Building Performance Evaluation

- £8m funding between 2010 & 2014
- Individual buildings & developments
- Identify factors that encourage good performance
- Case study investigations
- Domestic & non-domestic
- Expose activities that contribute to poor performance
- Explore lessons learnt

https://connect.innovateuk.org/web/building-performance-evaluation
Domestic: 53 projects (350 homes, 76 with detailed monitoring data)
- 23 “Early occupation” projects
  - 6 months assessment post construction & initial occupation
- 30 “In-use” projects
  - 2 years detailed performance monitoring and occupant assessment

Non-domestic: 48 projects (55 buildings, 49 with detailed data)
- 8 “Early occupation” projects
  - 6 months assessment of handover
- 40 “In-use” projects
  - 2 years detailed performance monitoring and occupant assessment
Energy consumption is often much higher than design calculations suggest

• A lot of data has been gathered
• Design teams have been reformed to investigate the building
• Occupants have been involved
• Procurement methods have been reviewed
• We can now look beyond the numbers

What have we found?

https://connect.innovateuk.org/web/building-performance-evaluation
Key theme

Innovation requires care and attention

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Commissioning and handover activity is inadequate or overlooked

- Commissioning and reconciliation of systems rarely carried out
  - strategies not fully understood, implemented or reconciled
  - meters not functioning
  - no seasonal commissioning
- Handover time is often squeezed or sacrificed for other activities
- Inadequate training in what handover is supposed to achieve

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Low energy aspirations influence system complexity

- There are many conflicting factors at play that are outside of the “teams” control
  - carbon/energy targets
  - policy related to planning
  - conditional funding

- Attention needs to be given to implementation of new technologies

- Certification planned at design is not achieved in use

POE work to review, fine tune and feedback on findings is vitally important

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Disconnection of the building from the end users

- In-use strategies are not thought through
  - no consideration of occupants’ energy-related behaviours and the way they might interact with the building
- BMS systems impenetrable and confusing
- Complex controls - now with added bespoke protocols

Lack of post occupancy consideration means projects may not achieve operational outcomes

Poor placement of hot water meter

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Lack of client engagement

Activities occur throughout the build that can adversely affect the final building performance

• procurement tends to focus on cost not value
• value engineering tends occur without fully recognising the consequences

Clients are not getting the benefit of the measures they are paying for

https://connect.innovateuk.org/web/building-performance-evaluation
Programme outputs

- embed
  building intelligence for innovation
  getembed.com

- CarbonBuzz
  an RIBA CIBSE platform
  carbonbuzz.org

- BUS methodology
  busmethodology.org.uk

- DomEARM

- CIBSE TM22

https://connect.innovateuk.org/web/building-performance-evaluation
Building Performance Evaluation Programme: Findings from non-domestic projects
Getting the best from buildings
January 2016

Innovate UK

Building Performance Evaluation Programme: Findings from domestic projects
Making reality match design
January 2016

Building Performance Evaluation Meta-Analysis
Insights from Social Housing Projects

Federico Seguro


DIGITAL CATAPULT

BUILDING DATA EXCHANGE

Q1
Q2
Q3
Efficiency

Target
Unlock
A platform to unlock building performance data for use by the built environment community, digital innovators, designers and entrepreneurs

Discover
Explore one of the largest built environment datasets and discover the factors impacting building performance

Innovate
The platform provides data which can be used to develop new innovative solutions for the built environment, from carbon neutrality through to building efficiency and ergonomics.

Community
The building data exchange is a community of innovators, connected by a common goal to improve the buildings we live and work in.
To join the BPE community and be kept up to date go to: connect.innovateuk.org and search for Building Performance Evaluation
Join www.buildingdataexchange.org.uk
simon.hart@innovateuk.gov.uk
matcolmer@me.com & mat.colmer@digicapult.org.uk

Thank You