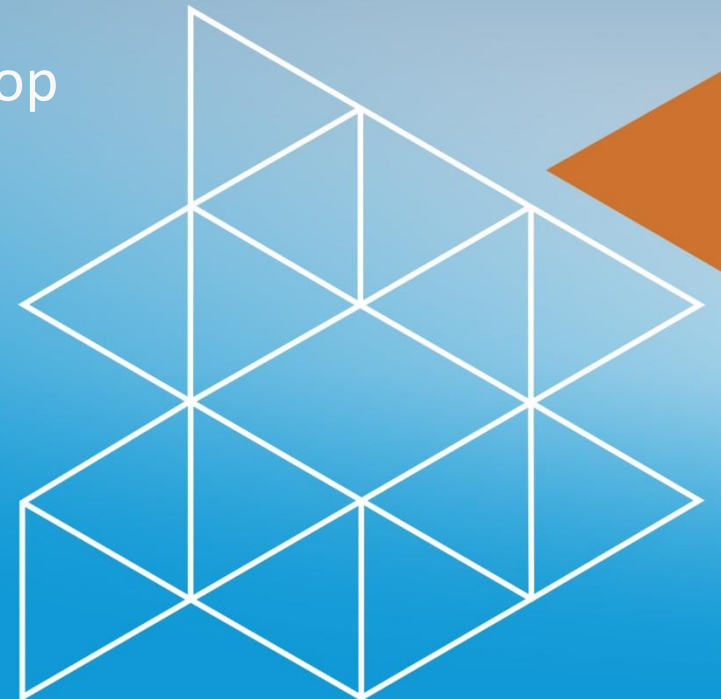




The Commitment Agreement

Introduction and Workshop



The Commitment Agreement Project State of Play

Feasibility study October 2015 – April 2016

- Review and comparison of the situations in the UK and in Australia
- Major industry workshop 1st December 2015
- Report published on technical, legal and financial issues



Pilot projects May 2016 – October 2017

- Apply DfP at various points in procurement and operational journey
- Develop longer term governance, administration and support



Overview

- An overview of NABERS
- Why building owners drive NABERS improvements
- UK challenges for adopting 'rate & display'
- The Commitment Agreement
 - Intent and Structure
 - Impacts and strengths
 - Can it work in UK
- The Design for Performance initiative
- Pilot programme opportunities
- Summary

NABERS in overview

- NABERS ratings exist for:
 - Office buildings (base building/tenancy/whole building): Energy, water*, indoor environment and waste
 - Hotels: Energy, water
 - Shopping centres (base building): Energy/ water*
 - Data centres (infrastructure/IT equipment/whole facility): Energy
 - NZ Office Buildings: Energy/Water
- All ratings are based on measured performance not attributes or design

