

TalkTalk
Business

SMART SPACES

FOR THE UK

SO NEAR, SO FAR

An exclusive report into the UK public sector's
adoption of smart space technology.

August 2025



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INTRODUCTION

The UK wants smart spaces. The UK isn't ready for them. Why?

The UK is waking up to the idea that buildings can do more than just house people and operations. They can sense, respond, optimise and even predict.

Whether it's a hospital wing adjusting its airflow, a town hall automating its lighting or a warehouse reconfiguring around stock levels, the smart space is no longer sci-fi – it's already here.

But it's not yet here for everyone, everywhere.

For every hospital investing in real-time bed tracking or smart theatres, there's another reliant on legacy infrastructure that can't support modern clinical systems.

For every council piloting connected lighting or sensor-led waste collection, there's a wider local authority estate grappling with fragmented networks and budget constraints.

And for every university adopting occupancy-driven smart energy systems, there's another still wrestling with outdated estates and the pressure to prove the ROI of their campus.

There's momentum and ambition. But there's also friction.

This report explores that tension. It looks at how smart spaces are taking root in the UK public sector. It draws on new data, exclusive survey findings and an array of examples to assess the opportunities – and the barriers – facing UK public-sector organisations, from healthcare to higher education.

It also looks at what it is that's holding the UK back, in global terms. While innovation is happening in pockets, the UK still trails international peers in smart infrastructure leadership.

Nordic countries have embedded *building standards and interoperability frameworks*. Singapore has *fused data and service planning*, city-wide.

In contrast, UK organisations are *often working piecemeal* – limited by budget cycles, disconnected estates and digital skills gaps.

In the *IMD Smart Cities Index*, only one UK city – London – makes the top 50, compared to four cities in Germany and three in Australia.

There's an appetite. In our new UK-wide survey of IT professionals, 88% had smart spaces on their radar. But only 34% felt their network was truly ready to implement the concept.

The intent is there. But the infrastructure isn't. (Yet.)

The pressures afflicting the private and public sectors may differ – competitiveness vs compliance; budget cycles vs customer expectations – but the core question is the same: Is your estate ready for what's next?

Smart spaces won't stay 'smart' for long. Like 'smart' phones before them, they'll soon be the baseline. What we do now – the groundwork we lay, the decisions we make – will shape whether our estates are ready to meet that future, or fall behind it.

WHAT ARE SMART SPACES?

Smart spaces use interconnected technology – such as sensors, automation and data platforms – to make buildings more responsive and efficient.

- Key benefits:
- Reduced energy usage and carbon emissions
 - Optimisation of how buildings and spaces are used
 - Improvement in comfort and safety for users
 - Lowered maintenance costs through real-time monitoring
 - Support for better service delivery through data

ABOUT OUR SURVEY

Who was surveyed?
362 full-time IT professionals across the UK, spanning strategic leaders, infrastructure managers and operational staff. Respondents represented sectors including healthcare, education and local government, alongside retail, hospitality and transport/logistics.

The results of this survey have formed the basis of two reports – this one, focusing on the challenges and opportunities facing the public sector, and a second report, focusing on the private sector. You can access the *private sector report here*.

How was the survey conducted?
A 25-question online survey, conducted by InnovateMR, targeting roles directly involved in network infrastructure, strategy and delivery.

Why does it matter?
This is one of the few cross-sector surveys to explore the gap between smart-space ambition and infrastructure reality. It sheds light on readiness, perceived benefits, common blockers, and what organisations really need to move forward.

THE CASE FOR CHANGE

According to our survey, 88% of public sector IT leaders are familiar with the concept of smart spaces. Awareness isn't the issue. The challenge lies in turning that awareness into action – across estates that are ageing, emissions that need curbing, and systems overdue an upgrade.

Smart spaces offer a chance to address all three of these interconnected issues at once.

But the barriers are deeply embedded in the structure and funding of the UK public sector. Despite a £26 billion annual spend on digital technology and nearly 100,000 digital/data professionals across the sector, *transformation outcomes remain limited*. As an example: only 47% of central government services – and 45% of NHS services – currently offer a *fully digital pathway*.

Ageing estates, rising costs

The UK public estate is vast, comprising more than 300,000 properties. Much of it is increasingly outdated.

