ASITE™

Your Guide to Becoming ISO 19650 Compliant

Parts 1 & 2



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Why You Should Care About ISO 19650

Delays, cost overruns, and disputes are all too common in the Architectural, Engineering, Construction, and Operational (AECO) industries. In fact, large projects typically take 20% longer to finish and can run up to 80% over budget, according to McKinsey Global Institute.

These issues can be put down to poor information management. This is hardly surprising, considering a single construction project produces massive amounts of data and information from various sources. Typically, you may have multiple stakeholders from varying disciplines contributing work and deliverables in different formats.

The result? Inaccessible and unreliable project data and information.

Many of these challenges could be solved by simply applying Better Information Management processes, more commonly referred to as Building Information Modelling (BIM), and implementing the right technologies to facilitate them.

But with the need for better information management processes comes standards to streamline these new ways of working.

This is where ISO 19650 comes in.

This guide will take you through what you need to know about ISO 19650, including:

- What is ISO 19650?
- Why You Should Become ISO 19650 Compliant
- The Benefits of ISO 19650
- How to Become ISO 19650 Compliant

Ultimately, this guide will highlight the importance of implementing the ISO 19650 suite of standards on your projects.

While you're planning, feel free to get in touch with our team at: sales@asite.com

What is ISO 19650?

The ISO 19650 standard is “an international standard for managing information over the whole lifecycle of a built asset using building information modeling (BIM).”

The framework was developed to outline the recommended collaborative processes for effectively managing information about buildings and all other types of assets in the Built Environment—building, infrastructure, and the systems and components throughout the asset lifecycle.

Ultimately, the suite of standards details the best practices for information management within the AECO industry.

The suite of standards is relatively new, moving from a UK standard to an international standard in 2019. They were built based on lessons and good practices learned from implementing the British BS 1192 and PAS 1192 standards within the UK and international construction industries.

The framework is supported by key construction bodies worldwide.



Embracing Digital Ways of Working

As the industry moves to more digital ways of working, stakeholders need to collaborate and communicate in an open and structured manner to control the digital flow of information and outcomes.

The ISO 19650 offers this approach.

The purpose of the standard is to provide the right information, to the right person, at the right time to make the right decision. It defines information management principles and requirements within a broader context of digital transformation. This ensures accurate information sharing, with a unique reference code (or fingerprint) marked on each iteration.

By using standardized naming conventions, a unique reference code is created. This allows iterations of a document to be tracked with the same reference code. As a result, tracking functionality is facilitated by additional metadata assigned to documents.

Another framework fundamental is the required use of a Common Data Environment (CDE)—an information management platform that facilitates collaborative information exchange across all project stakeholders across the asset lifecycle.

What is a Common Data Environment (CDE)?



Simply put, a Common Data Environment (CDE) is your best answer to taming the chaos swirling around any project throughout its lifecycle.

A CDE can ensure everyone has the most recent information in real-time—from the field to the office. In the most basic terms, its central repository provides a single source of information for the project or asset. This agreed source of information is used for collecting, managing, and disseminating each piece of information throughout a controlled process, according to the ISO 19650 definition of a CDE.

A Common Data Environment will:

- Create a flow of information throughout the asset lifecycle—from conception to delivery and beyond
- Create a central and secure repository for managing your supply chain
- Provide a single source of integrated project information and simplify the construction ecosystem
- Centralize your knowledge base, record analytics, and allow all project members to feed into a central hub
- Maintains a secure and immutable audit tail—providing assurance to the information within the CDE and the wider project
- Ensure all stakeholders work within the same collaborative environment
- Enhance decision-making, create more advanced procurement systems, stamp out waste, and prevent many issues from cropping up

According to AEC Hub, a Common Data Environment (CDE) is the gold standard for managing project information when multiple parties are involved.

While the scope of your CDE may differ depending on your project size—for smaller projects a simple EDMS (Electronic Document Management System) may suffice while complex projects with many stakeholders may require a more comprehensive CDE—a CDE is a vital step in correctly using ISO 19650.

ISO 19650: Ownership and Accountability

Implementing an ISO 19650-compliant CDE ensures that all stakeholders and project teams work together based on shared expectations, conventions, and protocols across the asset lifecycle.

