



دانشگاه علم و صنعت ایران

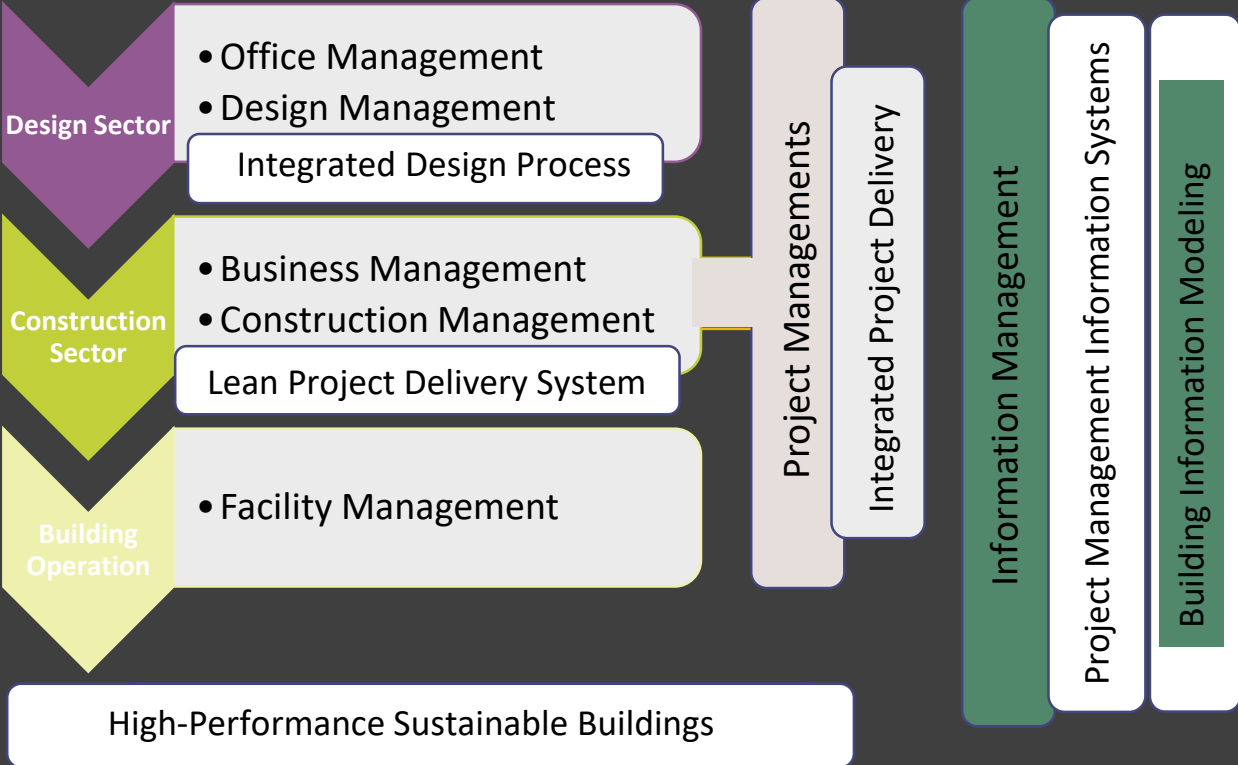
Advanced Design & Construction Management Techniques- Building Information Modeling

