Figure 10:
An example of a composite curve using the same logic of regional definition and tangency as the ellipse described in Figure 5. Each section of the composite curve is defined by a fixed radius. The connection between radial curve segments occurs at points of tangency that are defined by a line connecting the radii. Perpendicular to these lines, straight line segments can be inserted between the radial curves.

Figure 11:
A similar curve described using spline geometry, in which the radii are replaced by control vertices with weights and handles through which the curved spline flows.

Greg Lynn, Animate Form (1999)
<table>
<thead>
<tr>
<th>Year/Term</th>
<th>Faculty</th>
<th>Dept</th>
<th>Opt ID</th>
<th>Work Title</th>
<th>Work Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALL 2003</td>
<td>Toshiko Mori</td>
<td>A</td>
<td>T 5134</td>
<td>East Elevation</td>
<td>Office Floor an</td>
</tr>
<tr>
<td>FALL 2002</td>
<td>Laura Miller, Gary Rohracher</td>
<td>C</td>
<td>C 1856</td>
<td>Regional Sport Facilities. Final model</td>
<td></td>
</tr>
<tr>
<td>SPR 2002</td>
<td>Laura Miller, Gary Rohracher</td>
<td>C</td>
<td>C 1857</td>
<td>Regional Sport Facilities. Wall section</td>
<td></td>
</tr>
<tr>
<td>SPR 2001</td>
<td>Laura Miller, Gary Rohracher</td>
<td>C</td>
<td>C 1858</td>
<td>Regional Sport Facilities. Site Plan</td>
<td></td>
</tr>
<tr>
<td>FALL 2001</td>
<td>Laura Miller, Gary Rohracher</td>
<td>A</td>
<td>A 1860</td>
<td>Regional Sport Facilities. Surface migration diagram</td>
<td></td>
</tr>
<tr>
<td>FALL 2001</td>
<td>Alejandro Aravena</td>
<td>A</td>
<td>A 1861</td>
<td>Penelopen. Shanty town area in Santiago</td>
<td></td>
</tr>
<tr>
<td>FALL 2001</td>
<td>Alejandro Aravena</td>
<td>A</td>
<td>A 1862</td>
<td>Density. Extended urban carpet housing</td>
<td></td>
</tr>
<tr>
<td>FALL 2001</td>
<td>Alejandro Aravena</td>
<td>A</td>
<td>A 1863</td>
<td>Elevator</td>
<td></td>
</tr>
<tr>
<td>FALL 2001</td>
<td>Alejandro Aravena</td>
<td>A</td>
<td>A 1864</td>
<td>Perspective. Working and living</td>
<td></td>
</tr>
<tr>
<td>FALL 2001</td>
<td>Alejandro Aravena</td>
<td>A</td>
<td>A 1865</td>
<td>Perspective View into to communal courtyard</td>
<td></td>
</tr>
</tbody>
</table>

Harvard Graduate School of Design student work
When the GSD Designed Software

experiments in computer vision, 1965-1991

Between 1965 and 1990, the Laboratory for Computer Graphics and Spatial Analysis at Harvard and the GSD (the Graduate School of Design) was a research laboratory for the study of the application of computer graphics to architectural and urban design. The lab created a series of software packages designed to support the activities of architects, designers, and urban planners. The programs were used to test new ways of thinking and working in design.

As you might expect, both "design" and "computation" were redefined along the way. In the 1960s, it was obvious that each implied a new way of working on the other. The lab's work in Computer Graphics and Spatial Analysis helped to define a new field of computational architecture. The output of these tools is not only a new kind of visual representation but also a new way of thinking about design and computation. It could be argued that we can now think differently.

