



Building Performance Evaluation

£8m funding
between
2010 & 2014

Individual
buildings &
developments

Identify factors
that encourage
good
performance

Explore lessons
learnt

Case study
investigations

Domestic &
non-domestic

Expose
activities that
contribute to
poor
performance

Domestic: 53 projects (350 homes)

- 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)

- 8 “Early occupation” projects
 - 6 months assessment of handover
- 40 “In-use” projects
 - 2 years detailed performance monitoring and occupant assessment



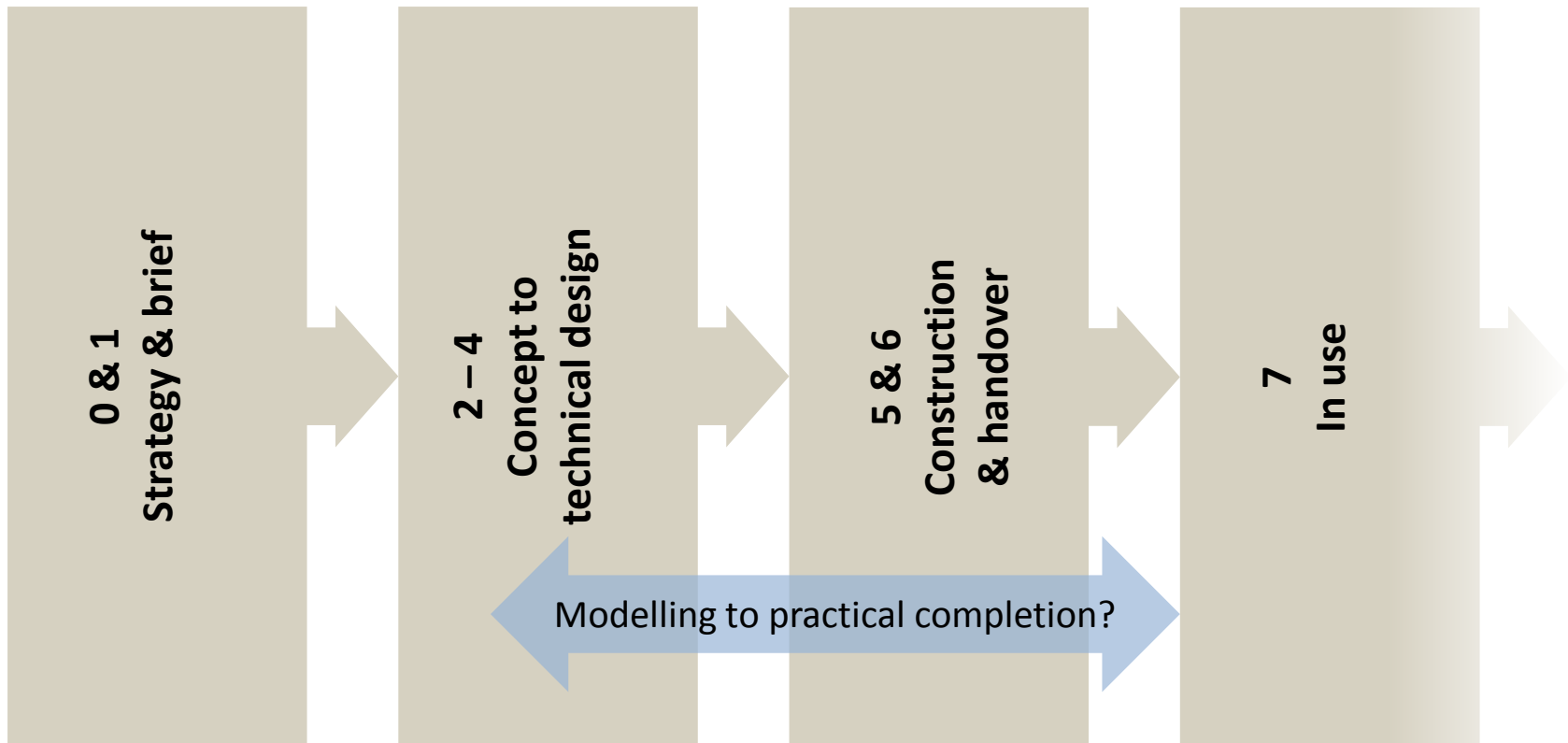
Energy consumption is often much higher than design calculations suggest

- 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

Where is the performance gap occurring? And who is responsible?

