

*Guaranteeing the performance of new office buildings  
Ecobuild, London, 8 March 2016*

# The Australian perspective

*How a Commitment Agreement supports a real estate market that values energy efficiency*

Bill Bordass  
*bilbordass@aol.com*

**the Usable Buildings Trust**  
*[www.usablebuildings.co.uk](http://www.usablebuildings.co.uk)*

---

## Background

- *Based on a report the Usable Buildings Trust commissioned from Dr Paul Bannister of Energy Action Australia.*
  - Paul led the technical development of ABGR (now NABERS Energy) from 1998, formulating the rules and in 2002 initiating the Commitment Agreement.
  - Sadly Paul can't be here today, owing to a bereavement.
-

# The NABERS (originally ABGR) rating system in Australia

Launched in 1999 by SEDA – *the NSW Sustainable Energy Development Agency*.

An in-use energy benchmarking system for offices, with three variants:

- 1 Whole buildings
- 2 Tenancies
- 3 **Base Buildings** (*i.e. landlord's services*).



# Base Building ratings caught on particularly well

## SEVERAL REASONS:

- **Good politics** by SEDA, the initiators.
- A **credible benchmarking** system.
- Routine **utility metering** of landlord's services in NSW & Victoria.
- Relative **homogeneity** of the prime office market.
- An **uncrowded** field, with little buildings and energy legislation.
- **Market intelligibility** through a simple Star rating
- **Ownership** of Base performance by developer and landlord.

*AND from 2004, a 4 Star requirement (4.5 Stars from 2008) for office space being considered for Central Government occupation.*



# Data required for a NABERS in-use Base Building energy rating

## DATA INPUTS:

- Energy use (*HVAC, lifts, common area light and power*).
- Area-weighted hours of operation (*occupied areas only*).
- Nett lettable area, Climate zone (*via postcode*).

## OUTPUT: Star Rating (*currently 0.5 to 6 Stars*)

*2.5 Star average in 1999, when 5 stars was thought to be unattainable.*

*Now 4.3 Stars is average, while most new offices (after tune-up) get 5 Stars or better.*

***6 Star offices (half way from 5 Star to true Zero Carbon) are now appearing.***



# The success of NABERS in-use ratings tripped up developers of new buildings

**THEY NEEDED A GOOD RATING *to attract tenants***

***BUT ...*** They couldn't compete with existing stock ...  
*because NABERS requires 12 months in-use performance data.*

***AND SO ...*** A process was developed to allow them to claim a rating during construction; *and to help them to meet their commitment in use.*



**NABERS Energy  
Commitment Agreement**

NEW BUILDINGS & REFURBISHMENTS

---

# What does a developer now commit to?

- Design and construct the premises to operate at the target level.
- Give written notice of the Agreement to all consultants and contractors involved in its design, construction, commissioning and management.
- Disclose the Commitment Agreement in leases with all tenants.
- **AND IN USE ...** Provide data to allow the operational energy performance to be verified after 12 months of full occupation.
- Provide all tenants with annual updates of the NABERS rating.
- Use their best endeavours to achieve and maintain the Commitment Rating for the duration of the lease (*many have improved on it*).



## **NABERS Energy Commitment Agreement**

NEW BUILDINGS & REFURBISHMENTS

---

# Technical requirements of Commitment Agreements

## MANDATORY

- **Advanced simulation** of the design, with reliable prediction of actual operational energy use by individual sub-meters.
- **Design reviews** by independent experts.
- Report **in-use rating** to NABERS administration.

## VOLUNTARY

- Extended commissioning and fine tuning - *usually essential to meet the claimed performance level: nobody wants to market their building like this >>*
- Integration with *Soft Landings*.