Projects from Harvard's Laboratory for Computer Graphics and Spatial Analysis
Including work by...
Animating the Archive

Live from the trays!
<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Type</th>
<th>Modified</th>
<th>Attr</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000_05 Competition</td>
<td></td>
<td>File Folder</td>
<td>5/13/2010 4:29 AM</td>
<td>a-r</td>
</tr>
<tr>
<td>2000_07 Suppliers Web Sites</td>
<td></td>
<td>File Folder</td>
<td>2/2/2001 5:19 AM</td>
<td>a-r</td>
</tr>
<tr>
<td>2001 Building Permit</td>
<td></td>
<td>File Folder</td>
<td>11/30/2010 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2001 Survey</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2001_02 Images</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002_04 MACA Model</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002_06 Presentation</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002_09 Fundraising Invitation</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002_09 Planning Dept Renditions</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002_10 AD Presentation</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 01 Presentation</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 06 PDF for New Artist</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 07 Animations</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 07 Tender</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 08 RCA Model and Poster</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 08 Wave Renditions</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 08 Plaza Renditions</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 08 Lightspeakers</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 09 Audition Lighting</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 11 DIFV BASH</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 11 Library Millwork</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2002 05 Working Drawing/PDF</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2003_04 Sculpture Garden</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2003_05 Auditorium Lighting</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2003_06 Plaza</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2003_11 DIFV BASH</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2003 01 Library Millwork</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2003 02 Library Millwork</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2004_01 Shop</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2004_09 Times Renditions</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2004_10 Terrace Rendering</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2004_11 DIFV BASH</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2004_11 DIFV BASH</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2004_12 DIFV BASH</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2004 03 Plan DWG from Art</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>2004 04 April Banquet</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>030101 KIRKUS MODEL ST for PRINCIG</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>030103 GALLERY LAYOUT</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>030104 Sculpture Garden</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>Collage</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>Cross</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>Data</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>Data</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>Datasheet</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>Factory</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>From Backshop</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>History</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>Invoices</td>
<td></td>
<td>File Folder</td>
<td>10/22/2001 5:07 PM</td>
<td>a-r</td>
</tr>
<tr>
<td>Preston Scott Cohen, Tel Aviv Museum of Art files</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
model / form evolution

2005/01/30

2005/06/25

2005/07/15

2005/11/23

Preston Scott Cohen, Tel Aviv Museum of Art files
Student Portrait: Joshua Feldman (MArch '16)
Resemble and optimize problems

Hello!

I resembled a cylindrical surface as mesh, and tried to optimize it - but nothing good came out.

2.3dm 2 (961.6 KB)
What's New in Beta 6-Dec-1999

**Preview image for 3DM files**
Now when you save a file, a preview image of the active viewport is saved. This preview image displays in the Open, Save, and SaveAs dialog boxes.

**Save Small option**
The `SaveSmall` command saves your file without render meshes to decrease file size. The `Save small` checkbox in the SaveAs and Export dialog boxes also clears the render meshes.

**Text and dimensions export to AI and WMF and import and export to DWG/DXF**
Text and dimensions export to Adobe Illustrator (AI) and Windows Metafile (WMF) and import and export AutoCAD DXF and DWG formats.

**BMRT support added**
Toolbars and commands to assist assigning materials to objects for rendering in Blue Moon Rendering Tools (BMRT) has been added.

**POV-Ray support added**
Toolbars and commands to assist assigning materials to objects for rendering in POV-Ray has been added.

New Commands

**Turntable**
The `Turntable` command continuously rotates the view. You can pan and zoom while Turntable is running. You can use the Turntable command inside surface analysis commands, Shade, and RenderPreview.

