



**Andhra Pradesh State Skill
Development Corporation**



ARCHITECTURAL MODELING USING REVIT

INTRODUCTION TO REVIT ARCHITECTURE



REVIT ARCHITECTURE

2.1 INTRODUCTION TO REVIT

Revit is a software platform that is used in the Design Process of the Architecture, Engineering and Construction Industry. The environment is 3D based and allows for the creation of 2D drawings extracted from the 3D Modeling. Each component within the model has information associated with it such as the material, quantity and other classification types. It is based on the Parametric Design.

There are three main disciplines you can model:

1. Architecture
2. Structure
3. M.E.P-Mechanical Electrical Plumbing

2.2 REVIT ARCHITECTURE

Autodesk Revit is Building Information Modeling (BIM) software for Microsoft Windows, which allows the user to design with parametric modeling and drafting elements. The base building is drawn using 3D objects to create walls, floors, roofs, structure, windows, doors and other objects as needed.

WHAT CAN DO IN REVIT ARCHITECTURE:

Revit BIM software will prove useful for architects and engineers, interior designers may find themselves feeling frustrated. This is because Revit isn't the easiest software to use if you want to work on building interiors from a different perspective.

Revit supports the design, drawings, and schedules required for building information modeling (BIM). BIM is digital prototyping for buildings. It delivers information about project design, scope, quantities, and phases when you need it. Before you get started with Revit, there are a few concepts you should know.

2.2.1 Modeling

In the Revit model, every drawing sheet, 2D and 3D view, and schedule is a presentation of information from the same virtual building model. As you work on the building model, Revit pulls together information across all other representations of the project. It automatically coordinates changes made anywhere—in model views, drawing sheets, schedules, sections, and plans.

2.2.2 Elements

Elements are the building blocks of a 3D model. They represent the real-world components that a designer adds to the model.

Some elements—such as walls, windows, and beams—are 3D and appear in all views. You can think of these elements as components that exist in a building. Other elements—such as tags, dimensions, or other annotations—appear only in the view in which they are placed.

These elements maintain rules and relationships to each other. For example, when a roof is

attached to walls, a relationship between the elements is established. These rules and relationships make changing the model easy.

2.2.3 Parameters

Parameters define the size, shape, position, material, and other information about an element in the model. Parametric modeling refers to the relationships among all elements in a project that enable the coordination and change management that Revit provides. These relationships are created either automatically by the software or by you as you work. Here are some examples:

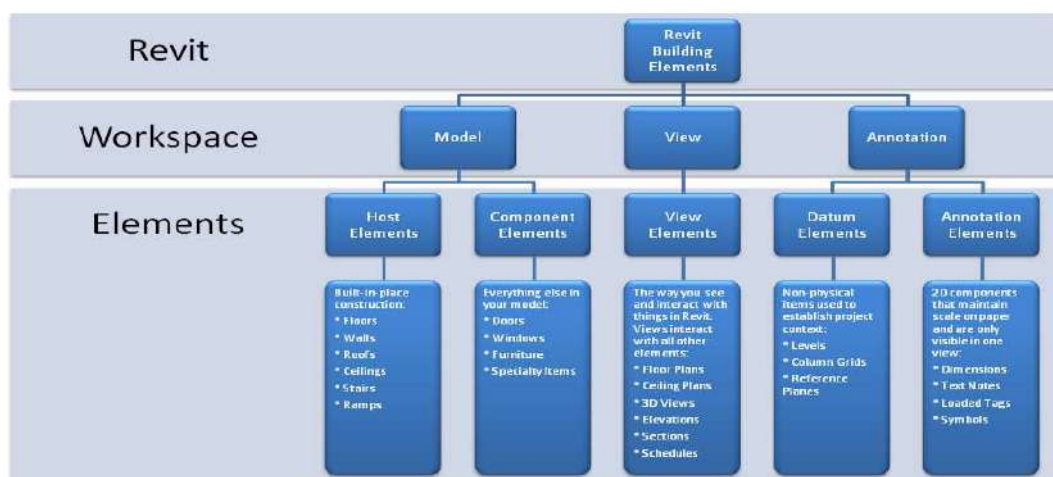
- A door is a fixed dimension from an adjacent partition wall. If you move the wall, the door retains this relationship to the wall.
- The edge of a floor or roof is related to the exterior wall so that, when you move the exterior wall, the floor or roof remains connected.
- Rebar is spaced equally across a given element. If you change the length of an element, Revit maintains equal spacing among elements.

2.2.4 Families

All the elements you add to your Revit model are organized into families. This includes walls, doors, structural members, mechanical equipment, or annotation elements such as elevation symbols, door tags, and column gridlines.

A family is a collection of elements with identical use, common parameters, and similar geometry. For example, although you may have different sizes of desks, all the sizes can belong to a desk family. If you look in the Project Browser, you can see a branch called Families.

Autodesk Revit Building Elements



Before going to construction virtual model creation in Revit Architecture



2.3 ADVANTAGES OF REVIT ARCHITECTURE

1. Reduced Field Cycle Time.
2. Greater Coordination and Collaboration.
3. Short Turnaround Time (TAT).
4. Waste Minimization.
5. Increased On-site Renewable Opportunities.
6. Greater Error Detection and Risk Mitigation.
7. Increased Public Confidence.
8. Increased Employee Productivity.

2.4 HISTORY OF REVIT

1. The Revit software developed by Autodesk company
2. Charles River Software was founded in Newton Massachusetts, on October 31, 1997
3. The company was renamed Revit Technology Corporation in January 2000.
4. Revit version 1.0 was released on April 5, 2000. The software progressed rapidly, with version 2.0, 3.0, 3.1, 4.0, and 4.1 released in August 2000; October 2000; February 2001; June 2001; November 2001; and January 2002, respectively
5. Autodesk has released several versions of Revit since 2004. In 2005 Revit Structure was introduced,
6. Then in 2006 Revit MEP.
7. After the 2006 release Revit Building was renamed Revit Architecture.