2025

ISO 19650 MADE EASY

A PRACTICAL GUIDE FOR BIM MANAGERS

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INTRODUCTION

As a BIM Manager, you've likely encountered ISO 19650, the international standard governing information management throughout the lifecycle of a built asset, spanning design and construction to operation and maintenance. Perhaps a client has even mandated ISO 19650 compliance for your upcoming project.

But what are the implications? How can you achieve compliance without disrupting your existing workflow?

This guide offers a pragmatic roadmap to ISO 19650 compliance, tailored specifically for BIM Managers in Construction. We'll break down the standard, provide concrete steps, and share practical tips to confidently navigate the compliance journey.

UNDERSTANDING ISO 19650

ISO 19650 provides a structured framework for managing information across all stages of a built asset's lifecycle. It prioritizes collaboration, information sharing, and the utilization of a Common Data Environment (CDE).

As of January 2025, ISO 19650 is comprised of six parts, each addressing a specific aspect:

- **ISO 19650-1: Concepts and principles**: This part lays the foundation, defining key terms, concepts, and principles for information management in the context of BIM.
- **ISO 19650-2: Delivery phase of the assets**: This focuses on the information management processes during the design and construction phases of a project.elivery phase. As such, that is the focus of this guide.

- **ISO 19650-3: Operational phase of the assets**: This part deals with information management during the operational and maintenance phases of an asset's lifecycle.
- **ISO 19650-4: Information exchange**: This part specifies requirements for using the Industry Foundation Classes (IFC) for data and information exchange.
- **ISO 19650-5: Security-minded approach to information management**: This part provides guidance on managing information security risks.
- **ISO 19650-6: Health and safety information**: This part outlines how to manage health and safety information using BIM and throughout the lifecycle of an asset.

For BIM Managers involved in the design and construction phases of a built asset, ISO 19650-1 and ISO 19650-2 are perhaps the most immediately relevant. These parts provide the framework and guidance for managing information during the project delivery phase. As such, that is the focus of this guide.

A BRIEF HISTORY

- ISO 19650 is based on the UK's BS 1192 series of standards, which were developed in response to the need for better information management in construction projects.
- The first parts of ISO 19650 were published in 2018, with subsequent parts and updates released in the following years.
- The latest full-text standards can be purchased via the ISO website and through national standards bodies like the British Standards Institution (BSI).

WHY ISO 19650?

Clients, particularly asset owners and developers, are increasingly requiring ISO 19650 compliance to achieve some of the objectives listed below:

- **Minimize errors and rework:** Clear information management processes reduce the risk of costly mistakes.
- **Improve collaboration:** A shared CDE and defined workflows enhance communication and coordination between project teams.
- **Facilitate better decision-making:** Access to reliable and up-to-date information supports informed decision-making throughout the project lifecycle.
- **Enhance project outcomes:** Ultimately, ISO 19650 contributes to delivering projects on time and within budget, with improved quality and reduced risk.

KEY CONCEPTS

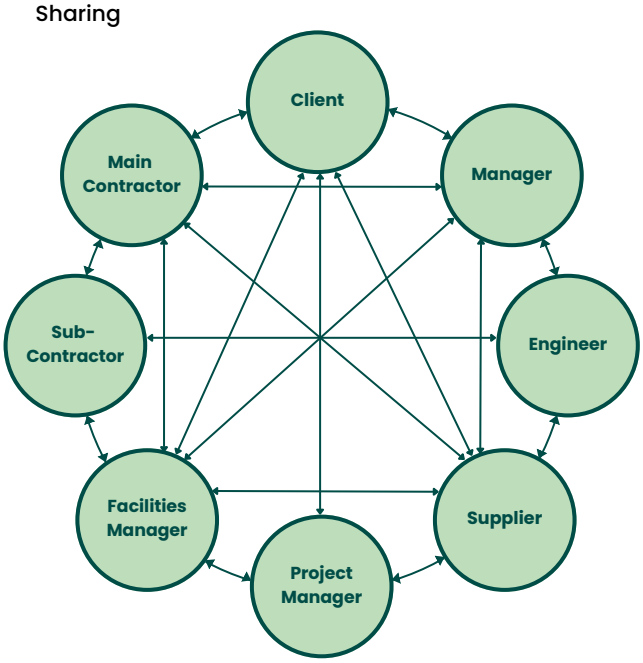
A number of Key Concepts are central to the application of ISO 19650. This document will not go through everything, but instead highlight a small number of concepts, which you should actively relate to. More detailed examples can be found in resources like the UK BIM Framework and the CIC's BIM Protocol.

