HOMES THAT BEHAVE WELL™

Technology Architecture for Life

# Buildings That Behave Well

A GOVERNANCE AND STEWARDSHIP FRAMEWORK FOR INTELLIGENT BUILDINGS

Moving beyond connected systems to purpose-driven outcomes, governance, explainability, and continuous stewardship.

PURPOSE ALIGNED | GOVERNED DECISIONS | MEASURABLE OUTCOMES | EXPLAINABLE BEHAVIOR | CONTINUOUS STEWARDSHIP

FROM SMART BUILDINGS TO **BUILDINGS THAT DELIVER WHAT MATTERS**

ARCHITECTURE | GOVERNANCE | STEWARDSHIP | EXPLAINABILITY

IDEAS & RESEARCH

# Buildings That Behave Well

## The Missing Layers of Intelligent Buildings

A Governance and Stewardship Framework for Commercial and Institutional Buildings

**Purpose of this paper**

This expanded thought exercise begins with Gardiner & Theobald's discussion of the gap between smart-building promise and delivery, then places that argument beside other public frameworks addressing user outcomes, health, functionality, interoperability, and facilities operations. Buildings That Behave Well identifies the additional operating layers required to sustain those outcomes: purpose, capability ownership, governance, stewardship, explainability, and lifecycle accountability.

Prepared by Tom Grounds | Homes That Behave Well

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

# Contents

Table of Contents ..... **Error! Bookmark not defined.**
Executive Summary ..... 4
From Smart Building to Building That Behaves Well ..... 4
The Smart-Building Conversation ..... 5
The original catalyst: promise versus delivery ..... 5
Where the original article is strong ..... 5
Where the original article leaves room to extend the model ..... 5
Where Existing Thought Leadership Converges ..... 6
The Missing Layers of Intelligent Buildings ..... 6
1. Who owns the outcome? ..... 7
2. Who governs change? ..... 7
3. Who provides stewardship? ..... 7
4. Can the building explain itself? ..... 7
Comparative Framework View ..... 8
The Buildings That Behave Well Model ..... 9
A capability-centric view ..... 9
Governance Layer ..... 10
Governance responsibilities ..... 10
Governance artifacts ..... 10
Stewardship Layer ..... 11
Core stewardship functions ..... 11
Explainability and the Building Audit Trail ..... 11
Subscription Value: Cost or Outcome? ..... 12
Subscriptions that can create continuing value ..... 12
Subscriptions that require challenge ..... 12
Maturity Model ..... 13
Implications for Owners, Designers, Operators, and Advisors ..... 14
For owners and developers ..... 14
For architects and design teams ..... 14
For operators and facilities leaders ..... 14
For consultants and technology providers ..... 14
Conclusion ..... 15
References and Further Reading ..... 16
Source and Use Note ..... 16

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

# Executive Summary

Across the built-environment sector, leading frameworks increasingly reject technology for technology's sake. Gardiner & Theobald challenges the gap between smart-building marketing and delivery. SmartScore frames smart buildings around user outcomes and technological foundations. WELL centers health and well-being. The Smart Building Collective evaluates building usage, performance, environment, safety, collaboration, and integrative design. buildingSMART advances open standards and information exchange. EY describes intelligent facilities management as a technology- and data-enabled operating model.

Together, these sources establish a strong foundation. They also reveal a recurring gap. The industry has become clearer about the outcomes intelligent buildings should produce, but less explicit about who owns those outcomes, who governs change, who stewards performance after commissioning, and how the building explains its behavior over time.

### Core Thesis

A building is not intelligent because systems are connected.

A building behaves well when its systems continuously serve defined human, operational, financial, environmental, and organizational outcomes — and when those outcomes are governed, stewarded, measured, and explained over time.

## From Smart Building to Building That Behaves Well

| Traditional Smart Building | Buildings That Behave Well | Strategic Shift |
|---|---|---|
| Technology systems | Building capabilities | Devices to outcomes |
| Integration and interoperability | Purpose-driven coordination | Connection to intention |
| Dashboards and analytics | Explainable performance | Data to meaning |
| Commissioning and handoff | Continuous stewardship | Project to operating model |
| Recurring software costs | Measurable service value | Subscription to outcome assurance |

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

# The Smart-Building Conversation

The public smart-building conversation is no longer limited to sensors, controls, and automation. The strongest recent work asks whether buildings improve experience, sustainability, efficiency, health, operations, security, and future readiness. Buildings That Behave Well begins by recognizing that progress rather than dismissing it.

