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*CIBSE YEPG debate, UCL Energy Institute  
The performance gap – is there really one?*

# THE PERFORMANCE GAP: A CULTURAL PROBLEM

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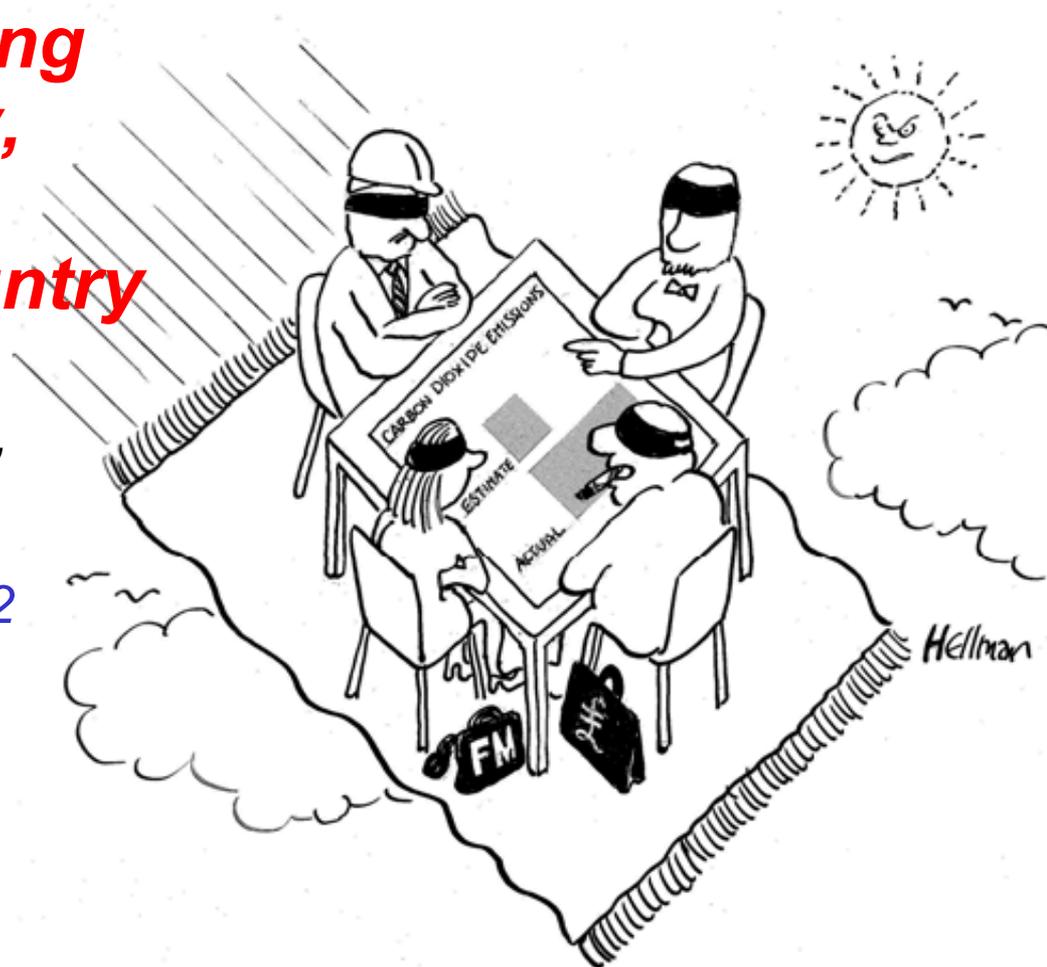
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# The performance gap: is there really one? *What a revealing question!*

***For most of the building and property industry, performance in use has been another country***

*“designers seldom get feedback, and only notice problems when asked to investigate a failure.”*  
*ALASTAIR BLYTH, CRISP 00/02*

*“I’ve seen many low-carbon designs, but hardly any low-carbon buildings.”*  
*ANDY SHEPPARD, Arup, 2009*



