

File Organization

visiSitePlan™

is comprised of:

- A Visio Template: visiSitePlan.vst
- 4 Stencils (VSS files):
 - visiSitePlan.vss
 - visiSitePlan Survey Objects.vss
 - visiSitePlan Survey Annotations.vss
 - visiTitles.vss
- Sample Drawing files
- This Tutorial file: visiSitePlan Tutorial.vsd

Page Structure:

The Template has these pages:

- | | |
|--------------------------|---------------------------------|
| • Site Plan A (scheme A) | Background page |
| • Site Plan B (scheme B) | Survey |
| • Survey | Title |
| • Title | (none) |

Right click on any page tab to insert more pages like it.

Stencils

Each Stencil contains:

- Shapes supplied with Visio but modified to suit Site Planning design. (and omitting the clutter of shapes not relevant).
- New Shapes created specially for Site Planning.

Some shapes make use of functions (called AEC functions) NOT available in the standard Visio Version. If you have a Version of Visio 2003 or later that includes templates and stencils for "Building Plan" then you have what you need.

Each shape displays help text when the cursor hovers over the shape whether located in the stencil or in a drawing page. Many shapes also have control points with text describing what they do..

Each Stencil also contains a "HELP" shape (with more compact versions of the what you will learn on this page) describing how to use the master shapes together to create complex arrangements.

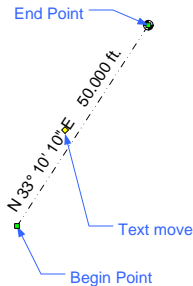
About Lot Surveys

A lot is bounded by a series of connected:

- Straight property lines defined by bearing and distance.
- Optional circular arc property lines usually tangent to the adjacent property lines and defined by subtended angle and arc length.
- A final "close" straight bearing defined by the overall beginning and ending points of the series of lines.

How to Draw a Survey Annotations

- Start with any lot corner where 2 straight bearings meet and drag a Survey Bearing shape onto the page. Enter bearing and distance data into the form. Its angle and length are now locked.

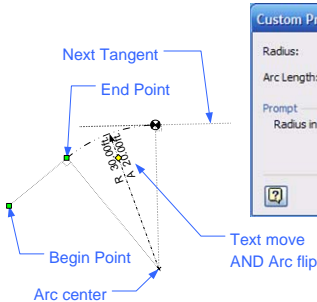


Custom Properties

NorS:	N
degrees:	33
minutes:	10
seconds:	10
EorW:	E
distance:	50.00
Prompt:	NorS

Define... OK Cancel

- Drag another Survey Bearing onto the page. Enter requested data and drag it so that its begin point glues the end point of the last bearing. And so on.
- For a Survey Arc, enter Radius and Arc Length, then drag each of its end points to connect to the beginning and end points of the previous bearing (or to the tangent connection points of the previous Survey Arc). Use the Text control to move the text radius arrow AND flip the arc if needed. Right click to hide the dotted construction lines.



Custom Properties

Radius:	50.00 ft
Arc Length:	20.00 ft
Prompt:	Radius in decimal feet

Define... OK Cancel

How to Draw a Survey (Continued)

- Drag a final Survey "Close Bearing" to the drawing. Connect its begin point to the end point of the previous bearing and its end point to the begin point of the first bearing. Its resulting bearing angle and distance will be displayed.
- Drag the Lot Area Shape onto the drawing. Using the Pencil tool, drag vertices as needed to connect to all vertices of the survey boundary. You can add vertices by using CTL-(Left Click). Drag edge center points to coincide with Survey arcs.
- It's advisable to lock the "Property Boundary" layer and "Lot Area" layer before drawing structures.

Survey Objects Stencil

How to Draw and Locate Structures.

Most structures and other building elements are irregular but with edges orthogonal to each other. They are almost always not parallel to compass points but are located on the survey with offset dimensions from building corners dropped perpendicular to property lines.