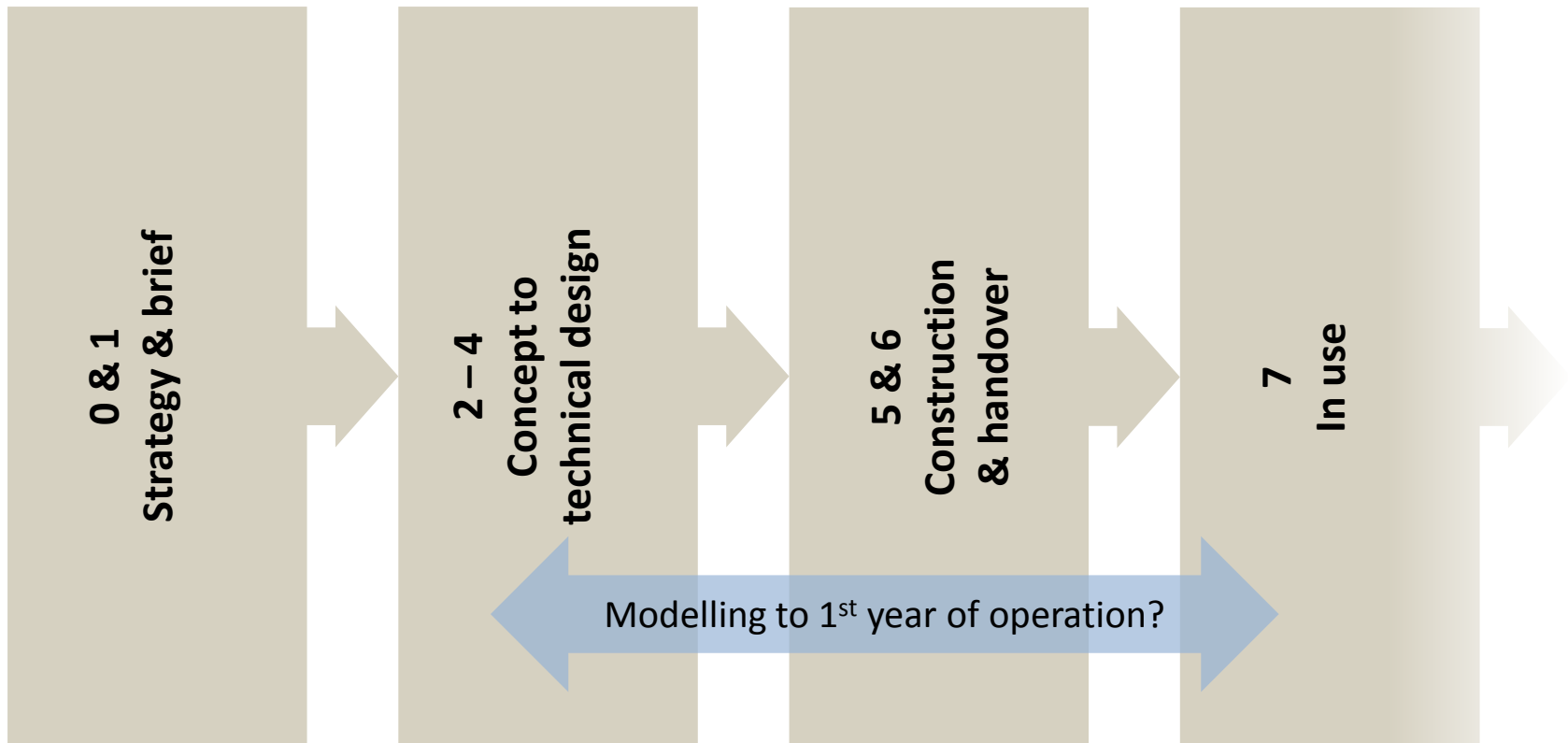
Where is the performance gap occurring?