Information Containers: These are organized sets of information exchanged at specific project junctures, acting as data packages delivered at key milestones. For example, an information container for a design submission might include the following metadata:

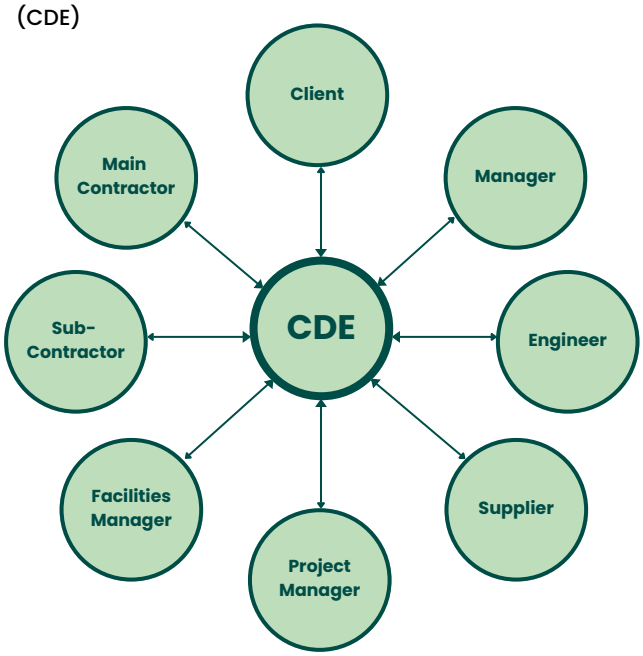
Metadata Field	Value
Project Name	*[Project Name]*
Container Name	*Architectural Design Stage 4*
Author	*[Architect Name]*
Date	*2024-10-27*
Classification	*IFC 4*
Status	*Published*

Common Data Environment (CDE): A centralized digital repository for storing and accessing all project information, serving as a single source of truth for the project team:

Traditional Information Sharing



Common data Environment (CDE)



Information Delivery Milestones: Predefined points in the project lifecycle where information is exchanged between stakeholders. These often align with project stages, such as those defined in the UK RIBA *Plan of Work*, or in the German HOAI *Leistungsphasen*:

	PREDESIGN	CONCEPTUAL DESIGN	SCHEMATIC DESIGN	DETAILED DESIGN	CONSTRUCTION	HANDOVER
UK	1. Strategic Definition ↓ 2. Preparation and Brief	3. Concept Design	4. Developed Design	5. Technical Design	6. Construction	7. Handover & Close Out
Germany	LP1 Grundlagenermittlung ↓ LP2 Vorplanung mit Konstenschätzung	LP3 Entwurfsplanung inkl. Kostenberechnung	LP4 Genehmigungsplaning	LP5 Aufsführungsplanung ↓ LP6 Vorbereitung der Vergabe ↓ LP7 Mitwirkung bei der Vergabe inkl. Kostenanschlag	LP8 Objektüberwachung	LP9 Objektbetreuung
Spain	N/A	Proyecto Básico		Proyecto de Ejecucíon	Direcíon de Obra	Final de Obra
Denmark	Byggeprogram	Dispositionsforslag	Projektforslag	Myndighedsprojekt ↓ Hovedprojekt	Projektopfølgning ↓ Udførelsesfase	Kommission ↓ Overlevering
Norway	Strategisk Definisjon	Program og Konseptutvikling	Forsprosjektutvikling	Detailprosjektering	Anskaffelse Entreprenør ↓ Produksjon og Leveranser	Idriftsettelse

Roles and Responsibilities: ISO 19650 defines a structure for assigning responsibilities to roles, within organizations. This is based on three main organizational levels: the Appointing Party, the Lead Appointed Party, and Non-Appointed Parties:

Organization	Description
Appointing Party	The organization procuring or commissioning the asset, i.e. oftentimes the "Client" or project investor. Defines information requirements, appoints the Lead Appointed Party.
Lead Appointed Party	The organization formally appointed to lead the delivery of information and manage the CDE, e.g. a lead consultant, general contractor or Generalplaner.
Task Team	An organization not formally appointed to the project but providing information (e.g., specialist subcontractors, suppliers).

