

TO GLOBAL INFRASTRUCTURE DOMINANCE – 100 YEARS



AVERAGE URBAN SPEEDS UNCHANGED!



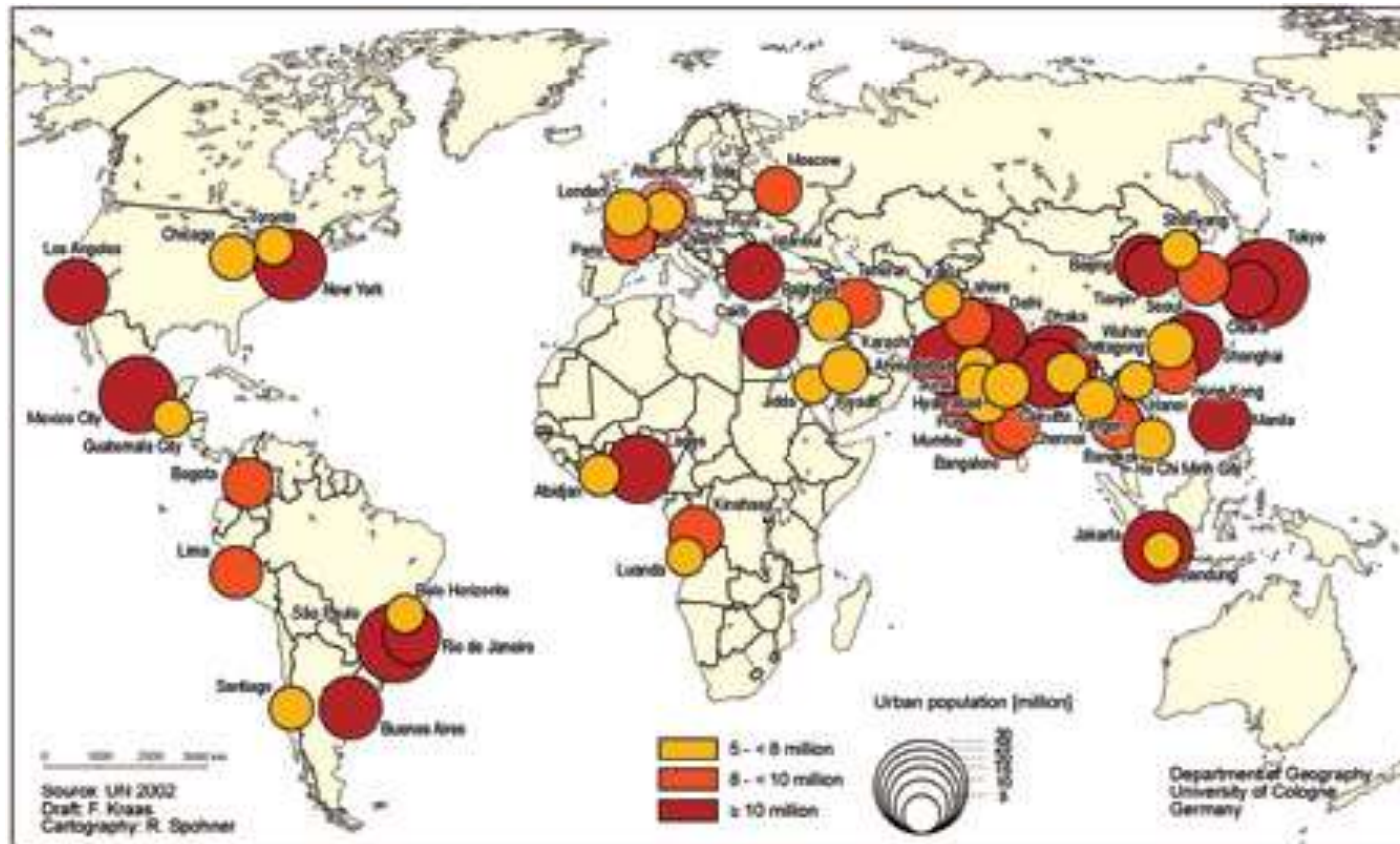
BEYOND THE BORIS BIKE



TRANSITIONAL TECHNOLOGIES



23 OF 30 LARGEST CITIES ON COAST



SHIPS SHAPED THE WORLD



VULNERABILITY DUE TO ASSETT LOCATION



1928



FLOOD PROTECTION INFRASTRUCTURE



CREATES NEW PROBLEMS



RESOURCE CONSTRAINTS



GEOGRAPHIC CHALLENGES



LESSONS FROM MARGINAL POPULATIONS



SUSTAINABLE ALTERNATIVES?



