

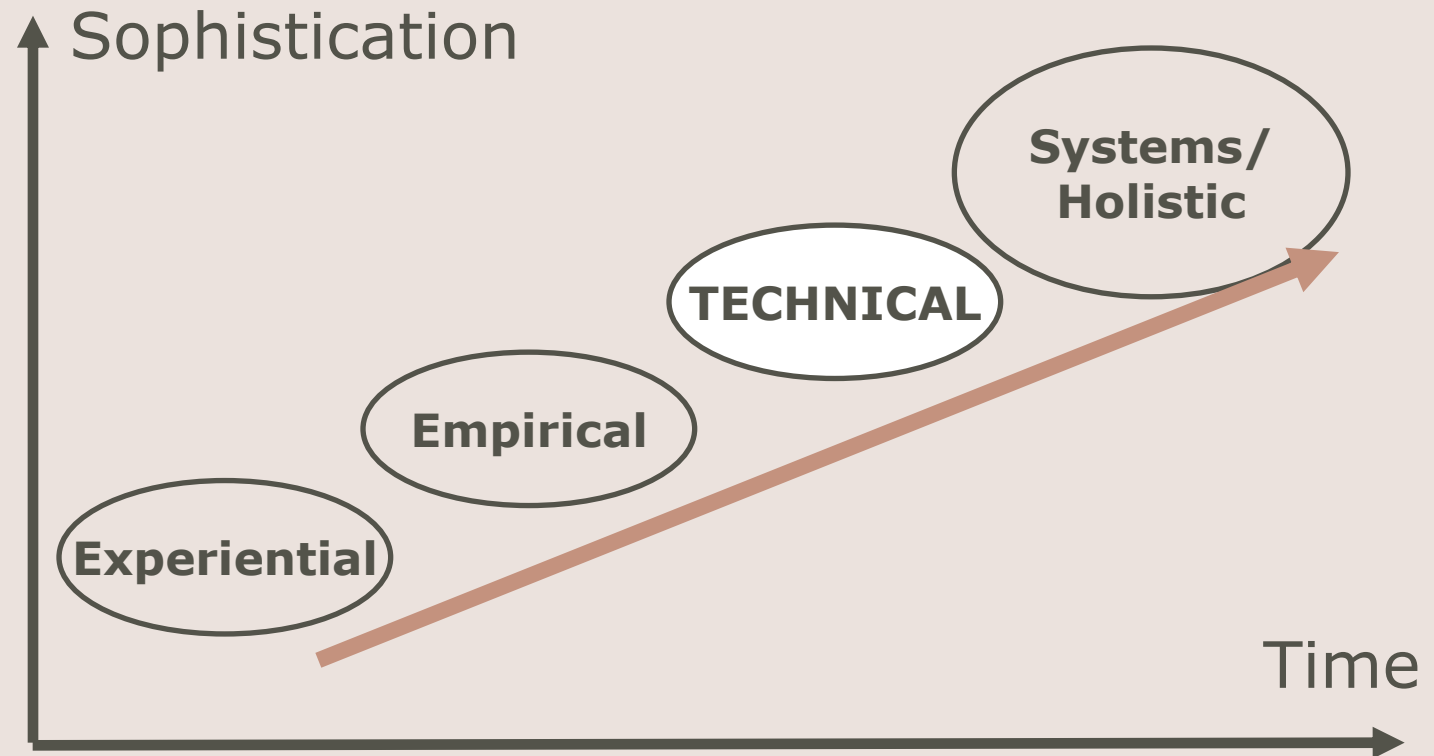


Presidential Address 2009

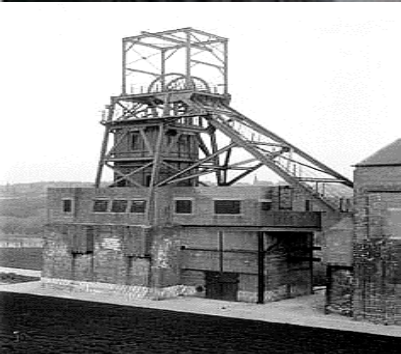