These properties are worth a collective £158 billion, but many of them are *poorly utilised and energy inefficient*. NHS Trusts are still operating from buildings where around *18% pre-date the founding of the NHS in 1948*. These trusts spend around *£30 billion annually* on estates and facilities management.

Against this backdrop, public-sector IT teams are often too sidetracked by firefighting problems and 'making do' with legacy infrastructure to enact real change.

Our survey data highlights the gap between aspiration and readiness. Just 19% of local authorities say they are "fully ready" to support smart environments. The majority are only "somewhat" ready, or worse.

Emissions can't be ignored

Buildings directly contribute to *around 25% of UK emissions*, and tackling this is now a legal obligation. The government has committed to halving direct public sector emissions by 2032, with a *further goal of 75% reductions by 2037*.

Smart spaces aren't a silver bullet, but they are already having an impact. In our survey, operational efficiency was the most widely realised benefit among public sector organisations – cited by 69% of local government and 48% of NHS respondents. The latter also cited energy optimisation as a top-three benefit.

By connecting sensors, analytics platforms and automated controls, smart space technology allows organisations to track and reduce energy use in real time. Systems can dim or switch off lights in unoccupied areas; adjust heating and cooling based on occupancy; and flag underperforming equipment for maintenance before it wastes energy.

According to the UK Green Building Council, such measures can cut energy use from heating, cooling and lighting by between 20% and 50%, depending on the building and its baseline efficiency. Over time, these operational gains will directly support progress toward emissions targets.

Infrastructure gaps are widening

Just 36% of survey respondents believe that the UK access network is fully ready to support smart space adoption. Fewer than one in three public sector organisations describe their own network as fully ready.

In many cases, the most recent IT upgrades have been relatively basic: increased storage, wider bandwidth, new equipment. Of the public-sector IT professionals we surveyed, only a minority report more advanced changes such as SD-WAN implementation or cellular IoT integration. Overall, the direction of travel is clear. Most public sector organisations want to modernise their estates, reduce emissions and improve service performance. But between intent and implementation are obstacles that are proving harder to shift – particularly when infrastructure and investment aren't aligned.

SMART-SPACE EFFICIENCIES

69% of local government organisations already using smart spaces say that operational efficiency is one of the most significant benefits.



BARRIERS TO ADOPTION

If the case for change is clear,
so too are the obstacles.

For most public sector organisations, smart spaces are not an abstract ambition – they’re an active aim. But between interest and implementation lie complex blockers: financial, technical and structural.

Constrained by budgets

Downward pressure on IT budgets is the single most cited barrier to smart space adoption. In our survey it was named the top challenge by local authorities (57%), NHS organisations (64%) and others, including housing associations and central government departments.

The squeeze on public sector budgets is well documented. Despite a 34% real-terms increase in overall public spending since 2017, digital spending on external providers has *risen by just 7% in that time*.

Many organisations simply don’t have the financial flexibility to upgrade network infrastructure, even when doing so could unlock long-term operational or energy savings.

For example: A council may delay upgrading its building networks, even though the improvements would allow smart lighting, occupancy sensors and HVAC controls to run across multiple sites.

Generally, it’s far easier for IT departments to get funding for upgrades when senior leaders view their organisation’s network infrastructure as a value-generating asset, rather than a necessary but burdensome cost.

The challenge to prove ROI

Funding isn’t the only issue. In some sectors, the blocker is more strategic. Housing associations, for example, reported that their biggest challenge was building a compelling organisation case for LAN/WAN upgrades.

Without a clear invest-to-save case – or confidence that the benefits will extend beyond a single building or pilot scheme – many organisations find it hard to justify the upfront cost.

Skills gaps are stalling progress

Even where budget is available, public sector organisations frequently lack the internal capability to plan and manage smart space deployments.

In our survey, lack of internal expertise was cited as a top barrier by 67% of respondents in higher education. Local authorities also flagged it as a key issue in *related research*.

The challenge is twofold: teams are often stretched thin, and existing IT staff may not have specific experience in cellular IoT, SD-WAN or edge deployments. Recruiting external partners helps – but even then, 46% of our public sector respondents said that finding the right network-infrastructure provider was one of their biggest challenges.

Legacy systems versus integration

Public sector estates are often built around legacy systems, from building controls and access management to Wi-Fi networks and data platforms. That can make integration a headache.