## The original catalyst: promise versus delivery

Gardiner & Theobald's "The Smart Building Promise: Separating Reality from Marketing" describes the practical gap between ambitious smart-building claims and the realities of budgets, integration, interoperability, commissioning, software maintenance, user training, and lifecycle cost. The article argues that impressive components can remain isolated and that strategic implementation must connect technology to operational goals and measurable value.

Original source: Gardiner & Theobald — The Smart Building Promise: Separating Reality from Marketing

## Where the original article is strong

- It challenges technology-first thinking.
- It treats interoperability as necessary to unlock value.
- It emphasizes lifecycle cost rather than capital cost alone.
- It asks whether investment produces measurable operational benefit.

## Where the original article leaves room to extend the model

The article identifies failures in delivery and integration but does not fully define the operating structures needed after delivery. Buildings That Behave Well extends the conversation by asking who owns the intended result, how change is governed, how performance is continuously stewarded, and how the building explains its decisions and interventions.

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

## Where Existing Thought Leadership Converges

The public sources reviewed solve different parts of the intelligent-building problem. Their overlap is significant: all move away from isolated products and toward outcomes, function, evidence, or operations.

| Source / Framework | Primary Public Focus | Contribution to the Conversation |
|---|---|---|
| Gardiner & Theobald | Delivery reality, interoperability, lifecycle cost, measurable value | Exposes the gap between promise and operational delivery |
| SmartScore / WiredScore | User outcomes and technological foundations | Provides a benchmark spanning experience, operations, cybersecurity, data, and integration |
| WELL Building Standard | Human health and well-being | Makes occupant outcomes a design and operational priority |
| Smart Building Collective | Usage, performance, environment, safety, collaboration, integration | Treats smartness as functionality shaped by context and use |
| buildingSMART International | Open standards and information exchange | Creates common structures for built-asset information and interoperability |
| EY Intelligent Facilities Management | Integrated operations, data, analytics, efficiency, sustainability, occupant experience | Moves the discussion from installation toward proactive facilities operation |

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

# The Missing Layers of Intelligent Buildings

The sources above describe important outcomes and enabling conditions. Buildings That Behave Well proposes that a durable operating model must also answer four questions that are often left implicit.

## 1. Who owns the outcome?

System ownership is not the same as outcome ownership. A facilities team may operate HVAC while nobody is explicitly accountable for the Occupant Comfort capability across HVAC, controls, sensors, envelope conditions, schedules, complaints, and workplace policy.

## 2. Who governs change?

Buildings evolve after commissioning. Software changes, integrations are replaced, subscriptions are renewed, vendors change, spaces are repurposed, and operating priorities shift. Without decision rights, architecture standards, and change records, integration can gradually become fragmentation.

## 3. Who provides stewardship?

Support responds when a product fails. Stewardship continuously asks whether the building still fulfills its purpose. It examines capability health, system drift, technical debt, recurring value, institutional knowledge, and the effect of change on intended outcomes.

## 4. Can the building explain itself?

Technical logs show events. Explainability connects events to purpose: what happened, why it happened, which policy or signal authorized it, what changed, who approved it, whether the outcome was achieved, and what remains to be done.

