



## Tomorrow's Housing: Are Regulations fit for Purpose?

Lynne Sullivan OBE, RIBA  
Chair, Good Homes Alliance

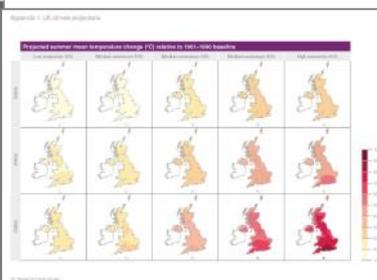
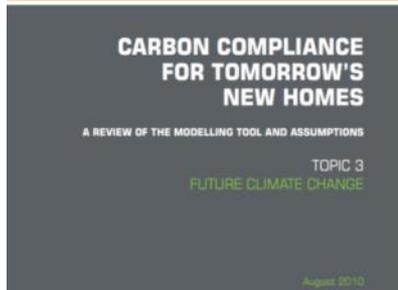


# Higher standards for resilience

- Catastrophic climate change
- Warming climate in UK
- Significant need to reverse greenhouse effect
- UN Sustainable Development Goals
- Renewable energy and re-forestation



The screenshot shows the top navigation bar of The Guardian website with links for 'Subscribe', 'Find a job', 'Dating', 'Sign in', and 'Search'. The main header includes 'Opinion', 'Sport', 'Culture', 'Lifestyle', and 'More'. The article title is 'We have 12 years to limit climate change catastrophe, warns UN'. The sub-headline reads 'Urgent changes needed to cut risk of extreme heat, drought, floods and poverty, says IPCC'. A red link below the sub-headline says 'Overwhelmed by climate change? Here's what you can do'. The main image is a firefighter in silhouette fighting a large fire at night.



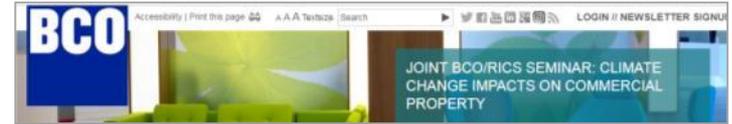
# Climate Change and national Policy on wider sustainability

- UK Climate Change Act, PMs Jodrell Bank commitment to halve all buildings energy use by 2030
- Core Cities, Smart Cities and Local Authorities' ambitions on zero carbon/low energy
- Review of Zero Carbon, Net Zero and Net Positive by UKGBC and others
- APPG on Healthy Buildings; air quality statistics on effects such as cognitive impairment
- NHS England Healthy New Towns - the importance of public open space: greening/leisure
- Impact of Grenfell Inquiry on build quality
- Impact of the hottest summer to date
- Design Quality references in NPPF; Building Better, Building Beautiful Commission
- Diversity, Inclusivity and Affordability – the role of social housing ??



# Key Issues for delivering built environment sustainability

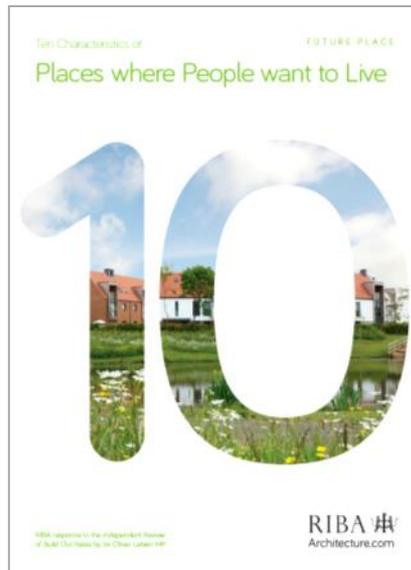
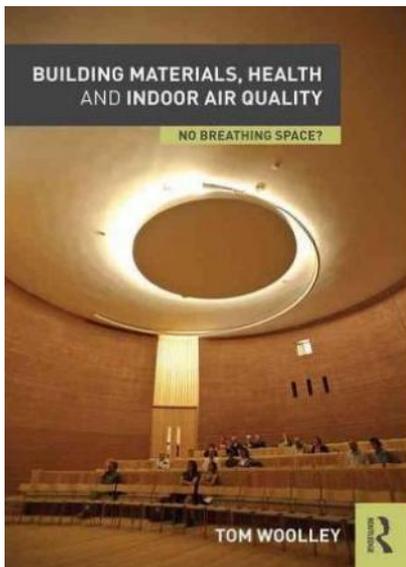
- Addressing climate change mitigation and adaptation  
**RESILIENCE DELIVERS LONG-TERM VALUE**



