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Digital transformation in construction is now a compliance essential, not an IT project

A Smas Worksafe executive report

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About the author

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Adam’s goal is to lead with confidence and knowledge, making modern complex issues digestible by breaking down technical jargon and turning it into clear, actionable insight. He is a Chartered Quality Professional of the CQI, A Chartered Fellow with the CMI, and a Technical Member of IOSH. He has recently achieved an MBA with Distinction from Exeter University, a Post-Graduate diploma with Distinction in strategic leadership and a Dean’s award for exceptional performance.

As the Technical Director for Smas Worksafe, Adam helps contractors across the UK gain nationally recognised certifications. Over the past decade, he has established himself as a thought leader with a deep passion for the intersection of technology, regulation, and behavioural science. He maintains a strong interest in Industry 4.0, digitalisation, and the evolving future of Industry – particularly how intelligent systems, data, and automation can enable safer, more ethical, and higher-performing organisations.

Introduction

Construction now finds itself in an era where, quite simply, "having documentation" is no longer enough. New expectations from the Building Safety Act (BSA) 2022 and the Golden Thread of Information have shifted the focus from producing files on demand, to maintaining information that is accurate, current, secure, and traceable across the lifecycle (Building Safety Regulator & Health and Safety Executive, 2024).

At the same time, the Government's Construction Products Reform whitepaper signals a move towards digital product information by default, including digital product records and digital identifiers to support traceability, accountability, and the Golden Thread (Ministry of Housing, Communities and Local Government, 2026).

Here, digital transformation is not just about updating technology. It means changing how information is created, checked, owned, updated, and reused.

The challenge is that construction still largely runs on documents rather than information. This matters more now, because regulatory and assurance expectations have moved towards demonstrable control, not just documented audit trails.

In the sections that follow, we explain why "digitising" often fails, why the industry's structure and workforce demographics contribute towards slow adoption, and how clients can modernise the long tail of SMEs and trades who carry out the works.

1: "Digitising" is not digital transformation

Many construction organisations have already digitised some processes in some form. Obvious examples include scanning paperwork, using online folders, PDF templates, e-signatures, portals, and workflow emails. This reduces paper use, but often leaves the same problems: disconnected information, unclear ownership, and multiple document versions.

Digital transformation is different. This is when you redesign how information is created, controlled, accessed, and then used – so it becomes a working system for delivery and assurance. In practice, that means:

- Structured data capture (not just uploads of separate documents)
- Defined ownership for each information set
- Version control and change history as standard
- Audit trails and access controls built in
- Information that can be verified once and reused many times.

If digitising means turning paperwork into electronic files, transformation means making information reliable, up to date, and easy to use. This is a clear but important distinction.

2: The uncomfortable truth: construction still runs on files, not information

Most organisations do use digital tools, but many projects still rely on PDFs, spreadsheets, email chains, and shared drives as their primary means of managing information. This leads to familiar problems:

- Multiple versions of the "same" document
- Unclear ownership of safety-critical information
- Evidence gathered late, rather than controlled continuously
- Handover packs that exist, but are hard to validate, search, or update.

This approach made sense in a paper-based world, when the question was, "Can you show you had something?" Now the questions are, "Can you show you are in control?" and "Can you show how this information affects other parts of the operation?"

Government guidance for higher-risk buildings is explicit that duty holders must keep a digital record of information about the building (Building Safety Regulator & Health and Safety Executive, 2024). The Golden Thread is framed around ensuring the right people have the right information to understand the building and keep people safe (Building Safety Regulator, 2024).

That is why the focus cannot just be on storing information. The issue is how information is used, governed, and kept current.

3: BSA and Golden Thread expectations raise the standard of proof

The industry understands the direction of travel, but delivery is uneven.

NBS reports that 78% of respondents say they need to be working digitally and 70% say Building Information Modelling/Management (BIM) adoption is needed to make the Golden Thread a reality, yet only 51% say they are clear about how they will do this (NBS, 2023). This gap is the issue.

Most people see the need, but many organisations are still figuring out what "doing it properly" means for their projects and people.

4: Regulatory checkpoints turn weak information into delivery risk

Where approvals and sign-offs rely on evidence at a given point in time, incomplete, conflicting, or unowned information poses both a commercial and a compliance risk.

The higher-risk building regime makes this visible, but the behavioural byproduct is wider: clients, insurers, and assurance teams increasingly expect information that is current, attributable, and controlled, not just filed away (Building Safety Regulator & Health and Safety Executive, 2024).

5: Construction product reform pushes traceability upstream

The Construction Products Reform whitepaper points towards digital information by default and the future introduction of digital product records and digital identifiers, linking these to traceability, accountability, and support for the Golden Thread (Ministry of Housing, Communities and Local Government, 2026).

This matters because product selection, substitutions, installation records, and commissioning evidence are common weak points in audit trails on live projects.

If product information cannot be trusted, connected, or traced through design, procurement, installation, and operation, the whole project is exposed.

So why does construction struggle to modernise?

The issue isn't that the construction industry or its people dislike technology. The industry is filled with technological advances such as:

- BIM and digital design coordination
- Drones and reality capture for progress reporting
- Laser scanning for as-built verification
- Digital twins for asset management
- Offsite manufacturing
- Mobile site apps for inspections and permits
- Modern project controls platforms

The problem is that these tools often sit on top of the same underlying operating model: disconnected supply chains, short project timelines, risk transfer through contracts, and evidence practices built for a paper world.