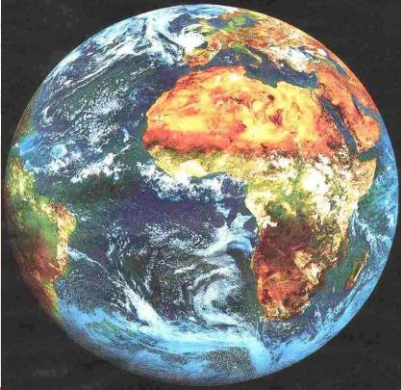
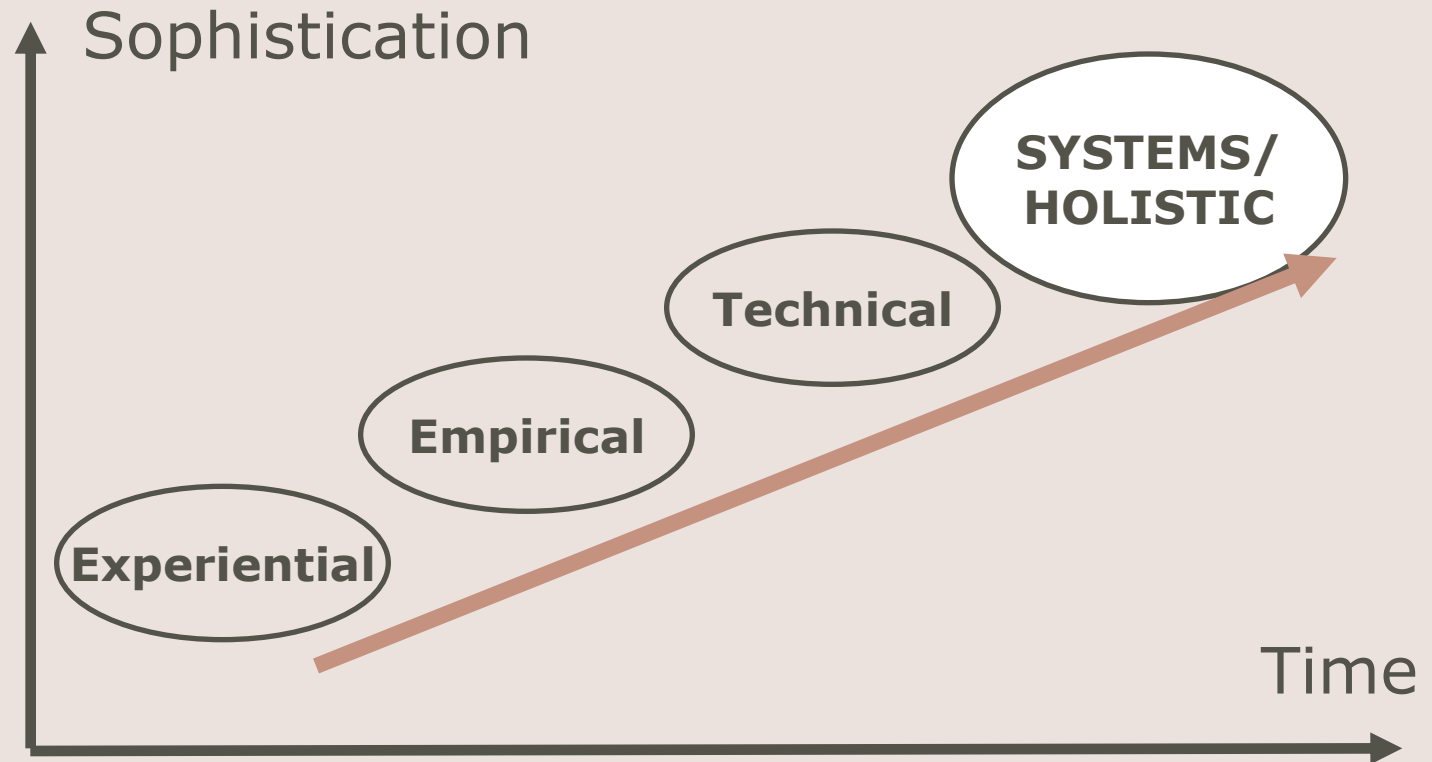


