BUILD TEST SOLUTIONS

Future Homes Standard: Are we ready? Measurement lessons from the field

Luke Smith

BTS Webinar Series #11

Build Test Solutions

- **Manufacturer** of measurement equipment
- **Eliminating guesswork** in building performance, accelerating the transition to **better quality, healthier buildings**
- Pioneering, **practical** measurement technologies
- Providing accurate, **actionable** insights

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Today We'll Cover

- New Build vs. Retrofit
- Future Homes Standard
- Case studies
- Why Measure?

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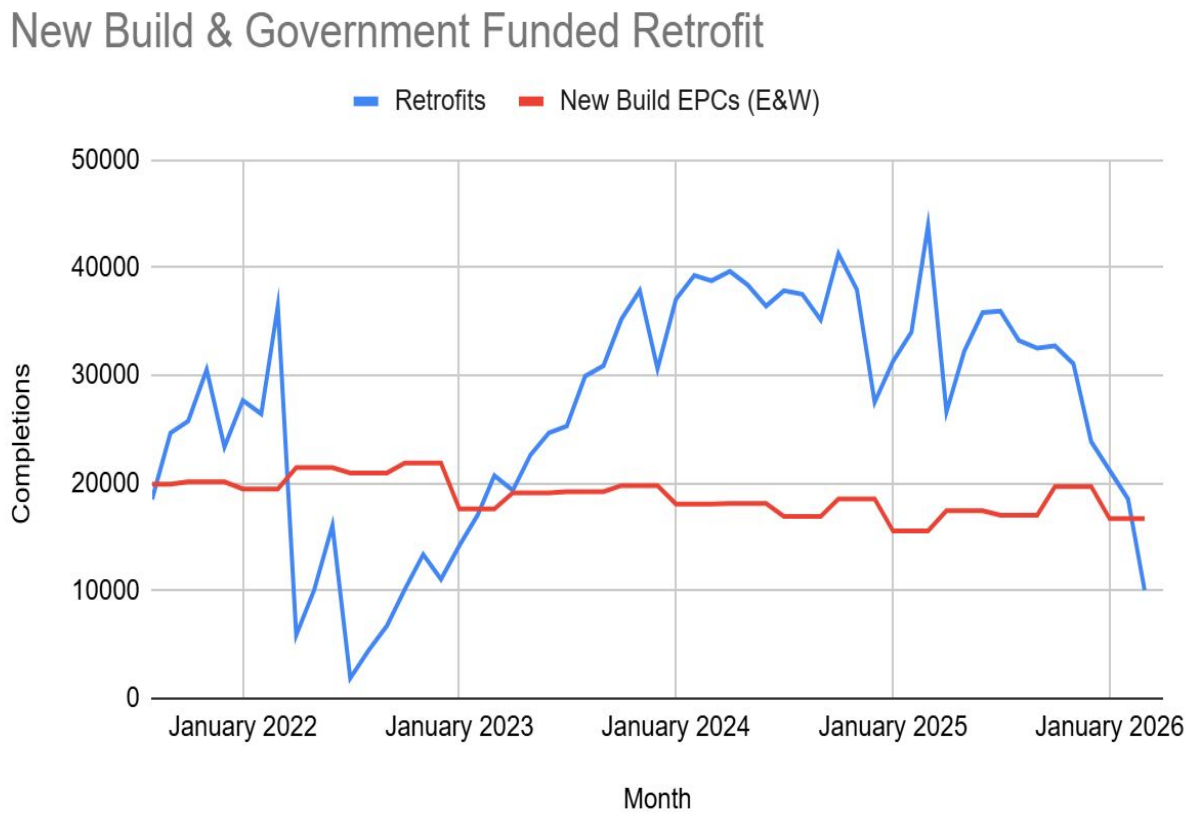
New Build vs Retrofit Completions

- New build **much** more stable
- Retrofit currently in a dip
- New build sets the standard
- New build market c.£60bn/yr