**FOR SALE** Smith-Jones Real Estate

12-18 North St, City

- 2,000m<sup>2</sup>
- Parking available
- 2.5-star NABERS Energy rating
- Commitment agreement of 4.5-star NABERS Energy rating

PHONE 00 1234 5678  
[www.example1.com.au](http://www.example1.com.au)  
Ground floor, 1-2 Example St, Example City



# Operation of Commitment Agreements

They are about **Risk Management**, not Compliance.

A **light-handed**, non-regulatory approach, so *design teams can focus on delivering outcomes instead of ticking boxes.*

**Design Review** provides a menu of options only:  
*The design team has to make its own response.*

**The sting is in the tail:** *If the committed rating is not met, tenants and investors will start to ask awkward questions.*

***So, without being expensive and legalistic, they create strong incentives to tune things up, and to do things that really work.***

---

# Why do owners bother to get a good NABERS in-use energy rating?

## SEEN AS A **BADGE OF QUALITY** BY THE MARKET:

- Access to government and large corporate tenants, *many of which now require minimum NABERS ratings.*
- CSR reporting.
- Investor sentiment.
- Measurable commercial benefits: *Lower vacancies, Better rents, Higher valuations, Attracts investors.*

***Leading to a push towards 5.5 and 6 Star base buildings ... in advance of large scale tenant demand.***

---

# What features lead to a good NABERS rating?

## **ESSENTIAL:**

**OK facade.** Variable voltage Variable frequency **VVVF lifts.**

**Good chillers** (integrated part load performance value 8.5 or better)  
*mostly water-cooled with variable volume pumping.*

**Reasonable air-handling** design, *mostly VAV and minimum 10-12 C.*

**Excellent HVAC control**, *especially fan turndown and minimal reheat.*

**LED lighting** *with maximum power density 7W/m<sup>2</sup>.*

**Good commissioning**, operation, maintenance and management.

## **OPTIONAL, and not always helpful:**

*“Innovative” HVAC (e.g. displacement vent, chilled beams).*

*Cogeneration/trigeneration, fuel cells. On-site renewables.*

---

# THE REWARDS:

## *Benefits of Design for Performance*

- **Brings people together:**  
*Bridges the gaps between procurement and operations.*
  - **Improves what really matters:** the final outcomes.
  - Identifies and **rewards what is proven to work** in practice:  
*helps to cut out unnecessary “green bling” and the extravagant and wasteful indulgences we too often see in London.*
  - **Addresses more than energy performance:**  
*well-tuned buildings have better occupant satisfaction outcomes too.*
  - Allows industry to develop **cost-effective solutions** that get results:  
*helping to stop regulations becoming too onerous.*
-

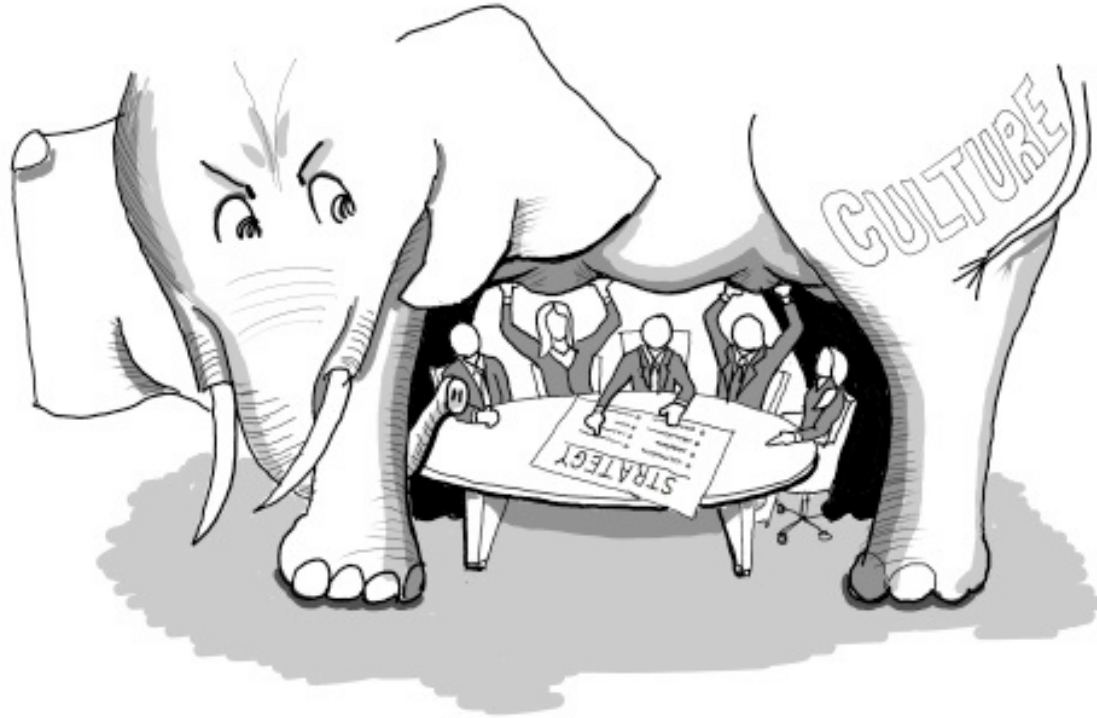
## Conclusions – *an effective market transformation instrument in Australia.*