The standards introduce a responsibility matrix. This outlines who owns, delivers, and verifies the data. The ISO 19650 series establishes that the owner of a CDE within a project will typically be the Appointing Party—the organization 'owning' the appointment or the project.

The **Appointing Party** is usually the client or asset owner. However, a third party occasionally may host, manage, or support on their behalf. According to the UK BIM Framework, their role is to provide a CDE to manage all project information throughout the asset lifecycle. They are also responsible for inviting other parties to collaborate and share information in the CDE.



Ultimately, what the ISO 19650 standard establishes is the client's responsibility to drive and set the tone for digital collaboration across the project. As the Appointing Party, they must set the project's information requirements in line with the ISO standards. This means the client influences the digital collaboration and the quality of deliverables.

The win-win? Now, ambiguity around ownership and the roles that each party is responsible for is eliminated.

ISO 19650: A Timeline

The ISO 19650 suite of standards is relatively new.

2017

In February 2017, the BSI (British Standards Institution) published a new draft standard for comment, divided into two parts:

- ISO 19650-1—Organization of information about construction works—Information management using building information modeling. Part 1: Concepts and principles.
- ISO 19650-2—Organization of information about construction works—Information management using building information modeling. Part 2: Delivery phase of assets.

2019

In January 2019, the final version of the standard was published, superseding the BS 1192:2007+A2:2016 and PAS 1192-2:2013 standards.

2020

In 2020, two further additions were added to the standard—Part 3 and Part 5:

- ISO 19650-3—Organization and digitization of information about buildings and civil engineering works, including building information modeling (BIM)—Information management using building information modeling. Part 3: Operational phase of the assets

- ISO 19650-5—Organization and digitization of information about buildings and civil engineering works, including building information modeling (BIM)—Information management using building information modeling. Part 5: Security-minded approach to information management

2022

In 2022, several changes to the standards that make up the UK BIM Framework were introduced, aimed at enhancing current standards. They deal with industry challenges and improving the understanding and use of the standards framework to improve project data management:

- ISO 19650-4—Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling. Part 4: Information exchange

- FLEX 1965—Built Environment - Informational Management using Building Information Modelling (BIM). Method of Specifying

Both updates were released and made publicly available in August 2022.

Benefits of Becoming ISO 19650 Compliant

The ISO 19650 suite of standards addresses the organization and digitization of information challenges within our built environment.

Here, it sets the rules for exchanging, recording, versioning, and organizing information for everyone involved in a project. This common approach to information management helps projects overcome challenges holding them back and move forward with confidence.

While many may be apprehensive about investing in BIM and implementing the right technologies and processes to facilitate it, it's clear that the benefits of becoming ISO 19650 compliant are worth the investment.

Here are just five benefits of becoming ISO 19650 compliant:

1 You Ensure the Right People Have the Right Information

How often has project information been sent to the wrong person? Or a document waiting for approval but hasn't been sent to the right person to approve? Or has a supplier provided their document but never notified the project manager?

ISO 19650 negates all of this.

One of the most fundamental aspects of the ISO 19650 suite of standards is ensuring the right people have the correct information at the right time.

While this may seem like a simple benefit, information not being in the right person's hands when required has been known to cause significant project delays. With ISO 19650, ambiguity ends, and projects can push forward.

2 You Save Time and Money

With better information management comes cost savings and time back to your workers.

The ISO 19650 standard helps increase the efficiency of information processes, improve the clarity of the information, and facilitate better collaboration. This allows projects globally to increase productivity.

Consider this stat: according to a recent KPMG report, between £5.10 and £6 of direct labor productivity gains could be made for every £1 invested in information management.

These gains are not just limited to the UK. In Australia, this equates to up to AUD$11, in North America US$8, in UAE AED25, and those countries using the Euro could stand to save up to €7.

Time is no longer wasted manually sending a document to stakeholders or searching through files to see if your supplier has submitted their deliverables.

Without ISO 19650, these simple tasks become time-consuming, wasting valuable time and impacting your bottom line.

3 You Get a Better Overall View of Your Project

Projects typically bring together numerous players from different backgrounds, all inputting information in various formats at different times.

Without a way to monitor these inputs, it can lead to information chaos. And a project manager or asset owner can quickly and easily lose track of what is going on in their project. ISO 19650 reigns this chaos in and creates betters project visibility. Project owners can streamline these complex processes with Information Deliver Planning (IDP)—a key component of becoming ISO 19650 compliant.

