Touchup

Touchup allows you to produce 3D hatching on DataCAD entities to visually enhance your 3D models for production of presentation-quality images. Unlike rendering programs, Touchup uses vector entities (3D lines) that can be scaled up or down without loss of clarity and can be outputted directly to a printer or plotter.

Unlike DataCAD's 2D hatching function which requires the definition of a hatch boundary, selecting a surface to be hatched in Touchup is as simple as clicking on it with the mouse. Hatchable entities include 2D lines (if Z-base and Z-height are not equal), polygons (with or without voids), slabs (with or without voids), and blocks.

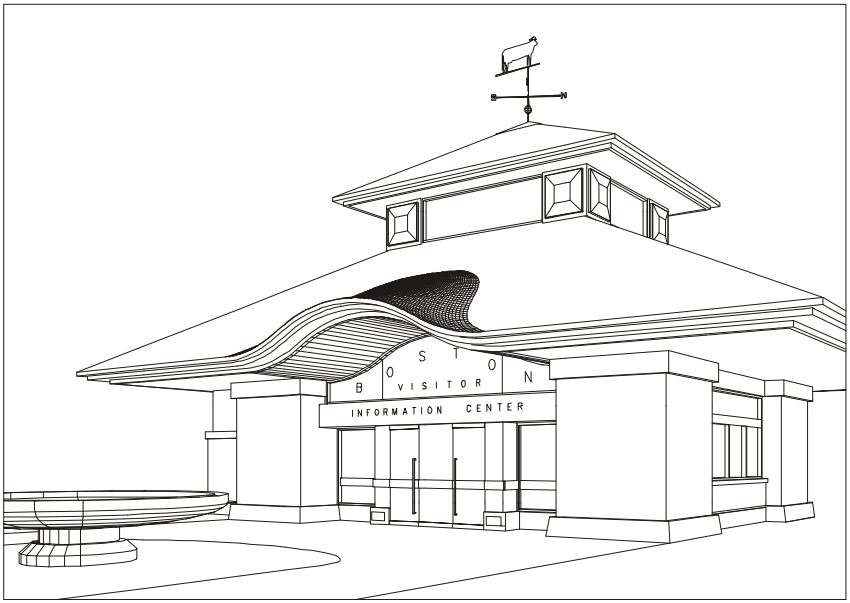
These 3D hatch patterns are truly on the entity face in the form of the DataCAD 3D line entity; the model may be viewed from any point and in any viewing projection, and the pattern will be correct. A subsequent hidden line removal will result in the displaying of the pattern on the face of the model, giving it a much more realistic and textured appearance than the typical plain, empty faces of ordinary DataCAD models.

As with 2D hatching in DataCAD, the more complex the pattern, the quicker drawing size grows. Therefore, the amount of hatching to be applied to a model should be weighed against the negative impact of increased drawing size and longer hidden line removal times.

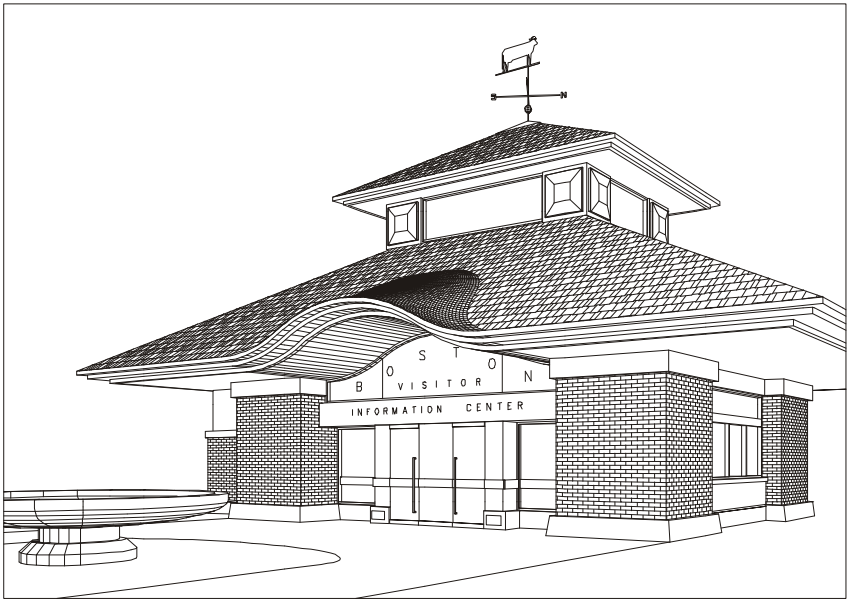
To produce 3D hatching with Touchup, first select a pattern (along with the desired scale and rotation of the pattern), then select the face of an entity to be hatched; the pattern is generated.

