# In-Class Tutorial 1: QTO and Cost Estimating with Revit

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## Creating Room Schedules

**Step 1.** Define rooms in your model (Architecture>Room/ Set the upper limit in schedule to upper level). Use Room Separator to define rooms in areas that are not separated by walls (such as between lobby and corridors).Tag all the rooms (Architecture> Tag Room). Include the room name, area and volume in tagging. Assign names to the rooms in your First floor (Example of room names: office, classroom, Lounge, corridor, etc.)

**Step 2.** Make sure all your room volumes are calculated based on the room boundaries. (Select rooms>Properties> Upper Limit>change to the next level).

**Step 3.** Create a schedule of your rooms with their names, numbers, areas and volumes (View> Schedules> Schedules/Quantities).

**Step 4.** Arrange all open windows tiled in the drawing area (View> Tile).

**Step 5.** Allow Revit to calculate Volumes for the rooms (Architecture> Click on the arrow under Room and Area palette> Area and Volume Computations> Check Areas and Volumes).

**Step 6**. Double click on one of the room tags to open its family. Edit the family so that the volume appears below the area. Load the family back into your project (Create> Load into Project).

**Step 7.** Duplicate each floor plan and add a color scheme based on the rooms' name to your duplicated layouts (Properties>Color Scheme> <none>).

**Step 8.** From the room schedule assign names to your second floor rooms and observe the change in your floor plan color scheme.

## Creating Cost Estimate for Cast in place Concretes

**Step 9.** Select one of the walls in your project, right click and select "select all instances in the entire project", then from the properties pallet, select Edit Type, and edit the structure of the wall, setting "cast in place concrete" as the main material.

**Step 10.** From the identity tab specify a cost for the unit of analysis that is used in the project (i.e. 90$ per cubic yard)

**Step 11.** Repeat step 10 for your foundation items.

**Step 12.** Perform a multi-category take off to calculate total volume and cost of the cast-in place concrete in your building. Select Family and Type, Material: Name, Material: Area, and Material: Volume, and Material: Cost, as the scheduled fields. Also, add a parameter called "Total cost" (Discipline: Common; Type: Currency) for calculating total cost of the concrete using this formula: "Material: Volume/1 CY * Material: Cost". Edit the formatting so that the report looks clear and readable.

## Sheet Set Up

**Step 13.** Go to your color schemed level 1 plan view and crop its region making it ready for print set ups (within view bar in the bottom of your interface, click on show crop region and move your crop region lines to include only your building)

**Step 14.** Create a new Sheet; Load a C17*22 Horizontal sheet and give it a name such as "Level 1-Color Schemed Plan with Room Schedule".

**Step 15.** Adjust the title block so that the name fits in the allocated space. (Double click on the title block to edit its' family. You can click on any of the defined parameters and change their text size (Properties> Label). You can also move the lines to allocate bigger spaces to any of the parameters. "Load into project."

**Step 16.** Drag and drop your color schemed level 1 plan into the sheet. Adjust its scale (viewport properties> view scale) and position so that it fits well within the sheet.

**Step 17.** Drag and drop the room schedule into the sheet and adjust their positions.

## Extra Tasks:

## QTO Exercises:

**-** Tag all the doors in your project.

**-** Assign a type mark and cost to each type of doors in your model (Select the item> Properties> assign type mark and cost)

**-** Create a Material Take Off of all the doors. Include “family and types”, “Material: name”, “mark”, “Matiral: Cost” and “Material:area” within the schedule. Organize your schedule for QTO in a readable format.

## Sheet Set Up:

- Create a new sheet for presenting the Cast in place concrete QTO. You can put other viewports such as Section views next to the QTO table.