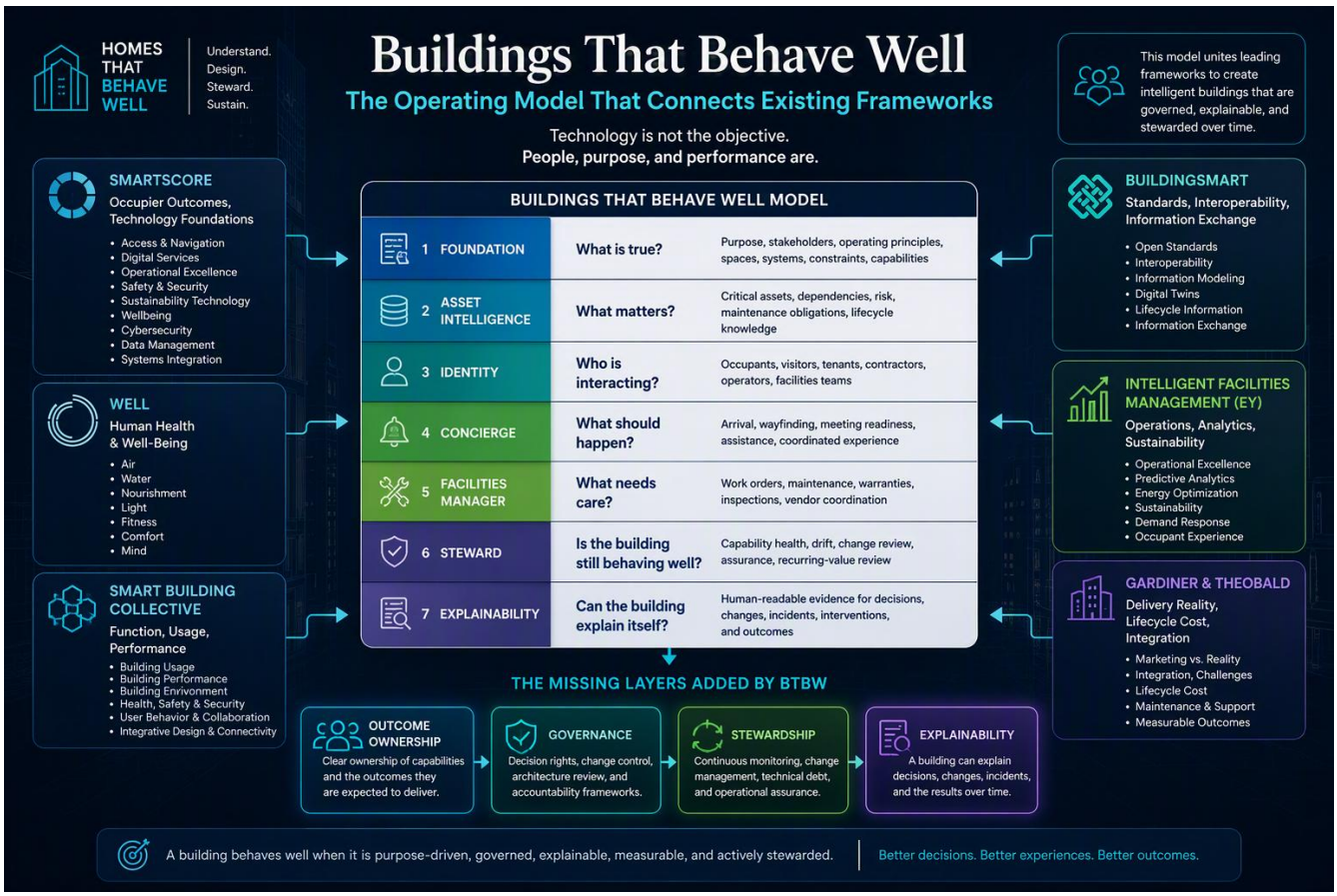
**The Stewardship Gap**

Design → Build → Commission → Operate does not complete the lifecycle.

Buildings That Behave Well adds: Govern → Steward → Explain → Improve.

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

## Comparative Framework View




Buildings That Behave Well is not presented as a substitute for certification, health standards, information standards, or facilities-management practices. It is an operating-model layer that could help connect them.

| Perspective | What it helps establish | BTBW extension |
|---|---|---|
| SmartScore | Whether smart capabilities and foundations are present | Who owns capability outcomes and how they remain governable |
| WELL | Whether the built environment supports health and well-being | How those outcomes remain operationally stewarded and explainable |
| Smart Building Collective | Whether technology improves function, use, performance, and environment | How responsibility, change, and evidence are maintained over time |
| buildingSMART | How built-asset information can be exchanged consistently | How information supports decisions, accountability, and explanation |
| Intelligent Facilities Management | How integrated data and technology improve operations | How operational change is governed and linked to capability health |
| Gardiner & Theobald | Why integration, lifecycle cost, and measurable value matter | The governance and stewardship model required after the diagnosis |