In our survey, 139 respondents overall cited “integration with existing systems” as one of their top network challenges when adopting IoT. These technical limitations make even small deployments more complex, and harder to scale.

At a wider level, the public sector continues to be affected by vendor lock-in, fragmented procurement frameworks and systems that simply weren’t designed to work together. Some councils face *exit costs of up to £300,000* just to switch digital providers.

Cultural and procurement friction

Lastly, organisational culture plays a role. In our survey, 40% of public sector respondents cited “risk-averse culture” as a key non-technical barrier to adoption. A further 44% said “limited senior stakeholder buy-in” was a blocker.

Public-sector procurement models can compound the issue. Complex approval chains, strict funding criteria and short-term budget cycles all limit the ability to move quickly, even when the appetite is there.

The desire to adopt smart spaces exists across the public sector. But fragmented estates, cautious cultures and uneven digital maturity continue to slow progress, and deepen the gap between ambition and reality.



GREEN SHOOTS FOR SMART SPACES

As our survey shows,
the path to smart space
adoption is not entirely
an uphill struggle.

Momentum is growing
across the public sector –
slowly, but surely.

31% of public sector
organisations that
have upgraded their
networks have introduced
alternative connectivity
technologies, such as
cellular IoT or LP-WAN, to
support smart spaces.

74% of public sector
organisations have already
adopted at least one type
of smart spaces or IoT
technology.

53% of public sector
organisations have already
upgraded their network
infrastructure to support
smart technology.

WHERE PROGRESS IS BEING MADE

Despite the blockers outlined above, smart space adoption is gaining traction across parts of the public sector – not as sweeping transformation, but as focused, measurable projects.

The projects making headway are those that solve specific problems, demonstrate ROI early, and align with broader organisational priorities such as estate optimisation, energy management or service delivery.

Smarter buildings, lower emissions

In the NHS, *St George's Hospital* in London has implemented smart theatres that combine environmental sensors (CO₂, particulate matter, temperature, humidity and TVOCs) with real-time occupancy monitoring. Live status displays help teams better manage theatre conditions, safety and scheduling.

Elsewhere, occupancy and HVAC controls are being introduced across public buildings. These setups use smart sensors and AI analytics to adjust heating, cooling and lighting based on real-time use, *cutting energy demand for HVAC systems by up to 50%, and lighting by up to 40%.*

This aligns with our survey results: across the public sector, operational efficiency was the most widely realised benefit of smart space adoption – cited by 69% of local authority respondents, and 48% in the NHS.

Smart services in action

In Newcastle, *computer vision cameras were used to track real-time footfall* during the COVID-19 pandemic. The resulting tool – ‘How Busy is Toon?’ – helped residents avoid crowded areas by providing live updates every five minutes.

And while not strictly a smart space deployment, Hillingdon Council's large-scale rollout of *AI-powered citizen services* shows how focused digital investment can drive measurable returns, saving £5 for every £1 spent.

These projects demonstrate how digital upgrades can support responsive, community-facing services, aligning with local needs and generating measurable benefits.

Doing good with data

HMRC has entered a partnership to develop digitally advanced government buildings with IoT-enabled condition-based maintenance. These buildings use *smart sensors to manage equipment such as boilers and chillers* based on real-time performance.

In social housing, East London's Poplar HARCA is rolling out *15,000 IoT sensors across 6,000 homes to monitor for damp, ventilation issues and fuel poverty.* This data not only protects tenants' health, but is projected to help reduce the NHS's £2.5 billion annual cost of treating housing-related illness.

These examples show how smart spaces can help public bodies move from reactive maintenance to proactive, data-informed management.

Ready, steady, scale

While overall readiness remains mixed, some public sector bodies are building strong digital foundations. In our survey, 62% of public sector organisations said they'd already upgraded their network infrastructure – at some level – to support smart technologies.

The most common upgrades included bandwidth increases, server expansion and new network equipment, with a smaller proportion introducing SD-WAN or cellular IoT.

Although advanced upgrades are relatively rare, the intent is clear: smart spaces are no longer being treated as pilot schemes. They're becoming tools to address urgent operational priorities: reducing energy bills, meeting net zero targets and improving communities' access to services.

Progress may be uneven, but it is real. The question now is how to scale it.

15,000

IoT SENSORS

have been added to 6,000 homes in East London to monitor for damp, ventilation issues and fuel poverty.