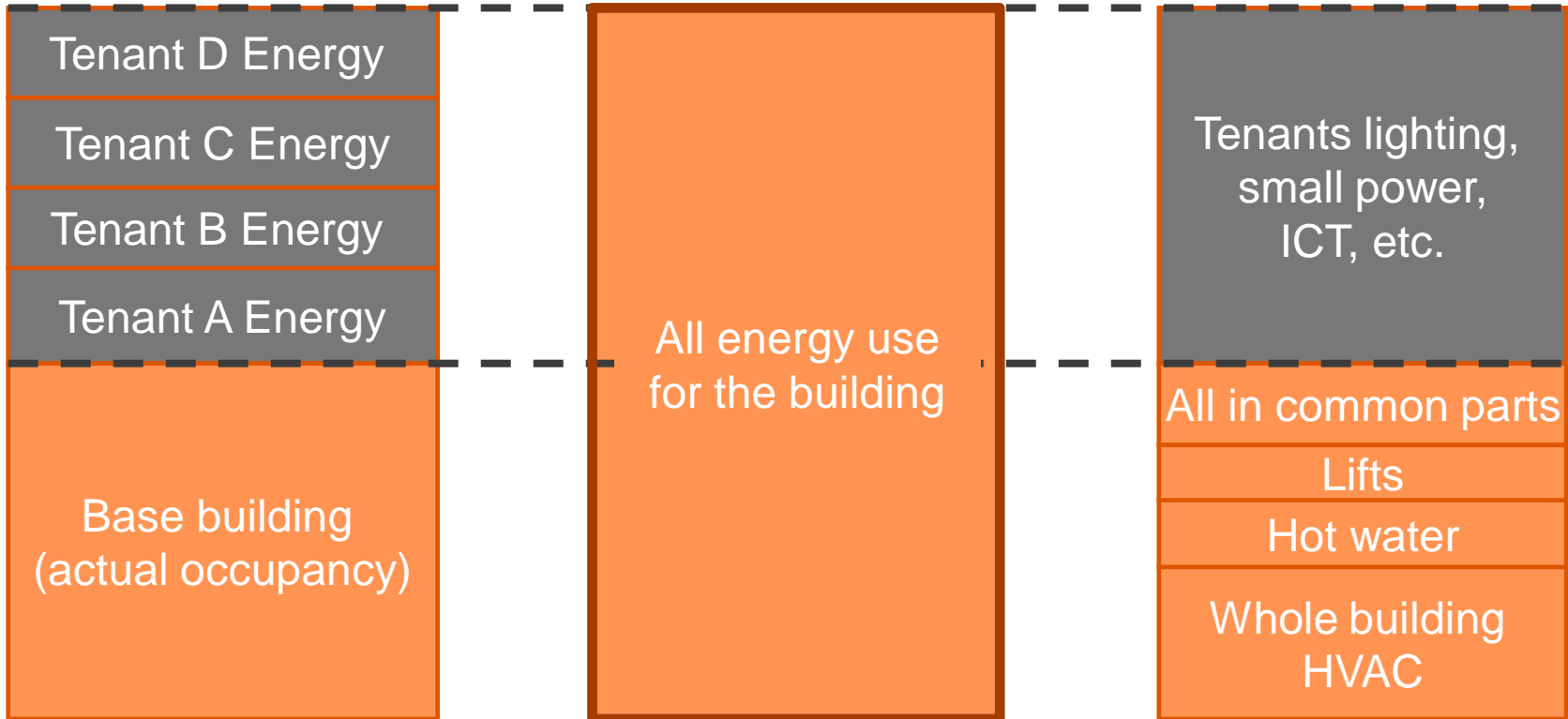
*Water ratings are whole building

NABERS Energy for Offices



- NABERS Energy for offices (base building) has achieved huge results in Australia
- Data inputs:
 - Energy use of base building (whole building HVAC lifts + common area light and power)
 - Net lettable area
 - Area-weighted hours of operation
 - Climate zone (via postcode)
- Outputs:
 - Star rating