# I was writing about this 20 years ago too!

## Optimising the irrelevant

by Bill Bordass CIBSE Journal, February 1993, p 32-34

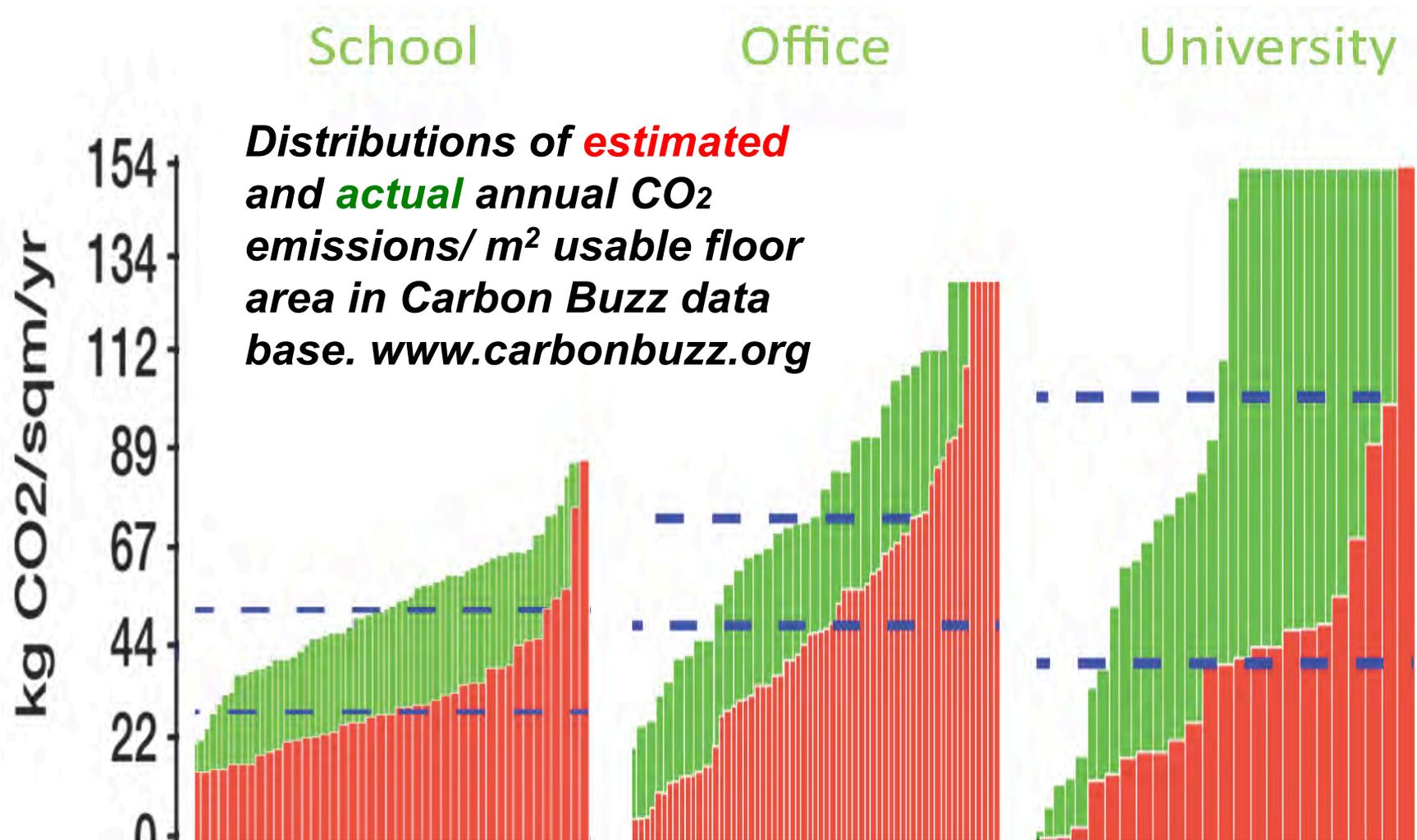
**Why is the hi-tech office failing to meet users' needs? Is it the technology or the design process that's at fault? Bill Bordass identifies some of the problems and offers some solutions.**

**W**hen people think of designing low energy buildings, they tend to fall into one of two traps. One is: "If we get the principles right, everything will automatically follow" or, "all you need is a lovely new bit of technology and it will solve the world's problems".