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

# The Buildings That Behave Well Model

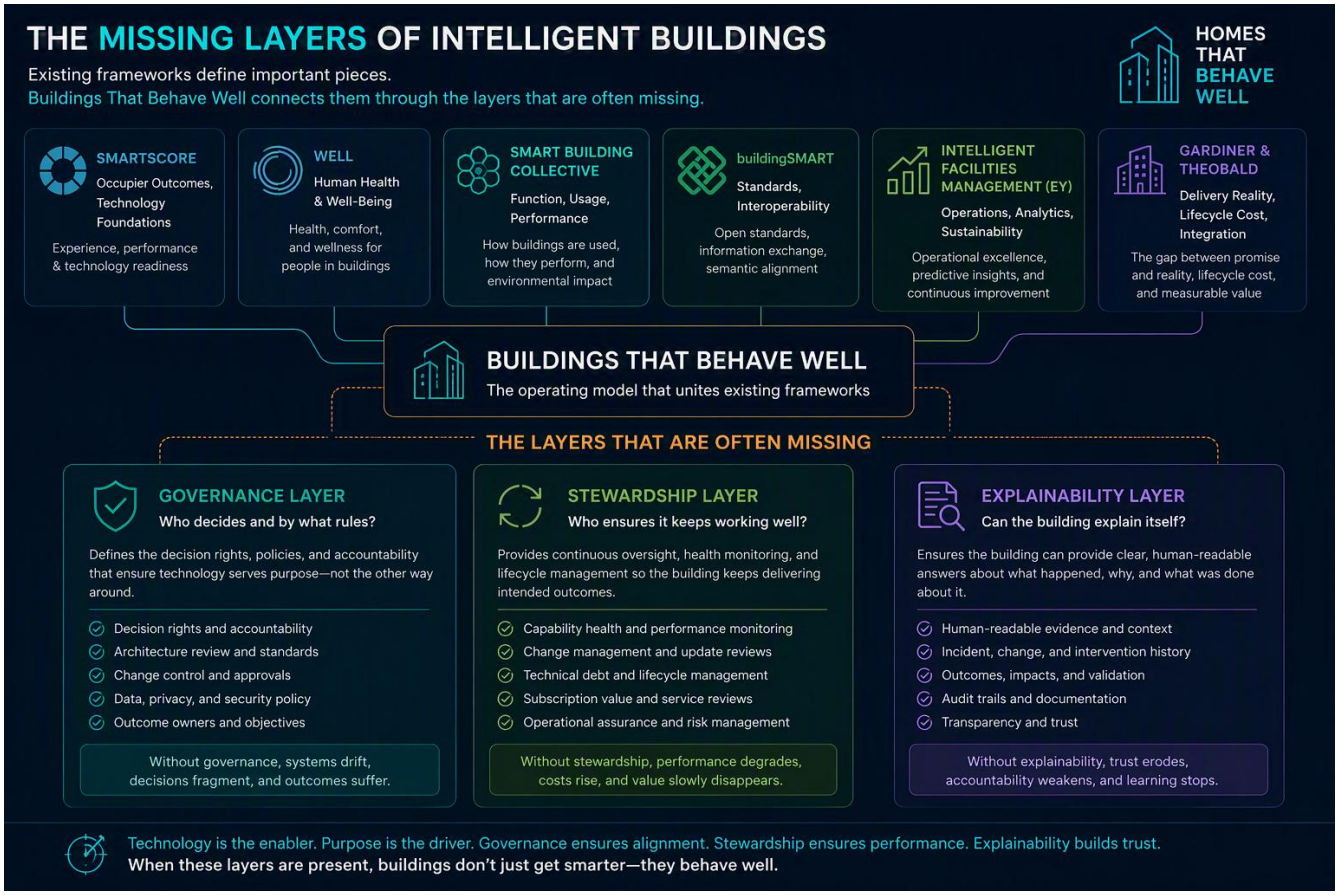
The framework organizes an intelligent building around questions rather than product categories.

| Layer | Primary Question | Building Application |
|---|---|---|
| Foundation | What is true? | Purpose, stakeholders, operating principles, spaces, systems, constraints, capabilities |
| Asset Intelligence | What matters? | Critical assets, dependencies, risk, maintenance obligations, lifecycle knowledge |
| Identity | Who is interacting? | Occupants, visitors, tenants, contractors, operators, facilities teams |
| Concierge | What should happen? | Arrival, wayfinding, meeting readiness, assistance, coordinated experience |
| Facilities Manager | What needs care? | Work orders, maintenance, warranties, inspections, vendor coordination |
| Steward | Is the building still behaving well? | Capability health, drift, change review, assurance, recurring-value review |
| Explainability | Can the building explain itself? | Human-readable evidence for decisions, changes, incidents, interventions, and outcomes |

## A capability-centric view

- HVAC becomes Occupant Comfort Capability.
- Access control becomes Safe Entry and Visitor Experience Capability.
- Lighting becomes Visual Comfort, Energy Stewardship, and Experience Capability.
- Sensors become Awareness and Operational Intelligence Capability.
- Networks become Building Digital Foundation Capability.
- Analytics become Explanation and Decision Support Capability.

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well




# Governance Layer

Governance turns the building from a collection of projects into an accountable operating model.

