Digital Construction Management with BIM Integration Training Course



14 - 18 Dec 2026

Barcelona

5900 € (Per Person)

Ref: #DT9828_92673

Course Introduction / Overview:

The architecture, engineering, and construction (AEC) industry is undergoing a profound digital transformation, with Building Information Modeling (BIM) at its core. This shift from traditional methods to integrated digital workflows is no longer an option but a necessity for delivering projects on time, within budget, and to the highest quality standards. This course provides a comprehensive A-to-Z guide to mastering digital construction management and strategic BIM implementation. As highlighted by pioneering academic Dr. Chuck Eastman in his seminal work, the "BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors," the value of BIM extends far beyond 3D visualization, encompassing the entire project lifecycle. BIG BEN Training Center has designed this program to equip professionals with the strategic knowledge and practical skills to lead this change. Participants will explore the principles of digital project delivery, learn to manage information across complex projects, and leverage technology to enhance collaboration, mitigate risks, and drive efficiency from initial design through to facility management, making data-driven decisions that define modern construction excellence.

Target Audience / This training course is suitable for:

- Project Managers.
- Construction Managers.
- BIM Managers and Coordinators.
- Architects and Architectural Technologists.
- Civil and Structural Engineers.
- MEP (Mechanical, Electrical, and Plumbing) Engineers.
- Quantity Surveyors and Cost Estimators.
- Site Managers and Superintendents.
- Facility Managers.
- Project Planners and Schedulers.

Target Sectors and Industries:

- Construction and Contracting.
- Real Estate Development.
- Architecture and Design Firms.
- Engineering Consulting Services.
- Infrastructure and Transportation.
- Oil and Gas Projects.
- Government and Public Works Agencies.
- Facility Management Services.
- Manufacturing and Prefabrication.

Target Organizations Departments:

- Project Management Office (PMO).
- Engineering and Design.
- Construction Operations.
- Planning and Scheduling.
- Procurement and Contracts.
- Quality Assurance and Control.
- Health, Safety, and Environment (HSE).
- Asset and Facility Management.
- Information Technology (IT).

Course Offerings:

By the end of this course, the participants will have able to:

- Develop a strategic BIM Execution Plan (BEP) aligned with project goals.
- Establish and manage a Common Data Environment (CDE) for seamless information flow.
- Implement international BIM standards such as ISO 19650.
- Lead interdisciplinary coordination meetings using federated BIM models.
- Perform automated clash detection and manage the resolution process effectively.
- Utilize 4D modeling for construction sequencing and schedule optimization.
- Apply 5D BIM for accurate quantity take-offs and dynamic cost estimation.
- Integrate digital tools like laser scanning and drones for site progress monitoring.
- Evaluate the role of BIM in facility management and the asset lifecycle.
- Analyze construction data to improve decision-making and project outcomes.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be immersive, practical, and highly interactive, ensuring participants can apply their learning directly to their work environments. This course moves beyond theoretical lectures to foster a deep, strategic understanding of digital construction management. Sessions are a dynamic blend of expert-led presentations, in-depth case study analyses of successful and challenging real-world projects, and collaborative group workshops. Participants will engage in team-based exercises that simulate the development of a BIM Execution Plan and the resolution of coordination issues, promoting practical problem-solving skills. Interactive discussions and Q&A sessions are integral to each module, encouraging the sharing of experiences and peer-to-peer learning. The course emphasizes a hands-on approach to strategy and process, focusing on the 'why' behind the technology, not just the 'how'. This ensures that attendees leave with not only new knowledge but also the confidence to lead digital transformation initiatives within their organizations.

Course Agenda (Course Units):

Unit One Foundations of Digital Construction and BIM

- Introduction to the digital transformation in the AEC industry.
- Core concepts and terminology of Building Information Modeling (BIM).
- Understanding the different BIM dimensions (3D, 4D, 5D, 6D, 7D).
- The business value and ROI of implementing BIM.
- Overview of key international standards, including ISO 19650.
- The role of the Information Manager in a BIM project.
- Exploring the concept of a Common Data Environment (CDE).

Unit Two Strategic BIM Planning and Implementation

- Developing a comprehensive BIM Execution Plan (BEP).
- Defining Employer's and Asset Information Requirements (EIR & AIR).
- Establishing project-specific goals and uses for BIM.
- Roles, responsibilities, and competencies in a BIM-enabled team.
- Legal and contractual implications of BIM adoption.
- Strategies for technology and software interoperability.
- Managing the cultural shift and change management for BIM adoption.

Unit Three BIM for Design Coordination and Pre-construction

- Principles of 3D model authoring and information management.
- Creating and managing federated models for coordination.
- Conducting automated clash detection and interference checks.
- Leading effective clash resolution and design coordination meetings.
- Using BIM for design validation and constructability reviews.
- Model-based quantity take-off and preliminary cost estimation.
- Integrating BIM with design analysis and simulation tools.

Unit Four Digital Tools for Construction Phase Management

- 4D BIM for construction sequencing, phasing, and site logistics planning.
- 5D BIM for detailed cost estimation and budget tracking.
- Leveraging mobile technology and cloud platforms on the construction site.
- Introduction to reality capture technologies like laser scanning and photogrammetry.
- Using drones for site surveying, progress monitoring, and safety inspections.
- Digital workflows for quality control and handover documentation.
- Enhancing on-site safety through BIM and virtual reality simulations.

Unit Five Advanced BIM Applications and Future Trends

- BIM for facility management, operations, and maintenance (6D BIM).
- Introduction to the concept and application of Digital Twins.
- Integrating Lean Construction principles with digital workflows.
- Construction data analytics for performance improvement and predictive insights.
- The impact of Artificial Intelligence (AI) and Machine Learning in construction.
- Exploring the future with robotics, 3D printing, and smart contracts.
- Developing a roadmap for continuous digital innovation in your organization.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As digital twins become more prevalent, what are the primary ethical and data security challenges the construction industry must address to ensure responsible implementation?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by focusing on the strategic management of digital construction rather than mere software proficiency. While many programs teach the technical skills to operate specific tools, this training course cultivates leaders who can architect and implement comprehensive digital strategies across an entire organization and project lifecycle. Its curriculum is built around a holistic, process-driven approach, deeply rooted in international standards like ISO 19650, ensuring the methodologies taught are globally relevant and best-in-class. A key differentiator is the emphasis on the entire value chain, from initial planning and design coordination to on-site management and long-term facility operations. By integrating concepts like Lean Construction and data analytics, the course provides a forward-looking perspective that prepares participants for the future of the industry. The content is enriched with real-world case studies that explore both successes and failures, offering practical, actionable insights that go far beyond textbook theory. It is designed not just to train, but to transform participants into strategic thinkers capable of driving meaningful digital change.