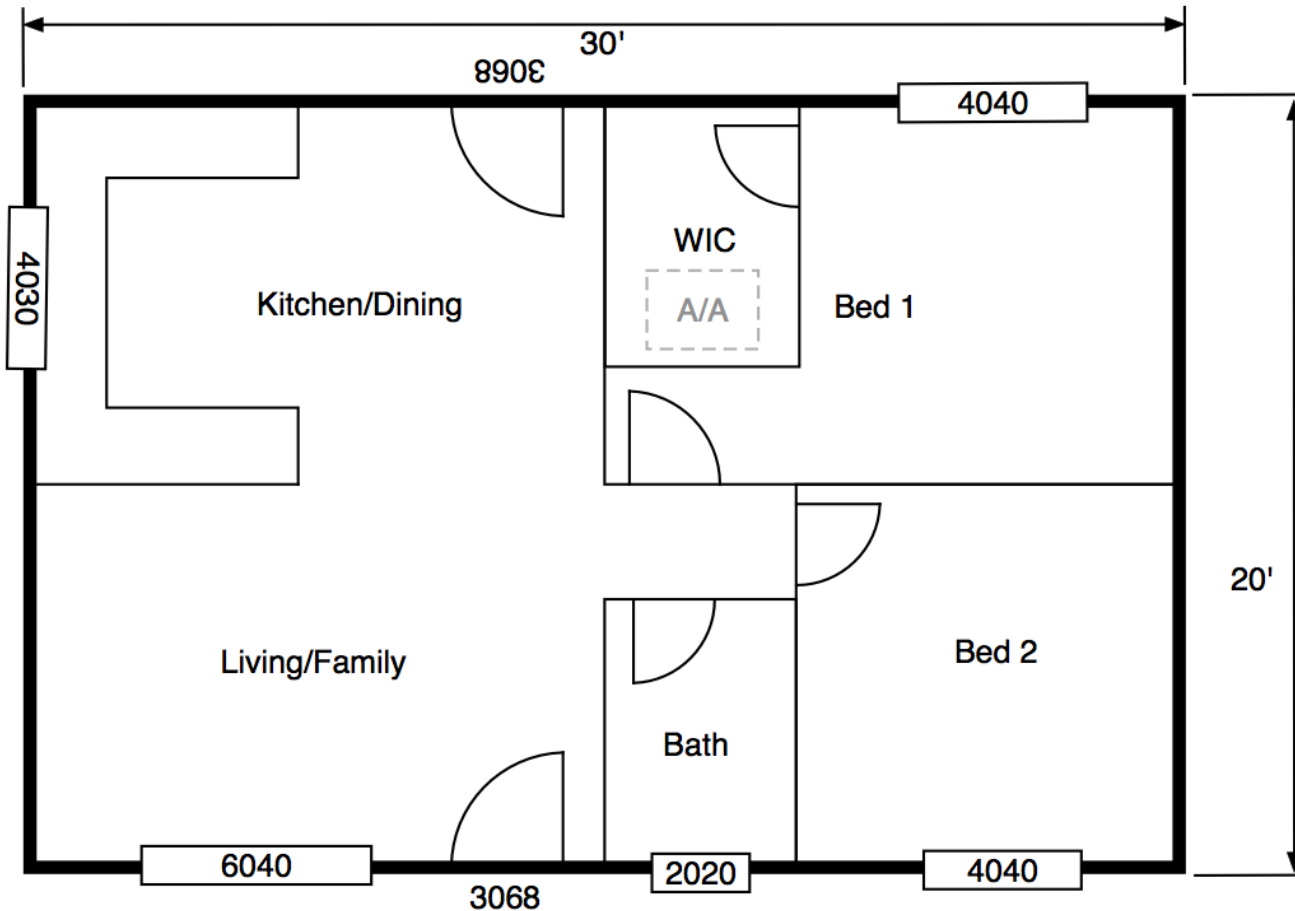


My First Kwik Model House

(BETA v.0-1-8, 4/13/19)



(Before you start: Take a screen snip of the floor plan above. It should save as a PNG or similar image file. Save it where you can easily find it. It will be used in step 2b, below.)