When information is still exchanged as PDFs, email attachments, and spreadsheets, technology improves the pockets of activity but does not create a single, current, trusted record that can be reused across the lifecycle. In high-consequence work, the safest route is often the most familiar, so organisations default to what has historically reduced disputes and satisfied audits, even when it creates duplication and delay.

High-consequence work rewards certainty over speed

Construction is safety-critical, contract-heavy, and reputationally exposed. When failure happens, it is costly. Organisations therefore tend to prefer proven routines and defensive evidence.

Research on strategic agility makes a relevant point here: construction has high "system relevance", meaning its outputs are essential to how society functions, and failures can have serious consequences beyond the organisation itself.

In system-relevant sectors, tolerance for error is low because mistakes can affect public safety, critical infrastructure, economic stability, or trust in institutions. This tends to produce heavier regulation, stronger assurance expectations, and a culture that favours control and predictability over experimentation (Prange & Hennig, 2019).

Applied to construction, the need for strong safety and information systems during the design and building phase – and again to support the building during its maintenance and lifecycle – is clear. Buildings and infrastructure are safety-critical, long-lived, used by the public, and difficult to "recall" or fix once built – their system relevance is at the core of operations.

The workforce is ageing, and that matters for digital adoption

CITB evidence to Parliament reports that 24% of the construction workforce was aged 55+ in 2023, up from 13% in 2000 (Construction Industry Training Board, 2025). NBS reports a similar age effect in digital adoption: respondents over 55 were less likely to have adopted BIM (59%) and more likely to have no plans to adopt (22%) (NBS, 2023).

The point is not that older workers can't use technology. The issue is that adoption is slower in older cohorts, which slows standardisation and makes it harder to work consistently at scale.

The industry structure spreads capability thinly

CITB describes the construction industry as overwhelmingly made up of self-employed, micro, and SME businesses, which together make up 98% of the industry (Construction Industry Training Board, 2025). Across the wider economy, SMEs make up 99.8% of the UK business population, and construction has the largest number of SMEs of any sector (Department for Business and Trade, 2026).

This structure makes it hard to invest consistently in training, change management, data standards, and shared systems across the supply chain because skills, time, and funding are dispersed rather than concentrated.

Large organisations can adopt faster, but the work is delivered by SMEs

Digital uptake is generally easier for Tier 1 contractors and large corporate organisations because they have scale, standard operating procedures, dedicated support functions, and enterprise tooling. NBS provides evidence for this: the use of cloud computing rises to 87% among large organisations (251+ employees) (NBS, 2023).

However, construction is executed through a long tail of subcontractors, specialists, sole traders, and micro employers. This is the central tension. Large organisations can afford to modernise their internal processes, but the record is only as good as the information captured at the point of work.

NBS shows how this gap appears in practice. BIM adoption falls to 60% among organisations with 25 or fewer staff, and to 56% among those with 15 or fewer staff. The proportion with no plans to adopt rises to 19% (25 or fewer staff) and 23% (15 staff or fewer) (NBS, 2023).

So, the question isn't simply, "How do clients modernise?" It's, "How do we modernise the people and organisations who carry out the tasks, without adding friction that slows delivery?"

What needs to change to modernise those who carry out the work

If the supply chain is fragmented and capabilities are uneven, it's unreasonable to hope every subcontractor becomes and information manager. Instead, the answer is to design operating models and tools that make the right behaviour easy at the point of work.

Practically, that means:

1. **Set a minimum information standard that is realistic on-site:** Define the smallest set of safety-critical fields that must be captured consistently (what, where, when, by whom, to which spec, with which evidence), rather than asking for large evidence "packs".
2. **Design for mixed digital confidence:** Make information capture mobile-first, reduce steps, use plain-language prompts, and attach structured metadata to evidence so people don't have to manage naming conventions and folder structures.
3. **Shift governance burden upwards:** Version control, validation rules, mandatory checks, routing, and audit trails should be handled by the system and the Tier 1 operating model, not by trades on site.
4. **Use procurement requirements with real enablement:** If digital evidence is required, provide onboarding, short guidance, and working examples. Otherwise, requirements become another barrier that pushes risk down the chain.
5. **Make reuse the incentive:** Adoption rises when evidence captured once can be reused across clients and projects, reducing repetition and admin for SMEs.

Closing points

In terms of future travel direction, it's obvious that duty holders must keep information digitally, securely, and in a usable format that forms a single source of truth for higher-risk buildings (Building Safety Regulator & Health and Safety Executive, 2024).

Product reform is also pointing towards digital product information systems to improve traceability and accountability (Ministry of Housing, Communities and Local Government, 2026).

Tier 1 organisations can move faster, but the industry's outcomes depend on the small organisations and trades that carry out the work. Modernisation, therefore, requires more than new tools. It requires operating models that make reliable information capture easy at the point of where the work is done.

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As one of the UK's leading Health & Safety providers, we've helped thousands of contractors show their commitment to workplace safety. Whatever the size of your business, we'll support you to achieve Worksafe Plus certification so you can get recognised nationwide and open up a world of opportunities for your business.

Whether you're ready to go for it now or you would like some more advice, just get in touch and we'll have a chat. You can call us on **01752 697370** or email **info@smasltd.com**.

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