- Draw the building parts (structures, decks, patios) orthogonal to the page using standard tools (esp. Rectangle) and operations (esp. Union and Fragment).
- For each separate building element:
 - Drag an "Existing" shape to page.
 - Select it's name from the list, or type your own text.
 - Move the "basepoint" control some where within your building element.
 - Hold down SHIFT and click on the Building element.
 - Right click and select "Autosize"
 - Now you have 2 shapes the same size with a correct area display and appropriate formatting.
- Group all the shapes.

Now we need to move and rotate this grouped shape to the correct location within the survey boundary.

- Use the Offset shape to define existing offset lines from property lines.
- If the structure is parallel to a bearing line, View ... Size and Position, Copy (CTL C) the angle from bearing and paste into angle for grouped structures.
- Temporarily turn off Snap, then drag and rotate the grouped building shapes to the correct location.
- Don't forget to turn Snap back on.

All other shapes on these stencils should be self evidently easy to use.

The print date, page size, file path and page names are displayed on each page automatically

Go to the Title Page to edit Text in this area to be displayed on each page

Scale and Optional North Arrow exist only on Survey background page.

Drawing Type and Name (from Title Stencil)

Boilerplate to appear on all pages can be located anywhere on the Title Background Page

This space is reserved for a professional stamp after printing.

The name of each page is displayed automatically here.

Verify all dimensions in field

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Email address

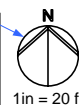
Web address

Mail Address

Author Title
Phone

Project Name

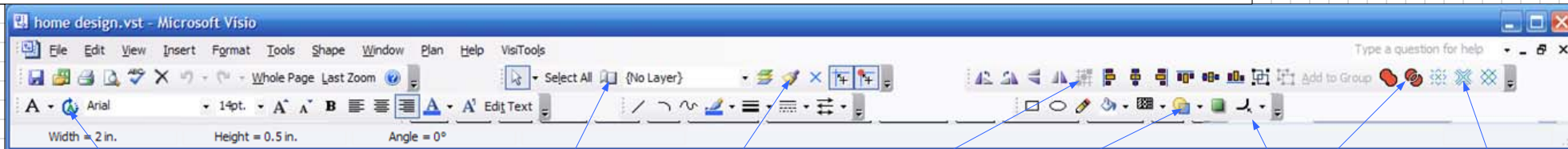
Project Address



Overview

visiSitePlan™

SITE
PLAN



Text Block Tool

Page Properties

Format Painter

Distribute

Transparency

Rounding
Union and Fragment

Trim, Offset and Join

Using Standard Visio Tools for CAD

Most Users of VISIO use it to draw abstract diagrams. They do not use it to design large complex physical objects to scale... what is called CAD (Computer Aided Design).

visiSitePlan™ provides many specialized smart shapes, custom line and fill patterns, and organizational concepts aimed at drawing Surveys and Site Plans.

But it is also important to understand the CAD power of many VISIO tools and shapes: some buried deep in VISIO menu trees and stencils.

Although the customization of VISIO toolbars is to some extent personal preference, I recommend it. Click on the "toolbar options" arrow to the right of any toolbar, click "add or remove buttons" and "customize".

For my own work I have created 6 custom toolbars (see image above) and disabled the standard toolbars (View... Toolbars.) They are arranged as follows:

File and View	Settings	Actions
Text	Line	Polygon

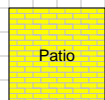
I have highlighted some of the more important and most frequently used tools that deserve to be accessible directly on toolbars. For a discussion of each see below.

Some frequently Used Tools

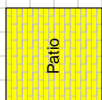
- **View:** Whole Page and Last Zoom.
- **Settings:** Page Properties and Format Painter.
- **Actions:** Note all tools shown above.

Text Toolbar

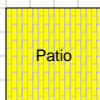
- The **Text Block Tool** works for the text of geometric shapes. Sometimes you need to rotate a shape to get a fill pattern to be properly oriented.



