Digital Architect – Novel Monarch of Innovation

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Introduction

The experience of innovation is closely linked to technological advancement in the field of architecture, engineering and construction. Pioneering approaches provide the opportunity to significantly reduce the time of commission of new projects. The industry is embracing new modes of rational approaches towards efficient practices – notably Building Information Modeling – BIM. It is a smart model – based process that provides insight for creating and managing projects.

This lateral approach has widened the horizon of the architect's canvas of evolution, communication, realization and continuance. BIM enables complex design concepts to take shape, which earlier were handicapped by conventional methods.

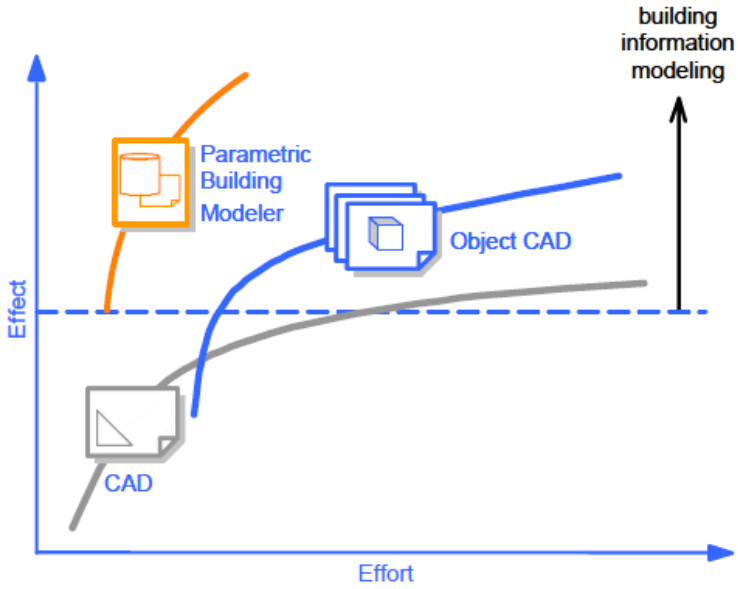
BIM Explorations - Project Old Age Neighborhood – AEC Design Studio - Courtesy - Ar. D. Vijaya Prasad

Evolution of BIM

CAD - the first generation Cad systems were used to automate the task of drafting. A CAD drawing was easy to modify and replicate. In order to establish as sense of meticulousness the concept of layering and 3D modeling was incorporated.

OOCAD - this approach brought in the paradigm of intellect to the computer aided illustrations. Vector drawings were replaced by building elements- Objects. These elements were able to be represented in multiple views, as well as having attributes of limited details assigned to them. This further gave way to the possibility of establishing linkages between geometric and functional aspects of building elements.

BIM – this innovation was a rational approach to visualize an entire building as a smart object. With algorithms and intelligent data processing that makes the virtual model interactive. In short it is a controlling tool that can be utilized to make any 3D model more intelligent.



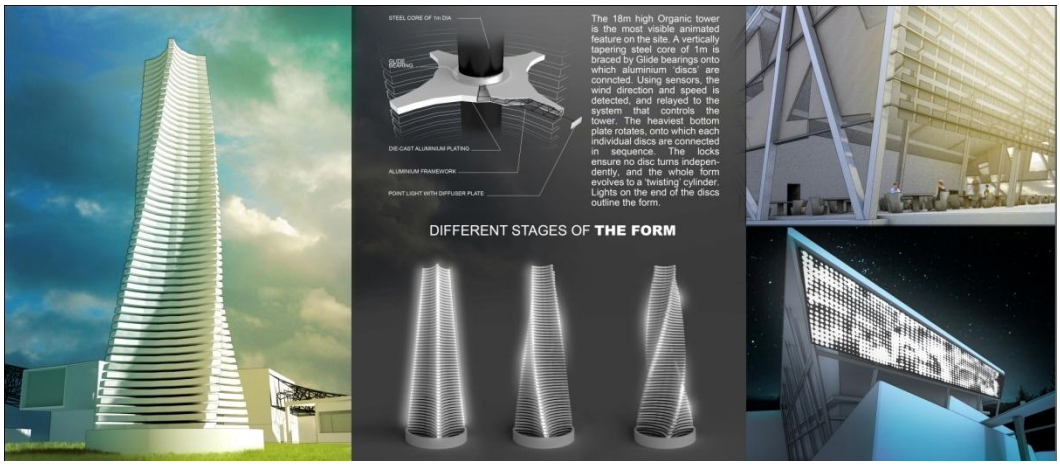
Efficiency Analysis Factor – Graphical Illustration

