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Beyond Handover

Why Smart Buildings Still Underperform

Handover is a milestone, not proof of performance.



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A quick question:

If the BMS screen shows no alarms,
does that prove the building is performing well?

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The promise and the reality

The systems are installed. But do they perform?

Promise

- Comfort when needed
- Energy used only when needed
- Systems working together
- Information we can trust

Reality

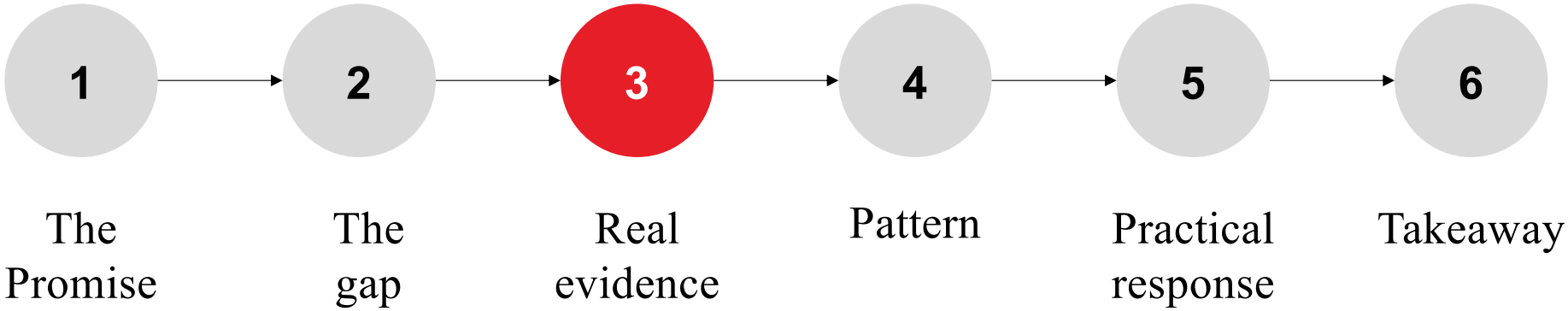
- Empty spaces still conditioned
- Systems running unnecessarily
- Data that doesn't make sense
- Problems remain hidden

This gap is where today's stories begin.

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The Journey

From promise to evidence to sustained performance

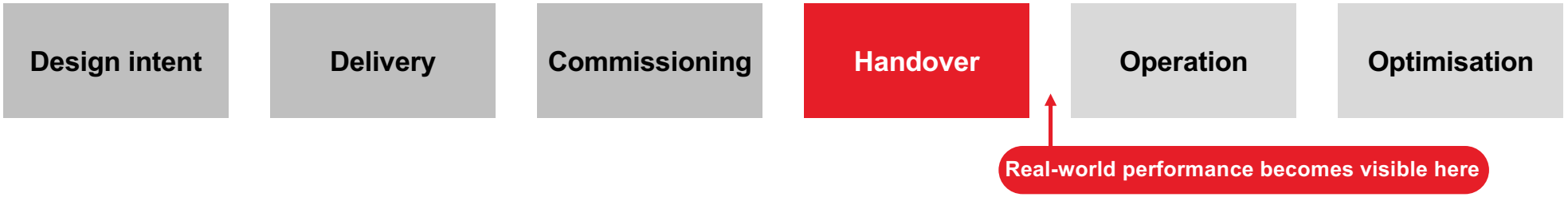


Five real examples reveal where the gap appears.

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Where the gap emerges

Performance is not fully proven at handover



At handover

Documents, demonstrations and completion evidence

In operation

Real occupancy, changing use, overrides and drift

What is needed

Review, feedback, ownership and optimisation

Handover confirms delivery. Operation proves performance.

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Three Projects. Five Lessons.

Real evidence from three anonymised office-building reviews

Project A

Operational Review

Can we trust the information?

1 Story

Project B

Live Testing

Does the system respond?

2 Stories

Project C

Targeted Review

Does the building still match reality?

2 Stories

Five real examples. Five practical lessons.

Each story is based on real operational evidence.

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Project A | The Chilled-Water Sensor That Reported 150°C

Data quality is the foundation of every digital layer

Observed

A chilled-water temperature point reported about 150°C, then 0°C; historical values were generally 8–11°C.