However, when you actually start looking at and analysing buildings they don't tend to give you the same messages. For



# The evidence is now overwhelming: *slide from Carbon Buzz launch in June*



# The gaps occur in housing too: *40 years after the 1973 oil crisis*

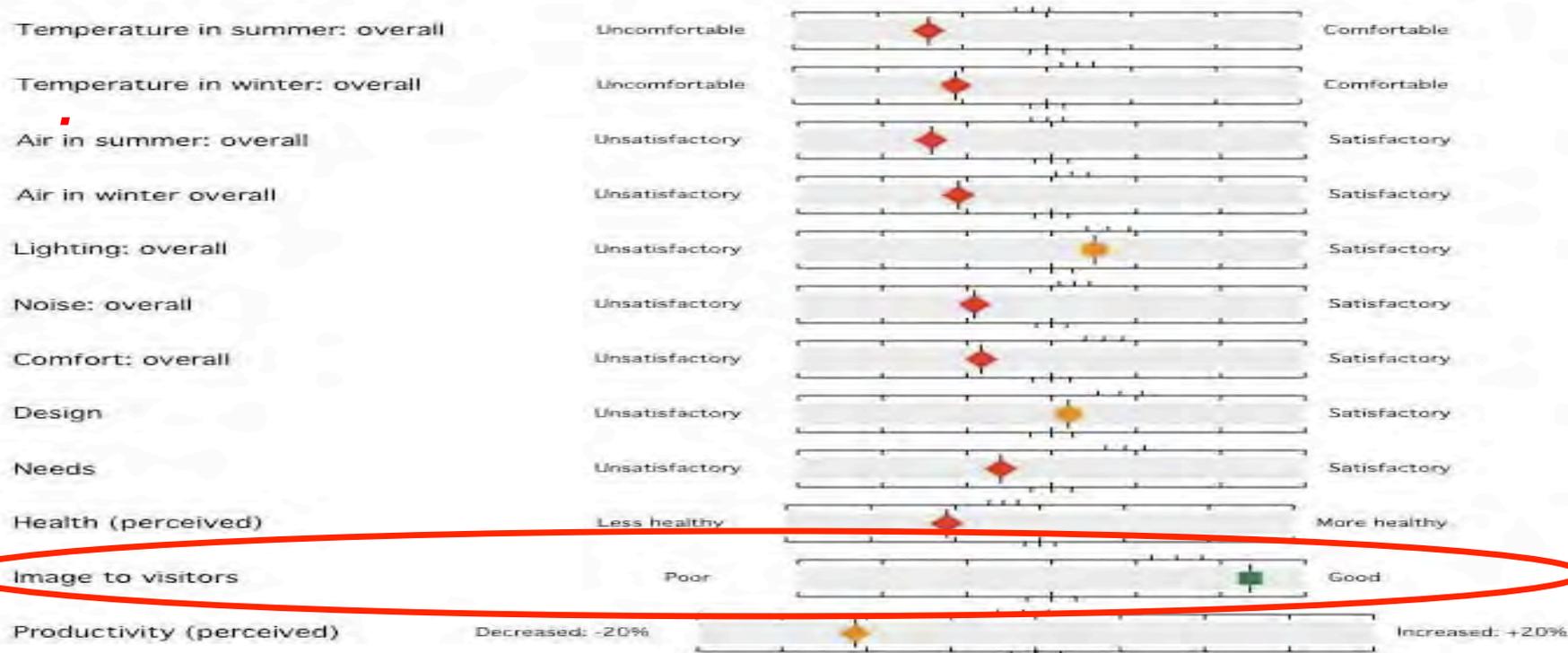
Minister launches Hub-led project to tackle the performance challenge **Ecobuild 6 March 2013**

A new project to examine the energy performance of new homes is unveiled today. The industry-backed project brings together leading housebuilders and industry experts to investigate the actual performance of homes and better understand how this compares to that expected by the original design. Communities and Local Government minister Rt Hon Don Foster MP announced a new £380,000 grant for



