THE **GOLDEN THREAD** OF INFORMATION

GUIDE TO GETTING STARTED

Bentley®

WHY THE GOLDEN THREAD?

The supply chain that supports construction and the built environment is notoriously fragmented, with much disconnection at an information management level.

This was tragically demonstrated during the Grenfell Fire enquiry in London, when up to 200,000 contractor documents had to be sourced, identified, and analysed to discern which parties could be held liable.

After an independent review of building regulations and fire safety in particular, the resulting report, "Building a Safer Future", recommended a more stringent building safety regiment, introduced through the Building Safety Act of 2022.
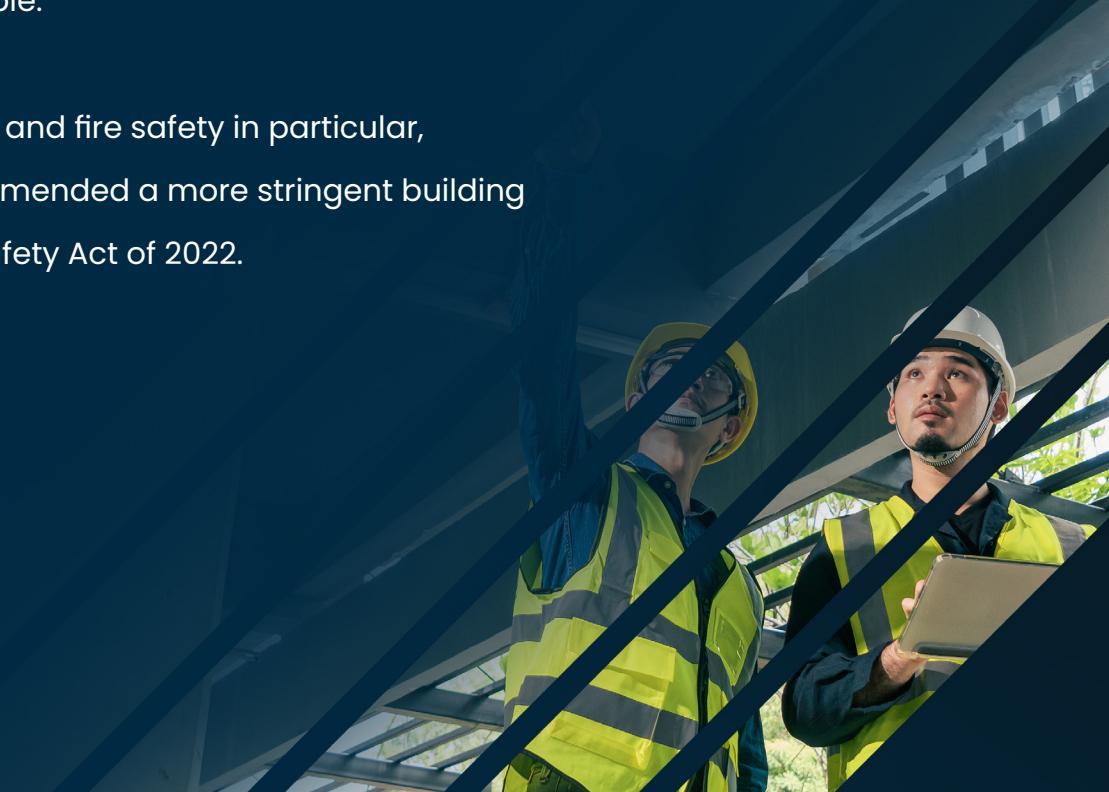
WHY THE GOLDEN THREAD?

Part of the recommendations include the golden thread of information to address the problems of key information not being effectively managed or even available throughout the lifecycle of the building. It will ensure the right people have the right information at the right time.

Must have at least:
18 Metres High
7 Storeys
2 Residential Units*

Who does it affect

- Developers
- Owners
- Landlords
- Principal Contractors
- Principal Architects

Type of Buildings affected*

- High-rise residential
- Student accommodation
- Hospitals
- Care homes
- Any building owned or occupied by the crown or government.

* applies to buildings that are at least 18 metres in height or have at least seven storeys and at least two residential units. It also applies to care homes and hospitals meeting the same height threshold during design and construction, but not during occupation.