**Hydrostatic calculations for marine design**
The `HydroStatics` command displays hydrostatic values for surfaces.

**Curve information tools**
The `CrvStart` and `CrvEnd` commands place a point at the start point and end point of a curve.
Rhino What's New

Notes for beta build 21-Mar-97

NEW FEATURES:

- Online Help. This is Beta Help. Please do not provide feedback on this yet - we're still a long way from being done. There is a What's New section in the help file that has more details on all the new features listed below.
- Customizable keyboard shortcuts. From the Tools menu, click Shortcut Keys. Type any command or list of commands in the space provided.
- Periodic surfaces. Closed, smooth surfaces created by some commands in the newest build of Rhino are periodic surfaces. Commands that can create periodic surfaces are Loft, Sweep 2 Rails, Sweep Along Path, Extrude, Revolve.
- Revolve makes periodic surfaces. Use the deformable option and revolve 360° to create a periodic surface that stays smooth when its control points are edited. Previous releases of Rhino created surfaces of revolution that developed creases when deformed. The deformable option fixes that problem.
- Fillet edges of solids: From the Solid Menu, click Fillet Edges, or type FLTE. This fillet command that works well on simple objects, but not on complex ones.
- Show control polygon for control point editing. Use the CPTOG command to turn the control polygon on and off.
- Set control polygon display density wit the CPDASH command.
- Select rows and columns of control points on surface. There are three new commands to help select rows and columns of control points for editing surfaces.
- Delete control points on curves by selecting them and pressing the DEL key.
- Handlebar curve editor: From the Curve menu, click Point Editing, then click Handlebar Editor.
- Create cross section curves. The CSEC command creates cross section curves through any number of shape curves. It is similar to the 3DS deform fit command. For example, consider modeling a human arm. Profile curves can be drawn from the shoulder to the hand that define the rough shape of the arm. The CSEC command can be used to create slices perpendicular to the arm that can be used for lofting.
- Make curve periodic: From the Curve menu, click Edit Tools, then click Make Periodic or type MAKECURVEPERIODIC, to make a curve periodic.
- Project object to construction plane. From the Transform menu, click Project to Cplane, or type PROJCP. The objects will be projected to the construction plane in the viewport that is current when the command ends.
- Prepare curves for lofting. The PREPCURVES command Refits a set of curves so they have the same number of control points. If the set of curves are closed curves, a graphical interface allows the
What's New in Beta 1-3-Oct-1999

- Shaded working mode
  Continual shaded working mode is now available. Note: This does not use OpenGL.
  To turn it on, right-click the Viewport Title bar, then click Shaded.
  If objects start to look jagged after control point editing, select Refresh from the Viewport Title bar menu.
  The light for shaded views now comes from over your left shoulder.
  For this build, the ClearAllShades command turns off shaded mode so you can save the model without render meshes.
  When 1.1 ships, this command will be replaced by a checkbox in the Save and Save As dialog boxes.
  Drape, Sketch, and Mesh and ZBuffer use the wireframed display. This makes it easier to use the wireframe geometry as a visual aid.

- Annotation
  Annotation text: The Text command lets you place 2-D annotation text in your model. The EditText command lets you edit 2-D annotation text.
  Note: the command to create text objects has been renamed TextObject.
  Leaders: Create leaders with the Leader command.
  Angle dimensions: The DimAngle command creates a dimension between two lines.
  Edit dimension text: The EditDim command lets you edit dimension text.
  Still to come:
  Save to DWG, DXF, AI, WMF
  Import from DWG, DXF
  Make2D Enhanced: The Make2D command preserves layer information when creating hidden line views. It also has a new option to project the hidden line view to the construction plane in the active viewport.

- New Commands
  New from start, end, and radius: The ArcSER command creates an arc using the start point, end point, and radius.
  Previous and next construction plane: Move to the previously used construction plane with the CPlanePrev command. Restore construction plane change with the CPlaneNext command.

- Set names for multiple objects: The SetObjectNameMultiple command lets you set names for a set of selected objects. The names are numerically incremented.

- Select objects by name: Select object by name with the SelName command.

- Zoom window around 3-D target point: Set the target point to center your zooming with the ZoomTarget command. This helps get a good window zoom in perspective views.

- New toolbars: The toolbars have been updated to include the new commands.