Why It Matters

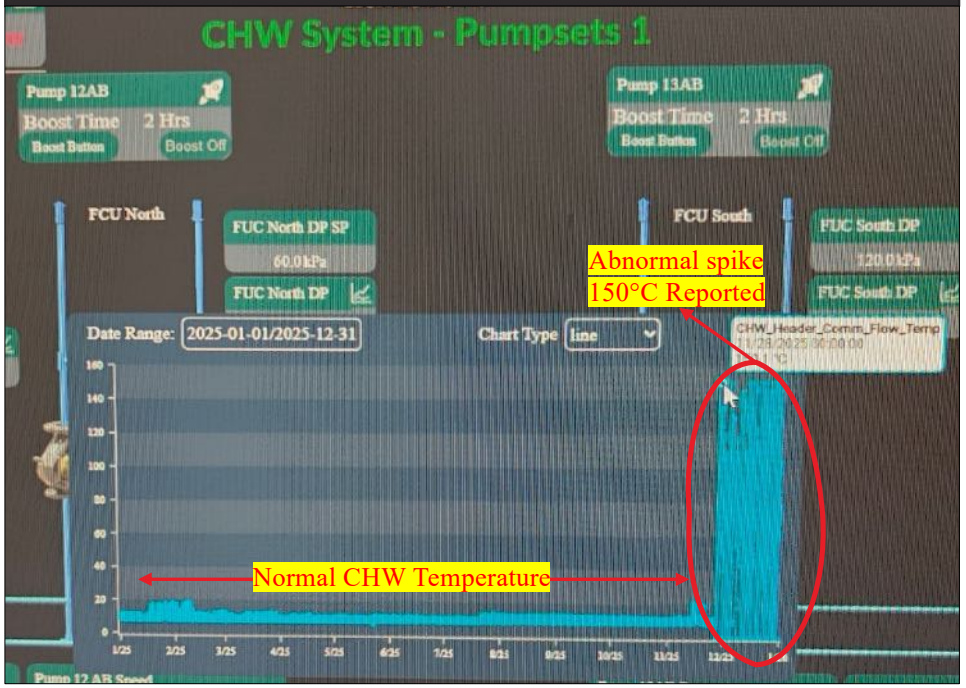
The plant may continue to run, but the BMS becomes unreliable for diagnosis, analytics and decision-making.

Practical Lesson

Apply plausibility rules and investigate abnormal values before using them in higher-level analytics.

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Project | anonymised evidence



Reliable decisions start with reliable data

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Project B | The Boiler That Ignored Its Own Setpoint

Live testing exposed a gap between command and response

Observed

Both boilers remained active at 76.2°C against a 75°C setpoint, despite a 5°C deadband.

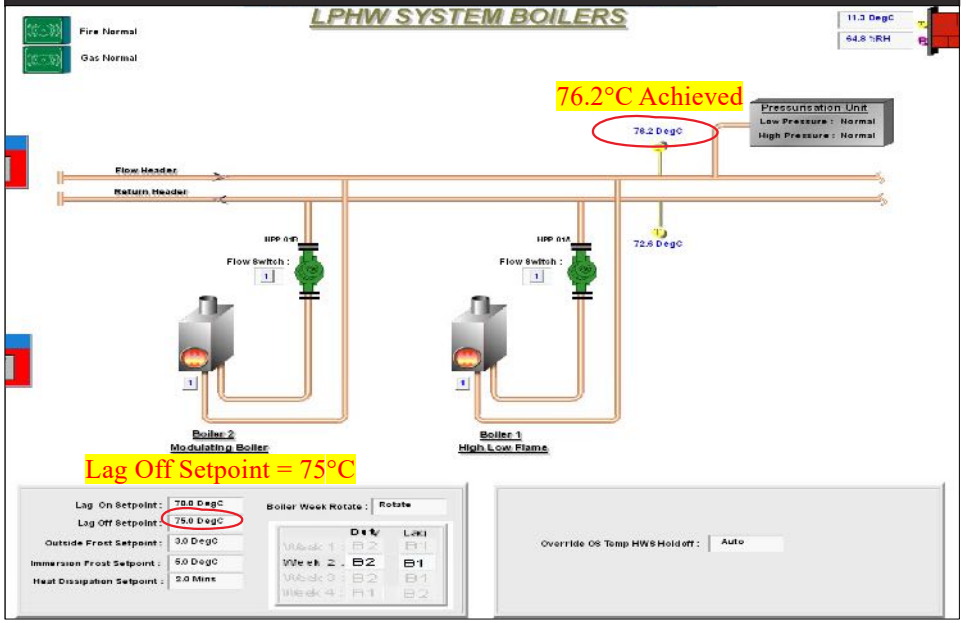
Why It Matters

The observed boiler response did not align with the visible control settings.