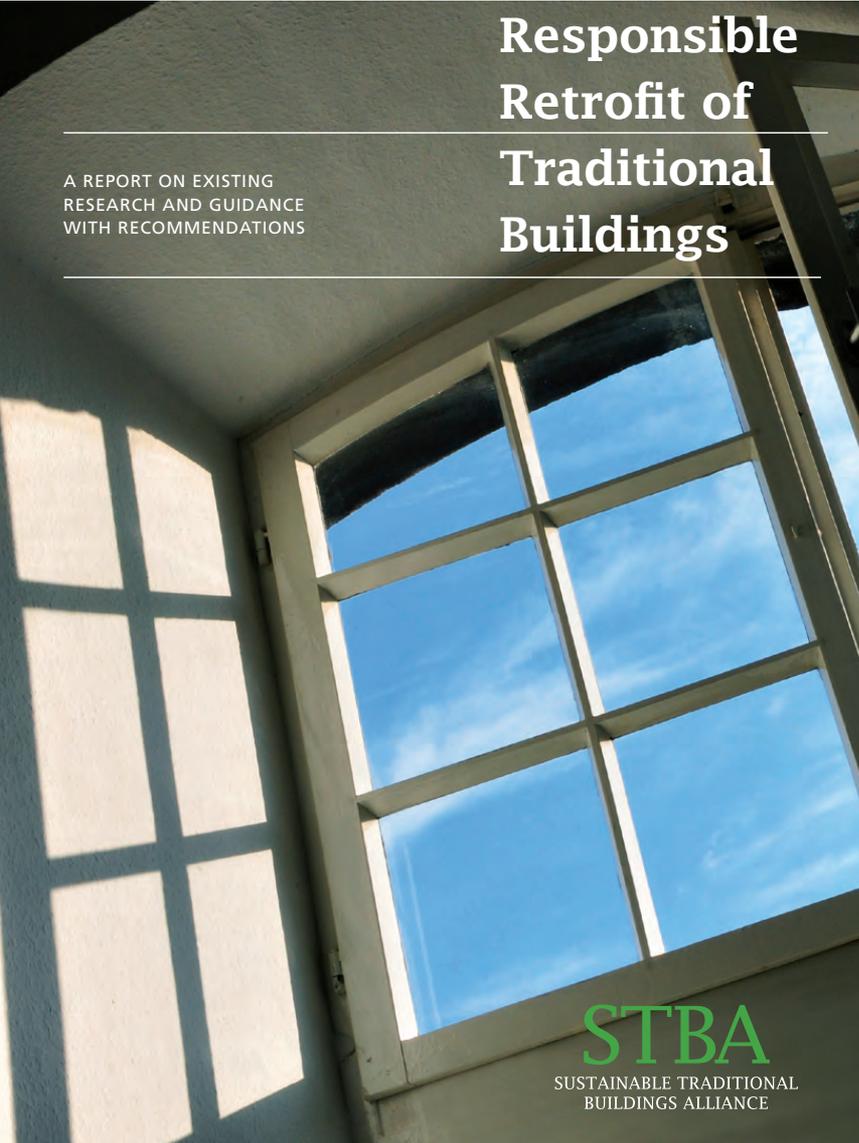
# The gaps are not only for energy: *occupant survey, multi-award-winning school*

**RED: below average; AMBER: Average; GREEN: Above average**



***“ ... the architecture showed next to no sense. It leaked in the rain and was intolerably hot in sunlight. Pretty perhaps, sustainable maybe, but practical it is not.” ... STUDENT***

# The gaps are not only for energy: *Knowledge base for retrofit*



## Responsible Retrofit of Traditional Buildings

A REPORT ON EXISTING  
RESEARCH AND GUIDANCE  
WITH RECOMMENDATIONS



### **SOME CONCLUSIONS**

Industry and policy lack understanding of traditional building performance.

Lack of connection between research intelligence and guidance procedures.

Significant uncertainty in application of models and software.

Some methods used are inappropriate.

A systemic approach is necessary to avoid unintended consequences.

There are good opportunities, but some will need to be developed using a rather different basis and structure.

# Why haven't we taken more account *of the evidence under our noses?*

*"Any system without feedback is stupid."* ... AMORY LOVINS

*"... unlike medicine, the professions in construction have not developed a tradition of practice-based user research ... Plentiful data about design performance are out there, in the field ... Our shame is that we don't make anything like enough use of it"*

*FRANK DUFFY, PPRIBA, Building Research & Information, 2008*

- *Most designers and builders hand over the keys and go away.*
- *Government has disconnected from many of its feedback loops, and nothing has been put in its place.*
- *Too many people want to bury bad news ... or point the finger.*
- *Evidence from case studies has been dismissed as anecdotal, not used to provide feedback, insights and advance warnings.*