Selecting Entities for 3D Hatching

1. Choose Touchup from the Toolbox menu. You are prompted: *Choose menu option, or select the entity to Touchup.*
2. Click on an entity to select it. If there is more than one entity near the point you chose (as is often the case in a 3D view when looking through many entities, or when the entity selected shares edges with other nearby entities), Touchup will highlight the first entity found. You are prompted: *Is this the right face? (y or n).*
3. Verify that the flashing entity is the one to hatch by selecting Yes from the menu. Selecting No causes Touchup to highlight the next nearest entity and again ask for verification. Once the correct face is verified, pattern generation will begin. The selected hatch pattern is generated in the current color, on the current layer, and with the current linetype, spacing, etc.; the Touchup of that surface is complete.



3D model before applying hatch patterns with Touchup



3D model after applying hatch patterns with Touchup

Touchup's Menu Options

Touchup's main menu contains the following options:

Pattern
Scale
Angle
LyrSrch
SideBrds
DoVoids
SBWidth
Sides
NmbrSides
3DViews
Hide
Polygons
Slabs
Exit

Touchup Hatch Pattern

Select a 3D hatching pattern from this menu. Touchup can read your DataCAD 2D hatch pattern file (DCAD.PAT) and will therefore be able to produce in 3D any pattern that is available in 2D. This includes any pattern the user has created, if it is in that file.

Touchup comes preloaded with DataCAD's standard 2D hatch patterns in its memory. If your hatch pattern file includes other patterns you would like to use, you must load those patterns into Touchup's memory.

1. Choose Pattern from the Touchup menu to view the currently loaded patterns.
2. Choose Rescan at the bottom of the Pattern menu. You are asked if you want to re-read your hatch pattern file.
3. Select Yes to load the patterns in your 2D hatch pattern file into Touchup's memory. This process may take some time.

Should you make any subsequent changes to DataCAD's hatch pattern file, you will have to choose Pattern,Rescan in Touchup to load those changes.

Touchup Hatch Scale

Scale sets the enlargement scale for the pattern, similar to DataCAD's hatch scale factor.

The most commonly used pattern is Line, and a scale factor of 1.0 translates into lines spaced 1/32" apart. Therefore, to get a 6-inch Line pattern on a wall to indicate 6" clapboards, you would set the Spacing to 192 (6 x 32). The default is 200.0.

Touchup Hatch Pattern Angle

Angle sets the hatch pattern angle. An angle for a 3D pattern is made relative to the face that is being hatched. For the simple case of hatching a face that is parallel to the X-Y plane (such as a slab or polygon representing a floor, flat roof, ceiling, or tabletop), a zero angle is the same as it is for 2D hatching, that is, to the right. For any other face, a zero hatch angle is parallel to the X-Y plane (a zero angle when viewed in elevation), and its angle in plan view is equal to the intersection line of the face and the X-Y plane. Thus a zero hatch angle (the default) will produce horizontal clapboards when viewed in elevation. Likewise for roofs, a zero angle will show shingles aligned in rows parallel to the ground (X-Y plane).

Any time a non-zero hatch angle is specified by the user, the specified angle is added in a counter-clockwise direction to the zero direction as described above.

