



## Controlling Unruly Structures

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Wednesday 25th March 2015, 5.15pm

Harrison Lecture Theatre 4

Refreshments will be served after the presentation



The civil engineering structures of tomorrow will be lighter and more slender than ever before. This is an inexorable trend resulting from architectural desires and the need for future society to use raw materials in an ever more sustainable way. Unfortunately, history has shown us that light and slender civil engineering structures can be highly susceptible to vibrations caused by human activities. The most infamous example in the UK was during the opening day of the London Millennium Bridge, but there have been many more cases with footbridges, sports stadiums and floors in residential, commercial and public buildings.

Fixing these problems can prove to be extremely difficult, expensive and disruptive and often involves significant structural modifications.

In some cases the only feasible solution is change of use, for example relocation of a gymnasium to an alternative location when vibrations caused by aerobics classes and treadmills is excessive. Other major facilities such as sports stadiums are prevented from holding pop/rock concert events as their vibration performance is in doubt.

This talk presents some of the recent advances that have been made in the development of advanced vibration control technologies to reduce the adverse effects of human dynamic loading on structures. These technologies have the capacity not only to fix problems when they occur, but may serve to drive a new generation of high performance, efficient and sustainable civil engineering structures.