

The Power of **BIM**

Building **I**nformation **M**odeling

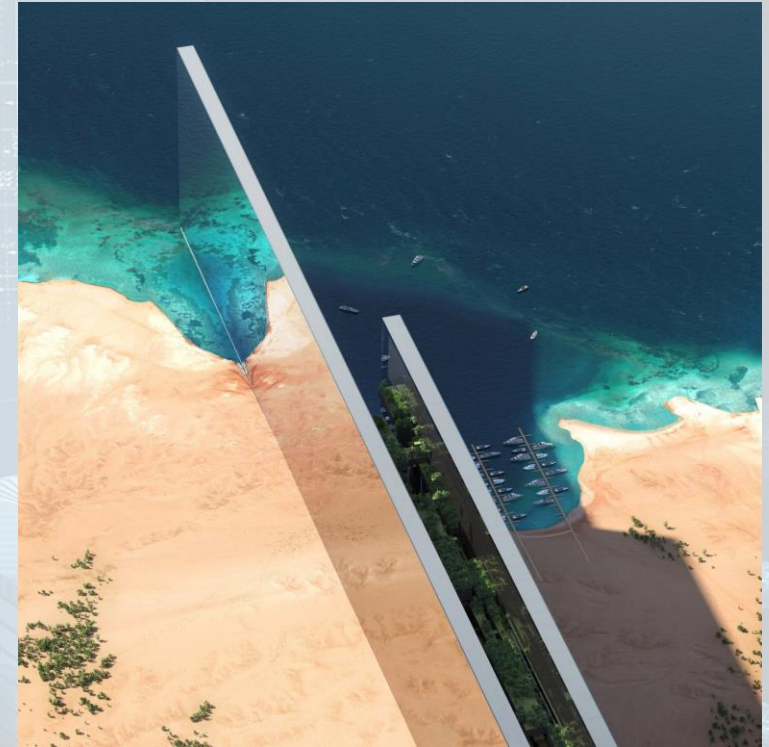
build it twice, once virtually

Dr. Muhammad Bashir Lakhani

BIM Revolution

Building Information Modeling (BIM)

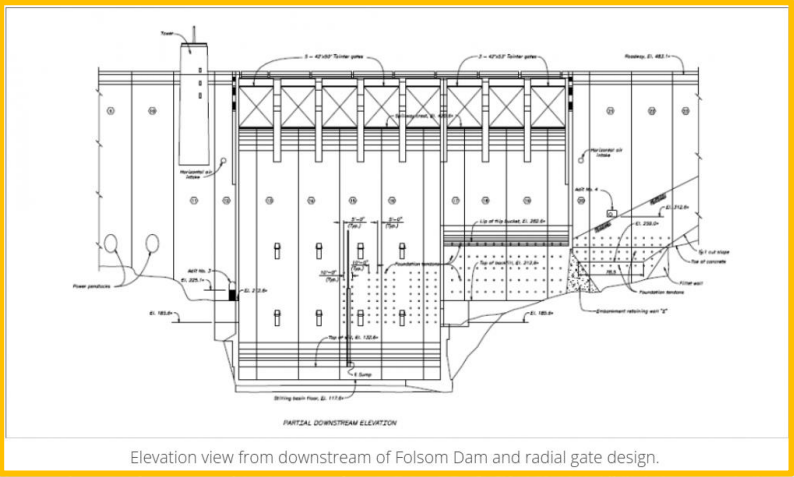
is not just a tool, it's a game-changer, enabling collaboration and streamlining the entire project lifecycle.



BIM Evolution

from CAD to BIM

CAD (2D Model)



Elevation view from downstream of Folsom Dam and radial gate design.