Now is the time

Phases of technology



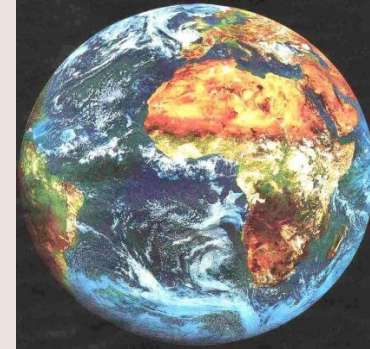
Phases of technology



Systems level consequences

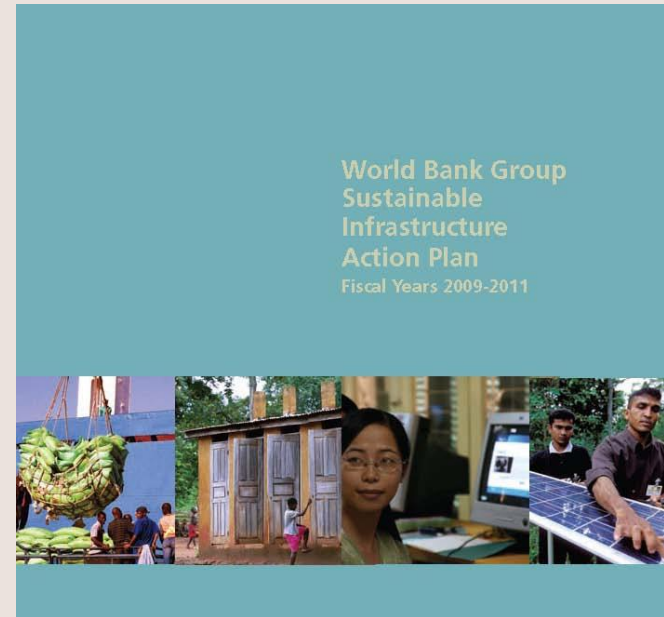
Systems level solutions

Slipping to an environmental catastrophe...



... and with

- 1 billion without access to safe water
- 1.6 billion without electricity
- 2.5 billion without safe sanitation
- 1 billion without telephone services
- 1 billion without all-weather roads



Civil engineers' ability to take a systems view at a range of temporal and spatial scales

Not just a shift to whole life costs
... but to whole life **values...**

Engineering the world away from an environmental crisis

Somalia



Tewkesbury



Providing the infrastructure platform for an increasingly urbanised world

Dhaka



Kolkata



Criticality and vulnerability of civil infrastructure

New Orleans



Hull



Andhara Pradesh



Rotherham



Criticality and vulnerability of civil infrastructure

L'Aquila



Kashmir



Aceh/Sri Lanka



Samoa



Systems level understanding...

...leading to **better decisions**

21st century challenges

“The Perfect Storm...”

- Urbanisation
- Population
- Food security
- Poverty alleviation
- Energy demand
- Climate change
- Water demand
- Counter-terrorism
- Infectious diseases
- Biodiversity

Prof John Beddington
Chief Scientific Advisor
UK Government

Systems level solutions!

- Urbanisation
- Population
- Food security
- Alleviating poverty
- Energy demand
- Climate change
- Water demand
- Counter-terrorism
- Infectious diseases
- Biodiversity

.. the **emergent properties** of large-scale, complex systems...

Civil engineers have a positive role to play in addressing all of these...

ICE-RAEng Workshop on Water Security

- Water resources and urbanisation in Asia
- Agriculture in Sub-Saharan Africa
- Sustainable water resources development in Europe

Recurrent message – the need to adopt a **systems** approach to water security

Disaster risk reduction

Disaster risk reduction

The Built Environment Professions in Disaster Risk Reduction and Response A guide for humanitarian agencies