## Governance responsibilities

- Define decision rights for technology, data, integrations, subscriptions, access, and change.
- Assign named owners to comfort, security, sustainability, experience, continuity, and other capabilities.
- Require each material technology investment to map to a building outcome.
- Establish architecture review and change approval appropriate to risk.
- Maintain a capability map and dependency model.
- Review recurring services against measured value.
- Preserve institutional knowledge through personnel and vendor changes.

## Governance artifacts

| Artifact | Purpose | Primary Audience |
|---|---|---|
| Building Purpose Statement | Defines what the building exists to accomplish | Owner, operator, design team |
| Capability Map | Connects systems, services, and policies to outcomes | Owner, facilities, technology teams |
| Decision Register | Records why significant decisions were made | Governance body |
| Subscription Value Register | Connects recurring cost to outcome and evidence | Owner, finance, operations |
| Change Governance Log | Records approvals, risks, implementation, and validation | Facilities and stewardship teams |
| Building Explanation Ledger | Maintains a human-readable audit trail | Owners, operators, auditors |

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

# Stewardship Layer

Stewardship ensures that the building continues to deliver its intended outcomes after handoff. It is broader than monitoring and more proactive than break/fix support.

## Core stewardship functions

- Monitor capability health as well as system uptime.
- Evaluate whether systems continue to deliver intended outcomes.
- Review updates, patches, vendor changes, subscriptions, and architectural drift.
- Maintain an audit trail of detection, recommendation, authorization, action, validation, and closure.
- Translate technical conditions into human operational impact.
- Report healthy conditions as well as exceptions so assurance is visible.
- Preserve why systems were configured and governed as they were.

### Daily Building Steward Report

Overall Building Health: Healthy
Occupant Comfort: Healthy
Energy Stewardship: Attention
Visitor Experience: Healthy
Digital Foundation: Healthy
Action Required: Review whether the energy analytics subscription continues to produce measurable value.

# Explainability and the Building Audit Trail

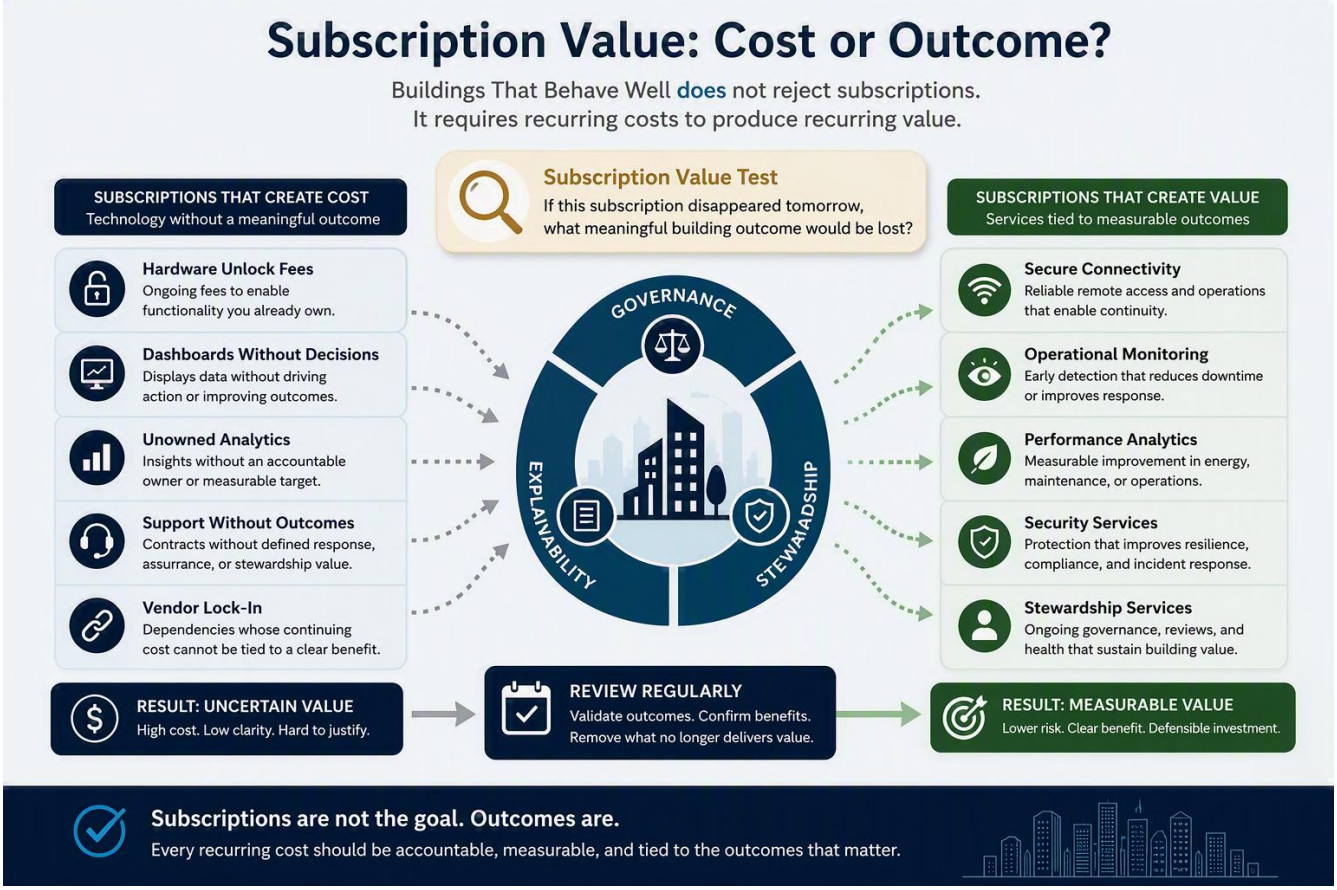
A building that behaves well should be able to answer more than “what alarm occurred?” It should connect technical evidence to operational meaning.