جلسه هشتم- اردیبهشت ماه 1398- مدیریت پروژه

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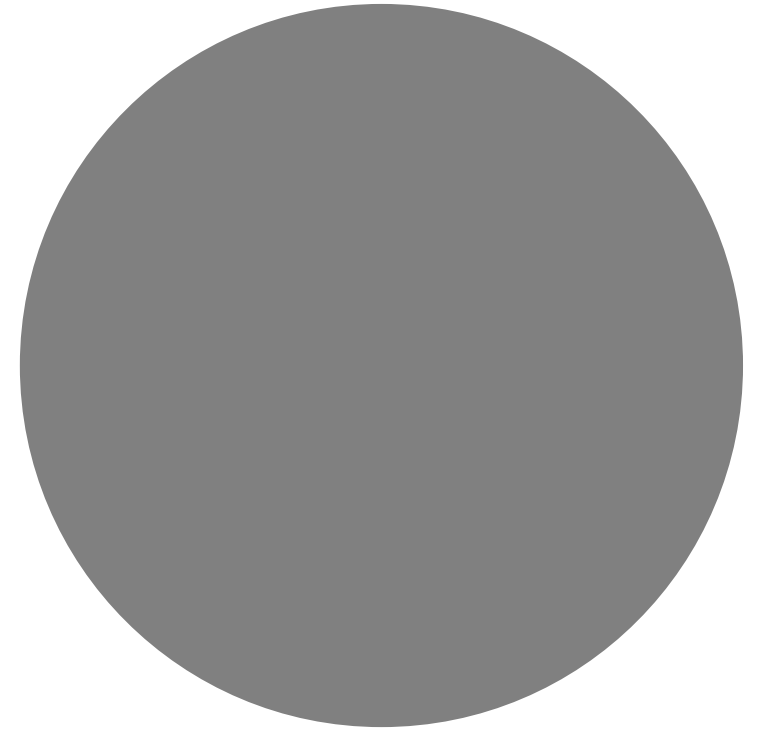
Introduction

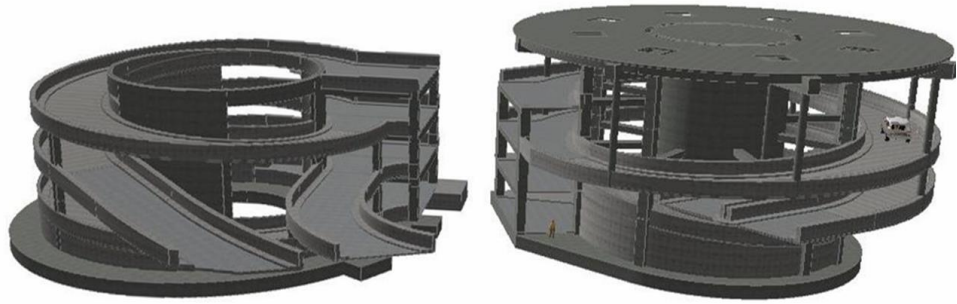
- **BIM Benefits**



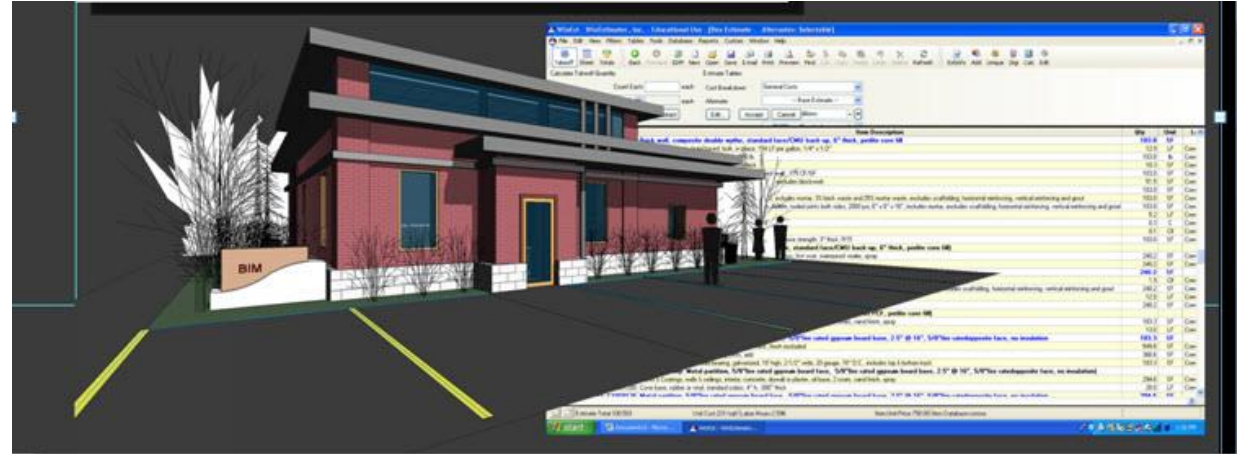
- Benefits to Owners
- Benefits to Designers
- Construction and Fabrication Benefits
- Post-Construction Benefits