- File I/O
  Speed improvements when saving on a network: Saving files to the network was considerably slower than saving to a local hard drive. This has been fixed.
  Export object properties to a spreadsheet file: Export object properties to a spreadsheet program like Microsoft Excel with the Export command. Exporting object properties to a spreadsheet file creates a comma-separated value (* .CSV) text file that contains a tabulation of various object properties including layer name, layer color, object name, object render color and selected mass properties.
  Add material name to objects: The SetObjectMaterial command assigns a rendering material. The object material can be used by RIB and OBJ file formats. Other formats will support material names in a future version.

- Enhancements
  Boolean operations allow Multiple Select: You can now select multiple objects for the BooleanUnion, BooleanDifference, and BooleanIntersection commands.
  UnrollSurf improved: The UnrollSurf command has been improved to allow unrolling of surfaces that are linear in one direction, but have degree higher than 1. Rhinoceros used to require surfaces to be degree 1 in the linear direction to unroll properly. Unrolling cylinders and cones, as well as other degree 2 and rational surfaces is more accurate.
  Project and Pullback support point objects: The Project and Pullback commands will now project points to a surface as well as curves.
  Fillet, Chamfer, and Extend simplify result: The Fillet, Chamfer, and Extend commands now simplify the result if possible. This means the extended lines and arcs do not have extra knots in them.
  FilletSurf and ChamferSurf leave polysurfaces joined: The FilletSurf and ChamferSurf commands used to extract surfaces from polysurfaces before creating the fillet or chamfer. They now leave surfaces joined to the rest of the polysurface they came from.

- Text command changed: The Text command, which creates text-shaped curves, surfaces or solids based on TrueType fonts, has been changed to TextObject.
Rhinoceros Perspective Match to Image

You have a perspective picture of something and an accurate 3D model. You want to set the projection in a Rhinoceros perspective viewport so that the model lies on top of the picture. You might want to do this to calibrate your model really as accurate as you think it is. You may need to add more elements to the model to reconstruct a crash or construction scene (like the accident reconstruction bowling pins). Or you have modified your model, changed the viewport settings, or want the same rendering projection used to create a previous image...

Step 1: Open the file with the model in it and put add perspective picture as a wallpaper image in one of the viewpoints.

Step 2: Click in the viewport with the wallpaper image (to make it the active viewpoint), and run the PerspectiveMatch command.

Step 3: Carefully pick a point on the wallpaper image, then carefully pick the corresponding 3D point on the model. Keep picking pairs of image/3D points until you have at least 8 points.

Step 4: Press enter.

Tips and tricks:
- Pick carefully. Accurate picking is rewarded with accurate results. Sloppy picking gives you garbage.
- Make the image view large. This aids in accurate image point picking.
- If possible, pick point pairs where an end or point snap can be used to select the 3D point. This aids in accurate 3D point picking.
- Pick points that are spread out in all dimensions. If the attached example, you get nice results if you pick the "carrot" points. You get less accurate results if you concentrate your picking in smaller sub-regions.

Change Log Press 1

The Face/Edge command reduces the number of faces in a polygon mesh. Catenary:
- You can reduce a mesh to as few triangles that it is useless.
- One triangle does not make a very good horse.

An argument could be made that it was the lightning arm that made Frank Gehry.
Windows 98/ME: You should now be able to run four or five copies of Rhino 3.0 on Windows 98/ME. We fixed some places in Rhino where it was using system resources.

Script Speedup: executing large scripts should be faster now. We found and fixed the bug that caused long scripts to get slower and slower as they executed.

File Import/Export on Windows 98/ME has been improved – several file formats (DWG, AI, CSV, WMF, etc) failed to open and save files. This has been fixed.

Trim and Split have been improved.

TextObject now works with Unico meta text.

Plug-ins failed to load when a command in the plug-in was run as a scriptable command. For example, -ReduceMesh failed to load the plug-in and therefore the command failed to run. This is now fixed.

Match3D failed on some trimmed surfaces.