Simply put, IDP takes what is usually in a manual spreadsheet and offers users a proactive and trackable project management tool. This enhances project visibility and helps keep your projects on track.

4 You Keep Risk to a Minimum

Risk, errors, and disputes are major causes of concern for the construction industry.

This shows no sign of going away any time soon. In fact, according to KPMG, 78% of engineering and construction companies believe that project risks are increasing.

The ISO 19650 suite of standards helps mitigate some of this risk.

Everyone has access to the project information they require. Deadlines and

deliverables are crystal clear. Roles and responsibilities are clearly outlined. The health and safety of workers on-site is improved. And errors or mistakes are easier to spot and deal with before they get too far.



Take automated workflows, for example. Here, the relevant information is automatically sent to the right person for approval. Stakeholders can no longer claim not to have been given the correct information, and if the project becomes stalled, it's easier to pinpoint the blocker.

In fact, according to Dodge Data Analytics—the commercial construction project data, market forecasting and analytic services company—61% of those in commercial construction report BIM processes reduced project errors. While the 2021 JBKnowledge ConTech report found most BIM users use the tech for preventing problems before they occur—clash detection and visualization.

5 You No Longer have Double Vision

Without standardizing your ways of working, the same document or file could be in your project management system multiple times. Or worse still, multiple versions of the same doc exist with no one knowing which is the most accurate and up to date.

The ISO 19650 suite of standards avoids this duplication.

With the standardized naming convention, documents are inputted into the CDE with clear and concise metadata. This outlines precisely which iteration the document is. In some cases, the most up-to-date version will override the previous version—meaning no one is left unsure about the latest edition. And as each ID is unique, you no longer must worry about multiple files with the same name.

4 Ways to Improve ISO 19650 Compliance

For many, ISO 19650 compliance can sometimes feel like a daunting task—a total revamp of your set ways of working or a process that only large-scale construction companies or megaprojects need to undertake.

This could not be further from the truth.

An ISO 19650-compliant CDE ensures all stakeholders across design, manufacturing, construction, and operational processes work from the same information as required or at the right time.

However, to become ISO 19650 compliant, a CDE alone is not enough. As well as implementing a CDE, the project team must also follow standardized processes that can be enabled and enhanced by technology. This includes:

1 A Standardized Naming Convention

One of the first and most accessible ways to comply with ISO 19650 is by implementing a standardized naming convention.

Here, several attributes—metadata—are combined to create your document reference. This unique ID does not change.

Each National Annex—a region-dependent appendix to the common international standard—will define the naming convention standards, which will differ from county to country. For example, the current UK National Annex comes in the form:

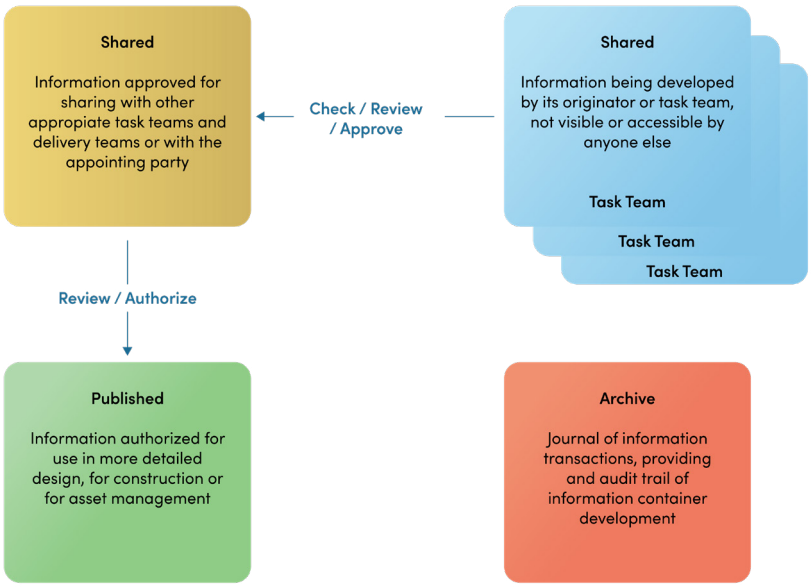


Other important metadata from a CDE perspective is the status of the document, this is a mandatory component. A classification code is also highly recommended, for example in the UK annex this is uniclass 2015 published by NBS.

