QUESTION

I want to add HVAC air ducts and vents to my plan, how can I do this?
ANSWER

With the [Spiral Ducting](https://3dlibrary.chiefarchitect.com/index.php?r=site/detail/922) bonus catalog, HVAC ductwork can be easily drawn into any plan as CAD Lines, then converted to a special 3D Molding profile.

To draw HVAC ducts

1. From the menu, select **CAD > Lines > Draw Line** and draw a standard CAD polyline where you want your ducts to be.

   **Note:** Molding Polylines generated from CAD lines will generate out to one side of the drawn polyline, typically to the right. For this reason it's advised to draw your CAD Lines in the same directions. In this tutorial, all CAD Lines are drawn clockwise, or left-to-right/top-to-bottom.

2. Select the Polyline and click the **Convert Polyline** edit button.
Make sure the selection is set to **Molding Polyline**, then press **OK**.

**Note:** The selection for 3D Molding Polyline will work for this procedure as well, though the standard Molding Polyline will likely be preferred, as the 3D Molding Polyline displays in Plan View as a single line, whereas the Molding Polyline shows the actual width of the molding used.

3. In the **Molding Polyline Specification** dialog that appears:

- On the **GENERAL** panel, set the **Height** of the duct. Remember that the molding generates up, so the height will be the measurement from the top of the unfinished floor to the bottom of the duct. In this example, the plan has a Rough Ceiling height of 134 1/2 to allow for the duct-work, the ducts have been set at a height of 117"

  **Note:** Molding polylines base their height off of the top of the unfinished floor, as depicted in the Room Specification dialog on the Structure panel.

- Select the **MOLDINGS** panel and click **Add New**. Browse to **Chief Architect Bonus Catalogs> HVAC No.2 Spiral Ducting** and select the only **Spiral Duct** option here, then press **OK**.
Specify its **Height** and **Width** as necessary, then click **OK**.

4. Repeat this as necessary for any additional ducts needed. It is not necessary at this time to butt or link the moldings together at intersections, as special connectors will be used to cover these areas.

If vertical ducts are required, some special considerations should be made:

- When a CAD Line is converted in an elevation view it can only be converted to a 3D Molding Polyline. 3D Molding Polylines behave similarly to, but not exactly like standard Molding Polylines, and will automatically attach to any surface (such as a wall) that the line crosses over in the elevation view.

- Conversely, if there are no surfaces for the polyline to attach to (such as drawing and converting the polyline outside of a room, away from other objects, or in a Backclipped Cross Section where no other surfaces exist) the molding polyline will generate 12" from the cross section plane. This can be used to control where the
molding is generated, and it can then be selected and moved in Plan View to align it with the other molding polylines.

- Because the start and end points on a vertical line share the same X and Y coordinates, a vertical 3D Molding Polyline will display in Plan View as a single dot, though if you click once to select it, only one of the two points will be selected and modified. To avoid this, draw a Selection Marquee around the polyline to select the entire object in order to re-position it.

To place duct fittings

Duct transitions, reducers, and vents are available as 3D Symbols that can be placed to create a more accurate representation of how your ducting will be built.

1. In plan view, open the Library Browser from the menu by selecting `View > Library Browser` if it's not already open, then browse to `Chief Architect Bonus Catalogs > HVAC No.2 Spiral Ducting`, and then into one of the appropriate sub-folders and select the symbol you wish to place.

   In this section of the tutorial, we will be choosing `90 Degree Transitions > Cross` to place a 4-way cross fitting.

2. Click to place the fitting. If necessary, you can disable object snaps by holding the `Ctrl` key if you are using a Windows computer, or the `Command` key if you are using a macOS computer.

3. Select the fitting and click the `Open Object` edit button to open the `Fixture Specification` dialog.
4. On the **General** panel:

   - Set **Height**, **Width** and **Depth** as needed.
   - For these types of symbols, if the size of the duct was modified, it's best to check the **Retain Aspect Ratio** check mark before making any modifications.
   - Set the Floor to Bottom to match the height of the molding polyline. In this example, 116” was chosen.
   - Press **OK** to return to plan view.

5. Because the 3D Molding and the 3D Symbol are roughly the same diameter, the 3D symbol will not fully cover the duct in this intersection.

To create an isometric view

1. Select **3D> Create Orthographic View> Orthographic Floor Overview**

2. Once the view has been created, select **3D> Isometric Views> Top Front Right**