redruk

Darfur

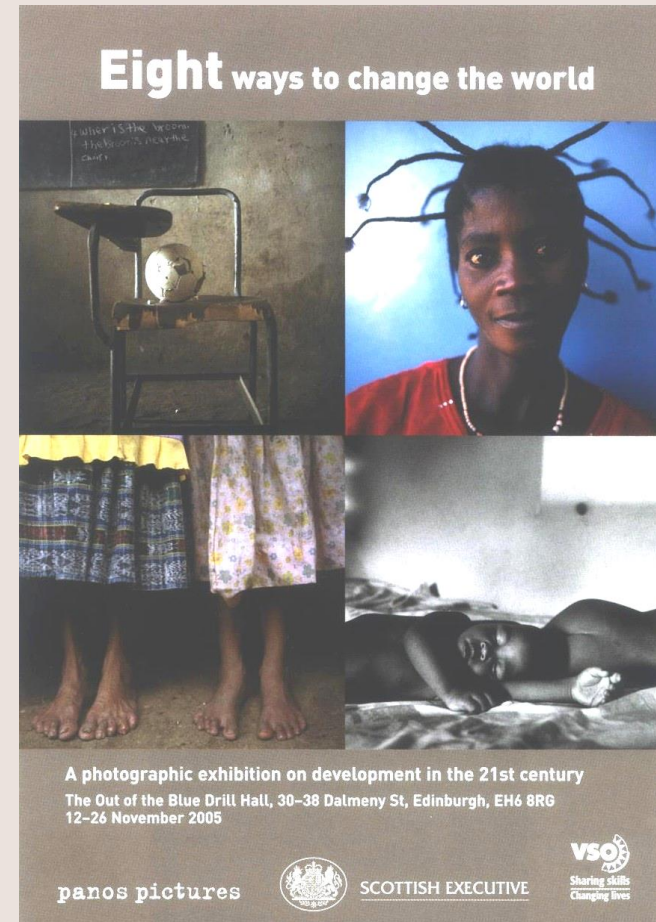


International development



The UN Millennium Development Goals

1. Reduce extreme poverty
2. Increase primary education
3. Increase gender equality
4. Reduce child mortality
5. Improve maternal health
6. Reduce HIV/AIDS
7. Increase environmental sustainability
8. Develop global partnerships







Slum-grey shanty towns



International development

Now is the time for an engineering vision for delivering the UN Millennium Development Goals

Prerequisites for development...

Reasonable governance structures

A functioning civil society

An effective local economy

Freedom from persecution, conflict and corruption

Ron Watermeyer



Soweto





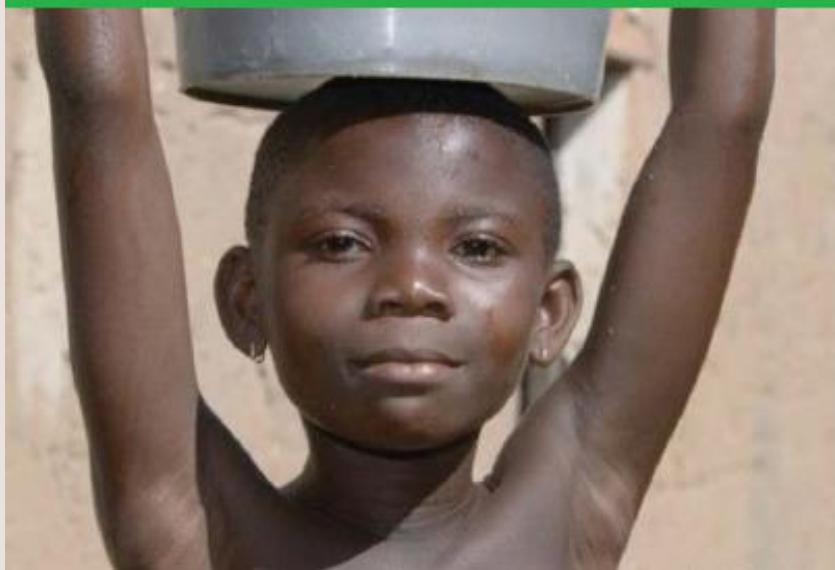
The Royal Academy
of Engineering

Africa
Engineers
Forum

ice
Institution of Civil Engineers



The Africa-UK Engineering for Development Partnership



Supporting young engineers

EFOD

Engineers for
Overseas Development



EWB

Engineers
without Borders



Mondialogo Awards

UNESCO Daimler
Mondialogo Awards



Supporting young engineers

Now is the time to inspire them,
and allow them in turn ...

... to inspire us – through their
passion, their values and their energy

The President's Apprentices 2009-10

An international band of young engineers...

Harnessing the energy of young engineers
to provide infrastructure for a better world



The President's Apprentice Scheme 2009-2010



The President's Apprentices 2009-10

An international band of young engineers...



Abiodun Akinyemi



Nicola Bailey



Benjamin Bampoh



Lorna Brady



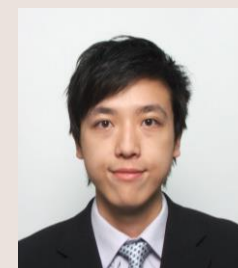
**Tonderai
Chakanyuka**



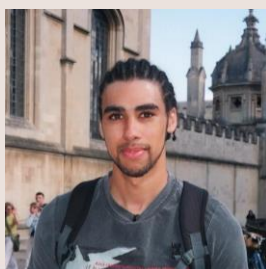
Fang Fang



Fazlun Fazlee



Hung Yik Lee



Joshua Macabuag



Joe Mulligan



Michelagh O'Neill



Tom Wilcock

A Career in Civil Engineering?

The Apprentices:

What motivates them?

What inspired us?

What motivated me?

Now is the time...

- to unleash the skills of our young engineers
- to deliver the UN Millennium Development Goals
- for an engineering renaissance
- to build and maintain critical infrastructure
- to deliver systems level solutions

Now is the time to deliver



Now is the time