Layer Search in Touchup

This is the DataCAD LyrSrch toggle. When on, it allows the user to select the entity to be hatched no matter what layer the entity is on. When off, only entities on the current layer may be selected.

Remember that the pattern is always generated on the active layer, regardless of the layer that the selected entity is on.

Side Boards

This toggle, when on, allows the user a variety of choices in creating side boards offset from entity edges by a given amount. This gives the end effect of having, for instance, 6" clapboards along a wall that terminate 4" short of the corner, where a vertical board is drawn. When SideBrd is off, there will be no offsetting of the face and the pattern will extend to all edges of the selected face.

Do Voids

If a polygon or slab that is being hatched contains voids (as for windows and doors), the user is allowed the option of having side boards automatically drawn offsetting from those voids, giving the visual effect of trim around the void. If DoVoids is on, sideboards will be drawn of the width specified in SBWidth. If DoVoids is off, no offsetting of voids will be performed.

Side Board Width

Use SBWidth to set the sideboard size. Sideboards will be offset automatically on the sides specified using the Sides option.

Side Selection

When selected, Sides will bring up a list of toggles for the various side numbers that are to have sideboards. Turning the toggle off for a side will cause hatching to be done right up to the edge of the selected face. When the side is to contain an offset sideboard, its toggle must be on.

To determine side numbering for any given face of a model, select the face with NmbrSides on.

Number Sides

Use NmbrSides to number the sides of a selected face of an entity.

1. Choose NmbrSides from the Touchup menu.
2. Select the entity face to be numbered. The sides of the selected face are numbered.

You can now specify which sides will contain automatically generated offset sideboards.

3D Views

The 3DViews menu helps you generate views for plotting or presentations. By orienting the model during the drawing process, you can add new entities to the right place on the model. For complete information about the 3DViews menu , see the DataCAD 8 Reference Manual.

Hide

Use Hide to perform hidden line removals in DataCAD. The hidden line removal system recognizes only two basic types of data: closed polygons (which may have voids) and lines. DataCAD's hidden line removal system is a two-pass system with an additional initialization step. The initialization step performs a few simple and quick operations: allocating memory, calculating the limits of your model for a specified view, and initializing the temporary hidden line removal database. For complete information about the Hide menu , see the DataCAD 8 Reference Manual.

Polygons

Use Polygon to create 3D polygons. Do not confuse 3D polygons with their 2D counterparts. A 3D polygon is not a group of lines as a 2D polygon is; it is a single entity. 3D polygons are opaque to the hidden line removal process. For complete information about the Polygons menu , see the DataCAD 8 Reference Manual.

Slabs

Slabs are usually the most common entity type in a model. Slabs are similar to polygons; you might, in fact, think of slabs as polygons with thickness. The one important distinction between slabs and polygons is that slabs possess a reference face that controls the direction in which you can pass a void. For complete information about the Slab menu , see the DataCAD 8 Reference Manual.

Exit Touchup

This command will exit the Touchup macro. The current settings for pattern, scale, angle, and sideboards will be remembered by Touchup the next time the macro is run.

Keyboard Shortcuts

You can use DataCAD's primary keyboard shortcuts (listed in The DataCAD Drawing Board chapter of your DataCAD 8 Reference Manual) while in Touchup.

Additionally when at the main Touchup menu, the user may issue any keyboard command, such as pressing (M) for move (except those that use (Alt) keys). Once the menu operation is complete and the user chooses Exit, control is transferred back to Touchup's main menu.

This is a one-level function: for instance, pressing (M) for move, then (T) for template without first exiting the Move menu will in fact take the user to the Template menu and entirely out of the Touchup macro.

Tips for Erasing Touchup Entities

If you generate a hatch pattern with the wrong scale, angle, color, etc., you can immediately rehatch it. Since the 3D hatch pattern is a group and if it is the most recent group added to the drawing, it can be quickly removed using the Erase Last Group keyboard shortcut, (<). Patterns can also be removed quickly as a group by using the Erase menu and using the Group option.