Separating landlord & tenant responsibilities and control



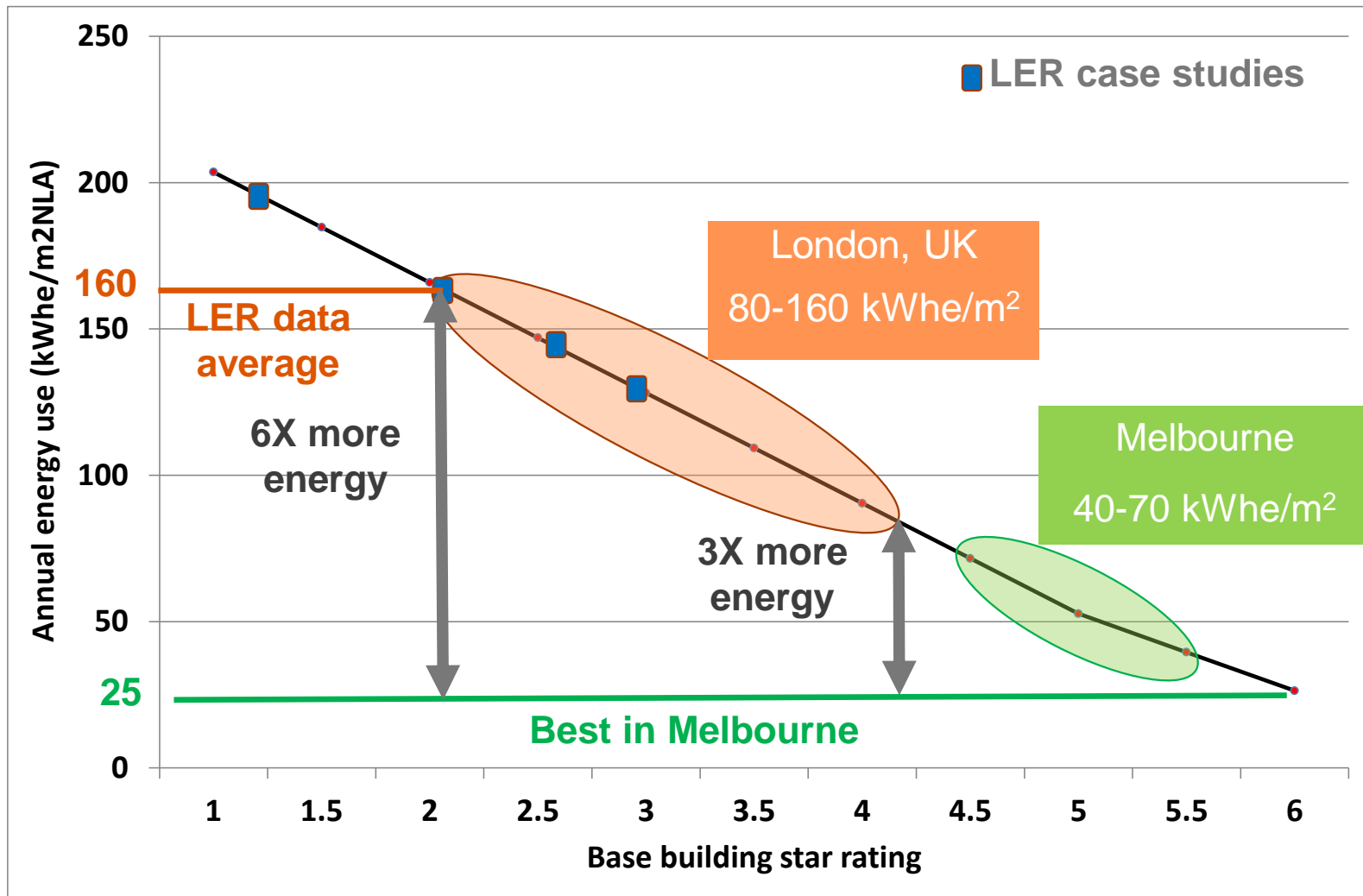
Base building and tenancy ratings

Whole building rating – classic operational rating, as used in DECAs.

Energy end uses divided between Base Building and tenant rating



Base building energy intensity in London 3 - 6 times Melbourne



Slide: R Cohen adapted by P Bannister





A typical high-NABERS building in Australia

- Must haves:
 - OK building façade
 - Good chillers
 - Reasonable air-handling design, most often VAV
 - Excellent control of HVAC plant, especially fan turndown
 - Good commissioning/maintenance
- Optional, and not always helpful:
 - “Innovative” HVAC such as displacement ventilation, chilled beams, etc
 - Broader environmental/sustainability initiatives
 - Cogeneration/trigeneration
 - On-site renewables



What delivers NABERS improvement?

- Step 1: Remove the stupidity
 - Simultaneous heating and cooling
 - VSD fans running at 100%
 - Other control and commissioning issues and blunders
- Step 2: Upgrade the dead and dying plant
 - Mainly chiller upgrades
 - Some AHU modification
- Costs:
 - Step 1: <3 year paybacks even with new control systems
 - Step 2: Generally conducted as part of general refurbishments
- Benefits
 - Typically enough to get to 4-4.5 stars
 - Improved occupant comfort