- What happened?
- Which capability was affected?
- Why did the building or operator act?
- Which policy, signal, or approval authorized the action?
- What changed?
- Who performed or approved the intervention?
- What validation was completed?
- Did the intended outcome return?

### Example Explanation

Visitor Experience was degraded because two entry sensors stopped reporting. Facilities approved a daytime diagnostic window. The affected integration was updated, sensor reporting was validated, and the access window was closed. No visitor identity data was required for the diagnosis.

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well




# Subscription Value: Cost or Outcome?

Buildings That Behave Well does not reject subscriptions. It requires recurring costs to produce recurring value.

**Subscription Value Test**

If this subscription disappeared tomorrow, what meaningful building outcome would be lost?

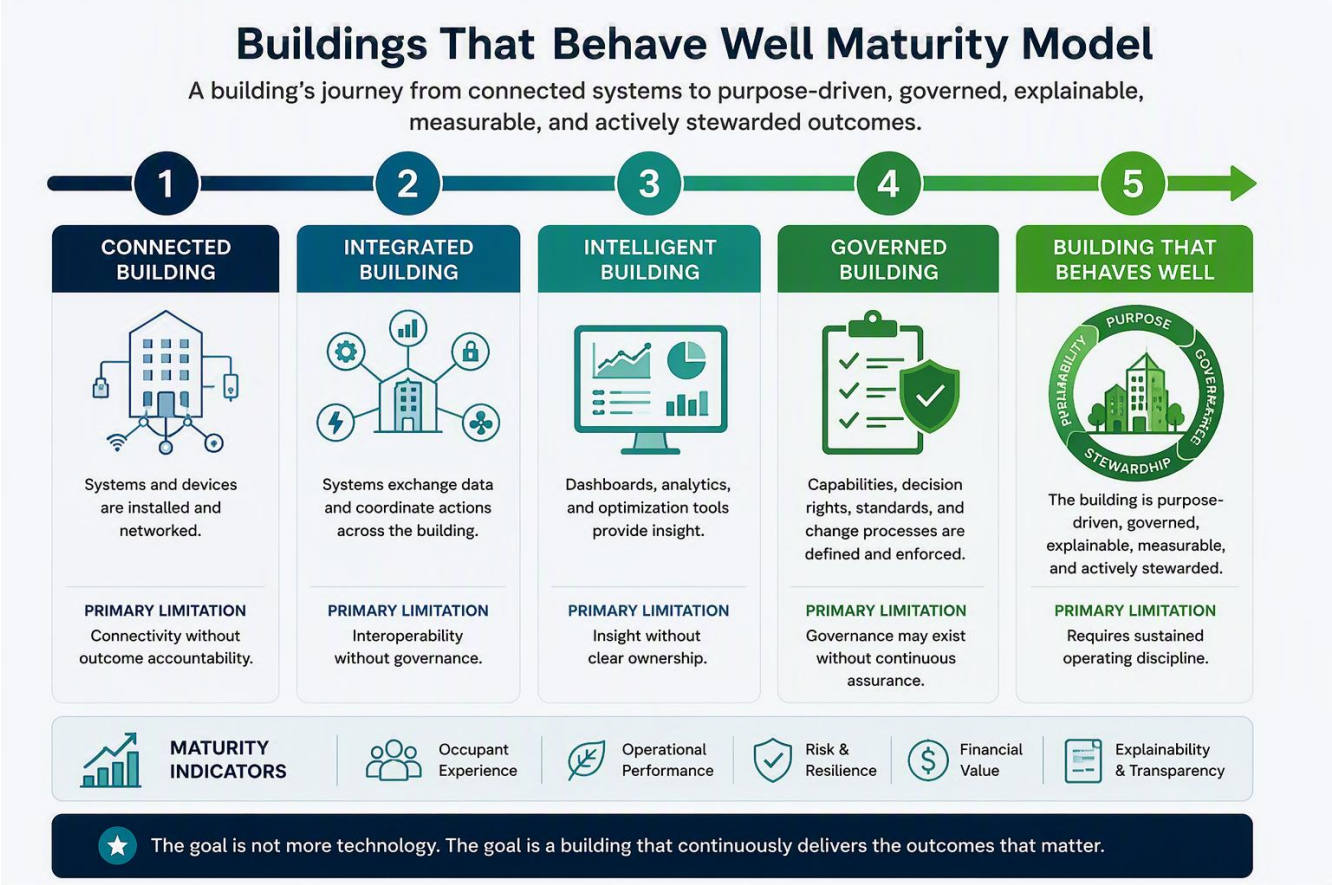
## Subscriptions that can create continuing value

