

CASE STUDY:

MULTI-COUNTRY

BIM

COLLABORATION

ACROSS TIME

ZONES

HOW A GOVERNED CDE, LOD DISCIPLINE, AND NAMING LOGIC TURNED A 24-HOUR WORKFLOW INTO A COMPETITIVE ADVANTAGE?

PROJECT SNAPSHOT

- Project Type:** Large-scale mixed-use development (Commercial + Infrastructure)
- Delivery Model:** Design–Assist with Early Contractor Involvement
- BIM Authoring Tools:** Revit, Tekla Structures
- Coordination Platform:** Navisworks
- CDE Platforms:** Autodesk Construction Cloud (ACC) + Trimble Connect
- Geographies Involved:**
- us **United States** – Lead Design Authority & Client Interface
 - EU **Europe** – Structural Engineering & Compliance
 - IN **India** – BIM Production, Model QA/QC & Coordination

Challenge: Align three continents, four time zones, and multiple authoring standards into **one trusted digital delivery pipeline**.

THE CORE PROBLEM

The project didn’t struggle because of software. It struggled because **information maturity moved at different speeds** across regions.

Early Warning Signs:

- Structural models from Europe were **over-detailed** for schematic coordination
- Architectural models from the US lacked **consistent LOD definitions**
- India-based production teams faced **ambiguity in file naming, statuses, and approval workflows**
- Clash reports were generated—but **not traceable back to accountable model states**

Without intervention, this was heading toward:

- Redundant rework
- Misaligned fabrication outputs

- Delayed coordination cycles

STRATEGY: ENGINEERING THE COLLABORATION, NOT JUST THE MODELS

The solution was not “more meetings.” It was **system-level BIM governance**.

1. CDE GOVERNANCE: ONE SOURCE OF TRUTH ACROSS CONTINENTS

The Problem

Each geography treated the CDE differently:

- US team viewed it as a **client-facing repository**
- Europe used it as an **engineering archive**
- India saw it as a **production handoff platform**

This fractured trust in data.

The Solution

A **strict ISO 19650–aligned CDE framework** was deployed:

CDE Structure

WIP → Shared → Published → Archive

Each transition required:

- Metadata validation
- LOD compliance checks
- Discipline-specific approvals

Key Governance Rules

- WIP** models were *never* used for coordination
- Shared** models were clash-tested and version-locked
- Published** models were contractually reliable

Time-Zone Optimization

- India handled **overnight QA/QC**
- Europe reviewed **engineering integrity**
- US teams started each day with **validated, clash-reviewed models**

Result:

👉 A **true 24-hour BIM production cycle** without version conflicts.

2. LOD ALIGNMENT: DEFINING “ENOUGH DETAIL” PER PHASE

The Problem

LOD meant different things to different teams:

- Europe modeled steel connections at LOD 400 during DD

- US architecture stayed closer to LOD 200
- India received conflicting expectations

The Solution

A **Model Element Authoring Matrix (MEAM)** was introduced.

Example: Structural Steel

Phase	LOD	Responsibility	Purpose
SD	200	Europe	Massing + load paths
DD	300	Europe + India	Coordination & quantities
CD	350	India	Fabrication intent
Shop	400	Fabricator	Manufacturing

Each element had:

- Geometry responsibility
- Information responsibility
- Approval authority

This eliminated:

- ✗ Over-modeling
- ✗ Under-defined elements
- ✗ Coordination noise

3. NAMING CONVENTIONS: MAKING MODELS MACHINE-READABLE

The Problem

Files were named for humans—not systems.

Examples:

- Final_Structure_NEW.rvt
- Updated_Model_Rev3.rvt

These broke automation, tracking, and auditability.

The Solution

A **strict ISO 19650 naming convention**, enforced via CDE permissions:

<Project>-<Originator>-<Volume>-<Level>-<Type>-<Role>-<Number>-<Status>

Example:

PRJ01-RBL-ZZ-ZZ-M3-S-00045-SHARED.rvt

This enabled:

- Automated clash grouping in Navisworks
- Version comparison without manual checking
- Rule-based access control per geography

Models became **data assets**, not files.

COORDINATION WORKFLOW: HOW THE TEAMS ACTUALLY WORKED

Daily Cycle

1. India (Night Shift)
- Model federation

○ Clash detection

○ Rule-based validation
2. Europe (Morning)
- Engineering review

○ Structural logic validation
3. US (Start of Day)
- Design decisions

○ Client coordination

○ Approved updates pushed to CDE

Weekly Milestones

- Locked coordination drops

• LOD compliance reports

• Traceable clash resolution logs

RESULTS: MEASURABLE, NOT JUST VISUAL

Quantified Outcomes

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 38% reduction in RFIs

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▼

 45% fewer late-stage clashes

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 20% faster coordination cycles

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✅

 Fabrication-ready models issued 2 weeks ahead of schedule

Strategic Outcome

BIM evolved from:

“A coordination requirement”
to

A globally synchronized construction intelligence system

KEY TAKEAWAYS

- ✓ Multi-country BIM only works when governance is stronger than geography

✓ A CDE is a **process engine**, not a file server

✓ LOD is a **contractual commitment**, not a modeling preference

✓ Naming conventions are the backbone of automation and trust

FINAL THOUGHT

When BIM teams across the US, Europe, and India stop working *around* time zones—and start working *through* them—you don’t just deliver projects faster.

You build **continuous, intelligent construction workflows**.

Case Study: Multi-Country BIM Collaboration Across Time Zones

How a Governed CDE, LOD Discipline, and Naming Logic Turned a 24-Hour Workflow into a Competitive Advantage

