Matterport™

eBook

How Digital Twins Support the Golden Thread

in Building Safety and Compliance

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Introduction

Building safety and regulatory compliance have become critical concerns in the construction and property management industries. With global construction output projected to reach $15.2 trillion by 2030 and the total building floor area nearly doubling to 415 billion square meters by 2050, maintaining security and meeting standards are absolutely necessary. Alongside these challenges, the importance of digitalization is increasingly evident. Digital transformation journeys are often fragmented, with investments misaligned due to a lack of understanding of what digitization entails and the possibilities it unlocks.

This disconnect highlights the need for strategic approaches to digital transformation. Digital tools like digital twins offer a powerful way to streamline operations, improve safety, and foster accountability. At the heart of this transformation is the Golden Thread—a regulatory principle that ensures accurate, accessible, and up-to-date information is maintained throughout a building's lifecycle.

This playbook explores how digital twins enable the **Golden Thread**, providing actionable insights into their role in enhancing building safety and compliance.

Building Safety Act

The Building Safety Act of 2022 represents a significant milestone in UK building regulation, introducing new requirements for building safety management. This legislation reinforces the importance of the Digital Golden Thread and establishes clear responsibilities for building owners and managers.

Key Requirements Under the Act

- **Building Safety Regulator:** New oversight body responsible for implementing and enforcing higher safety standards.
- **Gateway Points:** Mandatory stop-and-go points during design and construction requiring regulatory approval.
- **Golden Thread Requirements:** Legal obligation to maintain accurate, up-to-date building information throughout a building's lifecycle
- **Duty Holder Roles:** Clear definition of responsibilities for building safety during design, construction, and occupation.

What Is the Golden Thread?

The Golden Thread is a regulatory principle developed to address critical safety challenges in the built environment. Its significance was underscored by the tragic Grenfell Tower fire incident in June 2017, which highlighted the need for better documentation and accountability in building management.

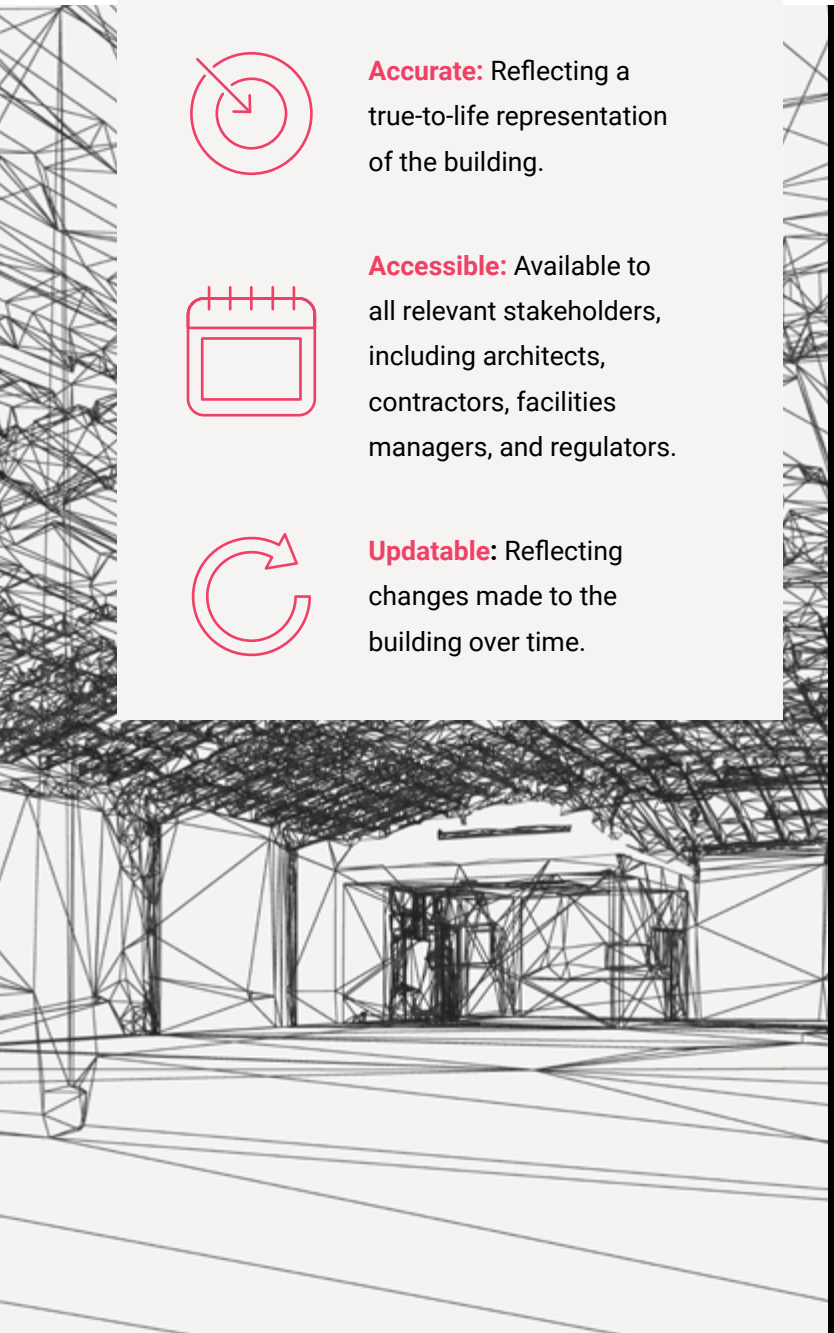
By adhering to these principles, **the Golden Thread fosters a culture of safety and accountability**, ensuring that critical information is created, maintained, and shared responsibly.

