of Ireland 2016*, Richard believes that wastewater and family housing are key sectors for public funding and investment. For evidence of the pervasiveness of the housing crisis in Ireland, Richard says we need look no further than the difficulty in encouraging Irish engineers who left the country to come back to work and live here. "We're finding it difficult to attract back engineers who left Ireland in the recession, particularly in relation to sourcing affordable family housing during relocation. While I would encourage Irish engineers who have emigrated to return home because they would have prior knowledge of the industry here, there is also an interest in attracting engineers from other countries as there is a widespread skills shortage in

engineering, both here and in the UK."

Investment in infrastructure

Asked if there is currently enough investment in Ireland's infrastructure, Richard believes that a lot more could be happening: "We would certainly say no to that. It's around 2 per cent of the overall [spend] and it should probably be double that to come close to European norms. There has been very little infrastructural development over a number of years and certainly during the recession there's been a rebalancing between capital expenditure and current expenditure, with a lot of Government expenditure going towards the current side. "We do recognise that finances are constrained. It's not a bottomless pit, so investment has to be wise in that regard – we have to invest in things that will deliver return." When it comes to innovative public private partnership (PPP) financing structures that

might aid in easing the pressure on the funding of investment, Richard points out that schools are being built under PPPs, as well as primary care units in the health sector. Road infrastructure development has also been achieved through PPPs. "Roads are more straightforward in some respects because you can toll them and there is an obvious return. When you get into supporting infrastructure it's more difficult as it's harder to show a bankable project with a defined return. "It's a pity that Irish Water has dropped out of that space as it was set up to be able to borrow as a separate entity, and that would have been a new form of funding. That's certainly gone, for the short term anyway. Water with a charge attached to it is something you can go out into the market with and you have an asset base; with enabling infrastructure it's a little more difficult." On water, Richard stresses that the key aspect going forward is that a

What is the ACEI?

The Association of Consulting Engineers of Ireland (ACEI) is a voluntary, self-regulatory professional body representing the business and professional interests of firms and individuals engaged in consulting engineering. It assists in resolving issues for both clients and consultants and contributes to the development of relevant public policy through involvement in working groups, government committees and other areas. ACEI represents individuals and firms engaged in consulting engineering who offer professional, independent, intellectual services to clients for a fee in the built, human and natural environment. The ACEI lobbies local, national and European politicians on important issues including water supply and waste management; flooding; infrastructure; housing supply; professional liability; quality-based selection; building regulations; and construction health and safety. The association also organises a set of annual awards to showcase design excellence in its member firms in civil, structural and mechanical/electrical practices. An Emerging Professional Consulting Engineer (EPCE) award is also presented every year.

single utility should be preserved, in whatever format, with national rather than fragmented planning in the sector.

Key sectors

Richard shares his thoughts on key requirements within several sectors in the long term: "In the area of transport, there are some delayed road projects and there is a lack of investment in non-motorway road infrastructure, and maintenance of that infrastructure. "There's also the whole north Dublin transport issue and the airport access solution – whatever that may be, whether it's light rail or Metro North or something else – along with the second runway at Dublin Airport." In the power and communications sectors, he highlights renewable energy and the north/south interconnector for security of supply as well as the national broadband plan, with particular emphasis on rural broadband connectivity. Within the health sector, some projects seem to be moving ahead, Richard says, particularly the National Children's Hospital, which will now be a priority and has successfully passed through the planning stage. "Again, the need for infrastructure to support housing – such as wastewater treatment facilities connected to housing, water supply and servicing of land for housing – is of vital importance for families in general and in order to attract Irish emigrants back to Ireland and build upon talent in the engineering sector and indeed other professions," says Richard.

Future developments

Following the formation of the new Government, the Department of the Environment has seen its functions split between three departments: Housing, Planning and Local Government; Communications, Climate Change and Natural Resources; and Regional Development, Rural Affairs, Arts and the Gaeltacht. Richard believes this needn't necessarily negatively impact the importance afforded to environmental issues. "There is certainly synergy between the environment and energy; however, it is a little unusual that there's now no department solely dedicated to the environment. But I don't think it's been disposed of or dismissed. As long as the functions remain it probably won't make a great deal of difference how it's split across departments, and the Environmental Protection Agency (EPA) would take on a large part of these issues." The driving issue that Richard faces in his presidency is the management of the skills shortage and the challenges of diversifying the profession and enlightening people on the many and varied paths within the engineering sector in order to boost graduate numbers and encourage female participation in the industry. "In relation to people choosing careers in engineering, we can see an improvement, but at a slow pace. As the talent pool grows we plan to encourage that growth and entice emigrants back to Ireland and build upon their careers as the economy continues to improve."

