

# **Resilience, Sustainability and Affordability: The Triple Challenge for Infrastructure**

William Powrie, Joel Smethurst  
University of Southampton, UK

## **Abstract**

Climate change is already happening and there is a good understanding in qualitative terms of the impacts it is having and will have on our infrastructure. As a society we expect the services enabled by our infrastructure to be resilient and indeed the infrastructure itself. Engineering responses so far have tended to build resilience by engineering, but this comes at a cost in terms of carbon and cash that increasingly renders new infrastructure and enhancements unaffordable. In other words, there is a danger of focusing on adaptation to the effects of climate change at the expense of mitigation, which is still badly needed if the world is to avoid a climate catastrophe. The presentation will explore this issue in the context of the likely impacts of climate change. It will suggest some steps that could help to achieve the desired resilience in a sustainable and affordable way, and a methodology to balance the sometimes conflicting demands of adaptation for resilience and mitigation towards sustainability.