Implementing a standardized naming convention makes it easier to find your documents, avoid duplication, and facilitate an audit trail across your project or portfolio of projects.

2 Automated Workflows in Line with ISO 19650

Once you have implemented a standardized naming convention and assigned metadata to create a document reference—attributes are automatically selected when uploading a document—ensuring effective collaboration around these documents is the best next step.



Throughout the asset lifecycle, documents move through different states. In these states, different people have visibility over this document. The document must pass through gateways to move to these different states—check, review, approval, or authorize processes.

Here, different status codes—or Purpose of Issue—can be assigned to a document to trigger a workflow and send it to the relevant stage.

For example, if you need to share a document with a task team, you can simply upload it to your CDE and populate it with the relevant status code. The document will automatically be sent to the appropriate team—no need for mass emails or multiple Teams messages.

Ultimately, automated workflows ensure the right people see the correct document at the right time.

3 Cloud-Based Model Management

The next step in ensuring ISO 19650 compliance is implementing cloud-based model management.

Previously referred to as "Volume Strategy," now called "Federation Strategy," this relates to viewing, managing, and coordinating your models within your CDE.

Different models come together by merging individual discipline-specific models to create a single project model.

Model coordination is facilitated by bringing all models together in a cloud-based environment. With this cloud-based viewer, model viewing becomes more accessible—you no longer require a fancy computer or specific desktop-based model viewing software.
This provides project stakeholders with a space to upload, review, and detect clashes between project models. Increased accessibility also means the wider project team can view the model, introducing new perspectives on the project and allowing the earlier identification of issues and risks.

Stakeholders will benefit from an integrated approach, and collaboration will be promoted. Design errors are ironed out quickly, clashes are detected and resolved, and estimations are improved.

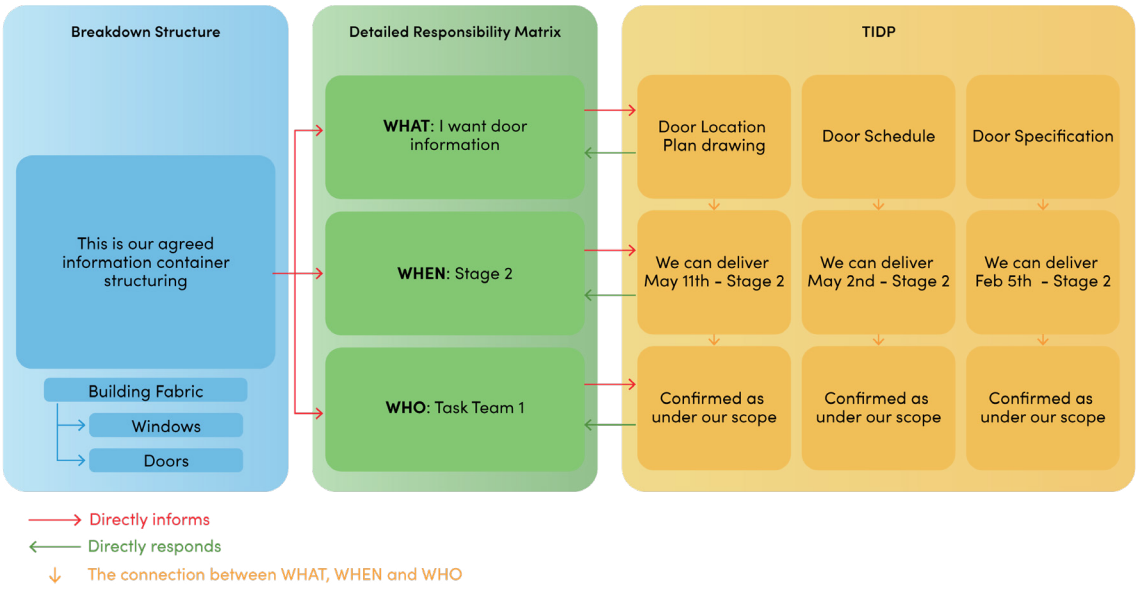
4 Digital Information Delivery Planning

Once you have started using models, implemented automated workflows, and set a standardized naming convention, it's time to introduce an Information Delivery Plan (IDP).

An IDP is a proactive approach to managing information.