Maximized Viewports: failed to return to maximized when the main Rhino window was maximized. This is now fixed.

The screen properly when canceling.

This has been fixed.

overkill-type-function/3401

Overkill type function?

rail
Oct '13

Overkill in AutoCAD? Overkill in AutoCAD searches out another) and deletes them and does other simple clean up tasks like

elvetosaur
Oct '13

Rhino was way ahead of AutoCAD with functions like SelDup over (long time) but AutoDesk have developed a few of these tools over only... SelDup.

lucio_zadra
Nov '13

overkill-type-function/3401

Overkill type function?

rail
Oct '13

Overkill in AutoCAD? Overkill in AutoCAD searches out another) and deletes them and does other simple clean up tasks like

elvetosaur
Oct '13

Rhino was way ahead of AutoCAD with functions like SelDup over (long time) but AutoDesk have developed a few of these tools over only... SelDup.

lucio_zadra
Nov '13

overkill-type-function/3401

Overkill type function?

rail
Oct '13

Overkill in AutoCAD? Overkill in AutoCAD searches out another) and deletes them and does other simple clean up tasks like

elvetosaur
Oct '13

Rhino was way ahead of AutoCAD with functions like SelDup over (long time) but AutoDesk have developed a few of these tools over only... SelDup.

lucio_zadra
Nov '13
Rhino 1.0 released

NEW FEATURES

Toggle the display of viewport titles with the ShowViewportTitle command.

Toggle the display of world axis icons with the ShowWorldAxes command.

Run an external program with the Run command.

Insert notes into Rhino file with the Notes command.

Capture Viewport screen image to the Windows Clipboard with ScreenClipboard, ScreenCaptureToClipboardWithoutCursor, CopyClipboard, or CopyViewToClipboard.

Draw a rectangle from its center point with the CRectangular command.

Specify which viewport is maximized with the SetMaximizedViewport command.

Create polygon mesh surfaces from a closed polyline with the Triangulate command.

Measure the coordinate of a point with the MeasurePoint command.

Match two surfaces by position, tangency, or curvature with SrfMatch command.

Evaluate UV coordinates of points on a surface with QueryUVPoint. This command requires knowledge of parameter space to use it.

Evaluate the U and V coordinates of points on a surface by choosing the point.

Create point on surface by specifying parameter space coordinates with CreatePoint. You need some understanding of parameter space to use this command. Evaluate the U and V minimums and maximums for curves and surfaces.

Create point on surface by specifying parameter space coordinates with CreatePoint. This is a geometrically command. You need some understanding of parameter this command. This is the reverse of querypoint.

Create parameter space curves with CreateParameter. This is a geometrically command. You need some understanding of parameter space to use this command. Reverses parameter curves to a real space. All boundary and trimming remapped to a rectangular area with the same aspect ratio of the original. This can be useful for matching features to certain parts of a texture map.

Create wireframe curves based on a surface or solid with ConvertToCurves command. Use this command on a surface or solid to generate curve objects from the wireframe curve of the solid.

CHANGES

Measure the volume of a solid with Volume. The volume command no longer displays centroid information. This command is replaced with the centroid command.

Measure the volumetric centroid of a solid with Centroid. This command is replaced from the volume command.

Read command files into command line with ReadCommandFile. Read a command file and execute it just as if it were typed into the command line. ENTER and SPACEBAR are command delimiters.

Paste commands from Windows Clipboard. Copy a list of command inputs, as you would type them into the command line, from a text file to the Windows Clipboard. Copy the input to the clipboard with Copy. Paste the input from the clipboard with Paste.

Startup commands. When Rhino starts, any commands in the Startup command will execute. If a file is opened by double-clicking in Explorer, these commands will execute after the file is loaded.

Change the number of undo and redo levels. You can set the amount of undo information. The undo command sets the number of undo levels. Rhino uses to save undo information. The undo command sets the number of undo levels. A level is the number of undo levels. Rhino uses to save undo information.