GIS



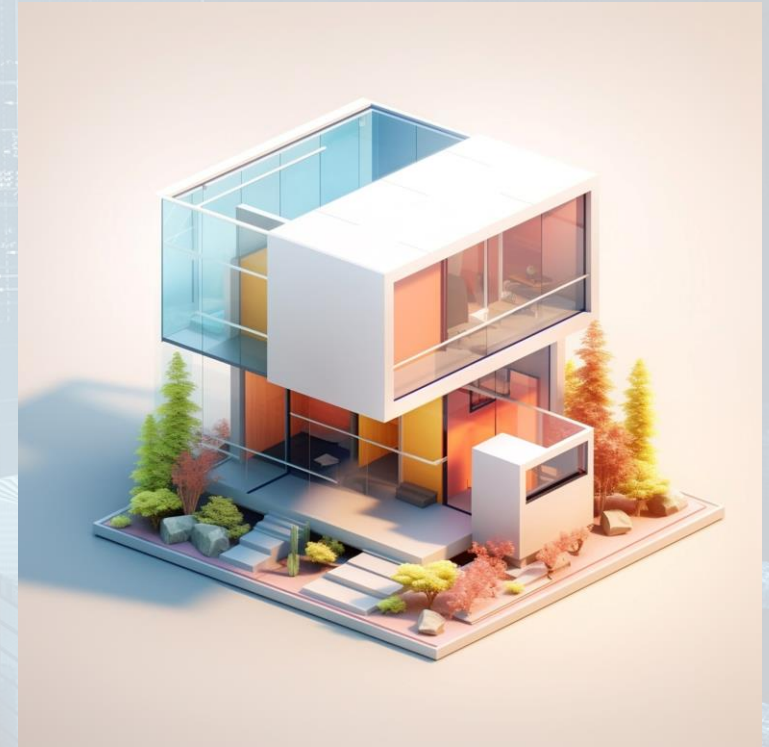
BIM COMBINING 2D/3D DRAWINGS AND GIS



What BIM Does?

DESIGN STAGE: Empowers architects and engineers to create sustainable & efficient structures.

CONSTRUCTION STAGE: Facilitates precision, safety, on-time project delivery, minimizing errors and maximizing efficiency.



BIM Sustainability

Embracing BIM means embracing sustainability.

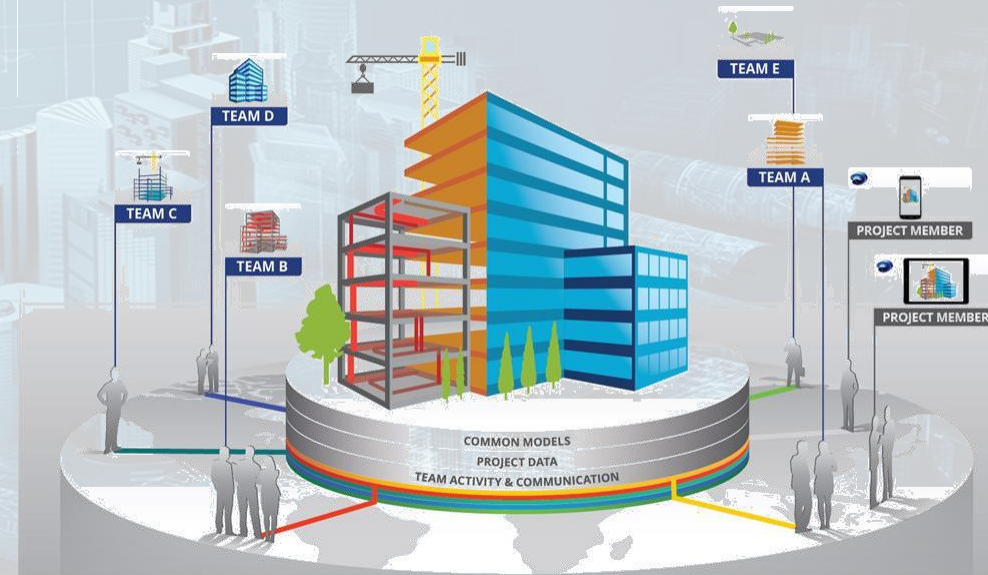
It enables the design and construction of environmentally friendly and energy-efficient structures.