WHY THE GOLDEN THREAD?

The golden thread refers to both the information about a building that allows someone to understand a building and keep it safe and the information management tools to ensure the information is accurate, easily understandable, can be accessed by those who need it, and is up to date.

Information should be created and maintained throughout a building's lifecycle, through design and construction stages, and then from construction to handover and operations.

It is intended for the information and documents required (for instance registration and certifications, safety case, mandatory occurrence reporting and information to support residents' engagement) to be part of the golden thread.[1]

EASY TO UNDERSTAND

UP-TO-DATE DATE SOURCE

ACCESSED BY THOSE WHO NEED IT

INFORMATION IS ACCURATE

1. https://www.gov.uk/government/publications/building-regulations-advisory-committee-gold-en-thread-report/building-regulations-advisory-committee-golden-thread-report
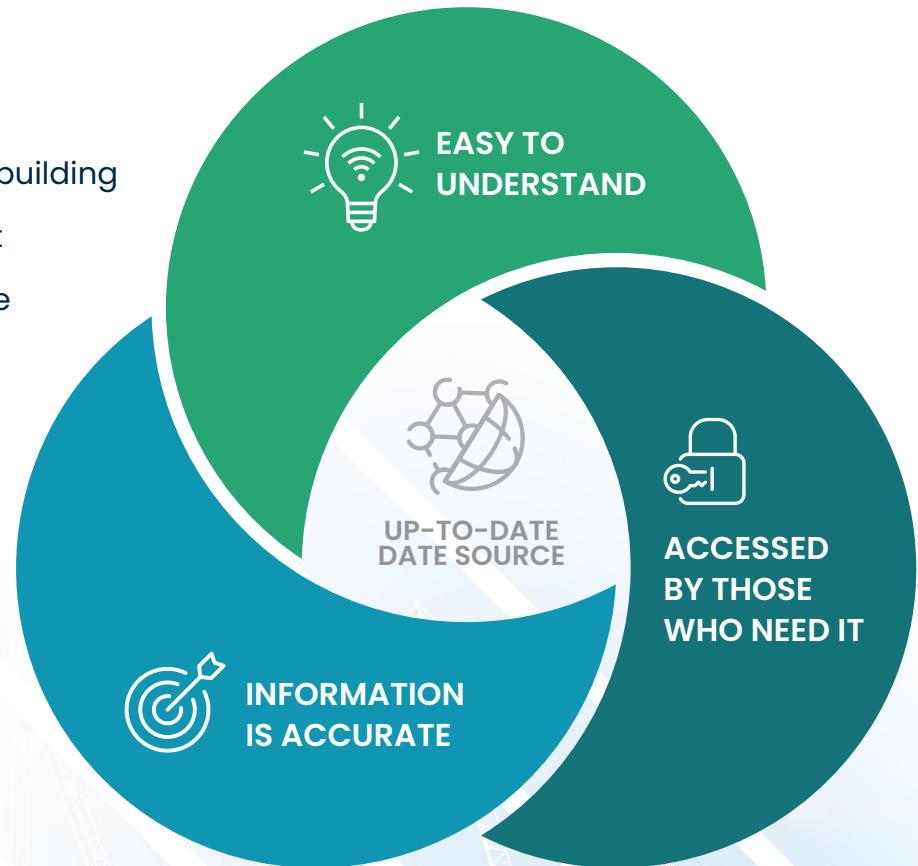
SINGLE SOURCE OF TRUTH

As a **single source of truth** the golden thread will record changes relating to a building's safety and the decision-making process behind them.

Information needs to be held in a structured **digital** manner that can be managed and accessed in the future.

Common data environments (CDEs), already used across construction related projects, support many of the principles (see next page) behind the golden thread. CDEs should define and retain the approval workflows that a document takes as it progresses through various stages rather than being a simple document filing system.

It is recommended that landlords, property developers, and asset owners should:

- Start to identify which properties may be affected.
- Identify what data they already have and where it is stored.
- Decide how they plan to standardise it into a digital format so it can be widely shared to the key stakeholders, or dutyholders, which include residents, regulators, and emergency services.
- Ensure staff is familiar with the requirements and processes.

