

Engineering ecological sustainability

Increasingly today environmental and social sustainability is becoming intricately linked to economic issues in both business and government. It appears that we are now more acutely aware of the environmental and social impacts of our economic activities than ever before. Sustainability is now critical – economically and environmentally. As Engineers Australia launch the “Ecological Sustainability: Victoria’s future at stake” forum, with the aim of identifying relevant issues and needs for regional communities in achieving sustainability, it seems appropriate to define the role of the engineering profession within the quest for sustainability.

Sustainable development, as phrased by the Brundtland Commission, is development that “meets the needs of the present without compromising the ability of future generations to meet their own needs”. What is the role of engineers in achieving this?

In many instances engineering skills and knowledge are inherent in the solutions to the challenge of sustainable development. Renewable energy sources rely on engineering solutions to capture energy and convert to power; greenhouse gas reduction initiatives often require engineering input; and many of the solutions to our dry land salinity problems may prove to be engineered. Through such innovative solutions engineers are contributing to our mission to enhance future generation’s ability to achieve their needs.

Achieving a sustainable future is surely dependent on innovation. However, in a recent interview with \, Terence Jeyaretnam, John Elkington, one of Europe’s leading authorities on sustainable development and on ‘triple bottom line’ business strategy, believes engineers will require more than just innovation. John stated that “One critical skill will be to engage key stakeholders early enough in the design and planning stages to ensure that the right solutions are engineered. Wherever they work in a company, engineers should contribute to the development of business cases for more sustainable solutions”.

John believes the biggest input that engineers will play in creating a sustainable future is in their involvement and input into new infrastructure. When asked how the engineering profession could contribute to social and environmental sustainability, he responded “...the interesting thing is that much of this infrastructure will be radically different from what we have seen in the past. And that’s where engineers come in; these people are trained to provide solutions.”

It may be the next 50 years in which we will do the most to protect, and restore the environment, and facilitate sustainability. We will do so because it will increasingly be more economically unfeasible, and socially unacceptable not to do so. Accordingly, engineers will have the significant task of re-engineering thought processes, challenging accepted wisdom, changing corporate thinking, accounting for the natural environment and remaining resources, increasing eco-efficiency, managing growth, and integrating the triple bottom line. It’s often said that the best way to predict the future is to help create it.