

# BLACK BOX

Lecture Series

## GREEN CONCRETE: Evolution or Revolution?

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**Thursday 21 May 2009**

**1.30 - 2.30 pm**

**David Warren Auditorium**

Ordinary Portland Cement (OPC) is the base binder in concrete, and has been for 150 years. Little known though, is that OPC is responsible for about 5-8% of all CO<sub>2</sub> emissions. This lecture explores the reasons why OPC is so polluting and what evolutionary things have and are being done to reduce the emissions of OPC-based concrete and their respective trade-offs and benefits. Going a step further though, the future of cement and concrete through use of OPC replacement technologies like alkali-activated cements are explored. The benefits of alternative technologies in comparison to concrete containing OPC will be explored in relation to cost, carbon reduction, whether they can be made in large volumes (as required for large building concrete pours), load strength, mass, brittleness, uses, degradation, toxicity, etc. The production process for the world's first industrially produced low-carbon concrete, E-Crete, will be shown, with examples of application.

