

David Driver's Revit One Sheets
REVIT'S MIND...OR THINK LIKE REVIT DOES

Revit System: Behavioral Organization of Revit Project

Revit is a database. For each kind of object you work with be it an elevation view, or a window, it is a part of the database that is the Building Information Model. Within Revit the kind of object you are working with will determine:

- How it is added,
- What parameters you have available to control it
- How it interacts with other objects
- How it is displayed
- How it is Scheduled

(this chart is adopted from the Revit Help File)

| Revit Terms | Model Elements | | Annotation Elements | | View Elements | |
|---|--|---|--|--|--|---|
| | Host Elements Building Objects | Component Elements Building Objects | Datum Elements Controlling Annotation | Annotation Elements Simple Annotation | | Phasing + Design Options |
| Description in terms of behavior | Typically Stand alone. Shape or size is created on the fly as you draw these items. | Typically these are imported into the project and often attached to another object. Their shape and size are stored in an external family file. | Datum elements CONTROL the building model and are visible in all appropriate graphic views | View specific objects. | Query of the Building Project Database | While not dependent entirely on views, these two functions are intricately linked behaviorally to views and view properties |
| Examples | Walls, Floors / ceilings, Stairs / ramps, Roofs, Site Pads, Topo Surfaces | Doors, Windows, Openings, Furniture, Fixtures, Equipment, Hosted sweeps | Levels Grids Reference planes | Dimensions Leader tags Symbols / text Detail elements Color fills tags | Sections Elevations Schedules Area Reports Area Plans Renderings, | |
| Comments | These are system families and can only exist outside the project model as Revit Groups | AKA hosted objects. While this is obvious for things like doors and windows, the Components (Furniture and Fixtures) may or may not act hosted. | These items will show up in many views | These items will only show up on the view they are placed | Whatever you want to place on a sheet will be a view of the building model | |

The Revit building model is composed of 5 very different types of elements: host, component, view, datum and annotation. These element groups are unique based on how they are created and modified in the drawing.

Revit Database: Category > Family > Type > Instance

Every component of the building model is part of a hierarchy of data base elements. Revit accomplishes this "macro to micro" hierarchy in these terms:

Category (or Element) > Family > Type > Instance

Each level within this hierarchy controls a general aspect of behavior within the objects, but there is overlap in many areas. The following is not a complete list, but enough to give you an idea of the concepts behind this thought.

Category

The Category is the general grouping of object. These are broken down further into subcategories for fine tuning

| Used for: | | Examples |
|--------------------------|---|--|
| Display Control per view | Display View Overrides: Per view in the visibility graphics override you can turn off, change color linetype or all... | Turn off all "Furniture" families in my annotated floor plan view. |
| Object Styles: lines | Lines are assigned to each category per cut or projection. | When you look at a wall in plan view you will see the cut assignment of walls, if you look at it in elevation, you see the projected line assignment for all walls |
| Object Styles: Material | Object Styles Per project you can assign material to subcategories | ...(All door panels regardless of family and type unless overridden get the material assignment OAK. object settings) |
| Family organization | Family Creation: Each time you choose to create a new family from a template you are given a list of RFT files to choose from. Each of these corresponds to a category in the list. | The set of initial parameters you have to work with will be different for a light than a casework. |
| Schedules | Most often you schedules will be based on categories: | Show me all the electrical fixtures in this project. Show me the area of all floors in the project and their assigned materials. |

Family

Family is the general grouping. While Category may be Door, Single Flush is an example of a family what may contain multiple types. There are two flavors of families. External families are created and defined in RFA files. They are loaded and used in the RVT file. System families are families whose geometry can not be predetermined outside of the project RVT file. Roofs floor slabs and walls are samples of system families.

RFA Families (component elements see first page)

| Ideas: | | Examples |
|------------|---|---|
| Geometry | If you change the geometry in a family it will change all types and instances in the project | If you add glass to a single hinge door family it will appear in all doors of this family in the project. |
| Parameters | Parameters are created inside the family file to allow users to drive the geometry after the family is loaded into the project. | The door has a type "width" parameter and an instance "Sill" parameter. |

System Families

| | You only have access to the type parameters of system families. So there is not a lot you can do by family | Examples |
|--|--|----------|
| | | |

Type and Instance are just that, subdivisions of the family. For Revit components the type often is the size. For example look at the single hinged flush (family) door. It has many types that are simply named by their height and width (30" x 84", 36" x 80" etc)
An Instance is just one of those doors. I have control at the instance level of most object of sometimes their material but for many, just their location in space. Remember it is entirely up to the creator of the family what they decided was important to be a type parameter Vs an Instance parameter.