

Developments in Infrastructure Modelling at CAR



What is Cambridge Architectural Research (CAR)?

Multi-disciplinary consultancy, founded 1987



Buildings & Cities



Risk



Structures



Acoustics



Energy



Heritage

CAR's experience / expertise

Expertise

Life-cycle evaluation – financial costing (LCC), environmental assessment (LCA)

Probabilistic modelling – simulation, scenarios, sensitivity analysis

Risk evaluation – hazards, vulnerability, mitigation

Structural solutions – materials, connections, construction process, disassembly

Acoustic solutions – room acoustics, noise control

Application areas

Decision-making – in situations of uncertainty

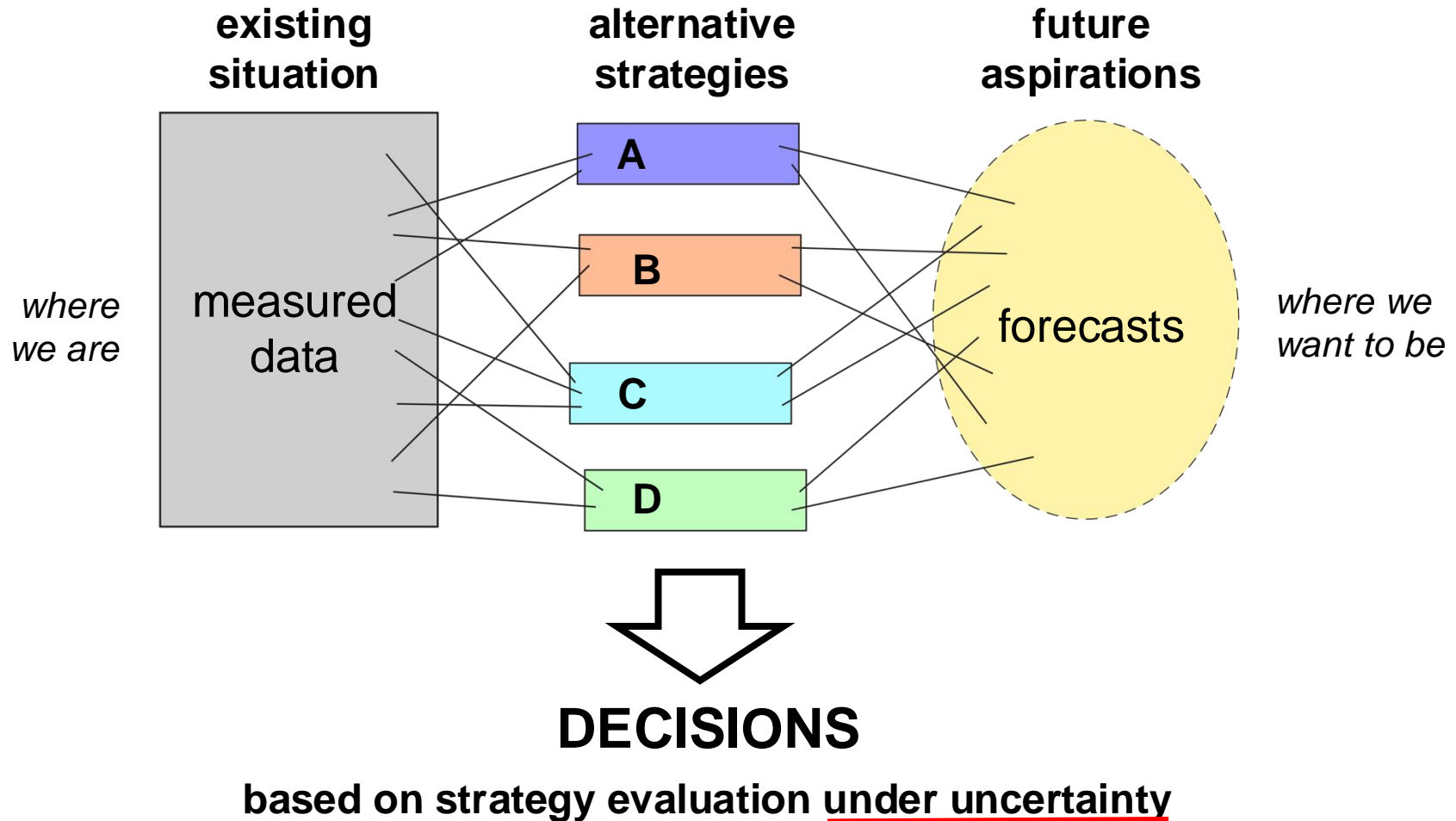
Construction – design, asset management, refurbishment

Heritage cities and buildings – significance, restoration, economic use

Energy – generation, transmission, consumption/end-use

Natural hazards – vulnerability of building stock, resilience/recovery

Infrastructure investment under uncertainty



CAR tools for decision-making under uncertainty considering, eg. risk aversion and time preference (RATP)

Horizon partners sought

Partners in projects that involve:

1. **Investment in infrastructure** – current resource input in expectation of greater future benefits
2. **All types of infrastructure** – energy, transport, construction, resilience, etc
3. **Need for evaluation** of alternative infrastructure strategies under uncertainty
4. **Quick win** – avoidance of over-investment (*where forecast future benefits are less than current resource investment*)
– **immediate saving in irrecoverable resource input**

Recent EU projects

RE-City

Reviving Shrinking Cities
in Europe
2018-22



CILECCTA

Construction Industry Life-Cycle Costing and Assessment

2009-13