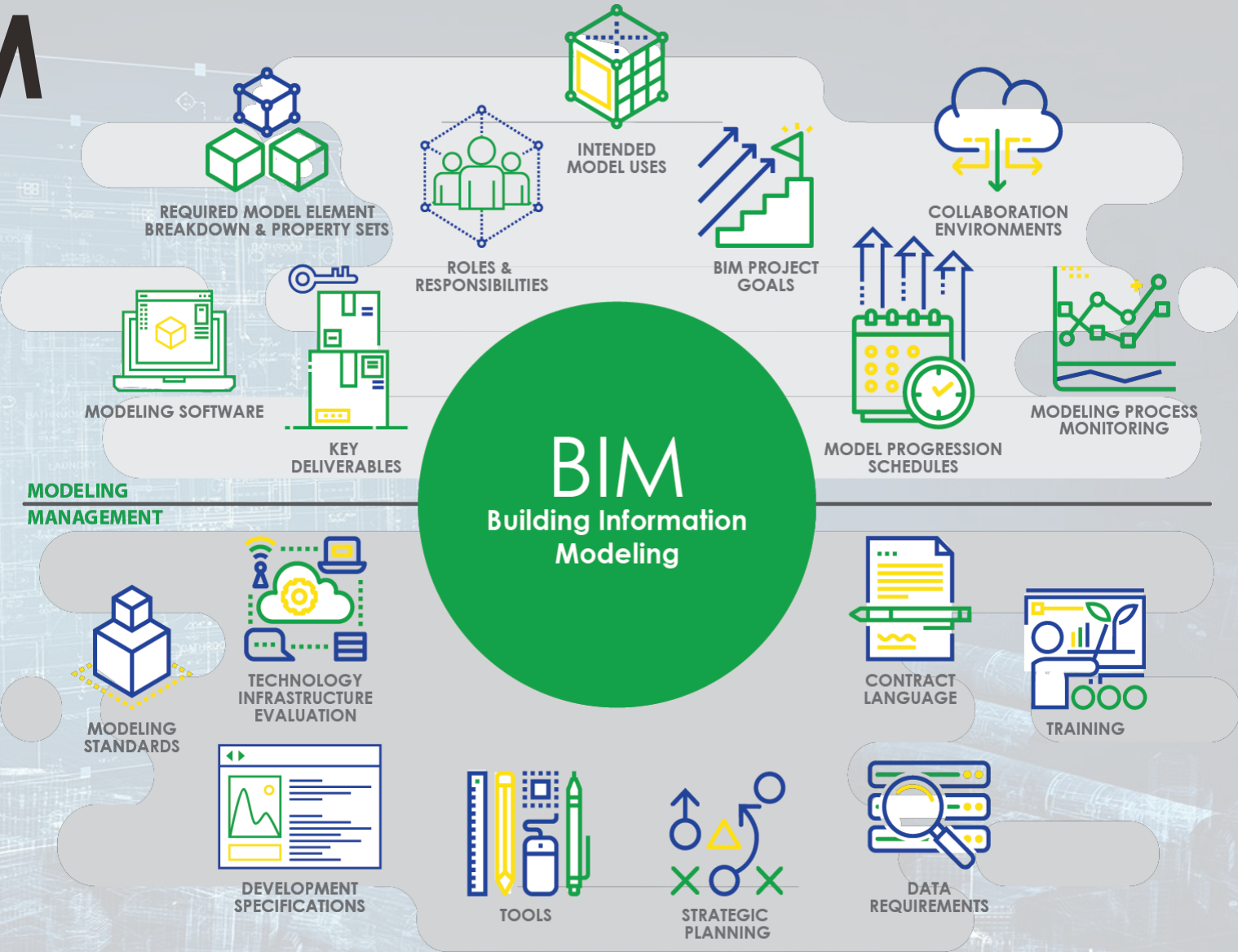
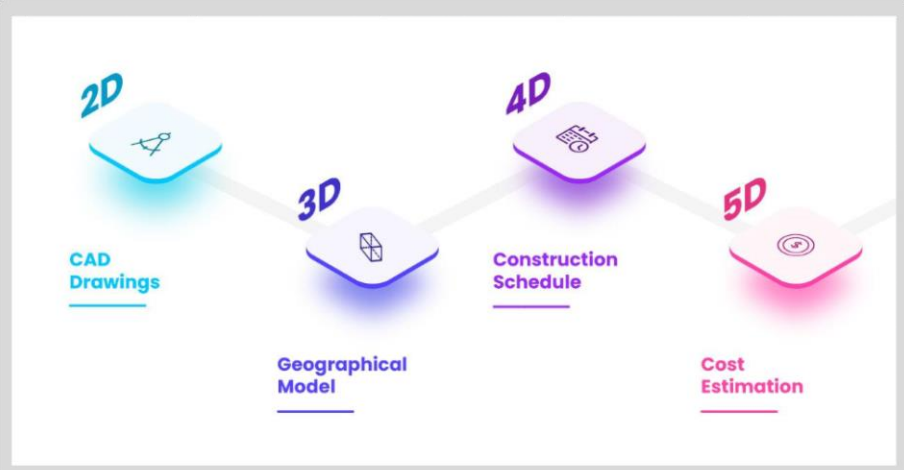
BIM Environment