Original



Rotated shape

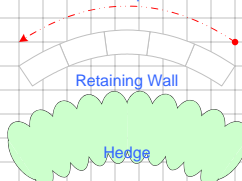
Rotate Text
back

Size and Position Window

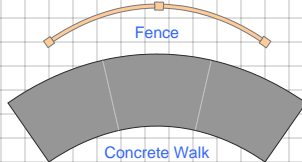
- It's useful to leave this window open at all times. (View.... Size and Position)
- **The fields accept formulas. Examples:**
 - Type "+ 5 ft" after the existing X value.
 - Protect aspect ratio (Format.... Protection), then type "*" 4" after the width value to quadruple the size.
 - Copy a shape's angle (Ctrl C). Select another shape. Past into that shape's angle field (Ctrl V).

Line Toolbar

- **visiSitePlan** provides many custom line patterns and line ends, but it's easier to drag them from stencils, where appropriate combinations of patterns, ends and colors are preselected. Use the Pencil tool to curve. These 5 shapes are all the same line!



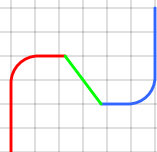
Hedge



Concrete Walk

Actions Toolbar

- **Join and Corner Rounding tools:** Useful for roads and walks.



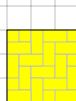
Original 3 lines



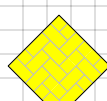
Join

Apply Corner
Rounding

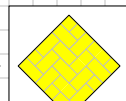
- **How to create a diagonal pattern at any angle**



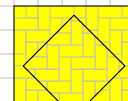
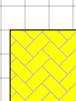
Original



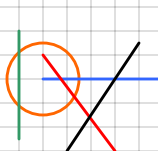
Rotate



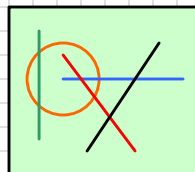
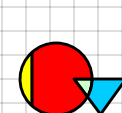
Draw rectangle

Select both shapes,
Fragment, delete
outside shapeRotate
Back

- **Creating Polygons from lines.** (Useful on imported AutoCAD files and on lines that result from the Offset tool.)



Original

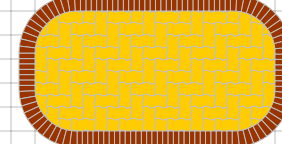
Draw Rectangle, use
pointer to area select.Fragment, delete outside
shape and apply fill
colors.

Polygon Toolbar

- A **polygon** is any closed shape that can have a fill pattern/color
- The **Pencil, Transparency, Shadow and Rounding** tools apply to Lines also but are mostly used with Polygons
- Any custom Line pattern can be applied to a polygon. This polygon uses custom line and fill patterns plus rounding.

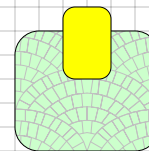
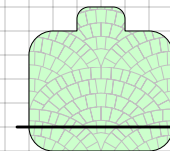
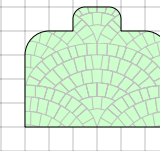


Before

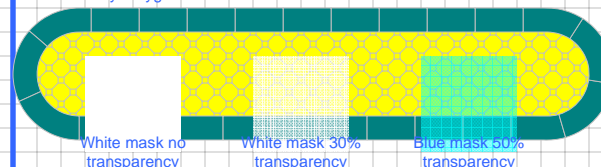


After

- Never draw radius curves if you don't have to. Rounding applies the same radius to all corners of a polygon. But Union and Fragment convert rounding to real geometry. If you need a polygon will some corners rounded (with different radii) and some not rounded here is how its done:

Different
Rounding RadiiUnion, then
draw lineFragment, then
delete bottom

- Sometimes it is useful to partially mask data from background pages. Any Polygon with Line Pattern "No line" can be a mask.

White mask no
transparencyWhite mask 30%
transparencyBlue mask 90%
transparency

Special AREA Shapes that calculate and display area.