2013 RIBA Plan of Work



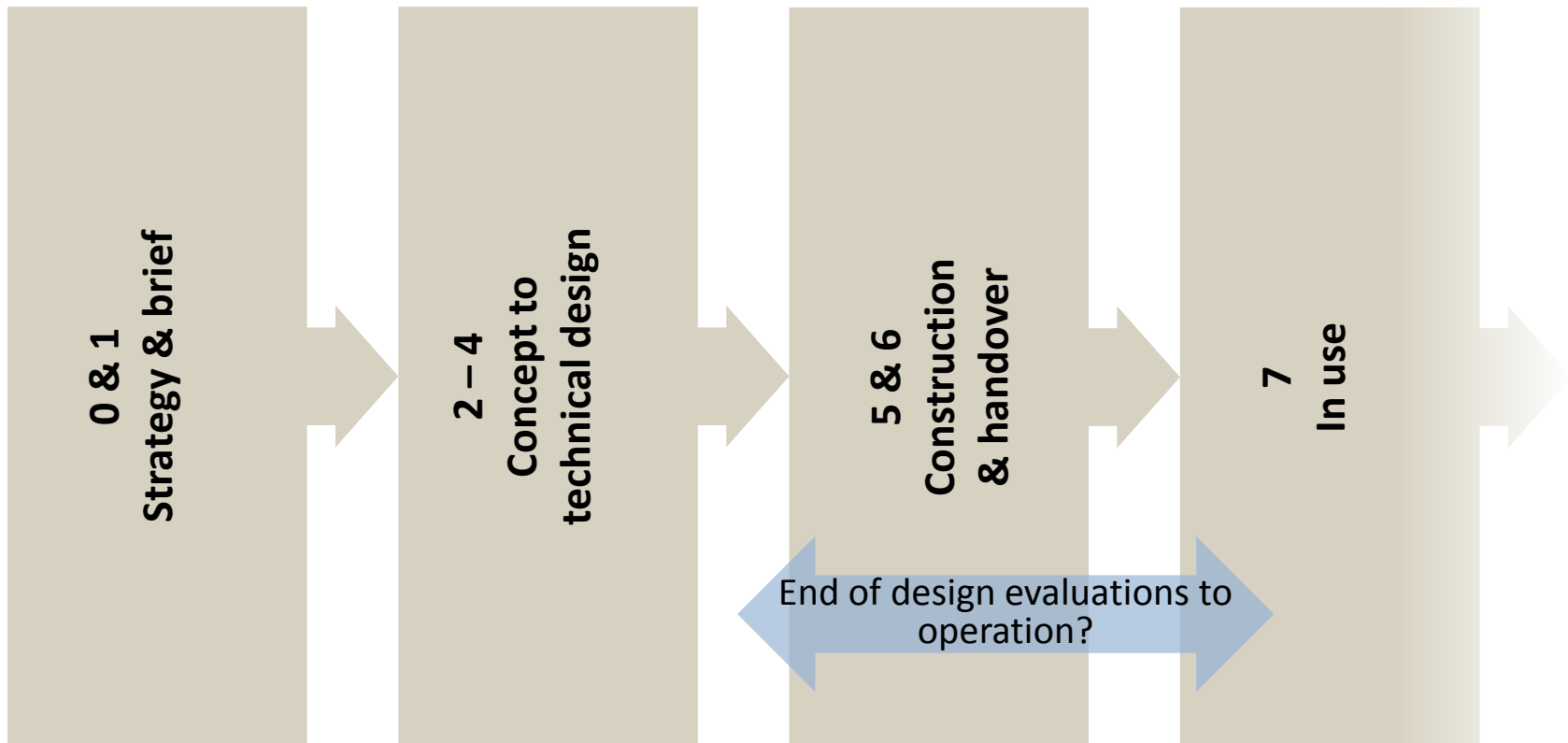
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