1. Basic Controls

- Left mouse button grabs and moves objects.
- Center mouse button (wheel) slides view up, down, left, right
- Right mouse button rotates view (3D rotation)
- Mouse wheel zooms in and out
- W-key fast zoom in
- S-key fast zoom out
- View keys – top right corner – front, left back right, top views
- 2D view, check/uncheck

2. Floor Plan Mode

- Click **“Elevations”** – [Just FYI: There is nothing to do here for this house, but notice that the floor is 6” thick, a slab in this example. The rooms will default to 8’ tall and there is no heal truss.]
- Click **“Import Floor Plan”** – Open the floor plan for My First Kwik Model House (screen snip of floor plan above).
- Click **“Top”** view and check box for **“2D view”**. Zoom in as needed.
- Click **“Scale Floor Plan”** – You will see two scaling arrows (lines with arrows at both ends), a maroon one that runs left/right and a blue one that runs up/down.

- i. Drag the maroon scaling arrow to line up with the marks for the 30' width of the house.
 - ii. Click on "**x scale blueprint to size**" (left margin), enter 30, click enter. Drawing will change size.
 - iii. Drag the blue scaling arrow to line up with the marks for the 20' depth of the house.
 - iv. Click on "**y scale blueprint to size**" (left margin), enter 20, click enter. Drawing will change size.
 - v. Drawing is now properly scaled.
 - e. Click "**Move Floor Plan**"
 - i. Zoom in on back left corner of house.
 - ii. Left-click floor to drag it around. Make back left corner of house line up with black 1'x1' grid lines as best as you can.
3. **Room Mode** (click "**Room**" at top of page)
 - a. ALT-click on anywhere on the Kitchen/Dining room to place a room (default room size is 10'x10'x8' tall)
 - b. Click on the room to highlight it.
 - c. Click-hold the room to drag it to align with floor plan.
 - d. Click-hold the red, blue, gray handles to adjust size of room.
 - e. Make room align with room on floor plan. Align with *exterior* edge of *exterior* walls.
 - f. Repeat for
 - i. Bed 1 (include walk in closet with Bed 1),
 - ii. Bed 2, living/family,
 - iii. bath (include hall with bath)
 - g. Check floor area in "**Info**" tab at top. Should say 600 square feet in "**from drawing**" box. If not something went wrong in the scaling step.
4. **Window Mode** (click "**Window**" at top of page)
 - a. Uncheck "**2D view**" box.
 - b. Click "**front**" view
 - c. Zoom in front wall of Living/Family room.
 - d. ALT-click-hold to drag window above 6040 window on floor plan
 - e. Enter size (6040 = 6" 0" wide x 4' 0" tall). Distance from top = 1'.
 - f. Repeat for other windows. You can either use right mouse button to rotate around house or you can click view buttons (Top, left, Back, Right) in top right corner of screen.
 - g. Click "**Doors**" in menu. Place doors at front entry and back wall in kitchen (doors default to 3068)

Building Shell is done.
5. **Duct Draw Mode** (click "**Duct Draw**" at top of page)
 - a. Defaults to "**Registers**" in menu box
 - i. Click "**Top**" view.
 - ii. ALT-click to place registers in each room. TAB to rotate register 90 deg.
 - iii. Place a register in each room. Use shadow to align with gray boxes on floor plans.
 - iv. Place return air grille in hallway, outside of bathroom. Enter size as 20 x 30. Tab to rotate.
 - b. Click "**Air handler**" in menu box
 - i. ALT-click to place air handler between return grille and attic access.
 - ii. Red box is furnace, blue box is evaporator (A/C) coil, grey box is return plenum and white box is supply plenum. All sizes can be changed.
 - c. Click "**Start Collars**"
 - i. Click "**Front**" view. Zoom in on supply plenum.
 - ii. Alt-click on supply plenum and place two start collars (grey circles).
 - iii. Click "**Back**" view button. Zoom in on supply plenum.