BIM environment is a collaborative process that uses 3D models and other information to design, build, and manage a project throughout its lifecycle.

BIM helps improving the communication & quality, and streamlining time & costs.

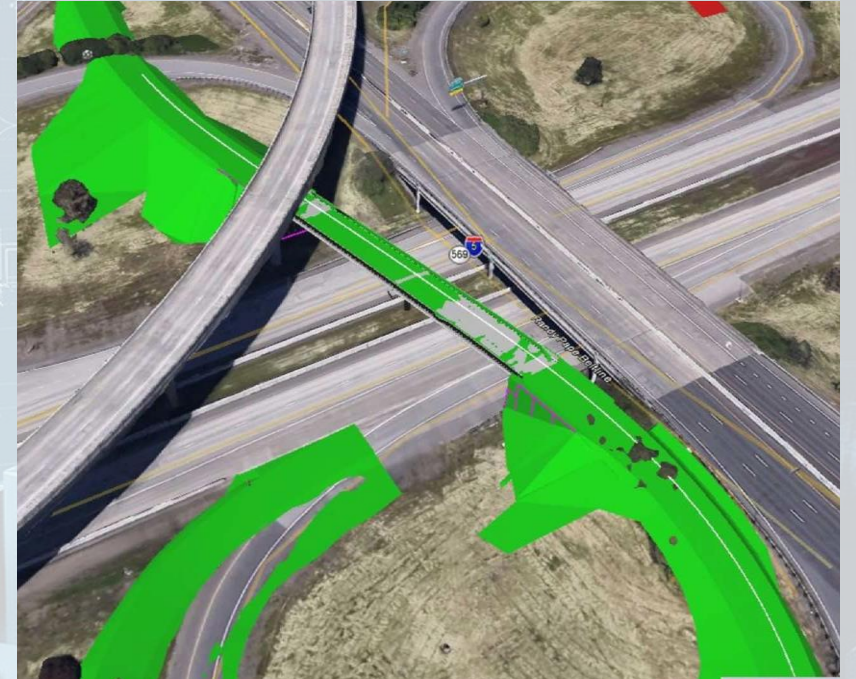


WORLD OF BIM

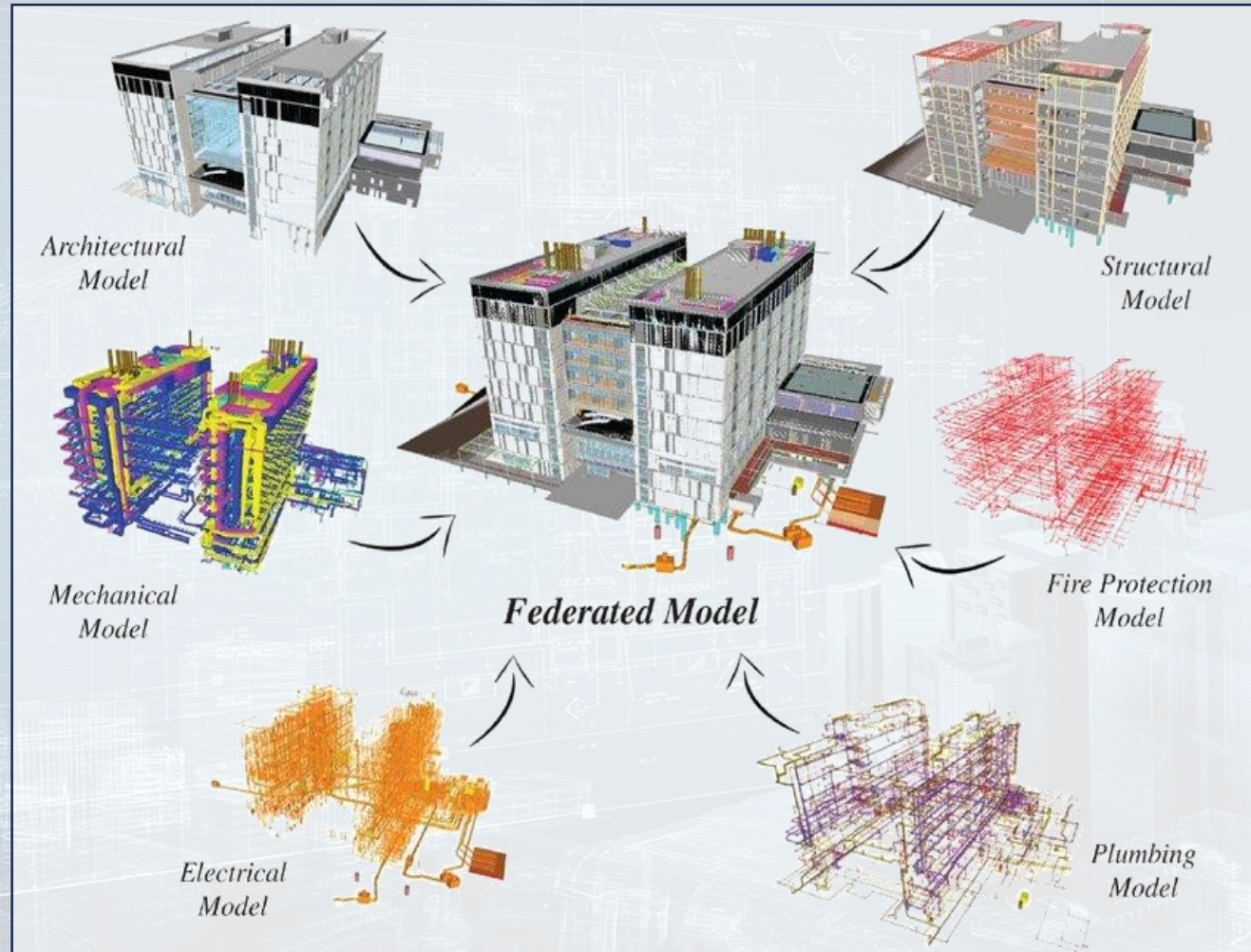


BIM Application

Design and Visualize
Improved Collaboration
Data Integration
Clash Detection
Project Scheduling
Project Cost Estimation