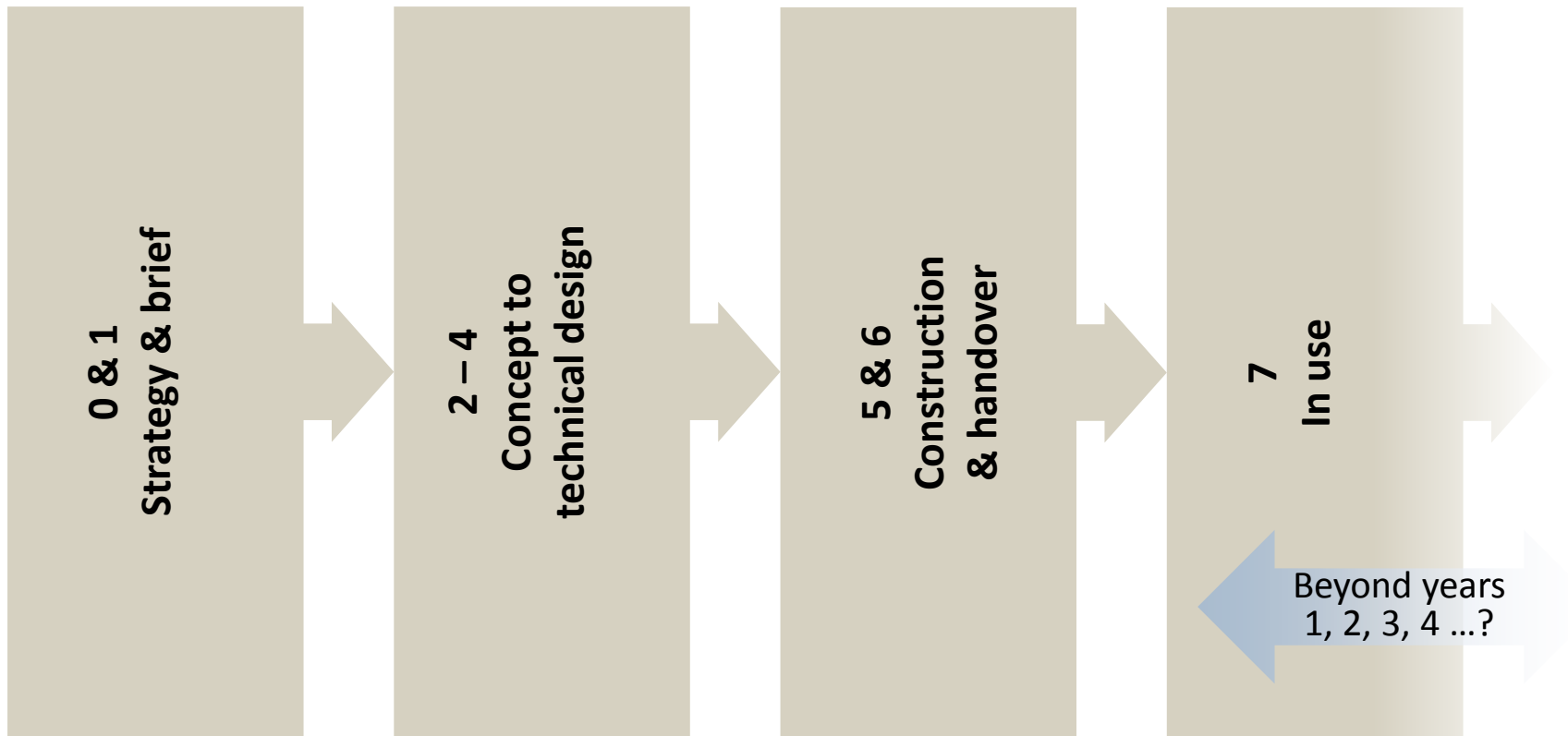
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