$\text{IMPACT} = \text{POPULATION} \times \text{AFFLUENCE} \times \text{TECHNOLOGY}$



TECHNOLOGIES ARE SOCIAL SYSTEMS MEDIATED BY MATERIALS AND DEVICES



“CONFIGURATIONS OF THINGS AND PEOPLE THAT WORK”

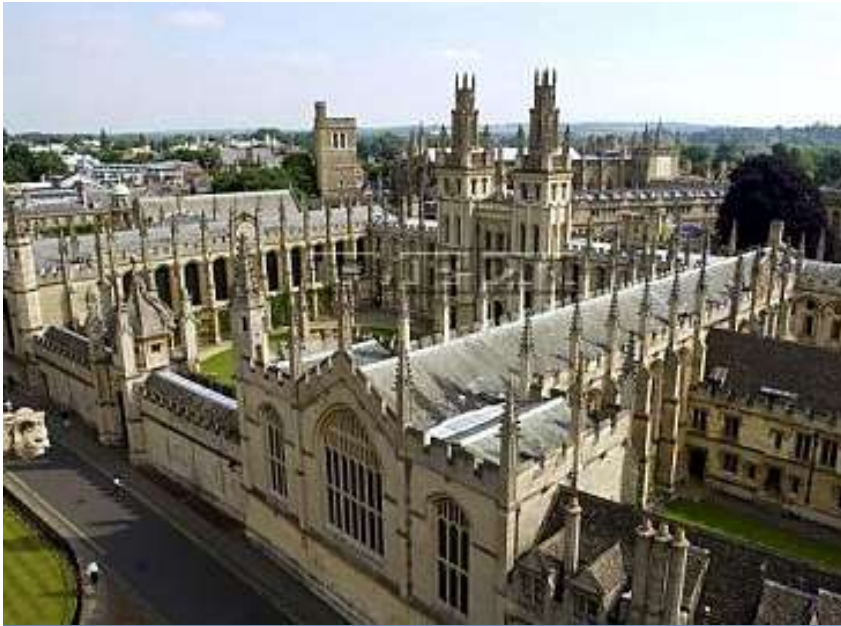
LANDSCAPES, REGIMES & NICHES



UNIVERSITIES AS CHANGE AGENTS



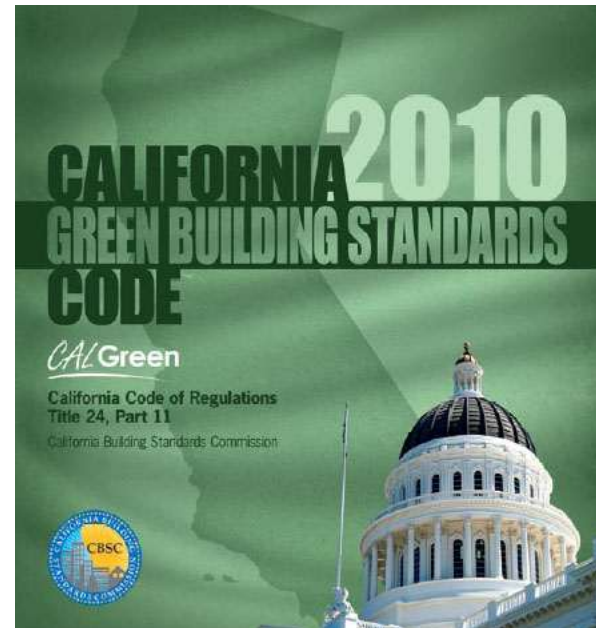
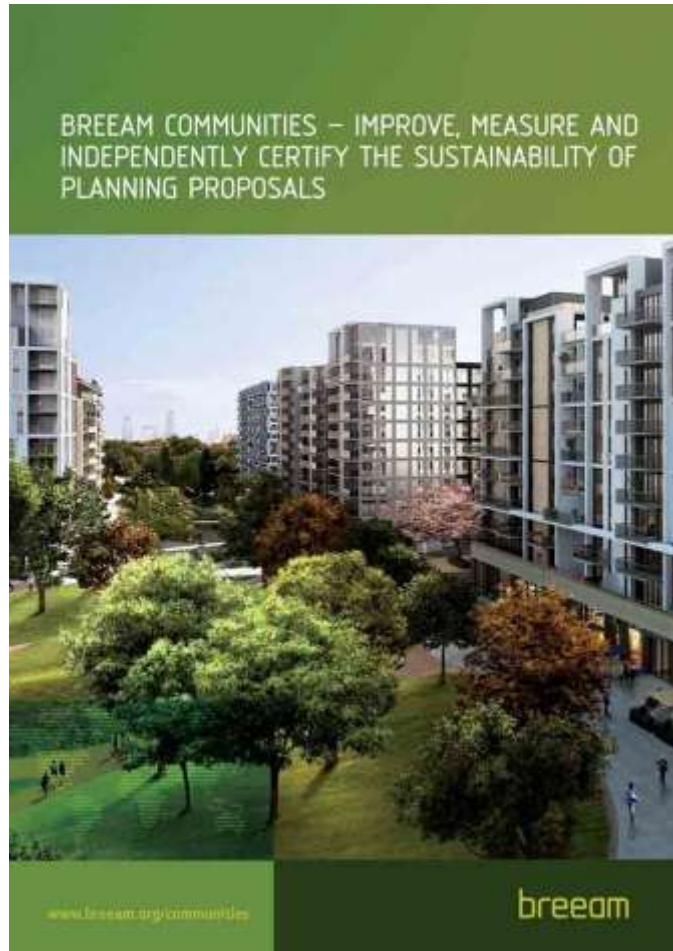
CONTEXT MATTERS



TECHNOLOGY REGIME CHANGE?