With Matterport, the company was able to:

Accurate: Reflecting a true-to-life representation of the building.

Accessible: Available to all relevant stakeholders, including architects, contractors, facilities managers, and regulators.

Updatable: Reflecting changes made to the building over time.



Why Is It Needed?

The Digital Golden Thread represents more than regulatory compliance—it embodies a cultural shift towards transparency, accountability, and data-driven decision-making in building safety management.

KEY COMPONENTS

- **Digital Documentation: Utilizing technologies like Common Data Environments (CDE) & digital twin solutions like Matterport to create accurate digital representations of the entire project, including the buildings.**
- **Information Management:** Implementing robust systems for storing, updating, and accessing building data throughout its lifecycle.
- **Stakeholder Engagement:** Ensuring all parties can effectively contribute to and access building information.

Keep it simple:

The Role of Digital Twins in Supporting the Golden Thread

1. Precise Documentation Through Digital Twins

Digital twins provide a highly immersive, navigable 3D model of a building, capturing everything from structural layouts to equipment placements. Unlike traditional documentation methods, digital twins offer visual clarity and context, eliminating ambiguities. This accurate digital representation serves as a source of truth for stakeholders, ensuring alignment with the Golden Thread's principles.

2. Seamless Lifecycle Management

Buildings evolve through renovations, system upgrades, and maintenance activities. Digital twins enable seamless updates to reflect these changes, making sure the Golden Thread remains intact. Features like annotations, tags, and embedded notes allow teams to document alterations directly within the model, providing a reliable and up-to-date resource for ongoing management.

3. Enhancing Accessibility and Collaboration

Cloud-based digital twin platforms make building information accessible to stakeholders regardless of location. They also give workers a safe way to keep up with projects and share information with clients without having to physically be on site. This level of accessibility breaks down silos, promotes collaboration, and improves decision-making across disciplines, from design and construction to facilities management and regulatory compliance.

4. Streamlining Compliance and Safety Efforts

Regulatory compliance is a cornerstone of the Golden Thread. Digital twins can centralize essential documents such as fire safety plans, evacuation routes, and structural reports, making them easily retrievable during inspections or audits. This simplifies compliance workflows, reduces risks, and enhances overall safety.

Digital Twin Integration With the Building Safety Act

Digital twins play a crucial role in meeting the Building Safety Act's requirements by:

- Providing a centralized platform for maintaining the legally required Golden Thread of information.
- Supporting the new duty holder roles with accessible, accurate building information.
- Facilitating compliance with Gateway Point requirements through comprehensive documentation.
- Enabling effective communication with the Building Safety Regulator through structured data management.
- Creating gateway points so projects can receive approval at the design stage before breaking ground, ensuring safety standards are met from the start.
- Maintaining duty holder roles, helping building owners stay compliant by having up-to-date and accurate building records, including fire safety measures and evacuation plans.

Organizations implementing digital twin solutions should ensure their systems align with the specific requirements outlined in the **Building Safety Act of 2022,** particularly regarding information management and accessibility standards.