BIM Integration



BIM in Action

X	PLAN	X	DESIGN	X	CONSTRUCT	X	OPERATE
	PROGRAMMING		DESIGN AUTHORIZING		SITE UTILIZATION PLANNING		BUILDING MAINTENANCE SCHEDULING
	SITE ANALYSIS		DESIGN REVIEWS		CONSTRUCTION SYSTEM DESIGN		BUILDING SYSTEM ANALYSIS
			3D COORDINATION		3D COORDINATION		ASSET MANAGEMENT
			STRUCTURAL ANALYSIS		DIGITAL FABRICATION		SPACE MANAGEMENT / TRACKING
			LIGHTING ANALYSIS		3D CONTROL AND PLANNING		DISASTER PLANNING
			ENERGY ANALYSIS		RECORD MODELING		RECORD MODELING
			MECHANICAL ANALYSIS				
			OTHER ENG. ANALYSIS				
			SUSTAINABILITY (LEED) EVALUATION				
			CODE VALIDATION				
	PHASE PLANNING (4D MODELING)		PHASE PLANNING (4D MODELING)		PHASE PLANNING (4D MODELING)		PHASE PLANNING (4D MODELING)
	COST ESTIMATION		COST ESTIMATION		COST ESTIMATION		COST ESTIMATION
	EXISTING CONDITIONS MODELING		EXISTING CONDITIONS MODELING		EXISTING CONDITIONS MODELING		EXISTING CONDITIONS MODELING

BIM Spectrum

Civil3D (Autodesk)

Revit (Autodesk)

Quantity Takeoff (Autodesk)

BIM360 (Autodesk)

Construction Cloud (Autodesk)

ArchiCAD (Graphisoft)

MicroStation (Bentley)

STAAD.Pro (Bentley)

Openflows WaterGEMS, SewerGEMS (Bentley)

Infraworks (Autodesk)

Navisworks (Autodesk)

Vectorworks (Nemetschek)

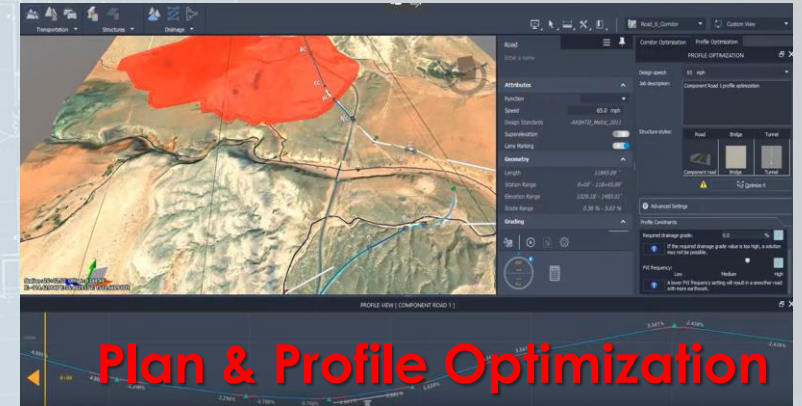
Primavera (Oracle)

MS Project

and the long list to go..

Infracore Examples

Create, analyze, and visualize infrastructure projects, such as roads, bridges, and utilities, in a real-world context using 3D models and geospatial data.



Navisworks Examples

Integrates 3D Model & Primavera Model for Schedule and Cost (4D and 5D) Simulation