Benefits of BIM

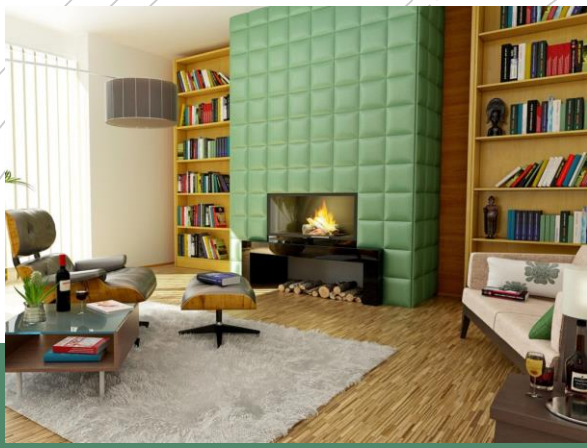




Pre-Construction Benefits to Owners



- Concepts (complex problems visualization, ...), Feasibility (conceptual estimating & sequencing) & Design Reviews
- System Selection Support (structural, Mechanical, Sustainability strategies)
- Increased Building Performance & Quality
- Improved collaboration using IPD



Benefits for Design



Earlier & More accurate visualizations of design



Automatic low-level corrections when changes are made to design



Generation of Accurate and Consistent 2D Drawings at Any Stage of the Design



Earlier Collaboration of Multiple Design Disciplines.



Easy Verification of Consistency to the Design Intent.



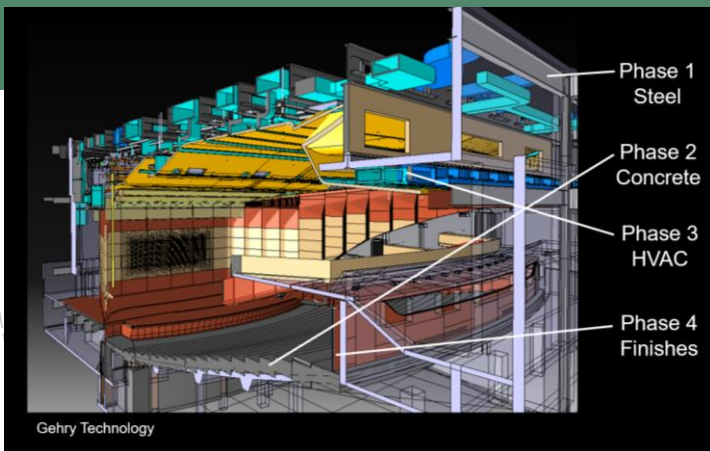
Extraction of Cost Estimates during the Design Stage.



Improvement of Energy Efficiency and Sustainability.



