LOW CARBON CITIES

Clare Wildfire
Climate Change Act 2008

Built environment contribution to UK greenhouse gas emissions & an 80% reduction by 2050
1988: Ravenswick Park
Bespoke strawburning boiler installation fuelled by waste straw

1993: Elizabeth Fry Building
First UK use of Termodeck delivered exceptional performance

2006: Westway Beacons
First UK application of Aquifer Thermal Energy Storage (ATES)
Access to Global and Multi-sector Skills
Boundary Conditions
Malmo Western Harbour
Cross Sector Lessons for City Infrastructure

Reduce demand: minimize pressure on assets and encourage diversification

Efficient & resilient design: value added and future proofed decision making

Enhance performance: extract maximum value from assets

Recover and reuse: zero tolerance approach to waste in all its forms

Integrated approach
2005: SMART (Stormwater Management And Road Tunnel)

- water and road tunnel in Kuala Lumpur city centre
- road sections are used for water relief during heavy storms
Lessons from the Infrastructure Carbon Review

**Up to 100%**

**Build nothing** — challenge the root cause of the need; explore alternative approaches to achieve the desired outcome.

**Up to 80%**

**Build less** — maximise the use of existing assets; innovate to increase capacity, reliability, service and resilience; optimise asset operation and management to minimise the extent of new construction; reward efficiency.

**Up to 50%**

**Build smart** — use Lean design, BIM and design for manufacture to minimise resource use; use low carbon materials; streamline delivery processes.

**Up to 20%**

**Build efficiently** — embrace new construction technologies; eliminate waste.
Extract Maximum Value from Assets
Implications for Governance and Citizens