- An evidence-based approach, rigour in prediction and feedback to fine tune tools and methods: eg in-use data on internal temperatures, indoor air quality, daylighting and resilience to overheating

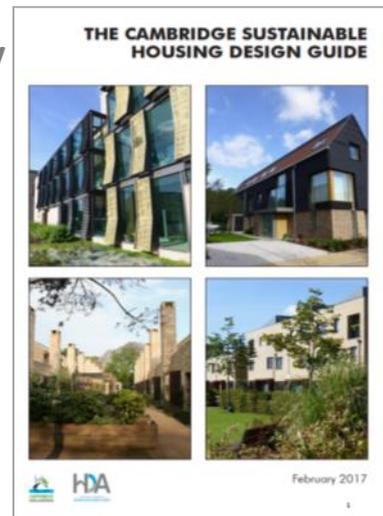
**NB BETTER PREDICTABILITY ON ENERGY AND COMFORT OUTCOMES REDUCES RENT ARREARS AND RESIDENT OUTGOINGS;**

- Deliver on build quality to support higher standards; prioritise health outcomes for residents  
**EG DESIGNING FOR RESILIENCE AND GOOD INDOOR AIR QUALITY IMPROVES RESIDENT HEALTH OUTCOMES**



# Promoting higher standards in development

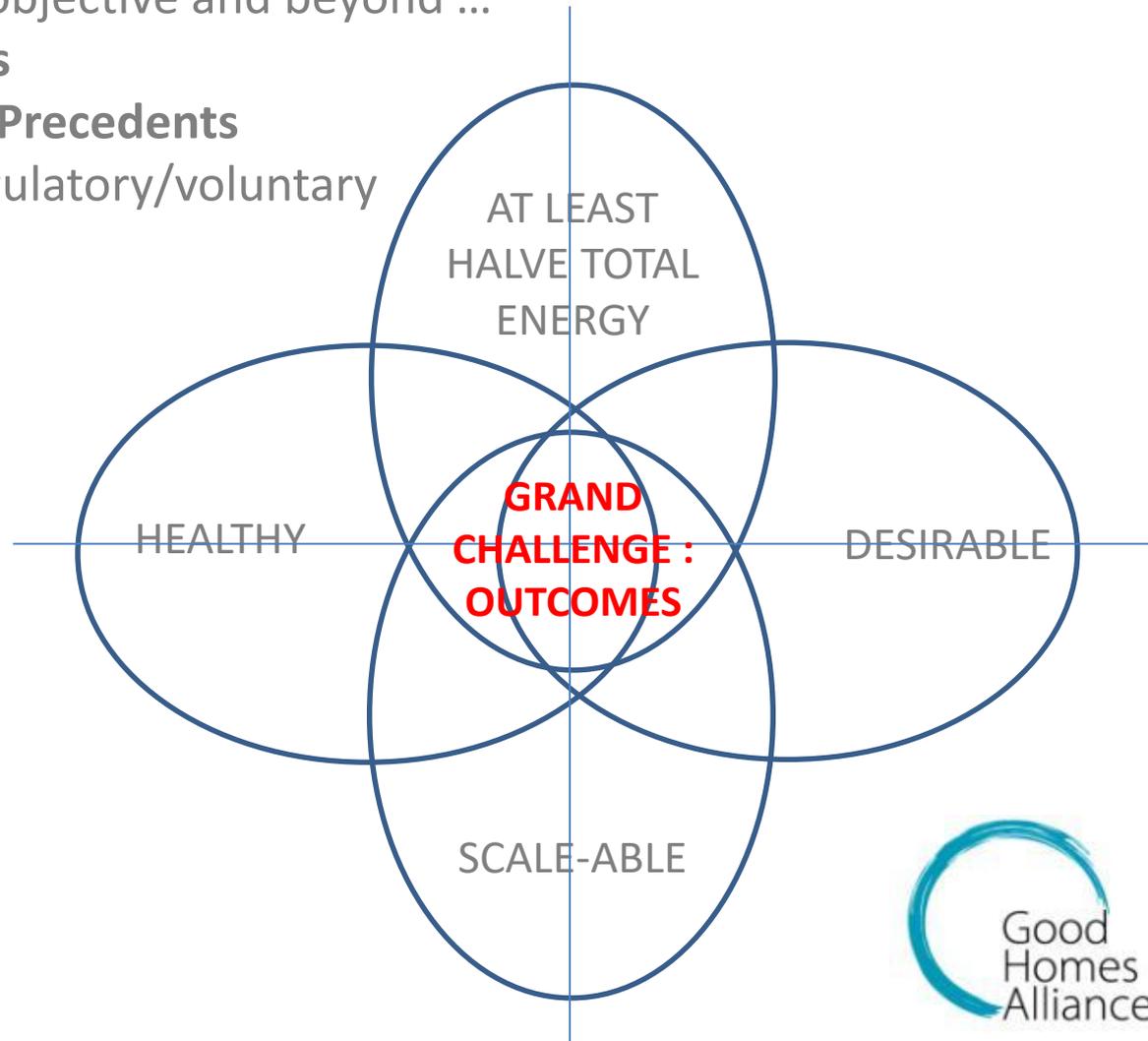
- Improving Health & Wellbeing outcomes
- Reducing social inequality and fuel poverty
- Enabling community cohesion
- Addressing climate change: futureproofing for more extreme weather
- Reducing energy and resource use
- Enhancing the local area
- Reducing car use; electric vehicles
- Addressing affordability