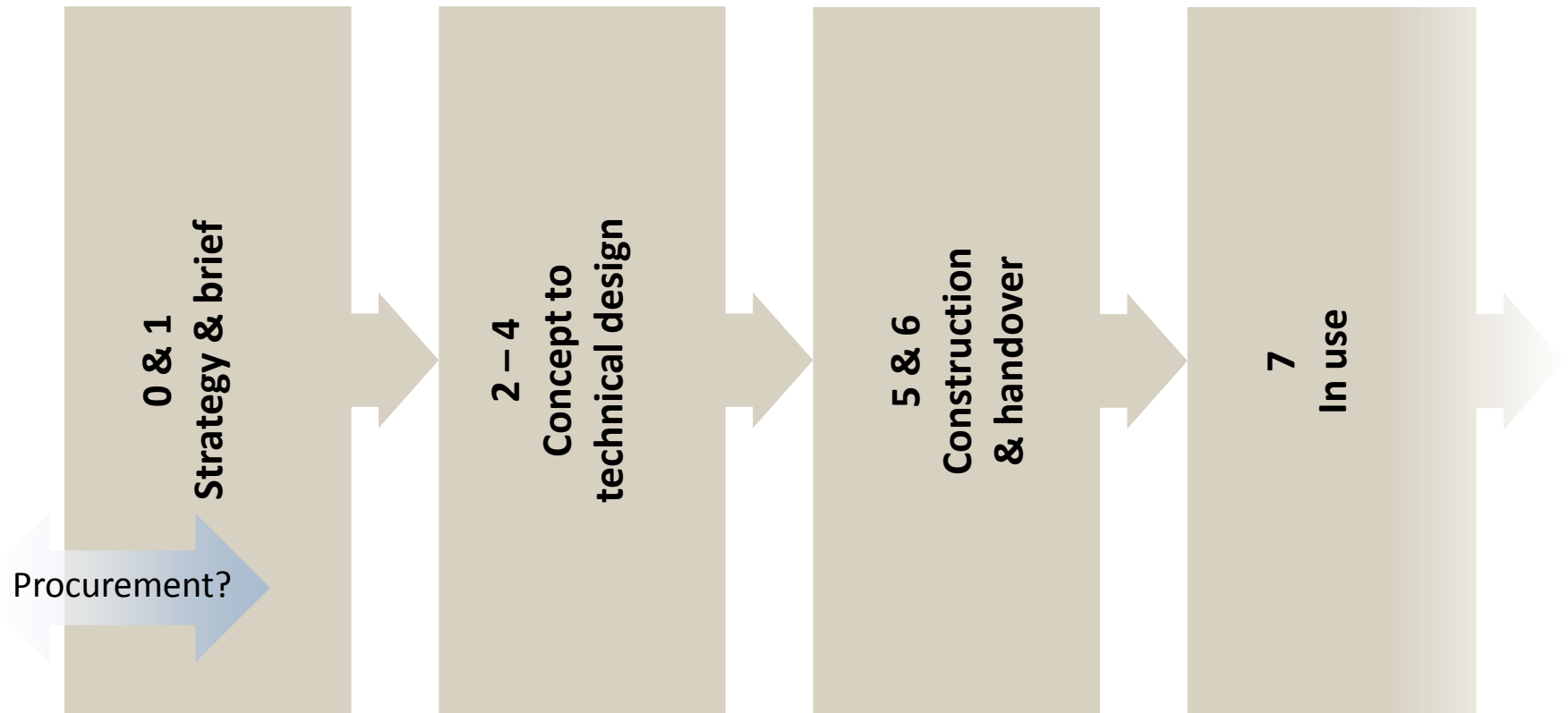
Where is the performance gap occurring?