- Vector for change (*performance measurement*).
- Identification of opportunities (*design review*).
- Test of achievability (*advanced simulation*).
- Test of achievement (*NABERS rating*).
- Light-handed, non-regulatory approach.
- Encourages innovation, minimises cost.

**Can easily be adapted for the UK technically** - *a prototype Landlord's Energy Rating has already been developed for BBP ...*

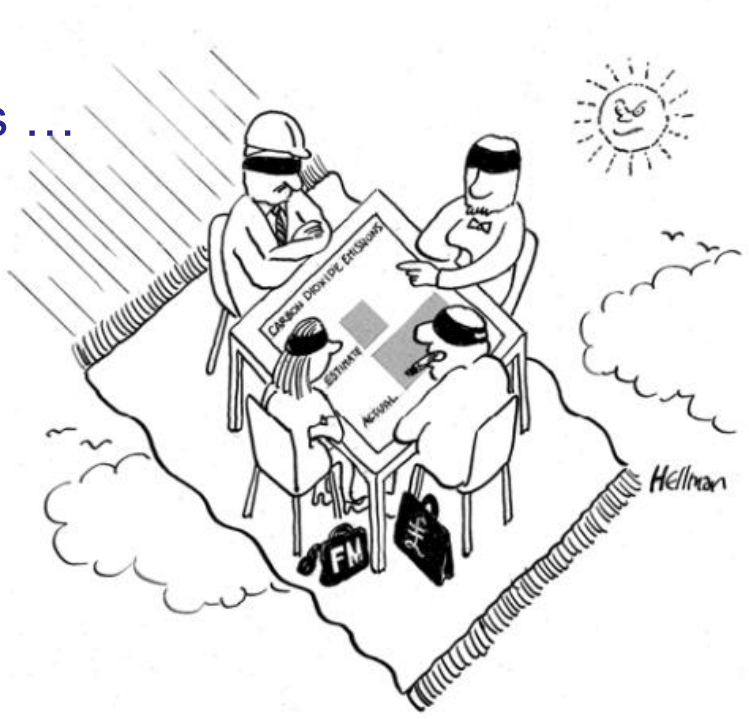
---

# ***BUT Culturally Challenging for UK players ...***



# ... but isn't it just what we need to tackle the UK's widespread performance gaps?

We need to move from *Design for Compliance* rituals and performance gaps ...



*When performance in use becomes the proper target, then everybody can pull together in striving to improve it.*

*if you don't understand  
the consequences of your actions ...*

***How can you call yourself  
a building professional?***

[www.usablebuildings.co.uk](http://www.usablebuildings.co.uk)

---