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VISTA FARAZ BAM
Project Management Consulting & Engineering Services
Building Information Modeling

BIM services include a variety of applications, which Vista Faraz Bam Co. by considering the local priorities and the available technologic facilities, present different solutions in domain of project management. These solutions can be expandable due to every project’s condition.

**Design & Engineering in all disciplines (Coordinated BIM):**
Using 3D Models and Merging Architectural, Structural and MEP Models to capture, explore, and maintain consistent and coordinated planning, design, construction and finding clashes.

**Architectural**  **Structural**  **Mechanical**  **Electrical**  **Plumbing**

Vista Faraz Bam Co. through its attendance in national projects and delivering services to international clients, could employ the novel scientific and engineering approaches.

**BIM Advantages:**
- Better design and perception
- Integration of information during the life cycle of the project
- Better efficiency and functionality
- Better quality
- Accurate management on design editions
- Avoiding rework
- Less manpower

**Level Of Development (LOD):**

- **LOD100**  Conceptual
- **LOD200**  Approximate geometry
- **LOD300**  Precise geometry
- **LOD400**  Fabrication
- **LOD500**  As-built
BIM Dimensions

BIM dimensions are different to BIM maturity levels. They refer to the particular way in which particular kinds of data are linked to an information model. By adding additional dimensions of data you can start to get a fuller understanding of your construction project how it will be delivered, what it will cost and how it should be maintained etc.

2D Drawing & 3D Modeling (Graphical Information)

- Traditional 2D drawings, conceptual designing, shopdrawing & drafting
- WORK FLOWS AND THE BIP-BIM IMPLEMENT PLAN. Procedures and organizational changes involving BIM in different areas of work.
- Using three dimensional computer graphics to develop mathematical representation of how the project fits together within itself and in its environment.
- 3D BIM’s visualizations capabilities enables participants to not only see the building in three dimensions before ground is ever broken, but also to automatically update these views along the project life cycle, from earliest conception to demolition.

4D Duration Analysis (Scheduling)

The fourth dimension of BIM allows participants to extract and visualize the progress of their activities through the lifetime of the project.
- Project phasing simulation
- Lean scheduling (last planner, just in time equipment deliveries, detailed simulation installation
- Visual validation for payment approval

5D Cost Analysis (Estimating)

The fifth dimension of BIM used for budget tracking and cost analysis related activities. The utilization of 5D-BIM technology can result in a greater accuracy and predictability of project’s estimates, scope changes and materials, equipment or manpower changes. 5D BIM provides methods for extracting and analysing costs, evaluating scenarios and changes impacts.
- Real time conceptual modeling and cost planning
- Quantity extraction to support detailed cost estimates
- Trade verifications from fabrication models
- Value engineering
- Prefabrication solutions

Office Building

Scan with Augmented Reality

Anode Plant
6D Sustainability Assessment
The sixth dimension of BIM helps perform energy consumption analyses. The utilization of 6D-BIM technology can result in more complete and accurate energy estimates earlier in the design process. It also allows for measurement and verification during building occupation, and improved processes for gathering lessons learned in high performance facilities.

- Conceptual energy analysis
- Detailed energy analysis
- Sustainable element tracking
- LEED tracking

7D Manage Assets Lifecycle (Facility Management)
The seventh dimension of BIM is used by managers in the operation and maintenance of the facility throughout its life cycle. The seventh dimension of BIM allows participants to extract and track relevant asset data such as component status, specifications, maintenance/operation manuals, warranty data etc.

- Life cycle BIM strategies
- BIM As-buils
- BIM embedded O&M manuals
- COBie data population & extraction
- BIM maintenance plans & technical support
- BIM file hosting on lend lease’s digital exchange system

BIM Use Cases
BIM use cases describe the purpose of BIM applications on a project.

- Virtual Reality
Combination of 3D models and appropriate hardware such as VR glasses, makes it possible that the design and execution of the project can be virtually modeled and be assessed by the effective factors. Through VR equipment, delivering and submitting the project will be done by higher accuracy and quality. Other use of VR is in the domain of renovation, which the final result can be watched virtually before the real execution of the project.

- Augmented Reality
Augmented Reality (AR) can enhance BIM by enabling users to view BIM model data hands-free in 3D. Architects and designers can use smart glasses to visualize their models at tabletop scale, and quickly polish their designs.

The samples which are used in the projects are the 3D models stemmed from 2D drawings. By setting the tablets or phones on 2D drawings, the 3D drawings, along with the full details can be illustrated.
- **Clash Detection**

A range of disciplines come together to work on different aspects of construction projects. Using the architect’s model as a starting point a structural engineer, environmental engineer, mechanical and electrical engineer (and potentially many others) will each produce their own model. During construction the intent of clash detection is to resolve major system conflicts prior to installation.

- **Facility Management & Operations**

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- **Laser Scanning**

Laser scanning technology has emerged as a useful tool in documenting existing conditions of buildings. The main application for such documentation is to assess current as-built conditions of existing, mostly historical, buildings. The technology can also be used as an integral part of construction progress documentation in new projects.

- **Cloud-Based Services**

BIM level maturity depends on the cloud-based services and tools. We offer to develop customized cloud-based platforms and apps for projects at any size and scale.
ISO 19650 - BIM Standard

Application of BIM to projects is rapidly developing, reaching asset management. In the life cycle of an asset, from conceptual design to engineering and construction, and finally to operation and maintenance, a lot of actors are involved in production and distribution of information.

In order to create a common approach among all the project actors and hence reach their appropriate performance, ISO published standard ISO 19650 on organization and digitalization of construction information.

BIM helps engineers and other professionals of the construction industry with planning, designing and managing projects, and improves efficiency significantly. However, its application to huge projects without following a standard is not possible. Therefore, standard ISO 19650 plays a leading role in proper use of BIM tools in projects.

In summary, this standard defines a framework in which the appointing and appointed parties can collaborate closely.

If the activities of different disciplines are decided to be performed based on BIM to achieve a comprehensive information model, the close collaboration of all these actors is required.

ISO 19650 is for:
- Owners/ Clients/ Operators
- Asset manager
- Design manager
- Execution team
- Supply chain
- Fabricators
- End users

ISO 19650-1: Concepts and Principles
ISO 19650-2: Delivery phase of Assets