Practical Lesson

Do not assume that changing a setpoint changes operation. Test the actual sequence and response.

Project | anonymised evidence



Expected: Boilers reduces.
Actual: Boilers continue running.

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Project B | 100% Valve Command, No Heat Delivered

A software command is not proof of physical performance

Observed

For selected trench heaters, changing valve command from 0% to 100% produced negligible or no measured temperature change.

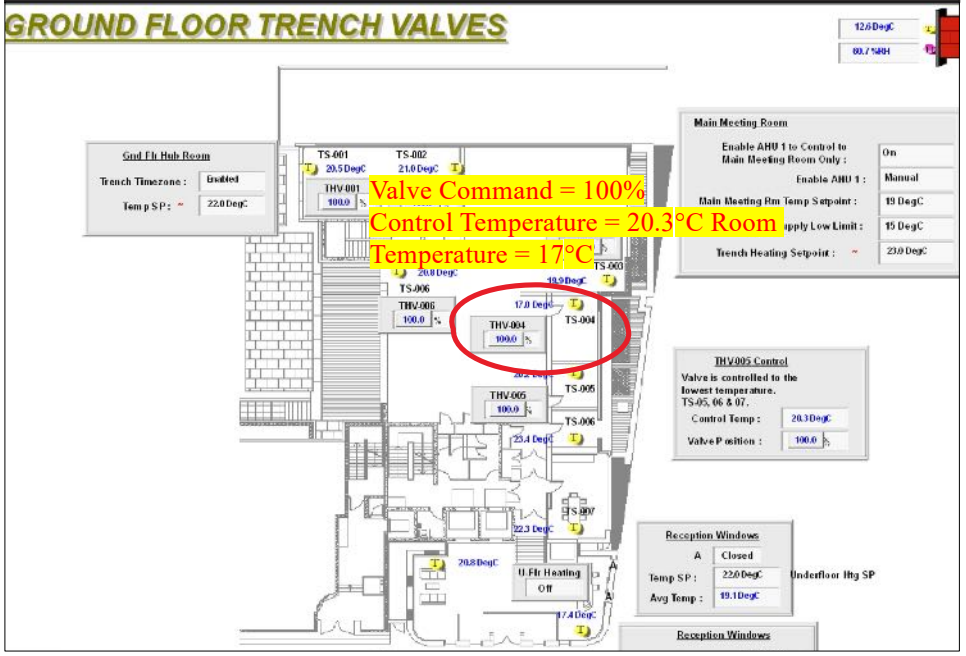
Why It Matters

The BMS showed demand, but the expected heating outcome did not occur.

Practical Lesson

Validate the physical response, not only the software command or actuator percentage.

Project | anonymised evidence



The command changed. The room stayed cold.

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Project C | Animated Fans on a Disabled AHU

Graphics should represent confirmed operating status

Observed

The AHU schedule was disabled, but fan symbols on the graphic continued to appear animated and operating.