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Future Homes Standard

- Part L 2013 > ~~Part L 2016~~ > Part L 2021…
  - Airtightness testing = 100% of plots
  - Ventilation commissioning and testing = all mechanical systems
  - Photographic evidence
- Future Homes Standard 2027
  - Transition to HEM: a more detailed model, but built on the same assumptions proven to be incorrect. Cannot lead to higher accuracy in heating and cooling load assessments.
  - Tightening on ventilation testing and commissioning?
  - Voluntary HTC measurement not yet included, despite high levels of support in consultation

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Higher paper standards ≠ better delivered performance

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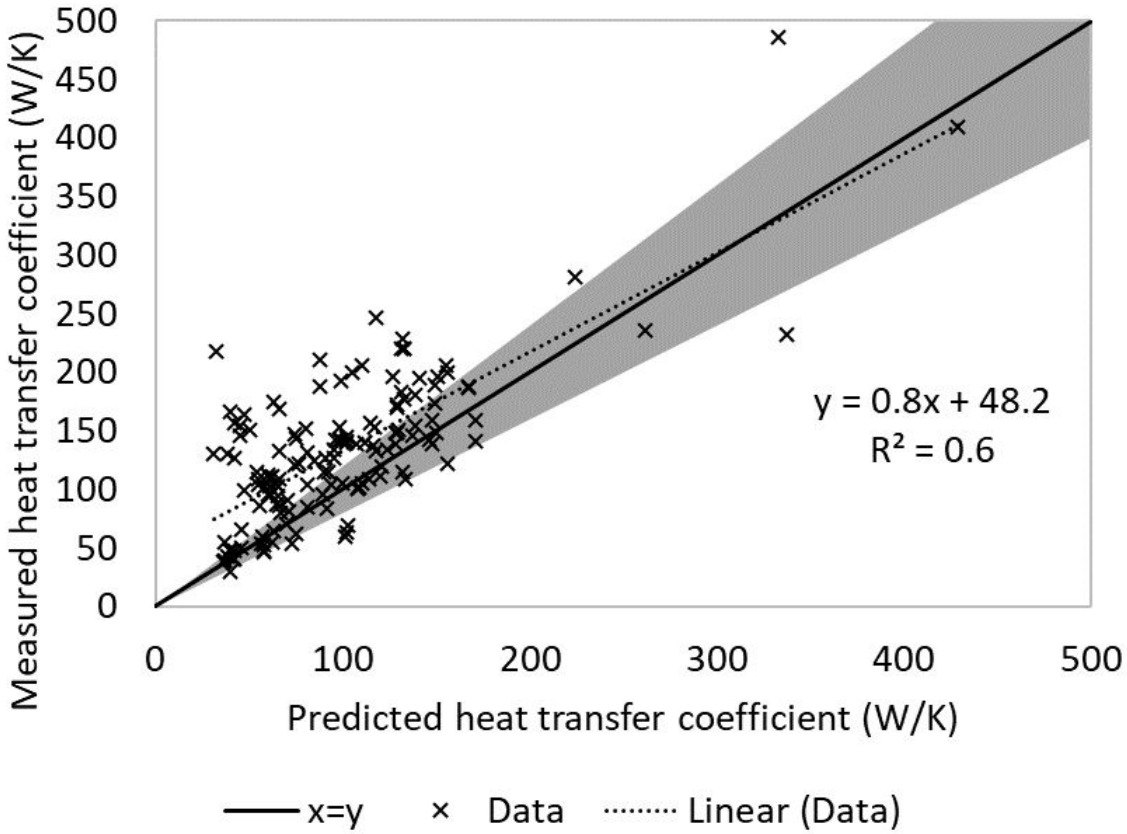
New Build Performance Gap

- 143 measurements
- Systematic underperformance
  - Mean 49%
  - Median 33%
- Mean 1,648 kWh/yr extra heating energy
- £140/yr extra cost
- *How do we align cause & effect of the performance gap?*