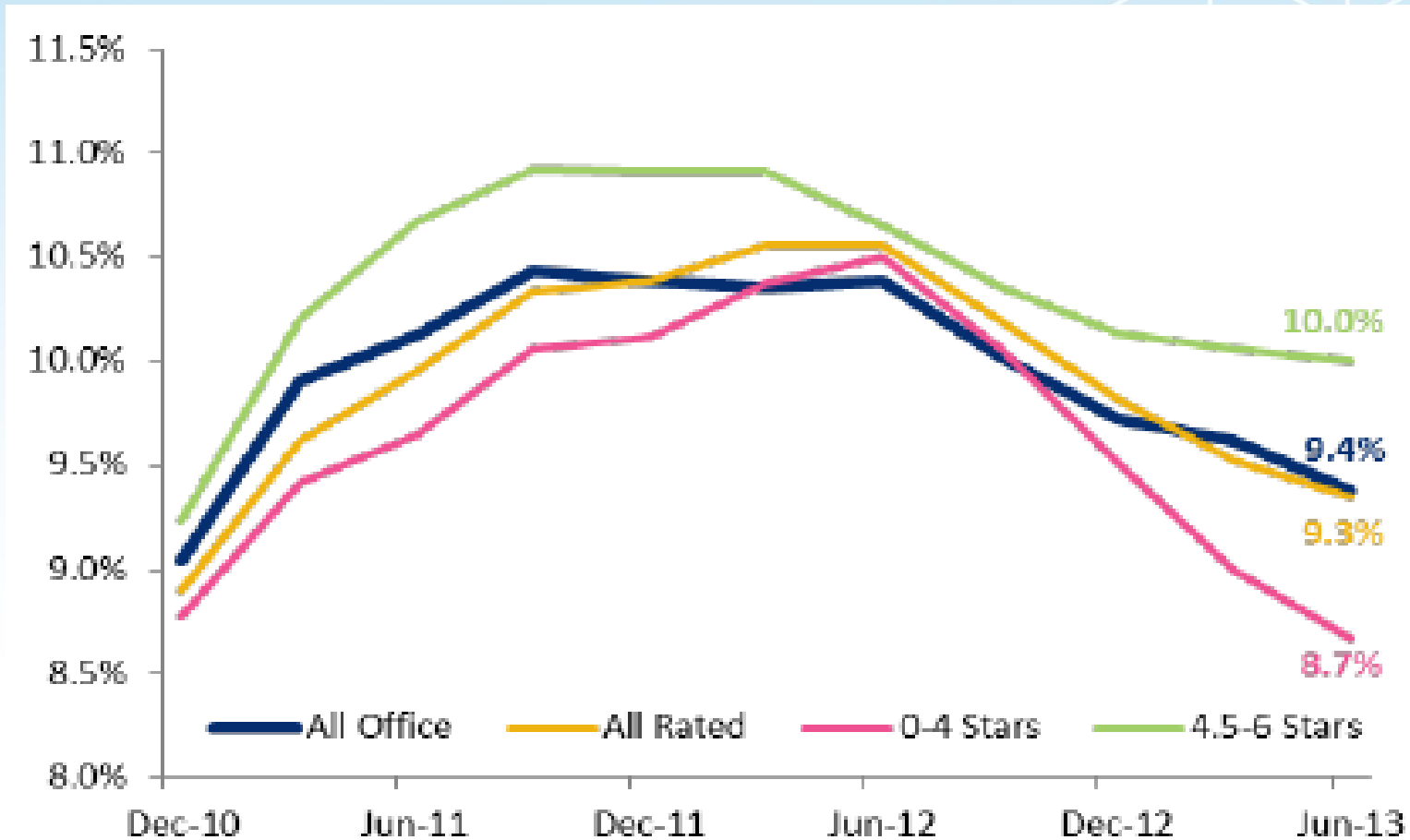
Why owners bother with NABERS improvement?



