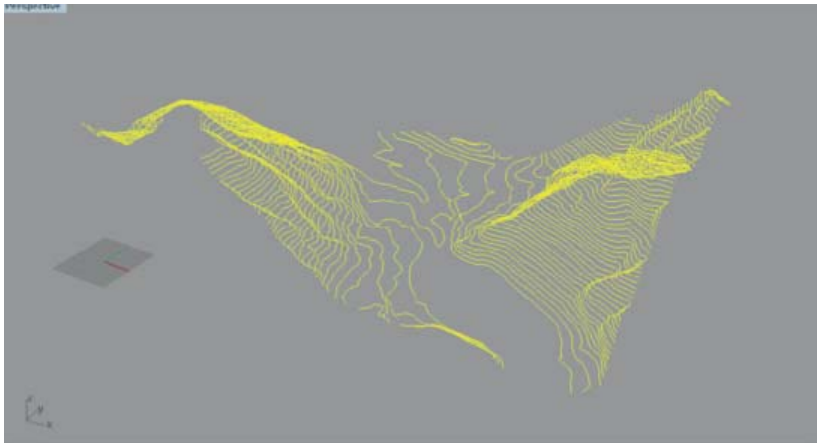
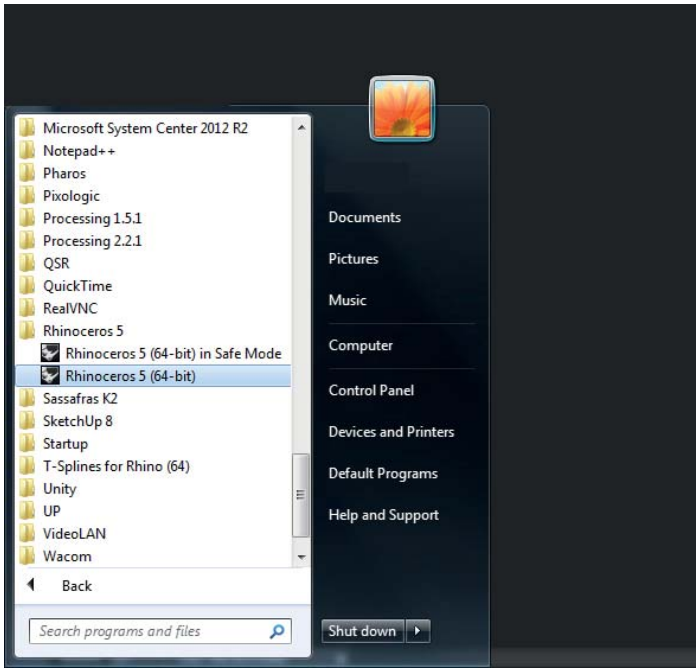
Guide: Contour Modelling
Software: Rhinoceros
28-10-2015