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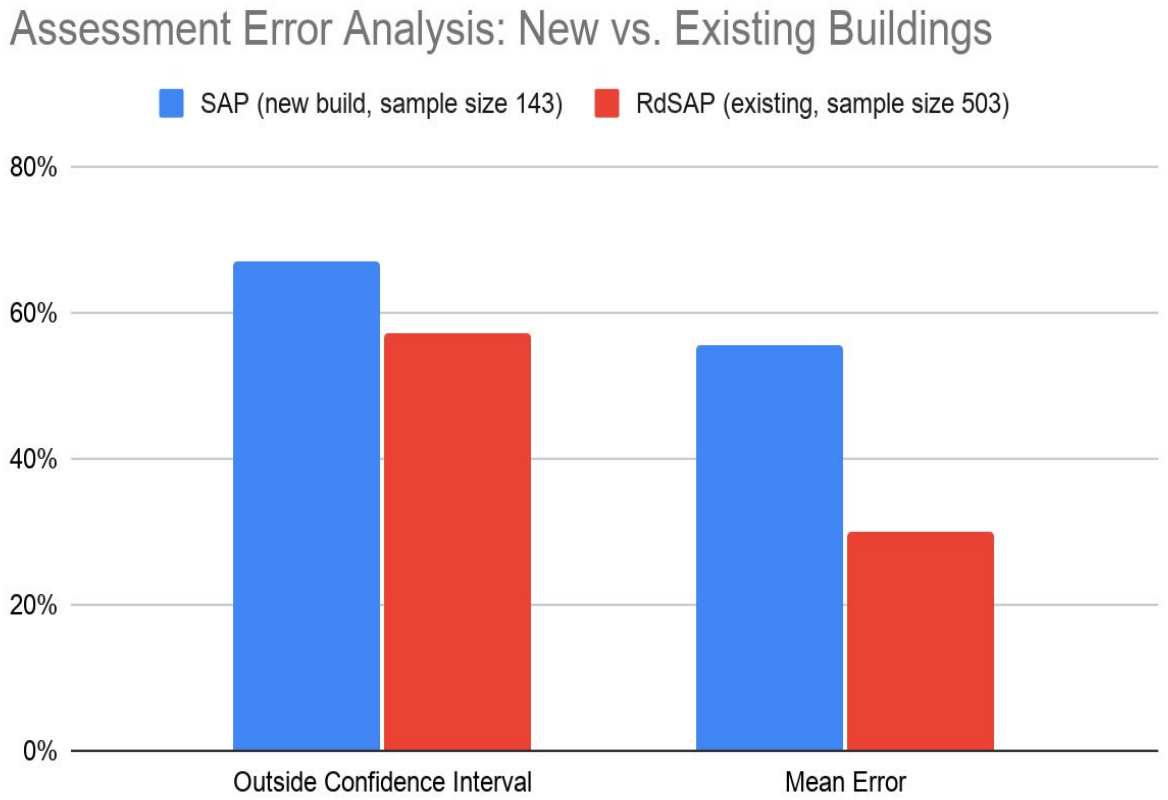
New Build vs Existing Performance Gap

- Despite much more information
- Assessment errors & performance gap are larger for new builds (!)