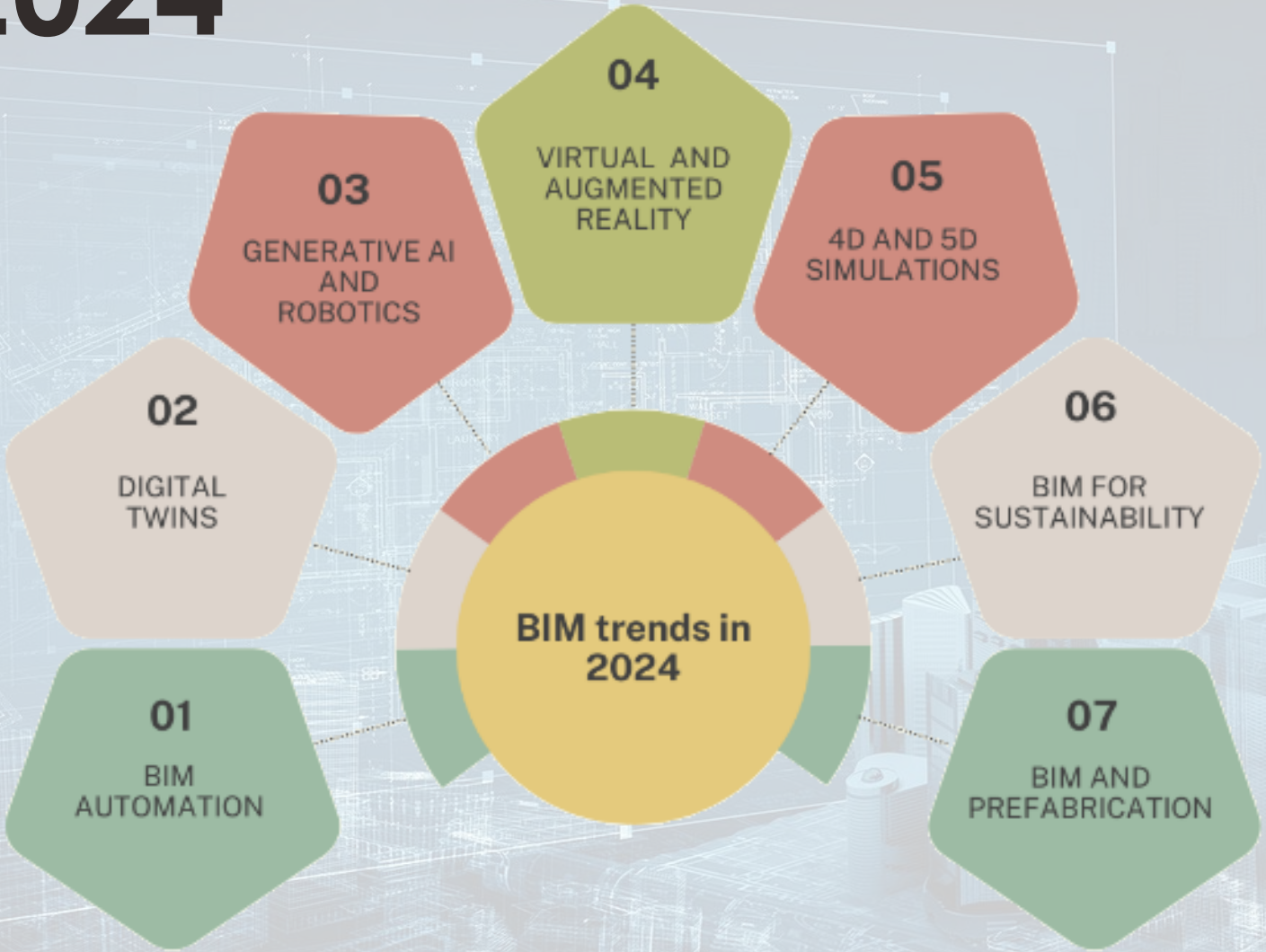
The screenshot displays the Navisworks interface. At the top, the menu bar includes Home, Viewpoint, Review, Animation, View, Output, BIM 360 Glue, and Render. The main 3D view shows a white building model with yellow highlighted sections. In the top-left corner, the following cost and schedule data is displayed:

- Day=11 date=5/9/2021
- Total Cost=2481563.84%
- Material Cost=0.00
- Lapor Cost=63629.95
- EQ, Cost=2417933.89
- Expenses=0.00

The TimeLiner window at the bottom features a Gantt chart for May 2021. The chart shows task bars for 'Saja Mall 2 (Root)', 'A1000', 'A1020', 'excavation & soilTransport', and 'SAJA MallSAJA MALL 2'. The 'SAJA MallSAJA MALL 2' task is highlighted in red.

Name	Status	Planned Start	Planned End	Actual Start	Actual End
Saja Mall 2 (Root)	2.78%	4/29/2021	4/25/2022	1/1/2021	7/15/2021
A1000	80.28%	5/1/2021	5/11/2021	1/1/2021	5/11/2021
A1020	80.28%	5/1/2021	5/11/2021	5/1/2021	5/11/2021
excavation & soilTransport	22.3%	5/1/2021	6/6/2021	N/A	N/A
SAJA MallSAJA MALL 2	2.24%	5/1/2021	4/25/2022	N/A	N/A

BIM in 2024





The Power of **BIM**

Continues..

THANK YOU