# Promoting higher standards in development

## The Green Construction Board

1. **Back-casting** from 2030 objective and beyond ...
2. Define desired **Outcomes**
3. Examine **Techniques** and **Precedents**
4. **Define drivers:** policy/regulatory/voluntary



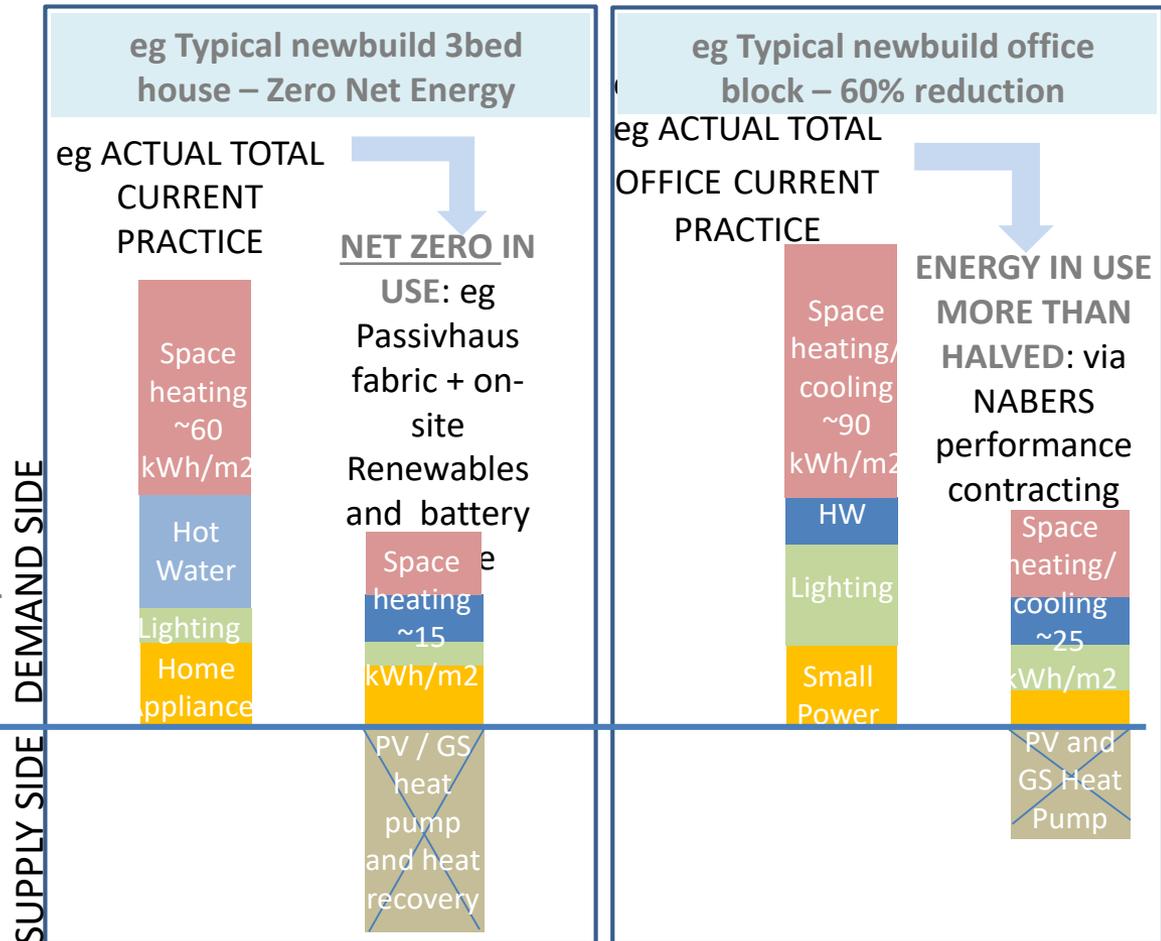
# Promoting higher standards in development

