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# Futures Fair<sup>09</sup>

SOCIETY AND STIMULUS

A season of horizon scanning at the RIBA

## Retrofitting- Adaptations and Aspirations

12 May 09.00-11.30  
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SOCIETY AND STIMULUS

**Prof. Yvonne Rydin**  
Bartlett, UCL

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Government  
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**Science**

 **Foresight**

# **Professor Yvonne Rydin**

Sustainable Energy Management and the  
Built Environment

**How can we make retrofitting acceptable  
and desirable?**

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## Background to the Foresight SEMBE Report

- First signalled in the Energy Review, 2006
- SEMBE is the first comprehensive, futures examination of energy systems in the UK built environment over the next 50 years
- Project time-frame roughly coincides with the 80% emissions reduction by 2050 target outlined in the Climate Change Act
- SEMBE report *Powering Our Lives* launched on 26 November 2008 (the same day that the Climate Change Act passed into law)

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## Remit of Sustainable Energy Management and the Built Environment Project

*To explore how the UK built environment could evolve to **manage the transition** – over the next 5 decades - to **secure, sustainable, low carbon energy systems** that **meet the needs of society, the requirements of the economy and the expectations of individuals.***

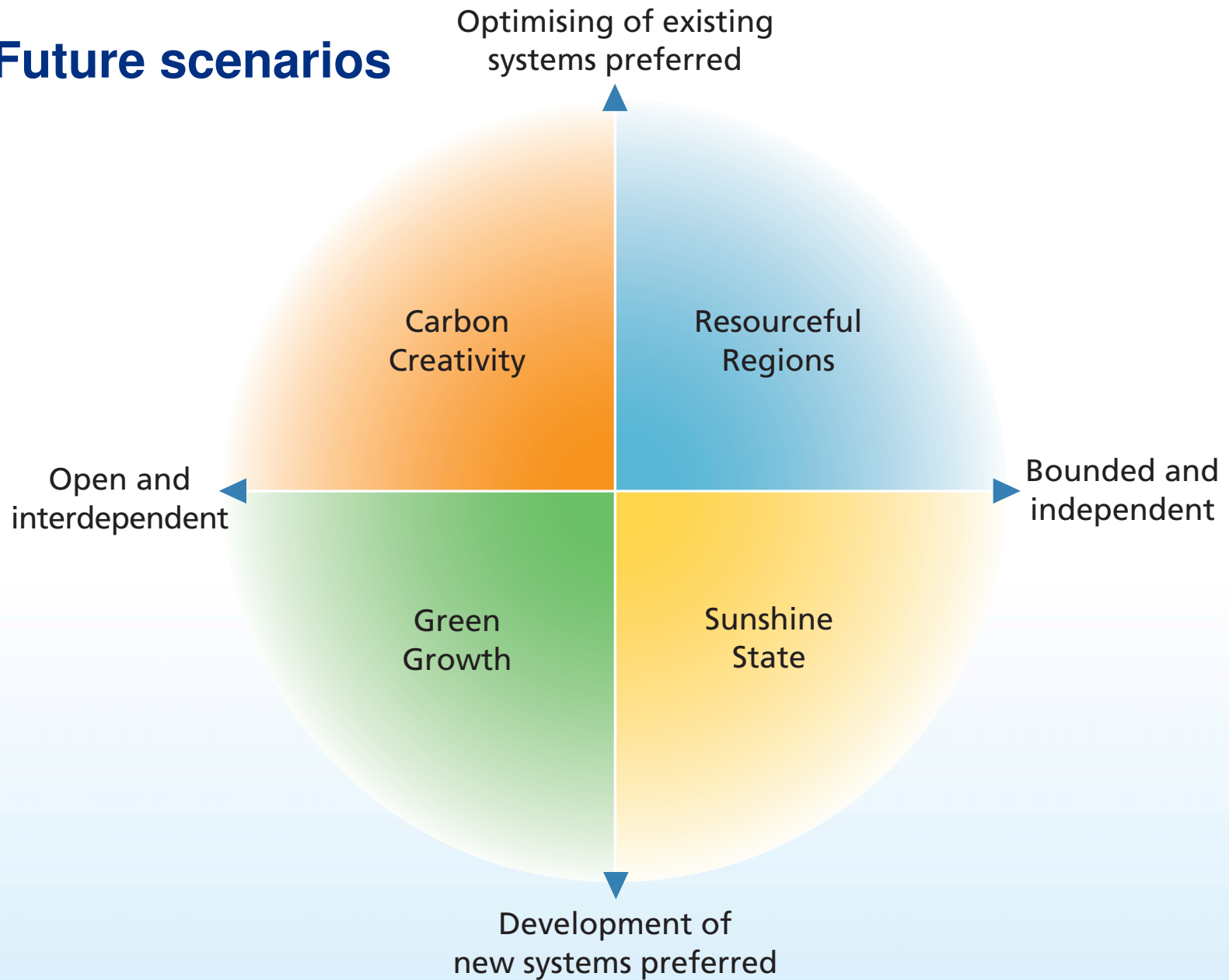
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## Evidence base

- Around 60 peer-reviewed State of Science papers, published in a Special Issue of *Energy Policy* (vol. 36, issue 12)
- Project participation by approximately 200 experts
- Report written by Foresight Team and a team of eight scientific experts
- Futures work through Foresight scenarios informed the analysis

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## Future scenarios



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## Why is retrofitting important?

Retrofitting is a key imperative because...

- Almost 70% of the buildings that will exist in 2050 have already been built

There are concerns over meeting the 2016 zero-carbon targets in relation to new housebuilding because of...

- The economic downturn
- Question-marks over implementation to required standard
- Lack of monitoring and enforcement

This is an issue for the non-domestic sector also.



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## Why is retrofitting a problem?

- Current take up of retrofitting schemes has been low.
- Retrofitting needs to be cheaper and easier, particularly given the *perception* of problems.
- Fear of disruption and of poor quality workmanship are major barriers.
- Need to think through potential conflicts, e.g. with historic buildings.

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## How can we make retrofitting acceptable and desirable?

- Area based initiatives could promote involvement and share the cost of investment.  
e.g. revamped area-improvement policies or town centre management initiatives
- Area-based schemes could also provide spaces for innovative ideas on retrofitting; e.g. Using Local Development Orders (or EZs or SPZs).
- Such schemes could connect new build programmes with retrofitting of existing surrounding stock (and with innovative energy systems that go beyond the development site).

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## What are the limits to energy reduction through retrofitting?

- The Report highlights that how we behave in homes and other buildings is as important in determining energy use as the details of building design.
- Energy behaviour responds to a mix: price signals, visibility of use and savings, peer pressure, established routines, ease of use of technology, regulation and enforcement.
- Need to develop nuanced packages of proposals to influence firms and households on their energy behaviour that take more account of the specific situation that those firms and households are in.

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## So what are some other important ideas?

- There is potential to introduce frequent, possibly annual assessments of a building's energy performance linked to minimum allowable standards (akin to a vehicle MOT) in order to promote change and to make people more regularly aware of building efficiency.
- The related standards could be ramped up over time.
- 'Green leases' for commercial buildings could be linked to real-time energy data from smart meters.
- Smart metering connected to energy grids could influence behaviour, creating much more active energy citizens.

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**Foresight's Sustainable Energy  
Management and the Built Environment  
Project**  
**[www.foresight.gov.uk](http://www.foresight.gov.uk)**