

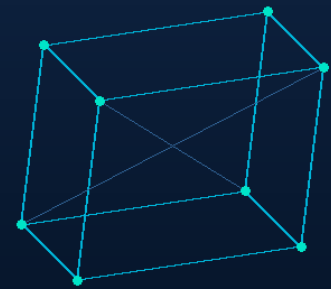
PRO · LOCKED

BIM & DIGITAL CONSTRUCTION

BIM Fundamentals — From CAD to Information Management

BIM fundamentals — from CAD to information management.

L01 BIM Fundamentals



NOVTRIQ Academy · BIM & Digital Construction

NOVTRIQ Academy · **BIM & Digital Construction** Lesson 1 of 8

BIM (Building Information Modelling) is the discipline of using shared digital information about a building across its lifecycle. From 2D CAD drawings to information-rich 3D federated models that enable design, construction, and operation.

This lesson sets the foundational vocabulary and the maturity progression.

Learning objectives

Remember	Key concepts.
Understand	How it works.
Understand	Standards.

1 • From CAD to BIM

2D CAD: drawing as record. 3D CAD: geometry without information. BIM: geometry + information (materials, performance, time, cost). Information container approach replaces drawing-as-record paradigm.

2 • BIM levels (UK heritage)

Level 0: paper / unmanaged CAD. Level 1: managed CAD with shared electronic data. Level 2: federated 3D models with shared information through CDE. Level 3: fully integrated, web-based, lifecycle. Most UK practice today is Level 2; Level 3 is research-stage.

3 • BIM Maturity Index

Modern framing: BIM Maturity Index measures organisational capability across people, process, technology, policy. Replaces UK-specific Levels framing internationally.

4 • Information lifecycle

Information moves from concept → design → construction → handover → operation → renovation → demolition. Each phase has different information needs. BIM enables continuity rather than rebuilding from scratch each time.

5 • What this looks like on a real project

UK UK Government BIM Mandate 2016

UK Government required BIM Level 2 on public projects from 2016. Drove industry adoption. Set foundation for ISO 19650 alignment.

EU EU public works directive

EU Public Works Directive 2014/24/EU enables member states to require BIM. Many adopted; some progressive in tendering.

UAE Dubai Municipality BIM Level 2

Dubai Municipality required BIM Level 2 on projects above defined thresholds since 2014. Major regional driver.

6 • Why this matters

BIM isn't 3D CAD — it's information delivery. You can now articulate the difference, the value chain (from designer to operator), and the cultural shift it requires. That clarity stops most BIM-implementation failures before they start.

Quiz

Your score

0 / 5

1. "BIM Level 2" means:

a) 2D CAD only

b) Federated 3D models with shared information through CDE

c) No information

d) Drawing only

2. UK Government BIM Mandate year:

a) 2010

b) 2016

c) 2020

d) 2024

3. Modern international framing of BIM capability:

a) Levels 0-3 only

b) BIM Maturity Index

c) Tier I-IV

d) Bronze-Platinum

4. Dubai Municipality BIM mandate year:

a) 2010

b) 2014

c) 2020

d) 2024

5. A "BIM container" is:

a) A storage box

b) An information unit (drawing, model, doc) under information management

c) A water tank

d) Hardware

Answers (for print): 1b · 2b · 3b · 4b · 5b

Resources

PRIMARY SOURCES

- BS EN ISO 19650 series.
- UK Government BIM Mandate.
- PAS 1192 series (legacy).

STANDARDS AND GUIDANCE

- BS 1192 / PAS 1192.
- BS EN ISO 12006.

INDEPENDENT COMMENTARY

- Designing Buildings Wiki BIM.
- UK BIM Alliance / nima publications.

Lesson 1 — start of course

NEXT LESSON

**ISO 19650 Series — The International
BIM Framework**