- Secure connectivity and remote operations.
- Monitoring that reduces downtime or improves response.
- Analytics that demonstrably improve energy, maintenance, or operational performance.
- Security services that improve resilience, compliance, or incident response.
- Stewardship services that maintain health, auditability, knowledge, and continuity.

## Subscriptions that require challenge

- Services that merely unlock previously purchased hardware.
- Dashboards that display data without changing a decision or outcome.
- Analytics without an accountable owner or measurable target.
- Support contracts without defined response, assurance, or stewardship value.
- Vendor dependencies whose continuing cost cannot be connected to occupant, operational, financial, environmental, or compliance benefit.

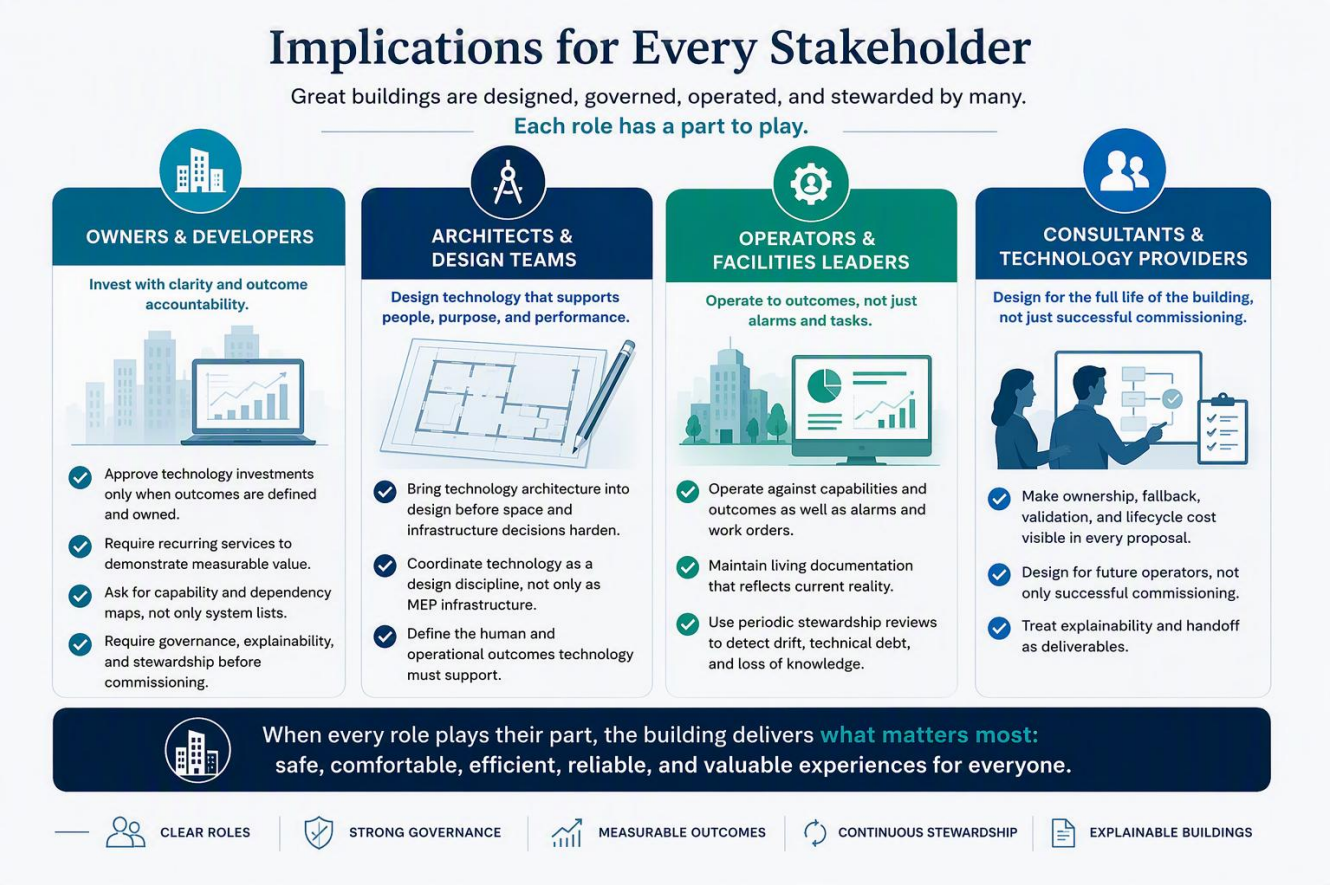
© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well