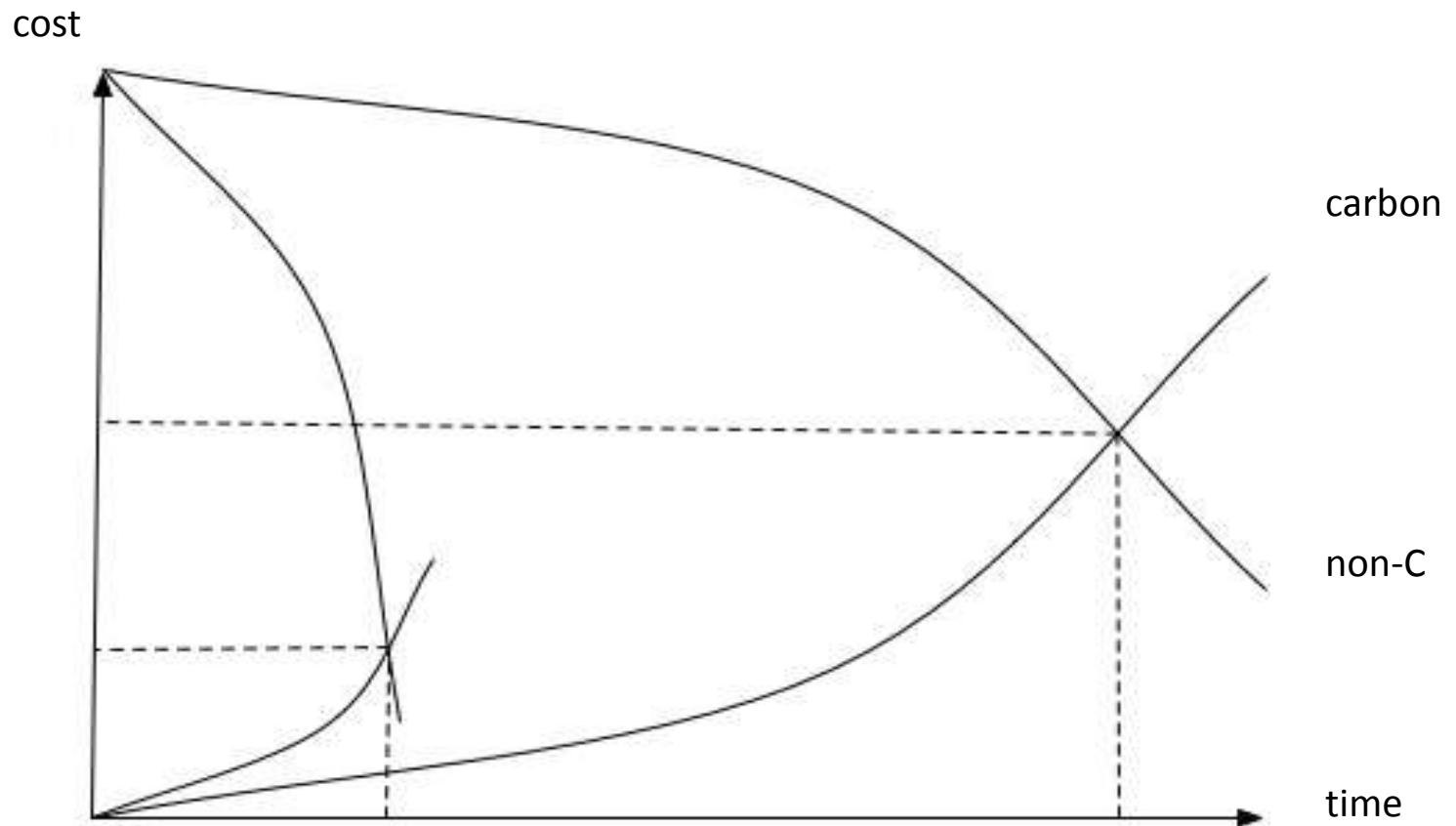
BEYOND THE UNIVERSITY



ENERGY MODERNIZATION



PRICING IS NO SUBSTITUTE FOR EARLY INVESTMENT



NEED FOR PUBLICLY FUNDED ENERGY RDD&D

- New technology faces “the valley of death” 3-12 years
- Public funding required to reduce business risk
- Small carbon tax (\$5/tonne) could raise \$80-150 billion/year worldwide
- Opportunities for India and China



SYNERGIES?



SUSTAINABILITY IS NOT SIMPLY A DESIGN PROBLEM



IT IS A CHALLENGE TO THE MAGINATION

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