

BUILDING INFORMATION MODELING

MODELOWANIE DANYCH BUDOWLANYCH

**Introduction to Building
Information Technology.
Productivity of industry and
construction sector.
Building. Information. Modeling.
BIM history.
BIM definition.
Model / Modeling / Management.**

For whom BIM ?

Owner, Owner Representative,

Operator and Facility Manager,

Facility End-User,

Designer, Construction Contractor,

Subcontractors,

Specialist suppliers,

Manufactures of construction

materials and products

BIM in life-cycle stages of building.
Pre-life cycle stages: inception, brief.
Pre-construction stages.
Construction stages.
Post-construction stages.
Operation, Maintenance. Demolition.
Loss of information during and
between life-cycle stages of the
building investment project.

Data flow. Interoperability.
Data in general and open data.
openBIM.

BuildingSmart.
openBIM model requirements.
BIM implementation in the world.

BIM levels.

Level 0

CAD documentation and no collaboration.

Level 1

**CAD 2D drawings together with
BIM 3D models without data exchange.**

Level 2

3D models with sharing of own data.

Level 3

**one data-centric BIM model
and integrated cooperation.**

LOD Level of Detail. Level of Development.

BIM standards.

Industry Foundation Classes

IFC MVD IDM bsDD BCF COBIE

**requirements for data transfer
to facility operation and management.**

Legal regulations in Poland. ISO, EN, PN

Formulation of BIM requirements.

Cooperation. Inter disciplinary

cooperation. BIM coordination.

Digital data transfer.

Data model management.

BIM Execution Plan

Role of BIM Manager. BIM Manager responsibilities.

Skills and experience in BIM.

Competence criteria.

Roles and specializations in BIM.

Professional qualifications certification.

BIM software.

Software for BIM model creation.

Software for design and tools

for simulations. Software for

architectural , structural,

construction detailing, shop

drawings and control fabrication

processes.

BIM software.

**Software for energy analysis,
wind analysis, shading and lighting,
visualization effects.**

**Software for cost estimating,
construction sequence planning and
detailed scheduling, building security
and safety, safety at construction site.
Clash detection, BIM model viewers.**

**BIM software certification by
BuildingSmart organisation.**

**Examples of certificates and
performance tests
for import and export of IFC data**

**Visualization, VR, AR, AVR,
Laser scanning,
point data cloud.**

**BIM model using point cloud.
Cloud computing.**

**Effect, cost and effort
distribution during stages of
investment project.**

BIM, BAM , BOOM.

BIM efficiency factors.

**Change of design costs
distribution for BIM workflow.**

**BIM implementation in design
company.**

**BIM case study
for good practices.**

