
APS1012 Management of Innovation – Final Team Projects, Fall 2010**Innovations in Sustainable Infrastructure****Objective**

What should the engineer's role be in designing and developing a sustainable society, particularly with regard to rapid bridge replacement, green buildings, and nuclear and wind power? Address the following objectives:

- Investigate three key areas: bridges, buildings and power
- Research best practices for innovation in these areas through case studies
- Investigate the barriers and incentives to innovation
- Highlight lessons learned: what worked and what didn't
- Evaluate the current role engineers play developing a sustainable society
- Develop recommendations for the Government of Ontario and Professional Engineers Ontario on how engineers should be involved in developing a sustainable society

Summary

In the face of some of the most pressing and complicated challenges to ever face humankind, engineers will increasingly be relied upon to provide solutions and guide society down a sustainable path. Five topics within sustainable infrastructure were investigated: rapid bridge replacements, preventative maintenance in nuclear power, wind power, green buildings, and geothermal heating. Case studies were explored to reveal the barriers and incentives to both the innovative process and the adoption of innovations. These were examined at the industry and policy level to showcase what's missing and what's working in the current efforts to develop and implement sustainable infrastructure. Drawing on the literature and these case studies, best practices and lessons learned were identified and boiled down into recommendations aimed at the Government of Ontario and Professional Engineers Ontario. Common themes from all topic areas were synthesized into a set of overall recommendations concerning how and when the Government should be involved and proposing a strategy for education to stimulate sustainable development.