SINGLE SOURCE OF TRUTH

START COLLATING*

EXISTING BUILDINGS

- Building size and height
- Full material and manufacturer product detail
- All safety-critical layers of protection
- Assessments and certificates
- Digital data capture of completed buildings, for example via laser scanning, 3D or 2D models, or plans
- Inspection reports

NEW / FUTURE BUILDINGS

- Building size and height
- As-built drawings and models
- Full material and manufacturer product detail
- Safety hazards and potential risks and their strategies
- Incorporate BIM requirements in contracts

*At the time of publishing the required information has yet to be defined

PRINCIPLES

The U.K. Building Regulations Advisory Committee working group produced a set of **golden thread principles** that provide guidance on the expected requirements that will need to be met for the golden thread to meet the government's expectations. Many of them are also the principles behind digital information management solutions such as common data environments.

- **Accurate and trusted:** how and when information is updated and who should update and check that information.

- **Residents feeling secure in their homes:** should support Accountable Persons in providing residents the assurance that their building is being managed safely.

- **Culture change:** require increased competence and capability, different working practices, updated processes, and a focus on information management and control.

- **Single source of truth:** reduce the duplication of information (email updates and multiple documents) and help drive improved accountability, responsibility, and a new working culture.

- **Secure:** sufficient protocols in place to protect personal information and control access to maintain the security of the building or residents. It should also comply with current GDPR legislation where required.

PRINCIPLES

- **Accountable:** there is accountability at every level – from the client or accountable person to those designing, building, or maintaining a building.

- **Understandable and consistent:** use standard methods, processes and consistent terminology so that those working with multiple buildings can more easily understand and use the information consistently and effectively.

- **Simple to access (accessible):** information needs to be stored in a structured way so people can easily find, update, and extract the right information. To support this the government will set out guidance on how people can apply digital standards to ensure their golden thread meets these principles.

- **Longevity, durability, and shareability of information:** easily handed over and maintained over the entire lifetime of a building, aligning with the rules around open data and the principles of interoperability.

- **Relevant/proportionate:** The objective of the golden thread is building safety and therefore if information is no longer relevant to building safety it does not need to be kept.

THE CULTURAL SHIFT

New developments most probably already incorporate digital standards such as **building information modelling** (BIM) and utilize common data environments (CDE) as part of their standard process for design and construction. But, they are traditionally owned and managed by the main contractor or designer rather than the asset owner or landlord.

In the future, there will be legal responsibilities on those who commission building work, those who are in the design and construction process, and those who are responsible for managing structural and fire safety in higher-risk buildings when they are occupied, to put in place and maintain a golden thread.

For many property and asset owners, **the golden thread will require a cultural shift** to a more collaborative, digital, and open way of working.

THE 'GOLDEN LOOP'

Across the lifecycle of a building, **many people will require access to information in a secure and managed way.** Information should be kept up to date and accessed by a number of different stakeholders across the lifecycle of the building, such as those demonstrated below.

CLIENT
PLANS AND
REQUIREMENTS

DESIGNERS
(ARCHITECTS & ENGINEERS)