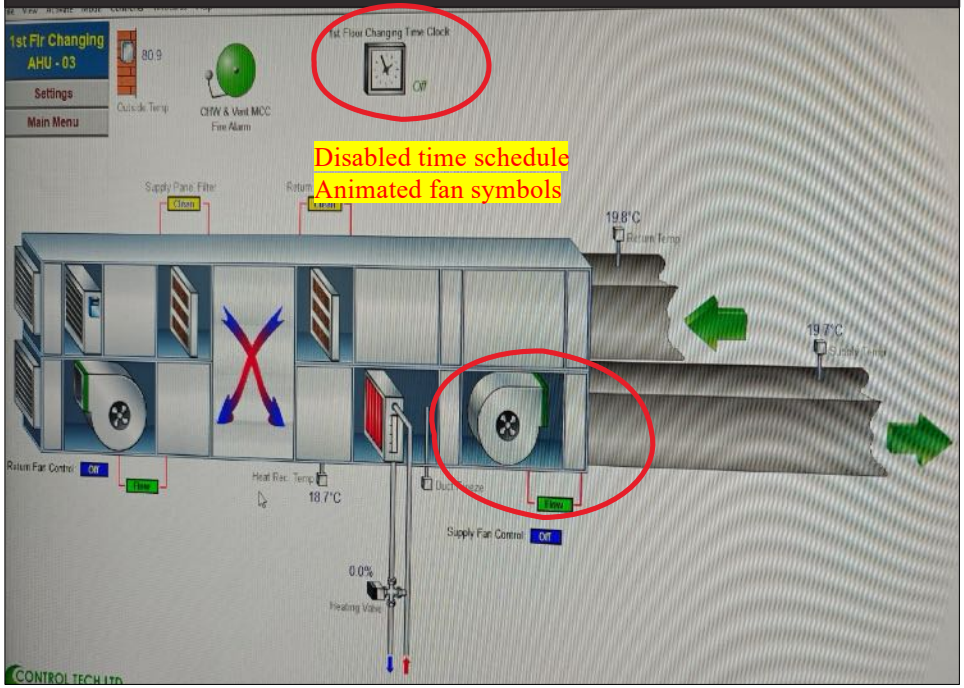
Why It Matters

Operators could misinterpret equipment status and make incorrect diagnostic decisions.

Practical Lesson

Link animation to confirmed run status, not to an assumed command or static graphic behaviour.

Project | anonymised evidence



The schedule said OFF. The graphic suggested ON.

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Project C | A Critical Alarm Hidden in Navigation

The fault existed, but only on the page someone had to find

Observed

A twin extract-fan alarm was visible only after navigating to the specific BMS page.

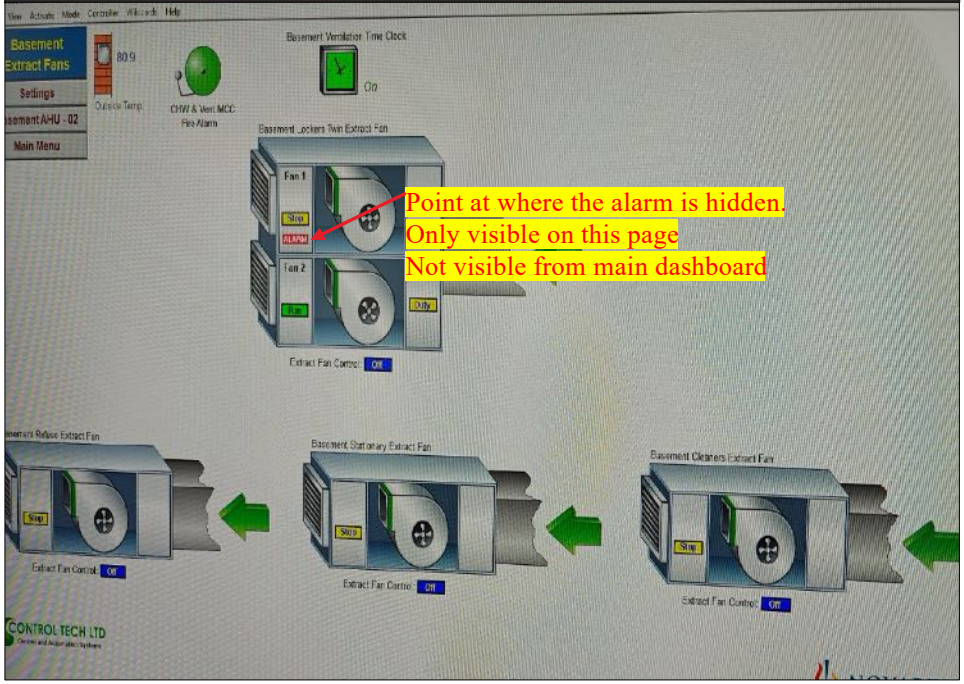
Why It Matters

The fault could go unnoticed, delaying investigation and reducing operator awareness.

