In-class Assignment 2: Revit Modeling: Adding Architectural Details/Material Quantity Take Off

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Step 1. Open the previous model you developed named "Campus-building-your Lastname.rvt".

Drawing the Parapet Walls

Step 2. Draw the parapet Walls (Make sure the exteriors are located on the outside/ click on the arrows if they are not).

Step 3. Edit the properties type>Duplicate the wall type>Edit structure>change the view on the preview to Section: Modify type attributes> Modify Vertical Structure> Sweeps> Add layer> for the profile type choose parapet cap, adjust other settings.

Creating Wall-floor trims

Step 4. From the first floor plan, choose a room that is bounded with walls (and not a curtain wall system).

Step 5. Define the trim path: Architecture tab>Component>Model in-place> Select Generic Models> Name: Wall-floor trim> Create tab> Sweep> Sketch Path>Uncheck Chain>trace the walls one by one and lock the newly created line to the interior side of the walls>Finish Edit Mode.

Step 6. Draw the profile of the trim: Modify|Sweep>Edit Profile>Select and open related view>Draw the profile>Finish Edit Mode>Properties>Material>Edit>Select Wood-Birch> Finish Model In-place Editor. (Alternatively you can choose a previously created profile from the properties menu).

Step 7. Create a Camera View to see the trimming (View>3D view> Camera).

Step 8. Adjust the lighting if needed (optional): View Control Bar>Show Rendering Dialog> Adjust Exposure

Creating Cost Estimate for Cast in place Concretes

Step 9. Draw foundation walls (Architecture>Walls: Structural>Edit Properties>Foundation-36"footing)

Step 10. 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 11. 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 12. Repeat step 10 for your floor and foundation items.

Step 13. Perform a multi-category take off to calculate total volume and cost of the cast-in place concrete in your building (Filter equals cast in place concrete). 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.

Creating Room Schedules (Optional)

Step 14. 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 15. Make sure all your room volumes are calculated based on the room boundaries. (Select rooms>Properties> Upper Limit>change to the next level).

Step 16. Create a schedule of your rooms with their names, numbers, areas and volumes (View> Schedules> Schedules/Quantities).

Step 17. Arrange all open windows tiled in the drawing area (View> Tile).

Step 18. 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 19. 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 20. Duplicate each floor plan and add a color scheme based on the rooms' name to your duplicated layouts (Properties>Color Scheme> <none>).

Step 21. From the room schedule assign names to your second floor rooms and observe the change in your floor plan color scheme.

Step 22. Explore any other options that might interest you in Revit and enhance the model. Ask any questions you may have.

Step 23. Save your model as "Campus-building-your Lastname.rvt" and submit the file in class website. You may contact me in case you have any questions or concerns at hoda@uw.edu.