The Green Construction Board

AT LEAST  
HALVE  
ENERGY IN  
USE BY 2030

1. All energy in use (not modelled)
2. Strategies and choices: demand-side and supply-side
3. Homes and commercial

**ZERO (NET) TOTAL ENERGY**



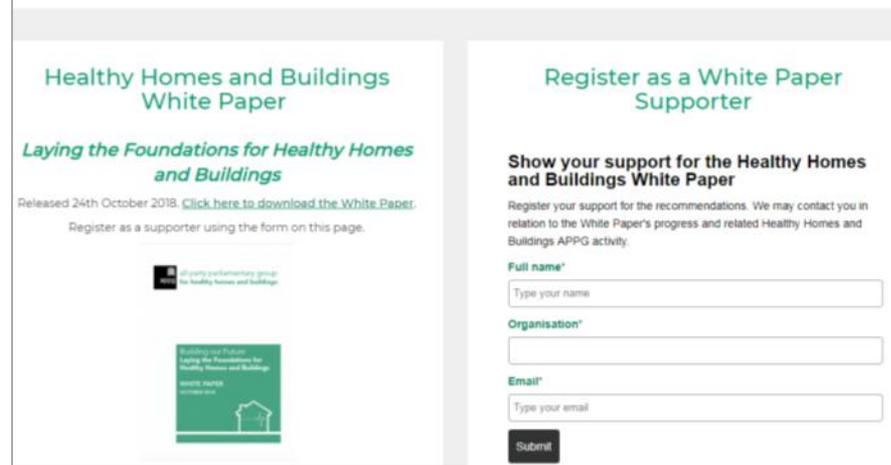
4. Examine Techniques against Outcomes:  
eg Passivhaus, Specific, Zero Positive, Zero Bills, NABERS, Energiesprong
5. Define regulatory/fiscal/voluntary drivers

# Campaigning to improve health and wellbeing outcomes

- Support to APPG and input to White Paper; make current housing stock renovation a Government priority
- Consider a range of issues (ventilation, offgassing of materials ) by case study research
- Builds on previous research (2014) by GHA with National Housing Federation and HCA/CIEH sponsorship along with input from membership



all party parliamentary  
group for healthy homes and  
buildings



**HEMAC NETWORK**  
HEALTH EFFECTS OF MODERN AIRBORN CONSTRUCTION

ABOUT | CHAIRS | ENVIRONMENT | WORKSHOP | SAFETY | AIR PROJECT | NEWS | MEMBERS | RESOURCES



# GHA Research to improve resilience to Overheating

- Sponsored research to deliver early stage design and local planning authority guidance
- MHCLG part of steering group against background of possible regulatory reform
- Builds on previous research (2014) by GHA with National Housing Federation and HCA/CIEH sponsorship along with input from membership



Solar panels on the roof of an eco-home. Researchers found heat built up faster than ventilation could remove it (file pic)

Britain has relatively few eco-homes, but building regulations mean all new homes must meet tough energy consumption standards from 2020.

Architect Lynne Sullivan, a member of the Passivhaus Trust, said: 'There is a danger of overheating in all homes built to the new regulations, particularly flats, and we have been warning the Government.'