2013 RIBA Plan of Work



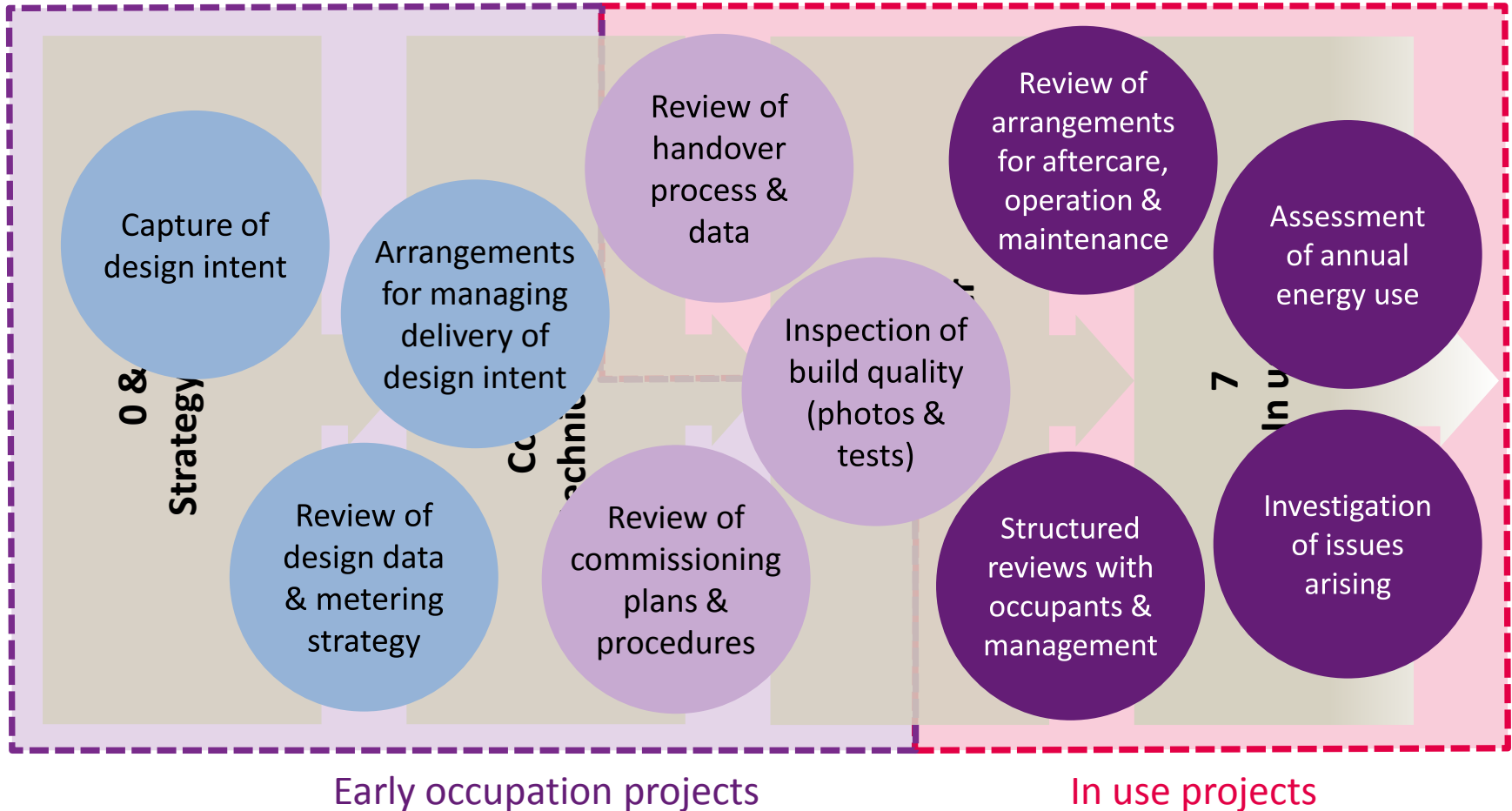
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2013 RIBA Plan of Work



Where is the performance gap occurring?

2013 RIBA Plan of Work



Key themes

Innovate UK

Lack of client engagement

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

- procurement tends to focus on cost not value
- value engineering
- tends to see certain key items removed without fully recognising the consequences
- certification planned at design is not achieved in use

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

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



Sub-meters installed for chillers in Petchey academy are not wired up and do not report the electricity intake of the chillers

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

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

Disconnection of the building from the end users



Poor placement of hot water meter

- 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

Programme outputs

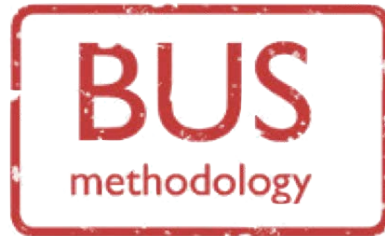
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Thank You

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