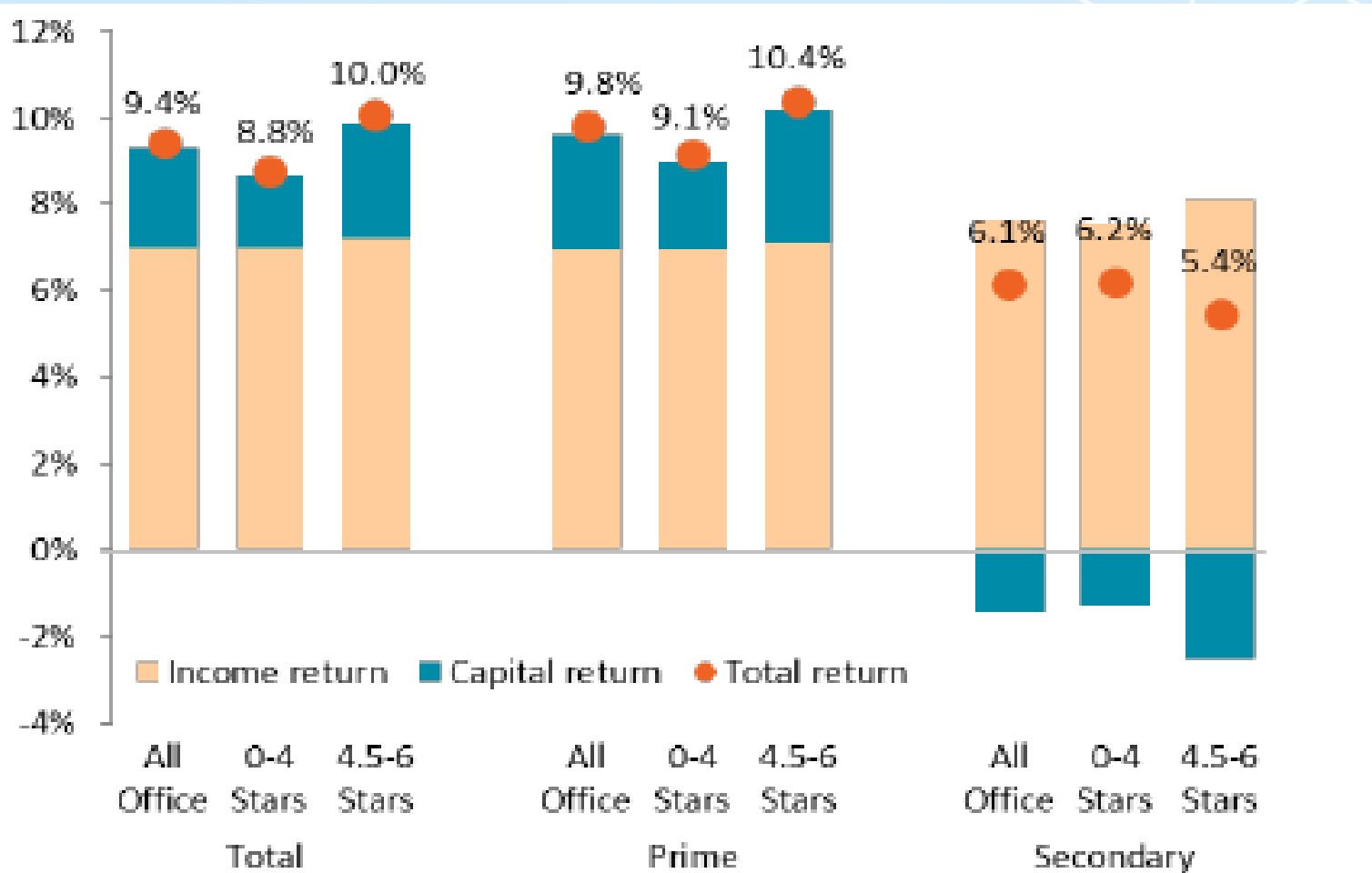
- Occupier demand for higher quality buildings
- Access to government and large corporate tenants
 - Many of whom require minimum NABERS ratings
- Measurable commercial benefits
 - Lower vacancies
 - Better rents
 - Higher building valuations
- CSR reporting and investor sentiment
 - High performance attracts investment
- General competitive pressure
 - Leading to a push towards 5.5 and 6 star buildings ahead of large scale tenant demand



Office market investment performance 2010-13

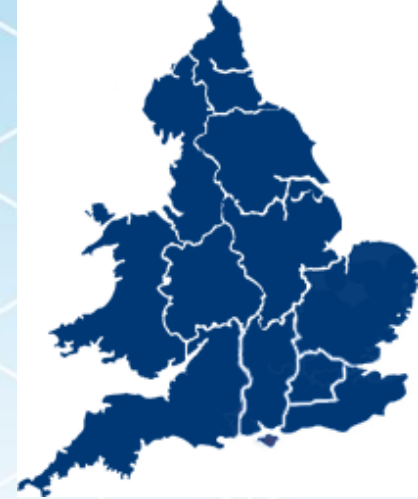


Office market investment performance 2013



Challenges for the UK

- Measured performance is not known, rated or valued in the UK
 - Metering and servicing boundaries blur landlord/tenant responsibility and duplicate FM need
 - Building regulations (Part L) oversimplifies performance and largely ignores HVAC
 - EPCs assess ideal not real performance
 - DEC only apply to public buildings
- Results:
 - “Design for compliance” culture in new build
 - Inefficient operation in existing buildings
 - Higher overall costs of occupancy