In any project, you already know:

- What your deliverables are
- Who is responsible for delivering them
- When they are due
- In what format and quality to be delivered



Typically, this is received as drawing registers or TIDPs in spreadsheets, which is then combined by the main contractor or the "lead appointed party."

In the CDE, with an IDP, you can create placeholders for the documents you expect before they are delivered. These placeholders can be assigned to the relevant people. Ultimately, an IDP gives you a digital tool to track whether required documents are delivered or not.

Asite at the Forefront of the ISO 19650 Standards

Asite has been at the forefront of advancements within the construction industry worldwide for years and works closely with experts in the field to help develop the industry BIM ISO standards.

As such, Asite developed its platform in alignment with these and industry best practices.

BSI Kitemark for BIM Software

This coveted position allowed Asite to bring its expert knowledge and play an instrumental role in creating the BSI Kitemark for BIM Software.

The BSI Kitemark is one of the most globally recognized quality marks; the BSI Kitemark for BIM Software assures that your information is managed according to the process requirements of the ISO 19650 framework.

The BSI Kitemark for BIM provides a valuable token that demonstrates stakeholders' experience, ability, and commitment to this vision, giving them a competitive edge and, hopefully, inspiring others to pursue similar paths.

Asite's Industry Compliant CDE

Asite has positioned itself as a key player in the industry and the benchmark in best practice, notably providing extensive experience consulting on the implementation of construction projects supporting compliance with the ISO 19650 suite of standards and boasting an industry-leading fully-compliant CDE.

As well as developing the Kitemark, Asite also at the same time achieved the certification for its CDE—one of the first organizations globally to achieve the certification.

The certification assures that the Asite CDE's user functionality enables information management in accordance with the relevant process requirements of the ISO 19650 framework.

The Asite Digital Engineering team is also one of only a few organizations worldwide with a British Standards Institution's Associate Consultant Programme (BSI ACP) certificate of membership. It consults on the BS EN ISO 19650 standards and supports clients in their journey to achieve BSI BIM Kitemarks.



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The Asite Digital Engineering Team

As members of the BSI Associate Consulting Programme, the Asite Digital Engineering team is part of a select group assured to consult on the BS EN ISO 19650 series of standards.

Also, due to its ACP membership, Asite is now part of a select group worldwide consulting on the BS EN ISO 19650 standards and supporting clients to achieve BSI BIM Kitemarks. This includes the BSI Kitemark for BIM Design and Construction, BSI Kitemark for BIM Asset Management, BSI Kitemark for BIM Objects, and BSI Kitemark for BIM Asset Life Cycle.

Accordingly, this BSI ACP certificate has allowed the Digital Engineering team at Asite to widen the scope of the services offered by the Professional Services team. Clients can now supplement standard project implementation with the new Digital Engineering Service Package.

Available to all new and existing clients, the package includes the configuration of workspaces to comply with ISO 19650 standards and Asite's Digital Engineering products, including the Asite collaborative BIM (cBIM) and Information Delivery Plan (IDP) solutions.

One of the Asite Digital Engineering team's primary focuses is their ISO 19650 consultancy to their clients. They offer implementation and compliance advice and "health checks" to ensure that projects continually adhere to best practices.

The team is also committed to facilitating the growing adoption of BIM within the construction industry. Our goal is to transform how the built environment and infrastructure designs, builds, operates, and integrates projects.

ISO 19650 is transforming the global construction industry by providing a framework that facilitates regional and cross-border collaboration through an internationally recognized way of managing asset information throughout the asset lifecycle.

With high-level BIM usage throughout the region not too far away, now is the time to get ahead of the game.

About Asite

Asite is the world's leading data platform for the built environment, helping organizations come together, plan, design, and build with seamless information sharing across the entire supply chain.

Founded in 2001, the Asite Platform has been used widely across the globe as the go-to- project management platform for complex, capital projects, including Dubai International Airport, Thames Tideway, and Australia's Bushfire Recovery Program.

Today, more than 62,000 organizations, including Laing O'Rourke, Goldman Sachs, Transport for London (TfL), Aldar Properties, and the New York City Metropolitan Transportation Authority (MTA), utilize Asite's cloud-based Data Platform with their 127,000 projects and over 53 million files.

Asite is headquartered in London with regional offices in New York, Houston, Amsterdam, Riyadh, Dubai, Sydney, Hong Kong, and Ahmedabad.

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