Andhra Pradesh State Skill Development Corporation

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ARCHITECTURAL MODELING USING REVIT

SETTING OF UNITS

&

EXPLAINING ABOUT WALLS

SETTING OF UNITS

Before going to the execution, we have to set the units.
So click on manage tab, Which is present in the ribbon bar then go to the settings panel, Here we can see the Project Units option, Or We can use a shortcut also i.e., **UN**.

1. In the Project Units dialog box, we need to select the discipline. That means we need to select the type of UNIT. By default, it has common units. If you want to change the unit type to structural then just click on the drop down arrow of discipline option, Now select the structural option, then you can see only structural units like force, area force, unit force ...etc. But for modelling we used mostly common units.
2. Click the value in the Format column to change the display value for that unit type. Then it will display the Format dialog box. Now click on the dropdown arrow of units, then you can change the unit format like mm, m,feet...etc. So Specify Units, if necessary like area, volume, angle ...etc.
3. ROUNDING: Rounding is nothing but precision. If you want to display the dimension values to the nearest 1000,100 and 10 then you can select the appropriate options in the rounding column.
    - If you select the '0' decimal option then it will display the only 0 decimal value (for example if you take 3123.456 and it displays as 3123).
    - If you select the '1' decimal option, then it will display the only 1 decimal value (for example if you take 3123.456 and it displays as 3123.4).
    - Remaining options are the same as these examples.
    - Coming to the custom, if you select the custom then you can mention the appropriate value as much as u wants.

1. For the Unit symbol, select an appropriate option from the list. I.e., if you select the unit format as millimeter then here you need to select the unit symbol as mm.Or if you don't want to display any unit symbol then you can select the option as none.
2. Optionally select:
    - Suppress trailing 0's
      When selected, trailing zeros do not display (for example, 123.400 displays as 123.4).
    - Suppress 0 feet
      when selected, does not display the 0 foot value (for example, 0' - 4" displays as 4"). This option is available for Length and Slope units.
    - Show + for positive values
    - Use digit grouping
      when selected, the Decimal symbol/digit grouping option specified in the Project Units dialog is applied to the unit value.
    - Suppress spaces
    - when selected, suppresses spaces around feet and fractional inches (for example, 1' - 2" displays as 1'-2"). This option is available for Length and Slope units.
    - After specifying all units then click on OK.

WALL

Before going to this topic, we should set the building height. Actually, we have four elevations in the drawing area. As we can see it in the project browser also. To set the building height you have to go to any one of the elevations in the project browser. So I'll just go to north elevation, Here we can see the two levels.i.e., LEVEL 1 & LEVEL 2. Level 1 represents the ground floor and Level 2 represents the first floor. By default the height between the level1 & level2 is 4000mm.But we should give minimum building height i.e., 3000mm (and in feet we can give 10').So, to change the height we can double click on the value then it gets in editing mode. Now you can type the value as 3000mm or you can type 10' also.

NOTE: No need to change this value in all elevations. Because if u change the value in one elevation means in other elevations got updated.

TYPES OF WALLS: Walls are arguably one of the most important elements of any building. As such, the Wall Tool is a prominent function of Autodesk Revit Architecture.

When you click on the drop down arrow of the wall tool, as we can see that there are five types of walls.

1. Wall Architectural
2. Wall Structural
3. Wall by Face
4. Wall Sweep
5. Wall reveal

WALL ARCHITECTURAL:

Creates a non-structural wall in the building model. For modelling of any building we have to use wall architectural only.

WALL STRUCTURAL:

All wall types within the Basic Wall family have an instance property called Structural Usage, which specifies whether the wall is non-bearing or one of 3 kinds of structural wall (bearing, shear, or structural combined).

When you use the Wall tool, Revit assumes you are placing partition walls. Whichever wall type you select, the default Structural Usage value is non-bearing. When you use the Structural Wall tool, and select the same wall type, the default Structural Usage value is bearing. In either case, the value is read-only, but you can change it after the wall is placed.

WALL BY FACE:

Create walls from mass instances by picking lines or faces using the Wall by Face tool. This tool places walls on non-horizontal faces of a mass instance or a generic model.

WALL SWEEP:

Use the Sweep tool to add a baseboard, crown molding, or other type of decorative horizontal or vertical projection to a wall. You can add a wall sweep to a wall from a 3D or elevation view.

WALL REVEAL:

Use the Reveal tool to add a decorative horizontal or vertical cutout to a wall in an elevation or 3D view.

WALL ARCHITECTURAL:

Main Wall Groups:

When you select "Walls" from the Architecture menu, the Properties Palette "Type Selector" (at the top of the palette) will change to allow you access all the different wall types available to you. Just take a second to click on the Type Selector and have a look at the types available. Please Note: The types that you see when you do this will depend on the Revit Template (.RTE) files that you are using. As you scroll down the list of available types, notice that they are split into 3 different Groups.

The 3 Groups are Basic Wall, Curtain Wall and Stacked Wall.

BASIC WALLS:

The first Group is "Basic Wall". These are the wall types that you are probably going to end up using most of the time. This Group contains your 'usual' cavity walls, internal partitions, etc.

But we used mostly Generic walls. There are some default generic walls like Generic - 225mm masonry, Generic - 90mm Brick, Generic - 200mm - Filled, etc.

MASONRY WALLS:

Masonry walls are the most durable part of any building or structure. They provide strength, durability to the structure and also help to control indoor and outdoor temperature. It separates a building from the outside world. Masonry is the word used for construction with mortar as a binding material with individual units of bricks, stones, marbles, granites, concrete blocks, tiles etc. Mortar is a mixture of binding material with sand. Binding materials can be cement, lime, soil or any other. The durability and strength of masonry wall construction depends on the type and quality of material used and workmanship.

CURTAIN WALLS:

The second Group is "Curtain Wall". These wall types allow you to create (for example) "modular facades". They allow you to create walls which can be subdivided (both vertically and horizontally) into separate panels. Curtain Walls play host to Curtain Grids and also Mullions.

A curtain wall is any exterior wall that is attached to the building structure and which does not carry the floor or roof loads of the building.

In common usage, curtain walls are often defined as thin, usually aluminum-framed walls containing in-fills of glass, metal panels**,** or thin stone. When you draw the curtain wall, a single

panel is extended the length of the wall. If you create a curtain wall that has automatic curtain grids, the wall is subdivided into several panels.

In a curtain wall, grid lines define where the mullions are placed. Mullions are the structural elements that divide adjacent window units. You can modify a curtain wall by selecting the wall and right-clicking to access a context menu. The context menu provides several choices for manipulating the curtain wall, such as selecting panels and mullions.

These wall types provide 3 levels of complexity, upon which you can simplify or enhance:

- **Curtain Wall --** has no grids or mullions. There are no rules associated with this wall type. This wall type provides the most flexibility.
- **Exterior Glazing --** has preset grids. The grid rules can be changed if the setting is not suitable.
- **Storefront --** has preset grids and mullions. The grid and mullion rules can be changed if the settings are not suitable.

STACKED WALL:

The last of the Wall Type Groups is “Stacked Wall“. These Wall Types are fundamentally just “containers” for a number of other Wall Types” The Wall Types within a Stacked Wall “container” are stacked vertically. Stacked Walls are really useful where you design walls that change type at different heights.