- iv. Alt-click on supply plenum and place two start collars.
- v. Click "**Left**" view button. Zoom in on return plenum.
- vi. Alt-click on return plenum and place one start collar.
- d. Click on "**Ducts**" in menu box
 - i. Click on "**Top**" view, upper right corner of screen. Zoom in as needed.
 - ii. Click on register in Kitchen/Dining
 - iii. Click on start collar (grey circle on supply plenum) closest to that register. Both the register and the start collar should be highlighted (blue).
 - iv. Hit "**enter**" key. To create new duct.
 - v. Drag center duct handle (gold) or connection-angle handles (green) to make duct bends smooth as needed. (ducts must be selected – blue – to be moved)
 - vi. Repeat for Bed 1
 - vii. Repeat for Bed 2
 - viii. Repeat for Living/family.
 - ix. Click on duct to Bed 2
 - x. Drag gold handle to the right, past register in Bath, nearer start collar on supply plenum.
 - xi. Hit enter (T-wye appears).
 - xii. Click Tab until t-wy points to register in bathroom.
 - xiii. Click on register in Bath
 - xiv. Click on connector (gray ball) on end of T-wye
 - xv. Hit the "**enter/return**" key.
 - xvi. Click on return air grille
 - xvii. Click on connector on end of return plenum
 - xviii. Hit the "**enter/return**" key.
 - xix. Adjust ducts as necessary by dragging the gold or green handles. To move or rotate t-wyes, select "**Fittings**" in the "**Duct Draw**" menu.

6. **Table Mode** (Click "**Table**" at top of page)

- a. Move house to right 1/3 of screen. Zoom back and position model so you can see the whole thing when table is open.
- b. [Just FYI: Click on each wall in table. You can click the first one and use the down arrow to scroll through the list. Notice how the walls in the drawing are highlighted when selected in the table. Repeat for windows, doors, ceilings, floors. This is how you can easily check your model.]
- c. Click on "**Rooms**" in the table drop down. Name each room by clicking on the cells in the "**Room Name**" column.
- d. Give each room an "**Air Flow portion**". This is the percent of the total air that will go to this room/register. If you have room-by-room load calcs, this is the room load divided by the total load for that zone. Enter decimals (e.g., 0.15). They **MUST** add up to 1.0. Use these numbers:
 - i. Kitchen 0.3
 - ii. Bed 1 0.25
 - iii. Liv/Fam 0.25
 - iv. Bath 0.05
 - v. Bed 2 0.15

- e. Click on **“Ducts”** in the table drop-down list. Click on first duct and scroll down. Notice how the ducts in the drawing are highlighted when selected in the table. All ducts should have defaulted to 6”.
 - f. Click on the **“Default Friction Rate”** box. Enter “0.1”.
 - g. Click **“Set all ducts to default size”**. The value 0.1 should be in the friction rate column for all ducts.
 - h. Click on **“System”** in the table drop-down list. Set total airflow to 600 (assume a 1.5 ton system for this example).
 - i. Click back to **“Duct”** table. Click on **“Auto Size Ducts”**. Duct sizes will change based on airflow and friction rate. You should get:
 - i. Kitchen 9” 180 cfm
 - ii. Bed 1 8” 150 cfm
 - iii. Bed 2 7” 90 cfm
 - iv. Liv/Fam 8” 150 cfm
 - v. Bath 5” 30 cfm
7. Go back to **Duct Draw** Mode (click **“Duct Draw”** at top of page)
- a. Click on **“Ducts”**
 - b. Check **“Show Diameters”** box, in lower left margin.
 - c. Zoom in on model of duct system. View from different angles.

Congratulations on your First Kwik Model House!