- Several master shapes in the **visiSitePlan** stencils calculate and display their area: Lot Area, Structures, Driveway or Deck Areas on the Survey and Site Plan.
- The **right click** menu of these shapes have powerful tools to AUTOSIZE, EDIT and UNION. Learn how to use these functions.
- If you do use the normal **toolbar** UNION or FRAGMENT on these shapes the resulting shapes will lose their menus and area display. However, just drag a new master AREA shape onto the drawing and AUTOSIZE.
- In some situations consider applying NO LINE and NO FILL. The area will still display.

Fill Patterns and Line Patterns

Comes with many custom fill patterns and line patterns created to depict everything from paving types to hedges. Some of the line patterns also have associated custom line ends.

Although you can apply these patterns directly from the normal Visio formatting menus, it is usually better to use the predefined stencil master shapes which already have predefined the appropriate patterns (and ends) for each object type.

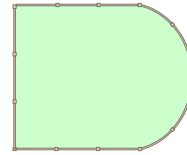
For example, the "Existing driveway" and "Proposed Driveway" shapes have drop down lists of paving patterns (but omit other kinds of patterns from the list).

In addition, some shapes (like "Hedge") use line patterns which also have what look like "fill colors". To avoid confusion these shapes have formulas that allow you to change colors using the standard "fill color" tool.

Remember that for any shape you can use the Pencil tool to curve any edge, move any vertex or to add a vertex (CTL click). You can also apply vertex rounding of any radius to all vertices.

Other Line Patterns

Fence (line w/ ends)



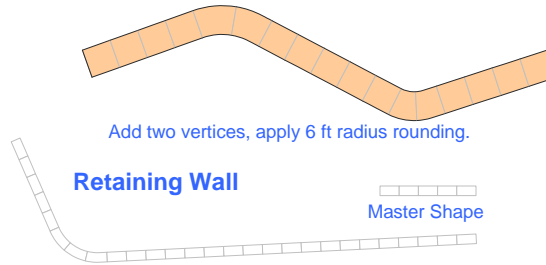
Master Shape

Use format painter to apply to any shape.

Walk



Master Shape



Add two vertices, apply 6 ft radius rounding.

Retaining Wall



Master Shape

Planting

Visio already comes with stencils containing many shapes for individual trees and shrubs. The only additions needed for Surveys and Site Plans are show below:

Hedge (line w/ ends)



Master Shape

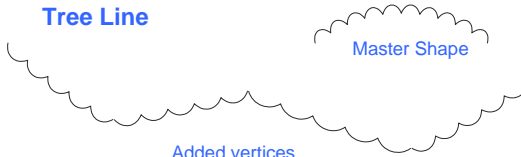


Stretched and curved



Added and moved vertex and changed fill

Tree Line



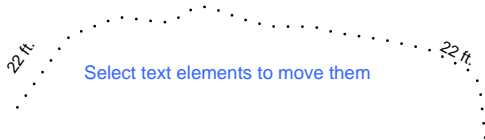
Master Shape

Added vertices

Smart Lines

Contour Line

Double click to change elevation.



Select text elements to move them

Straight and Curved Yard Setbacks

Connect end points to straight or curved survey bearings. Double click to enter parameters. Move controls to move line ends or curvature.



Min. Front Yard 10 ft

Min. Rear Yard 15 feet

Paving Fill and Line Patterns

Existing
Patio
300 sq. ft.

Brick

Existing
Patio
300 sq. ft.

Herringbone

Existing
Patio
300 sq. ft.

Fan

Existing
Patio
300 sq. ft.

Herringbone Interlock

Existing
Patio
300 sq. ft.

Stone Pavers

Existing
Patio
300 sq. ft.

Octagon and Dot

Existing
Patio
300 sq. ft.

Turf Block

Existing
Patio
300 sq. ft.

12x12

Edging

Brick

Brick Soldier

Irregular

Utility Lines

-----Gas-----
-----Sewer-----
-----Water-----
-----Telephone Overhead-----
-----Electric Overhead-----

Verify all dimensions in field

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Author Title
Phone

Project Name

Project Address

Email address
Web address
Mail Address

File and Line Patterns

PATTERN