***THE ONCE-SOUGHT STEP-CHANGE IN PERFORMANCE WILL NEED  
A SEA CHANGE IN HOW WE GO ABOUT THINGS COLLECTIVELY***

If you wanted to improve building performance in use, *what would you do ...*

**A. Focus on building performance in use?**

**OR**

**B. Do lots of other things and hope that performance will improve ...?**

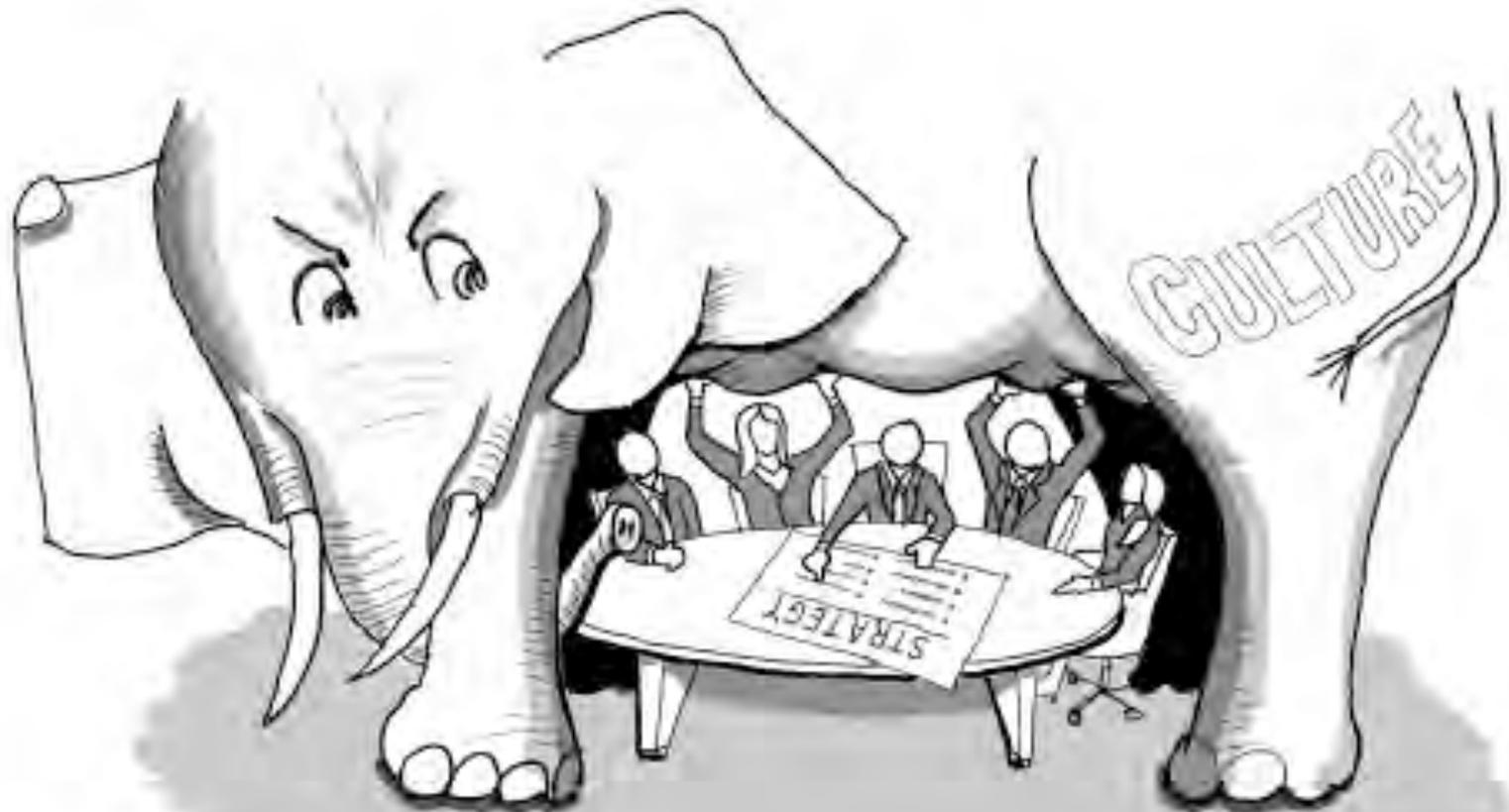


**Why are we doing things the long way round?**

*Why is actual performance the hole in the middle?*

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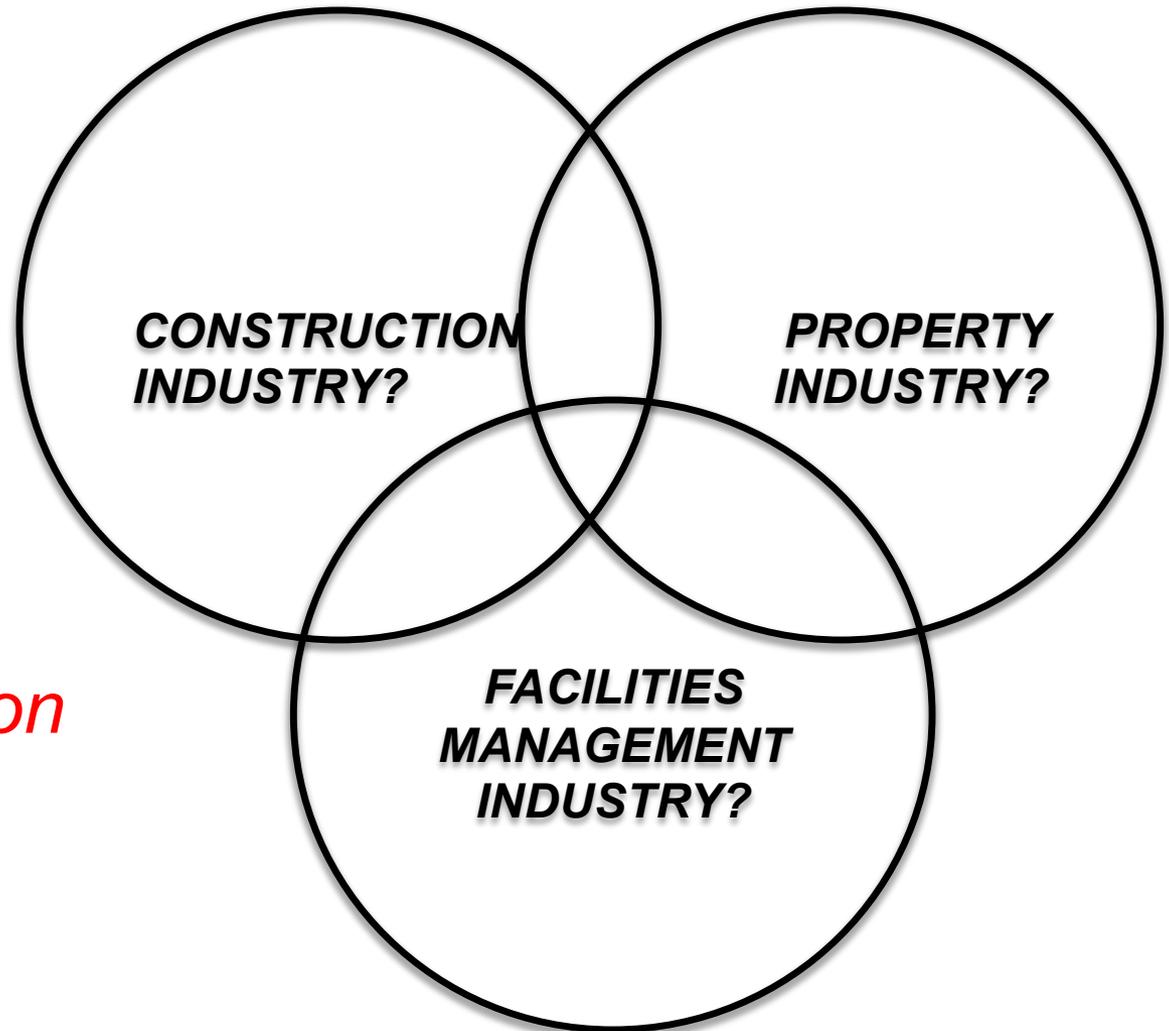
The elephant isn't in the room,  
*IT IS THE ROOM!*



# Which industry and market is really responsible for building performance?

*None of these:  
it's much more  
complicated  
than that.*

*The lack of traction  
is not a market  
failure, but a  
category error!*



As part of your education and training ...

**DID YOU INVESTIGATE  
BUILDING PERFORMANCE  
IN USE?**

**DO YOU NOW?**

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## So where are we now? *A confused situation.*

- Building performance is confused with construction and markets.
- Building-related policy measures don't join up, *often conflicting rather than converging effectively onto actual performance in use.*
- Policies add complication, *instead of getting people to focus on what really needs doing to get things to work better.*
- Salami-sliced, transactional procurement processes not fit for purpose.