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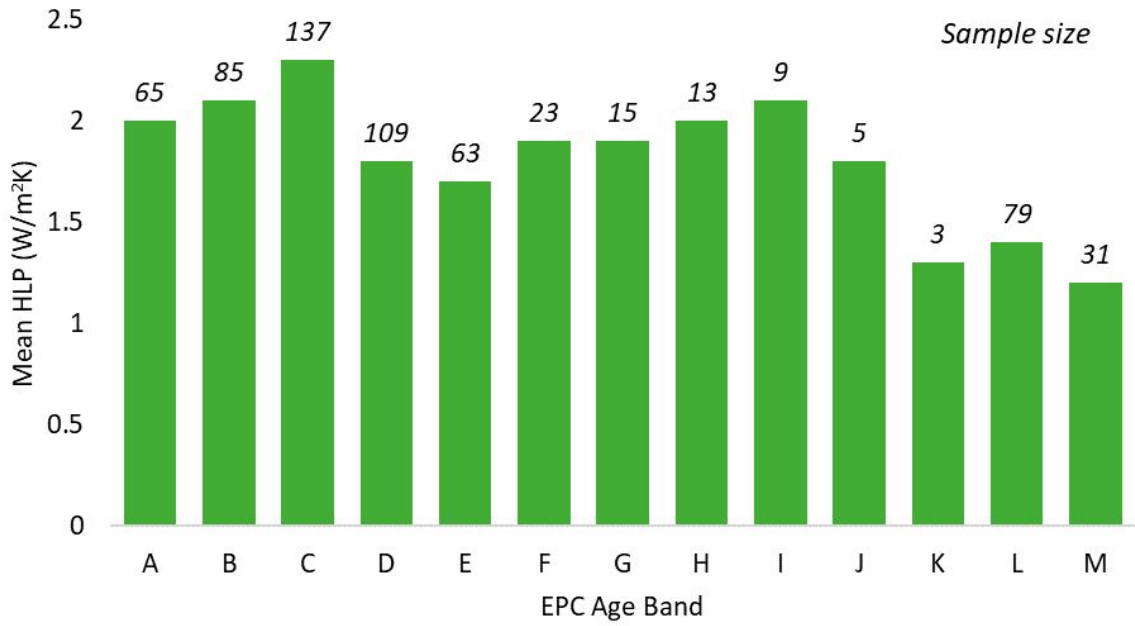
Building Regulations & The Performance Gap

- EPC age bands are determined by Building Regulation updates
- But actual performance is only weakly related to age bands



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3x Case Studies

Case Study 1: Dispute Resolution

- Residents complaints of high bills
- Objective evidence: SmartHTC shows **292%** underperformance
- Building diagnostics: Airtightness, external element U-values and ventilation flow rates as per design
- High party surface heat loss
- Remedial works specified

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Case Study 2: Section 106 Handover

- QA for housing provider taking possession from builder
- Sample of 7 units tested
- 3/7 perform to heat loss & ventilation spec
- Targeted air leakage remediation for 4 around penetrations
- Repeating issue found with loose fill cavity insulation quality

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Case Study 3: Hope!

- Small offsite timber panel development
- 6 of 7 HTC measurements match design
- 1 exception easily remedied with relaid loft insulation

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In Summary

- New build is a really important market and standards are (slowly!) tightening
- Higher standards haven't directly led to better performance in the past, why would they this time?
- The performance gap leads directly to significant extra risk + kWh, £, CO_2
- Just as with retrofit, performance across new build can be very varied for a wide range of reasons
- FHS doesn't look set to go far enough, though regulations are only minimum standards
  - Risk management, quality and brand reputation?
  - Financing, consumer rights, accessibility of data, planning, contract terms

A good building on paper, doesn't guarantee performance in practice!

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Next Webinar

Too hot to ignore: Understanding and tackling overheating in buildings

6th August 2026 @ 1pm

Guest speaker:

Loughborough University

Ben Roberts

Senior Lecturer in Healthy Buildings

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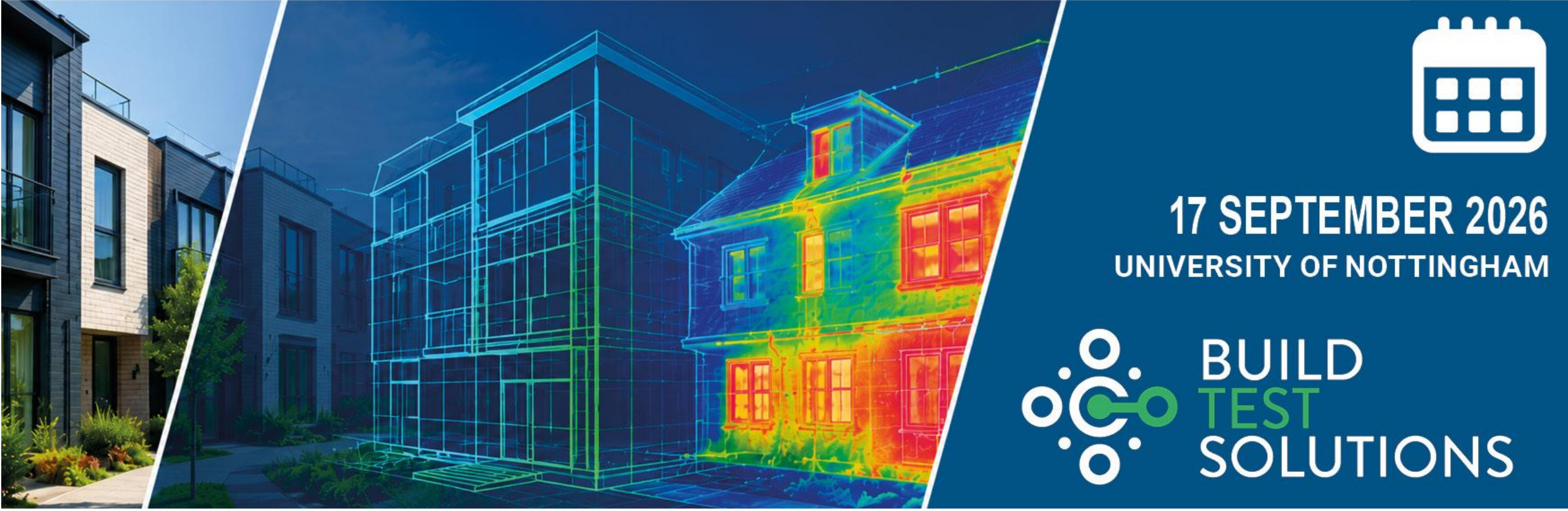

17 SEPTEMBER 2026

UNIVERSITY OF NOTTINGHAM

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The future of building performance won't be based on promises. It'll be based on proof.

Discover how measurement is helping deliver better buildings, stronger compliance and real-world performance, today.

Conference | CPD | Networking | Exhibition

Aimed at:

Retrofit assessors
DEAs
Architects
Housing providers
Local authorities
Landlords
...and more

6 CPD hours included

Register today: limited early bird tickets!

Outline Conference Agenda

Policy update:	Consumer first with WHP and FHS + reflecting on the lessons of ECO and GBIS remedials
	BS40101 update by Kerry Mashford OBE, who has been involved since the outset.
Delivering the promise:	The art of the possible when using building performance measurements in the most effective ways and real-world case studies (BTS)
Heat loss:	Insight from Prof. Richard Fitton, University of Salford and the story behind Heat3D
	Update from Prof. David Allinson, Loughborough University on HTCs and CIBSE TM71
Airtightness:	From concept to Pulse 3.0 on it's 10th birthday - Christopher Wood from the University of Nottingham looks to the future of air tightness
Ventilation:	Understanding how to keep homes both healthy and comfortable whilst also airtight and efficient
Case studies:	A variety of use cases including heritage properties, integrator insights, new build performance investigations and more TBC!

…Plus panel Q&A sessions, networking and carefully curated exhibition to enhance the agenda content

Future Diary Dates

- **Training:**

  Level 1 Airtightness
  Pulse upskill from BlowerDoor
  U-value training
  SmartHTC user training

  A range of courses run monthly to suit all levels and requirements

- **Events:**

  BTS Conference
  Nottingham
  17th September

  SAVA Conference
  Coventry
  6th October

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Time for some Q&A…

Thank you!

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