## Summer danger of 'red hot' eco-homes: Insulation used to keep buildings warm in the winter traps heat potentially putting residents at risk

- Researchers tracked the temperatures inside eco-homes in the summer
- The low energy homes have been billed as a solution to rising fuel costs
- They found some homes could heat up to more than 25C for days at a time
- This is due to heat building up in homes faster than ventilation removing it

By Vanessa Allen For The Daily Mail

PUBLISHED: 00:33, 11 May 2015 | UPDATED: 11:52, 11 May 2015



### Preventing Overheating

Investigating and reporting on the scale of overheating in England, including common causes and an overview of remediation techniques

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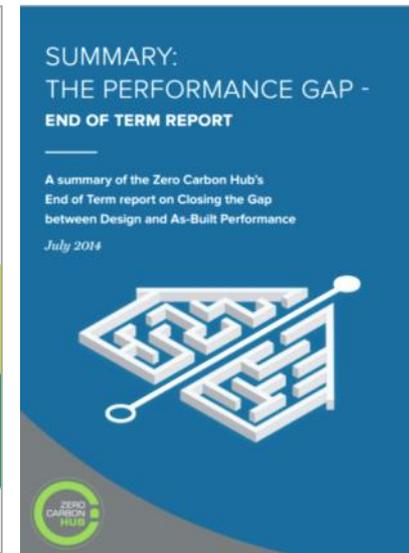
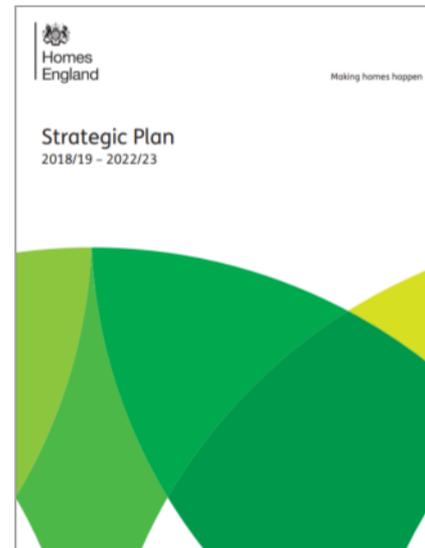
# Campaigning to improve performance and predictability

- Build Quality a major contributor to the 'Performance Gap'
- Investors and Lenders require better predictability of performance
- 'Net Zero' innovators are contractually obliged to deliver on performance and outcomes



More than half of the buyers of new homes have experienced major problems with their properties, according to research, which comes after Bovis Homes agreed to pay £7m compensation to customers for poorly built houses.

A YouGov survey for the housing charity Shelter found that 51% of homeowners of recent new builds in England said they had experienced major problems including issues with construction, unfinished fittings and faults with utilities.



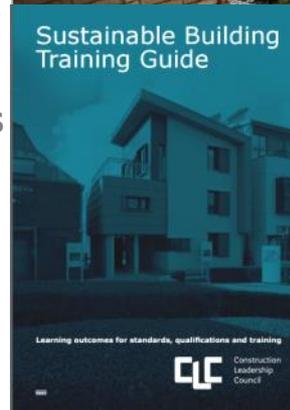
# Quality of performance alongside quality of place

- Quality control on site key to accountability
- Standards and sequence of defined tasks for ECO 3 input to Retrofit Standards Taskgroup  
NB Government intends to adopt the quality mark and revised PAS standards once these are implemented
- Predictability of outcomes demands verification of construction and in-use performance
- ZCH Performance Gap and APPG recommendations for literacy and skills improvements
- Restoring User understanding and confidence in build quality key to call for higher standards



The New York Times

*Grenfell Fire Inquiry Demands Radical Overhaul of U.K. Building Rules*



# Recommendations for Changes required....

- **Clear trajectory for energy efficiency and journey to “net zero”**  
Issues: how far with fabric? At what point does limiting personal/process energy use kick in?  
is heat recovery ventilation and its maintenance implications accepted?
- **The journey to a culture of total energy use verification**  
Issues: when does disclosure become mandatory?
- **Microclimate considerations? Avoidance of “overheating”**  
Issues: is whole building modelling an inevitable requirement? What future climate scenarios do we plan for?
- **Clarity on ventilation requirements and objectives**  
Issues: source control of pollutants? External air quality?
- **How will skills across the industry come up to speed? Accountability? Contractual liability?**



Tomorrow's Housing: Are Regulations fit for Purpose?  
Specific recommendations for changes welcomed!

**Thank you**