### FOR BUILDING ENERGY PERFORMANCE IN USE:

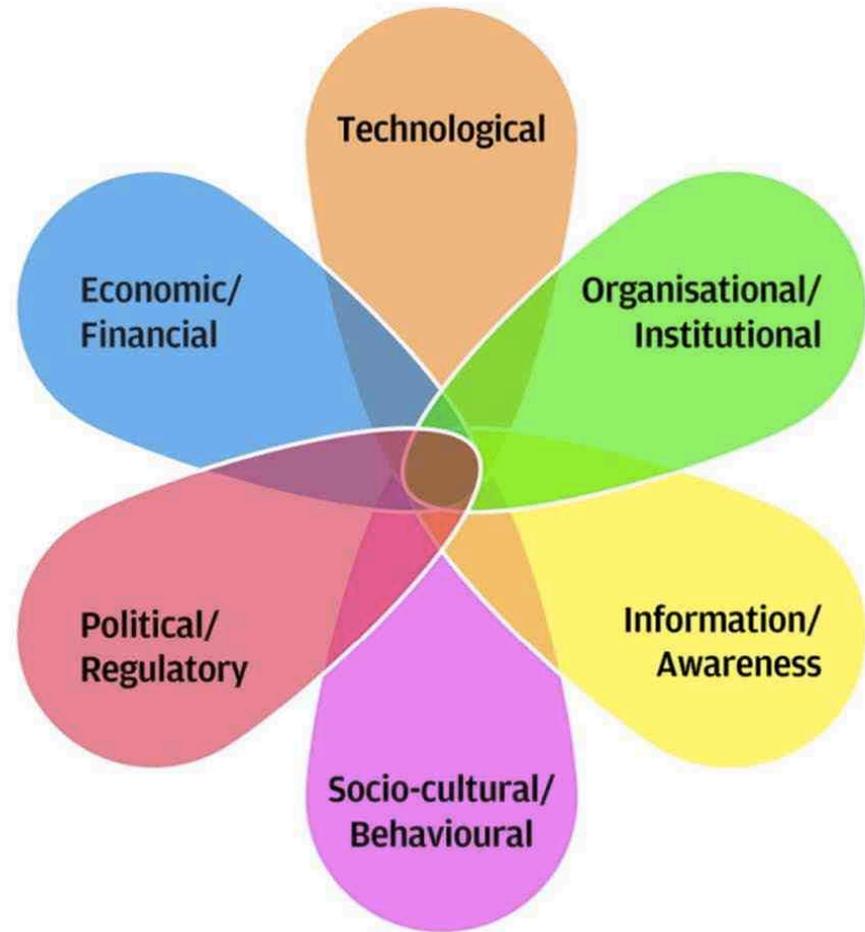
- Government has failed to provide core technical infrastructure that could help organisations, individuals and markets to self-organise: *e.g. no investment in in-use benchmarking for more than a decade.*
- Designers are trapped in the ghetto of “Regulated Loads”.
- DEC's that do disclose performance are being sidelined by DCLG.
- Too much emphasis on carbon. *First energy, then carbon.*

**MARKETS CAN'T SOLVE THIS ALONE: IT NEEDS SUPPORT**

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# Energy Efficiency in the Built Environment (*EEBE - Cambridge*) Barrier Categories

*So many barriers  
to surmount ...  
what could we do  
that could enable  
people to come  
together in the  
middle, quickly?*