A PRACTICAL ROADMAP TO ISO 19650 COMPLIANCE

While every project and organization is different, the below roadmap outlines a high-level guide to step-by-step achievement of ISO 19650 compliance.

- **Step 1: Assessment (2-4 weeks)**
    - Thoroughly evaluate your current BIM workflows, information management practices, and technology stack.
    - Conduct a gap analysis to identify discrepancies between existing processes and ISO 19650 requirements.
    - Assess your organization's BIM maturity level and readiness for digital collaboration.
    - Document your findings and create a baseline for improvement.

- **Step 2: Planning (4-8 weeks)**

    - Develop a comprehensive BIM Execution Plan (BEP) aligned with the ISO 19650 framework.
    - Clearly define roles and responsibilities for information management, including those for information managers, task teams, and project leads.
    - Establish well-defined information exchange procedures, including naming conventions, metadata requirements, and validation processes.
    - Set information delivery milestones that correspond to key project stages.
    - Select a CDE that fulfills the requirements of ISO 19650 and integrates with your existing tools.

- **Step 3: Implementation (Ongoing)**

    - Implement the BEP and associated procedures across your project team.
    - Configure your chosen CDE according to project-specific needs, including setting up access controls and workflows.
    - Deliver comprehensive training to your team on the new workflows, procedures, and the use of the CDE.
    - Establish clear communication channels to address questions and ensure everyone understands their roles and responsibilities.
    - Monitor the implementation process, gather feedback, and make adjustments as needed.

- **Step 4: Validation (Ongoing)**

    - Regularly review your processes and information flows to ensure ongoing compliance with ISO 19650.
    - Conduct periodic internal audits to identify areas for improvement and address any non-conformances.
    - Maintain up-to-date documentation of your processes and procedures.
    - Consider seeking external validation from an independent certification body if required by your client or for internal quality assurance purposes.

CHOOSING THE RIGHT CDE FOR ISO 19650

A robust CDE is crucial for achieving and maintaining ISO 19650 compliance. It serves as the central hub for all project information, enabling efficient collaboration, information exchange, and version control.

When evaluating CDEs, consider these essential features:

- **Information Management**: Comprehensive capabilities for organizing, storing, and managing diverse project information (models, drawings, documents, and data).
- **Workflow Management**: Support for defining and managing information exchange workflows and milestones, ensuring adherence to the ISO 19650 framework.
- **Collaboration**: Tools that facilitate real-time communication and coordination between project participants, including commenting, markup, issue tracking, and clash detection.
- **Access Control**: Granular permission settings to control information access based on roles and responsibilities, safeguarding sensitive data.
- **Audit Trail**: A comprehensive and tamper-proof record of all activities within the CDE, promoting transparency and accountability.

- **Open APIs**: Ability to integrate with existing authoring tools, model checkers, calculators and data (of you and your subcontractors) to avoid manual work and integration costs.

A BIM-powered CDE like Catenda Hub offers distinct advantages for ISO 19650 compliance:

- Efficiently manage **all project information** in a central, easily accessible repository.
- Enable **seamless collaboration** between stakeholders, regardless of location or software.
- Reduce design errors through **real-time information sharing** and clash detection.
- Connect to a wide range of BIM tools thanks to **open APIs** and robust interoperability.

TIPS FOR SUCCESS

- **Use purpose-built software**: When choosing a CDE, evaluate if it has been designed with ISO 19650 compliance in mind. This lets you save time by relying on pre-built templates, structures, naming conventions, checklists, and workflow automations.
- **Start with a pilot project**: Begin with a smaller, less complex project to test your ISO 19650 implementation plan, refine your processes, build critical mass of enabled team members in the organization who can drive larger-scale change.
- **Provide comprehensive training**: Invest in training your team on the ISO 19650 requirements, their roles and responsibilities, and the use of the chosen CDE. This ensures everyone is aligned and equipped for success.

CONCLUSION

While ISO 19650 compliance may initially appear challenging, it's an achievable goal with the right approach and tools. By following this practical roadmap and adopting a purpose-built CDE like Catenda Hub, you can streamline your workflows, enhance collaboration, and reap the rewards of improved information management throughout the entire project lifecycle.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the open way