Practical Applications of Digital Twins

Construction

Contractors can use digital twins to document as-built conditions, ensuring completed structures align with design specifications and regulatory requirements. This reduces discrepancies and fosters a smoother handover process.

Property Management

Facilities managers leverage digital twins to track equipment placement, schedule maintenance activities, and monitor compliance with safety standards. The visual and data-rich nature of digital twins makes it easier to manage complex buildings efficiently.

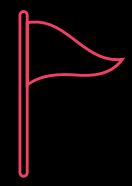
Insurance and Risk Management

Insurers can use digital twins to assess risks, validate claims, and resolve disputes. By providing a comprehensive visual and data-driven record, digital twins reduce ambiguities and facilitate quicker resolutions.

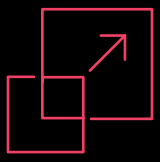
Renovation and Retrofitting

For existing buildings undergoing renovations to meet compliance standards, digital twins provide a detailed record of current conditions, track modifications, and ensure that upgrades align with safety and regulatory requirements. This helps streamline approvals, minimize disruptions, and maintain an accurate compliance history.

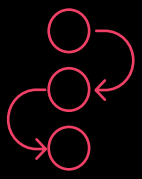
Industry Best Practices



Start With Clear Objectives: Define specific goals for your Digital Golden Thread implementation, aligning them with regulatory requirements and organizational needs.



Choose Scalable Solutions: Select technology platforms that can grow with your needs and integrate with existing systems.



Implement in Phases: Begin with pilot projects to test and refine your approach before full-scale deployment.

Focus on User Training: Ensure all stakeholders understand how to use the chosen tools effectively. management and accessibility standards.

Industry Developments

As the industry continues to evolve, organizations should prepare for:

- Enhanced Regulatory Requirements: Implement comprehensive digital documentation systems to stay ahead of evolving building safety regulations.
- Technological Advancements: Prepare for the integration of emerging technologies such as augmented reality and advanced analytics.
- Increased Stakeholder Expectations: Meet growing demands for transparency and accessibility in building information management.

The successful implementation of the digital Golden Thread requires a holistic approach that combines technology, processes, and people.

> By focusing on these comprehensive recommendations, organizations can create a robust foundation for building safety and compliance while preparing for future industry developments.

Building the Future with Digital Twins and the Golden Thread

As the construction and property management sectors continue to adopt digital transformation, the Golden Thread remains a critical driver of safety, accountability, and efficiency. Digital twins offer a powerful tool to meet these demands by enhancing transparency, improving collaboration, and streamlining compliance.

By integrating digital twins into your operations, you can:

- Maintain an accurate and up-to-date repository of building information.
- Enhance collaboration among stakeholders.
- Simplify compliance with regulatory standards.
- Optimize building safety and operational efficiency.

> Investing in digital twin technology isn't just about meeting current compliance requirements; it's about future-proofing your processes and creating safer, smarter, and more connected buildings.

Why Matterport Digital Twins?

Matterport digital twins set a new standard for the architecture, engineering, and construction (AEC) industry by providing highly accurate, immersive 3D models that transform how projects are designed, constructed, and managed. In fact, commercial real estate professionals had an 85% reduction in transaction time with Matterport digital twins, giving them more time in the day to focus on other pressing tasks.

As a trusted platform for creating detailed spatial data, Matterport enables organizations to effortlessly capture and maintain the digital Golden Thread required by the Building Safety Act. With its user-friendly interface and cloud-based accessibility, Matterport ensures that building information is accurate, up-to-date, and easily shared among stakeholders, promoting collaboration and transparency. Not only does Matterport provide millimeter-accurate scans but it also integrates seamlessly with BIM tools and enables cloud collaboration with automated updates.

By integrating Matterport into your projects and building operations, you can streamline compliance, enhance safety, and simplify lifecycle management. Take Wesbuilt Construction, for instance. These New York-based contractors saw a 61% reduction in document errors and omissions and 17% fewer claims and litigation by making the switch to Matterport.

Whether it's documenting as-built conditions, tracking changes over time, or centralizing compliance documents, Matterport digital twins provide an unparalleled foundation for achieving safer, more efficient, and future-ready buildings.

Want to improve your building safety and compliance? Trust Matterport to make this transition smooth and stress-free, giving your team the tools to track project progress from start to finish and maintain accurate, accessible records. **Contact us today to see our solutions in action.**