“Building Information Modeling is digital representation of physical and functional characteristics of a facility creating a shared knowledge resource for information about it forming a reliable basis for decisions during its life cycle, from earliest conception to demolition.” RIBA website

BIM Explorations – Revitalization MG Road Bangalore – UD Studio Thesis - Courtesy - Ar. Sherin Kadeeja T

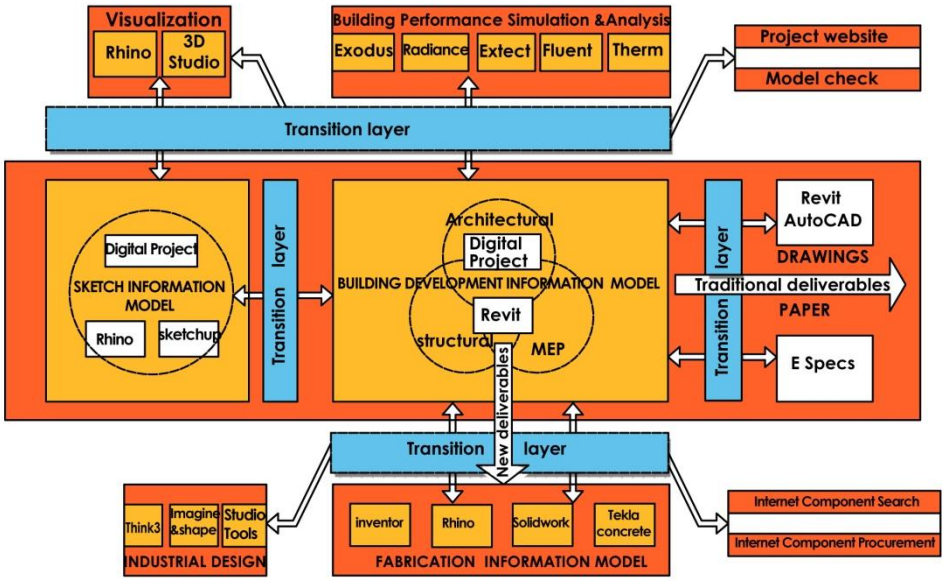
Fundamentals of BIM

Supplementary to a drawing and documentation tool, BIM offers a stage for enhanced interdisciplinary information sharing throughout the building lifecycle. BIM constitutes smart objects in such a way that information about these objects can be developed and edited, throughout the construction process and then used for maintenance of the building on commission. At any point these data about the objects – constituent parts of construction, could be used for refurbishment, alterations & replacement.



BIM Explorations – High Rise Structures – Thesis Design Studio Activity - Courtesy - Mr. Milad Thaha

The smart objects are virtual simulation intelligence of building components. It acts as a data application with attributes like quantity of material that can be edited. Major building systems can be represented using the integration of structure into a single master model. All these information can be retrieved in 2D document format in BIM application center.



Skidmore, Owings & Merrill (SOM), Building Development Information Model, New York 2008

BIM Architecture composes of cognition of hybrid user interface, elevated understanding of digital realm and in depth understanding of multi – disciplinary domains. Leading providers of BIM applications are: Autodesk Architectural Desktop (ADT), Revit, Bentley Systems, Graphisoft, & Nemetschek.