Practical Lesson

Centralise critical alarms and provide priority, context and response guidance.

Project | anonymised evidence



If it is hard to see, it is hard to manage

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Five Stories. One Pattern.

Different problems revealed the same post-handover gap.

Data
Information was not always reliable

Control response
Systems did not always respond as expected

Physical outcome
Commands did not always produce results

Operator view
Graphics did not always reflect reality

Operator action
Critical alarms were not always visible

Different problems. The same gap.

Installing technology is only the start. Performance must be verified in operation.

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What Sits Behind the Gap

Post-handover performance depends on four interconnected pillars



People

Knowledge is not sustained

- Operator changes
- Knowledge transfer gaps



Process

Operating practices become outdated

- Building use changes
- Reviews are not repeated



Technology

System behaviour becomes unreliable

- Interlock issues
- Equipment does not respond



Data

Information becomes unreliable

- Sensor errors
- Alarms lack context

When one pillar weakens, performance drifts.

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From Finding to Improvement

A simple four-step review approach

1

Understand intent

What should happen?

2

Check reality

What is actually happening?

3

Prioritise action

What matters most?

4

Verify the result

Did the change work?

Find it. Fix it. Verify it.

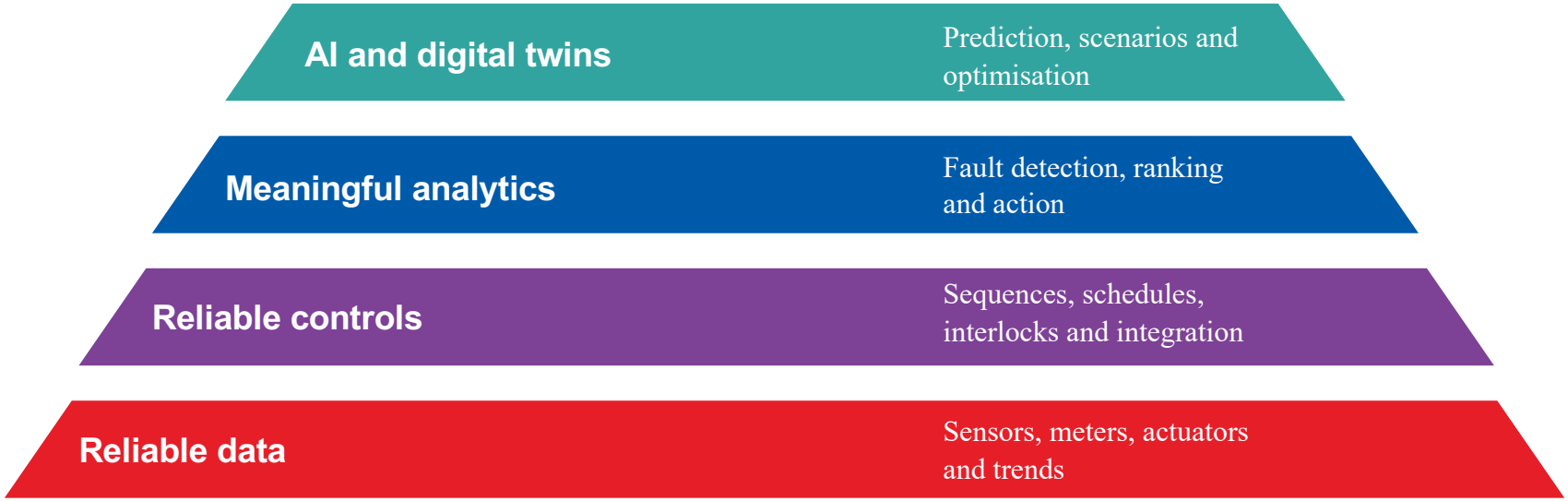
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Where Analytics, AI and Digital Twins Fit

Advanced tools amplify the quality of the foundations below them

Do not automate uncertainty

AI cannot fix unreliable foundations.



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Beyond Handover

Three actions that sustain performance

1

TRUST THE DATA

Maintain sensors, trends and alarms

2

VERIFY THE OUTCOME

Check the building, not only the screen

3

KEEP IMPROVING

Review schedules, controls and changing use



Handover confirms delivery. Operation proves performance.

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Thank You

Questions?



Contact

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