OPEX ADVISORY
CONSULTANT

DISPOSE
REPURPOSE

DESIGN &
CONSTRUCT

SUB-CONTRACTORS

CLIENT OPEX
(FM) TEAM

MAIN CONTRACTORS

CAPEX ADVISORY
CONSULTANT

ASSET
IN USE

HANDOVER

APPROVAL &
COMPLIANCE

RESIDENTS

JOINT VENTURE PARTIES

CLIENT CAPEX TEAM   CONSULTANTS   REGULATOR
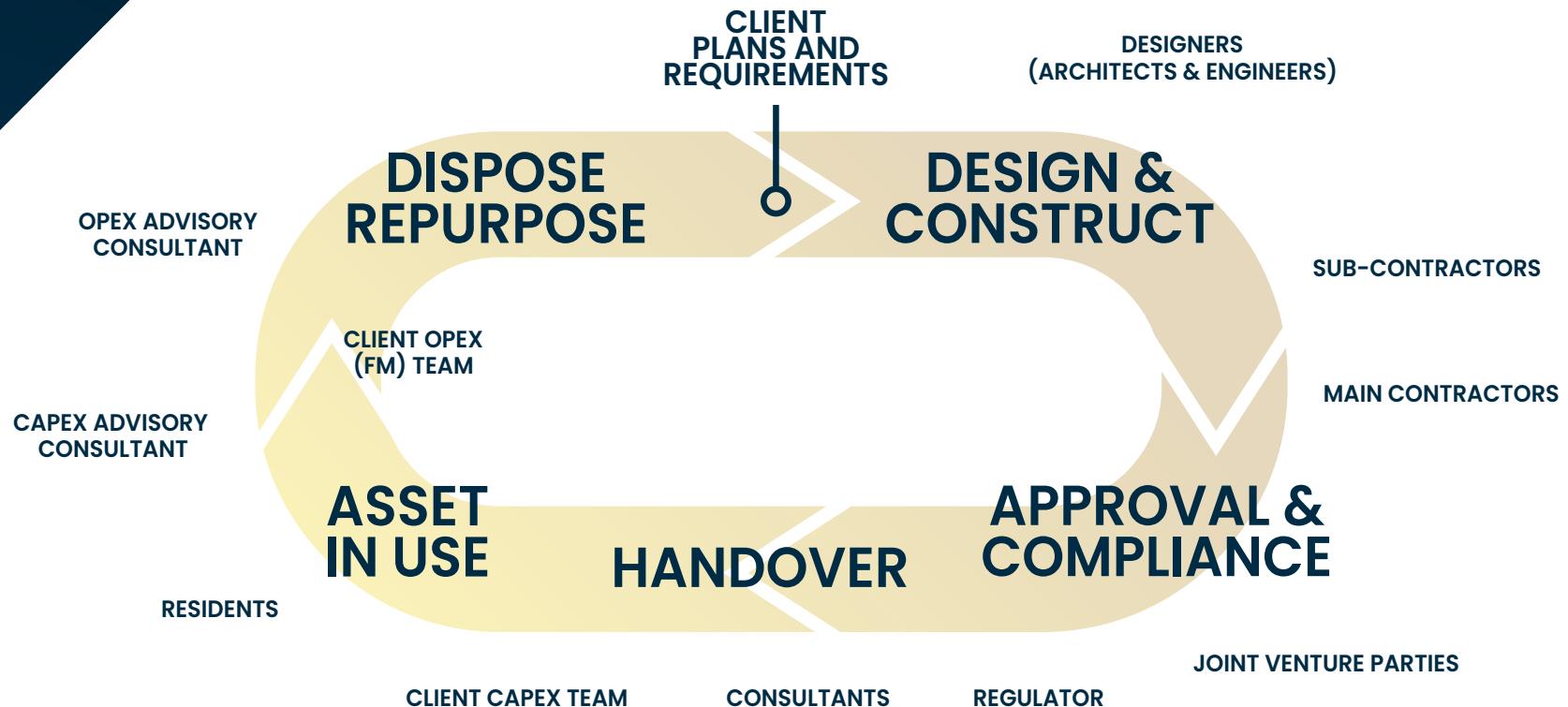
SIMPLE TO ACCESS

Although the golden thread need not consist of a 3D digital twin of the building, for many a visual approach makes the most sense, enabling key stakeholders and project teams to easily locate and access information. This approach is intuitive, especially if there are a number of properties across a large area.

One of the simplest ways for end users such as residents or maintenance teams to access information is by attaching QR codes on or near the asset. For example, a door to a flat or dormitory, or near the fire sprinklers. The QR code can then be scanned on their mobile to access the relevant information such as safety testing results or a floor map to the nearest fire exit.

Alternatively, existing 2D plans could be digitized and easily searched using plain language questions such as — Where are all the fire extinguishers? When were they last checked and by whom?

BCDE | THE PERFECT SOLUTION

Bentley Systems' BCDE common data environment supports many of the principles of the golden thread and benefits from its ability to integrate with other solutions within the Bentley family, as well as your existing ecosystem.

We support you no matter what your level of digital transformation – from those beginning their journey through to more ambitious organisations that see digitization as a tool to meet their strategic goals for better sustainability, increased health and safety, and improved performance.

BCDE is available in three license models that enable upgrades as required – from an individual project through to a fully configurable enterprise system, ultimately supporting the way you work.

Visit our website or contact us to find out more.

LEARN MORE ›

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