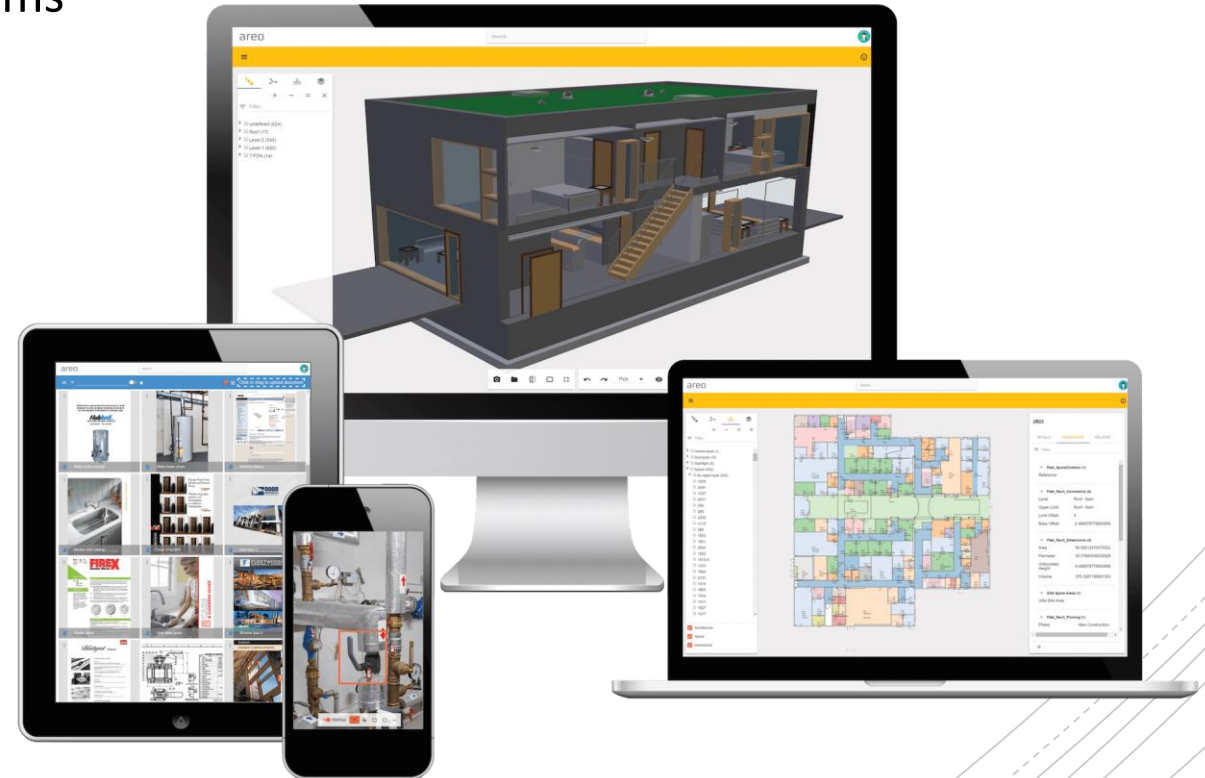
Construction & Fabrication Benefits



- Use of Design Model as Basis for Fabricated Components.
 - ⇒ Reduced construction cost & time
 - ⇒ Smaller crews
 - ⇒ faster installation time
 - ⇒ less on-site storage space.
- Quick reaction to design changes
- Discovery of Design Errors and Omissions before Construction
- Synchronization of Design and Construction Planning
 - Clash Detection
 - 4D Modeling
- Better Implementation of Lean Construction Techniques.
- Synchronization of procurement with design & construction.

Post-Construction Benefits

- Improved Commissioning & handover of facility information
- Better management & operation of facilities
- Integration with Facility Operation and Management Systems





Agency

Laws and regulations

- Building regulations
- Building specifications

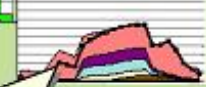


CAD software

- Drawings, calculations
- Architect, engineer,...

VRML

- Visualisation, 3D models



Simulations

- Comfort
- Ventilation, heating
- Life cycle cost
- Light, sound
- Insulation
- Fire, usage
- Environment
- Life time predictions

Knowledge databases

- Best practise knowledge
- Own practice



Briefing

- Functional req.
- Estimates
- Conditions
- Requirements



Demolition, refurbishment

- Rebuild
- Demolition
- Restoration



Facility management

- Letting, sale, operations
- Maintenance
- Guaranties



Construction management

- Scheduling
- Logistics, 4D



Specifications

- Specification sheets
- Classification standards
- Estimates, accounting



Procurement

- Product databases
- Price databases



Owner

Contractors

Preparation Reading for Next Class:

Subject:

BIM Challenges, BIM Execution Planning