The genesis of the Commitment Agreement

- Developers concerned that they could not compete with existing NABERS-rated assets
 - Because NABERS requires 12 months of performance data
- Commitment Agreement process developed to enable a building to claim a NABERS rating during construction
- Process:
 - Sign NABERS Commitment Agreement
 - Undertake at least design review & simulation
 - NABERS Rate asset after 12-18months of occupancy to prove/disprove achievement

Requirements of Commitment Agreement



- Simulation
 - Estimate of actual in-use performance
 - Covers all energy uses within base building
 - Reflecting known/expected hours of operation and loads
 - Calculation of NABERS rating
 - Risk analysis of potential failure scenarios
- Design review (by independent expert)
 - Review and interpretation of the simulation
 - Review of design covering
 - Performance risks
 - Design opportunities
 - Process/management enhancements
 - Controls improvements



The impact of the Commitment Agreement

- Design Reviews
 - Often limited impact on individual project design
 - Greater impact on control/commissioning
 - Significant impact on design over time – so primarily an education mechanism
- Simulations
 - Improved quality of simulation work generally, both in terms of the simulation itself and the reporting
 - Flow-through to other simulation work
 - Buildings achieving at or close to simulated performance
- Building process
 - Incorporation of NABERS target in builder's contract
 - Final retentions not released until NABERS rating achieved



The intent of the Commitment Agreement

- Risk management, not compliance
 - Target outcomes rather than process
 - Leave industry to do its thing
- Education
 - Use expert advice to expose designers to new ideas
 - Close the loop from performance back to design
 - Improve simulation practice
- Industry
 - Change matrix of responsibility to create an engaged design and construction team

The strengths of the Commitment Agreement



- Voluntary
 - Light-handed
 - Open to innovation
 - Non-prescriptive
 - Low to no cost impact on construction costs
 - Simple and low cost to administer
 - Drives learning culture and industry transformation
-
- Commitment Agreement is not readily adapted to regulation because it deals with things that are difficult to regulate
 - A better starting point for performance measurement in the UK market than existing buildings



Can a Commitment Agreement work in UK?

- Yes, with the following features:
 - Based on NABERS base building/LER like rating
 - Formalised and detailed
 - Benchmark achievement levels plus a set of rules
 - Using an enhanced Commitment Agreement process
 - Contractual requirements
 - Commissioning/ICA/soft landings
 - M&V and tuning
 - With support and training for high performance design/simulation



Design for Performance Pilot Project - Aims

- To test the use of potential components of a Design for Performance process in a UK context
- To trial process and feasibility of a Design for Performance program for new buildings
- To begin the process of transferring design for performance skills and knowledge into the UK market

Within individual projects, only one or two aspects of the Commitment Agreement are being tested due to time constraints (synchronising pilots to projects)



Current Pilot Projects

- Stanhope – Angel Court (simulation, metering, targeting)
- Willmot Dixon – Gatwick Diamond (design review, simulation, M&T)
- L&G 245, Hammersmith (design review, simulation, metering)
- The Crown Estate – 10 Burlington St (M&T, NABERS rating)

Benefits of being a Pilot Project

- Exposure to the leading edge of building performance
- Upskilling of project teams
- Potential for:
 - Better building energy efficiency
 - Building design insights
 - Improved simulation skills and value
- Visible industry leadership





Summary

- Commitment Agreements have been an effective market transformation mechanism in Australia
 - Vector for change (performance measurement)
 - Identification of opportunities (design review)
 - Test of achievability (simulation)
 - Test of achievement (NABERS rating)
- The Design for Performance project is seeking pilots to test these processes in UK conditions

Project organogram