## Maturity Model

| Level | Name | Description | Primary Limitation |
|---|---|---|---|
| 1 | Connected Building | Systems and devices are installed and networked. | Connectivity without outcome accountability. |
| 2 | Integrated Building | Systems exchange data and coordinate. | Interoperability without governance. |
| 3 | Intelligent Building | Dashboards, analytics, and optimization tools are present. | Insight without clear ownership. |
| 4 | Governed Building | Capabilities, decision rights, standards, and change processes are defined. | Governance may exist without continuous assurance. |
| 5 | Building That Behaves Well | The building is purpose-driven, governed, explainable, measurable, and actively stewarded. | Requires sustained operating discipline. |

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well




# Implications for Owners, Designers, Operators, and Advisors

## For owners and developers

- Do not approve material technology investment without a defined outcome and owner.
- Require recurring services to demonstrate recurring value.
- Ask for a capability and dependency map, not only a system list.
- Require governance, explanation, and stewardship requirements before commissioning.

## For architects and design teams

- Bring technology architecture into design before space and infrastructure decisions harden.
- Coordinate technology as a design discipline, not only as MEP infrastructure.
- Define the human and operational outcomes technology must support.

## For operators and facilities leaders

- Operate against capabilities and outcomes as well as alarms and work orders.
- Maintain living documentation that reflects current reality.
- Use periodic stewardship reviews to detect drift, technical debt, and loss of knowledge.

## For consultants and technology providers

- Make ownership, fallback, validation, and lifecycle cost visible in every proposal.
- Design for future operators, not only successful commissioning.
- Treat explainability and handoff as deliverables.

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

## Conclusion

The public frameworks reviewed here show that the intelligent-building sector is moving in the right direction: toward user outcomes, health, functionality, interoperability, evidence, and proactive operations. Buildings That Behave Well builds on that progress rather than competing with it.

The remaining challenge is institutional. Intended outcomes need owners. Change needs governance. Performance needs stewardship. Decisions and interventions need explanation. Knowledge must survive projects, vendors, upgrades, and personnel transitions.

### Final Thought

The next evolution of intelligent buildings is not simply smarter technology.

It is buildings that understand their purpose, support the people who use them, explain their behavior, and are deliberately stewarded over time.

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well

# References and Further Reading

The sources below informed the comparative analysis. Links are provided to the public source pages available at the time this expanded edition was prepared.


Gardiner & Theobald — The Smart Building Promise: Separating Reality from Marketing

Gardiner & Theobald LinkedIn post introducing the article

WiredScore — Smart Buildings: Our Future Is Smart white-paper page

WiredScore — SmartScore certification framework

International WELL Building Institute — WELL Building Standard

International WELL Building Institute — WELL Certification

Smart Building Collective — SBC Framework

buildingSMART International — Standards and services

EY — The shift to intelligent facilities management


## Source and Use Note

This paper is an independent Homes That Behave Well thought exercise. It summarizes and responds to publicly available source descriptions without reproducing source publications. Buildings That Behave Well is presented as a complementary governance and stewardship operating model, not as an official extension of, certification under, or endorsement by any referenced organization.

© 2026 Homes That Behave Well. All rights reserved. | Buildings That Behave Well