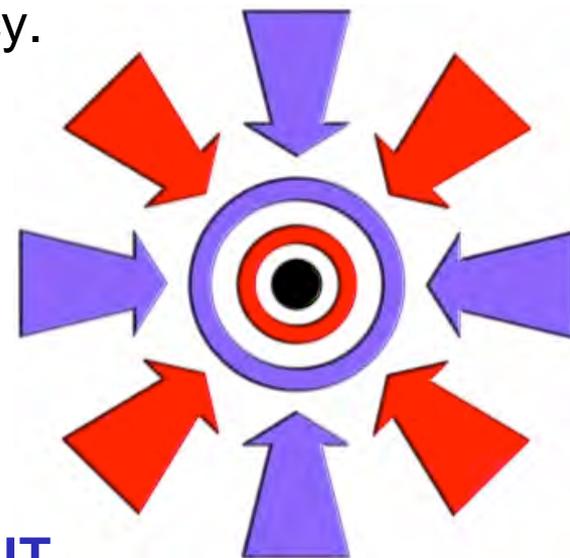


# A vision for energy performance: *where good performance becomes normal*

## **Make actual performance in use the objective function:**

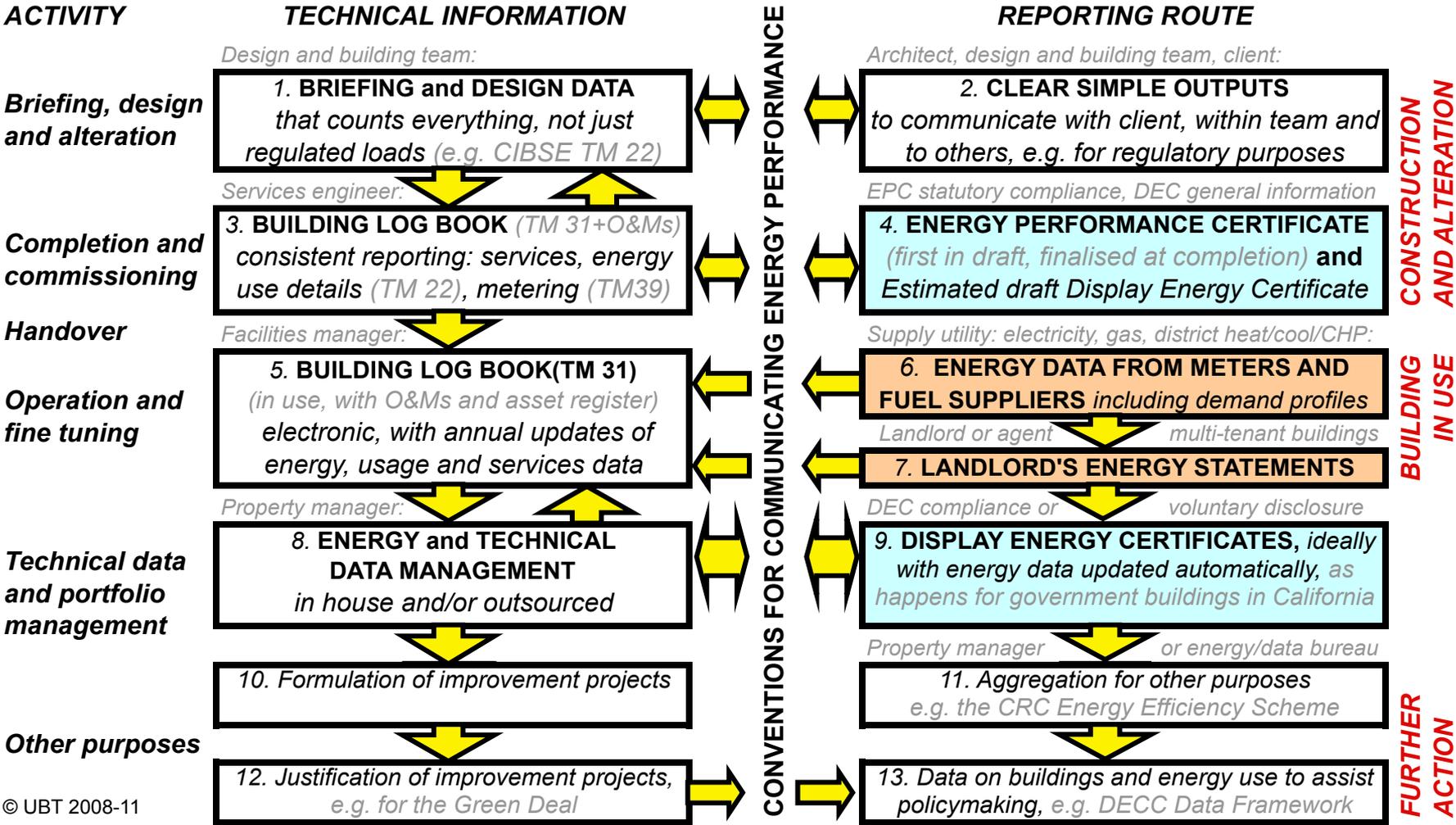
- Everyone must own their bit of the problem and concentrate their efforts.
- Count everything. Benchmark its elements where practical.
- Develop effective methods of communicating the results clearly, transparent between design, operation and policy.

*With collective understanding that performance in use is the goal, systems used in producing, owning, occupying, using, managing, equipping, maintaining and altering buildings can measure their contribution towards it, based on what actually works; and identify what needs attention.*



- DECAs could then drive better performance ... **BUT**
- **They need sound technical support & authoritative benchmarking.**

# How things could then join up for energy



# What do we need to support this?

- **A shared vision** for all building professionals.  
*Environmental responsibility means proper integration and proper engagement with outcomes.*
  - Recognise that building performance in use should be a **properly-resourced knowledge domain**, *with its own independent voice, able to represent the demand side and both to support and to challenge industry and government.*
  - For energy, *an authoritative Technical Platform: a focal point that can develop the **technical infrastructure** that will allow the plethora of different systems to converge.*
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[www.usablebuildings.co.uk](http://www.usablebuildings.co.uk)

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