FIVE WAYS UK ORGANISATIONS CAN ACCELERATE SMART-SPACE ADOPTION

1

START WITH INFRASTRUCTURE

Our survey reveals only 36% of public sector respondents believe the UK access network is fully ready to support smart space adoption. Planning around future flexibility – not just future capacity needs – is essential.

2

FOCUS ON ROI, NOT REVOLUTION

Smart HVAC and lighting controls deployed across public buildings are delivering energy savings of up to 50% and 40%, respectively. These are manageable, fundable interventions, not massive, multi-year transformations

3

ADDRESS THE SKILLS GAP HEAD ON

In our survey, 67% of public sector respondents in higher education cited a lack of internal expertise as the biggest barrier to adoption.

The longer this goes unaddressed, the more likely smart projects are to stall. Upskilling and trusted external partnerships must be prioritised.

4

DESIGN FOR INTEROPERABILITY FROM DAY ONE

Nordic countries are leading the way in smart space adoption, with an approach built on shared data standards and systems that work across different technologies.

UK organisations can emulate this by adopting schemas like BRICK or Project Haystack, even on single sites.

5

PRIORITISE HUMAN-CENTRIC CHANGE

Across the public sector, operational staff value smart systems that make their work easier, not just ones that monitor outcomes.

In Poplar HARCA's housing project, connected sensors help identify issues like damp or poor ventilation before they become critical – reducing NHS strain and improving tenant wellbeing. Tech should always serve people, not the other way around.

CONCLUSION

Groundwork
is everything.

SMART SPACES ARE NO LONGER JUST A TECH STORY THEY'RE A READINESS STORY

Every council using real-time occupancy data to reduce energy use; every NHS Trust trialling smart theatres; every housing provider deploying IoT to improve tenant wellbeing is making the same bet: that responsive, connected environments will define the next phase of public service delivery. And they're right.

But intent alone isn't enough. As our survey shows, only 34% of UK organisations feel fully ready to support smart spaces. Most still face technical gaps, budget constraints and internal hesitations. The result is a fragmented landscape – full of innovation, but short on integration.

That's why readiness matters so much. It turns a one-off pilot into a network-wide capability. It makes services more resilient. It frees up overstretched teams. And it makes public data deliver public value.

The UK has no shortage of ambition. But turning ambition into impact means investing in the one thing every smart space depends on: a network that can keep up.

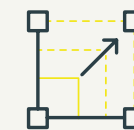


ONLY 34%
OF UK ORGANISATIONS
FEEL FULLY READY TO
SUPPORT SMART SPACES

WHAT TALKTALK BUSINESS BRINGS TO SMART SPACES

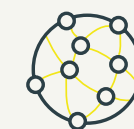
TalkTalk Business works with public and private sector organisations to create future-ready environments that adapt, respond and perform – without ripping up what's already in place.

HERE'S HOW:



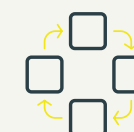
1. CONSULTATIVE PROJECT SCOPING

Every Smart Spaces deployment starts with a tailored scoping phase. We map network architecture, device density, user needs and estate complexity. The solution fits your organisation, not the other way round.



2. RESILIENT, FLEXIBLE CONNECTIVITY

From SD-WAN and leased lines to cellular IoT, TalkTalk Business delivers ultra-reliable coverage, even across remote or sensor-dense environments. Connectivity is designed to scale with your ambitions.



3. SEAMLESS TECH INTEGRATION

We partner with Cisco Meraki, Pangea and other market leaders to connect sensors, platforms and analytics dashboards. Data from each system can be combined, analysed and acted on without expensive custom integrations – true interoperability.



4. MANAGED SUPPORT AND PREDICTIVE MAINTENANCE

With a single pane of glass view of all connected users and devices, Smart Spaces can be easily managed from a central, cloud-based dashboard, providing automated alerts, predictive fault detection and remote access to resolve.



5. DESIGNED FOR REAL-WORLD CONSTRAINTS

We don't assume blank-canvas estates or bottomless budgets. We build solutions around what you already have, adding intelligence in modular, measurable steps.

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SPEAK TO TALKTALK BUSINESS

Make your spaces smarter –
on your terms, at your pace.

To speak to the public sector team [contact us here](#)

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