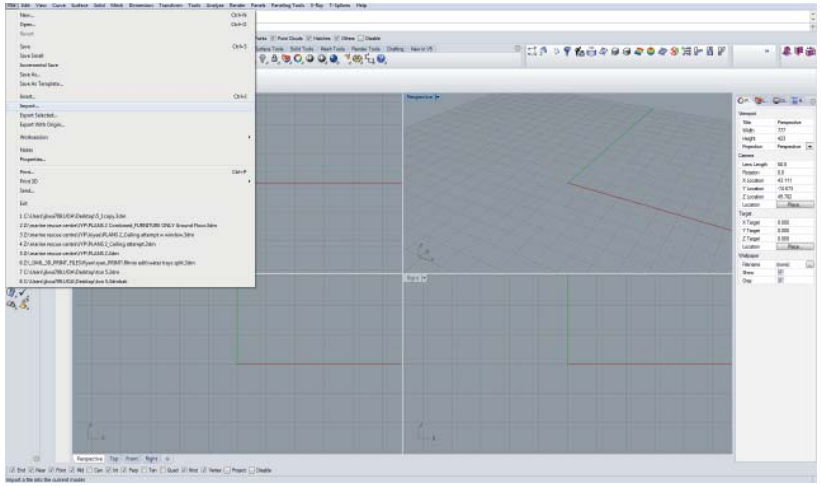
Tutorial Prerequisite

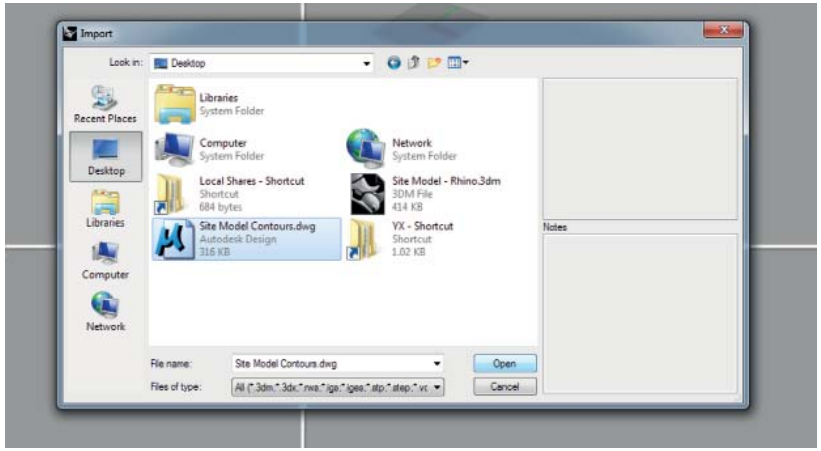
Contour lines from a GIS database in a drawing format such as .DWG or .DXF



1. OPEN RHINO

Open Rhino, under Start> All Programs> Rhinoceros 5> Rhinoceros 5.0

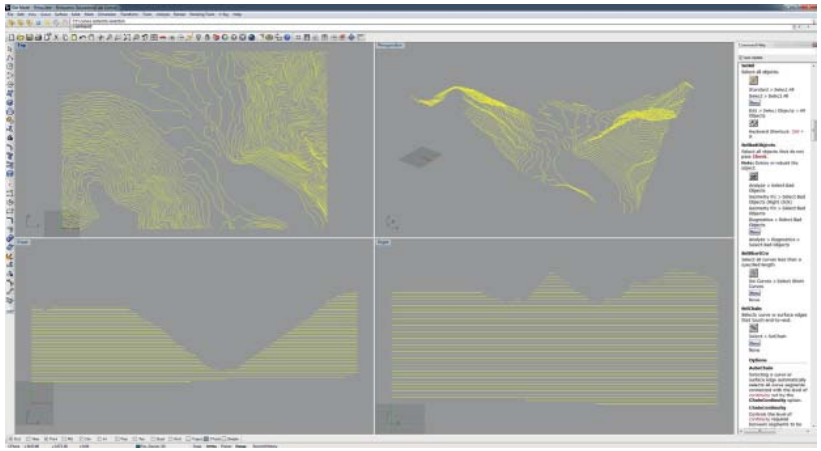




2. IMPORT .DWG or .DXF

Import contour file under [File] > [Import]

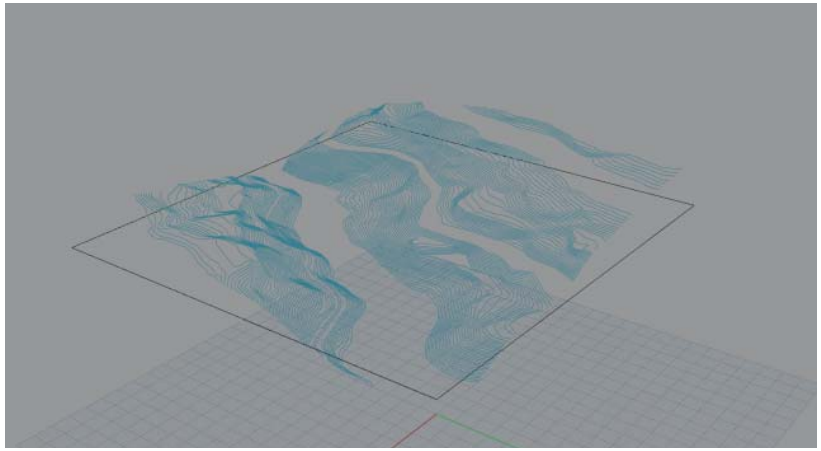
Navigate to the folder you saved the contour lines in and Open.

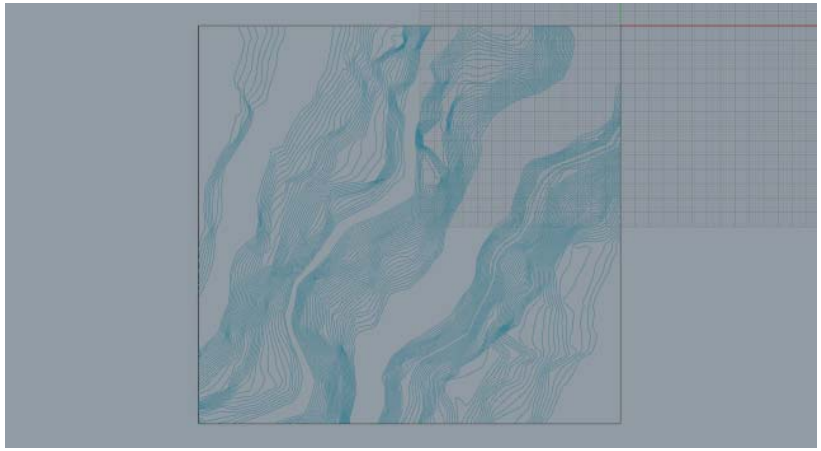


3. POSITION

Your contours will be imported as polylines.
Make sure that:

The contours are located around the centre of the workspace.
If not, type in “[Move]” to move the contours to the centre.
The centre is marked with a dark grey grid.
(This is to prevent display/meshing inaccuracy)

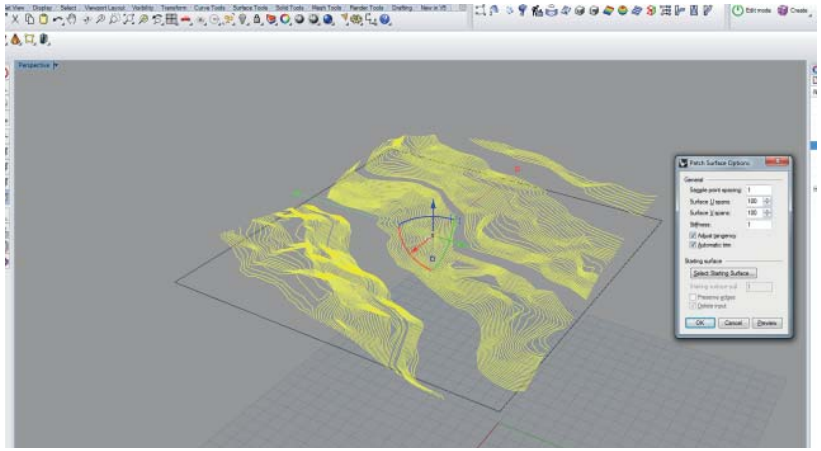




4. FORM BOUNDARY

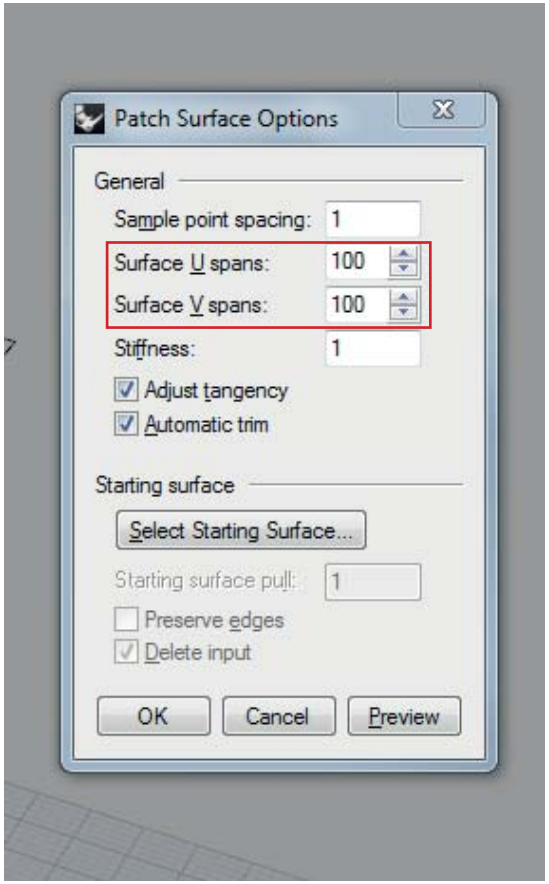
If not already done, trim the contour to your site boundary.

1. Draw an outline (using “Polyline” or “Rectangle” tool)
2. Use the outline to trim the contours (type “[Trim]”)



5. PATCH

Select contour lines and type command “[Patch]”

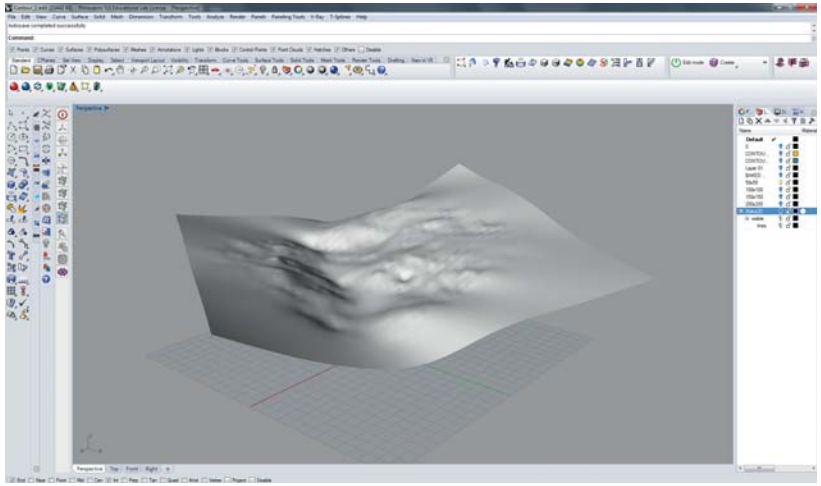


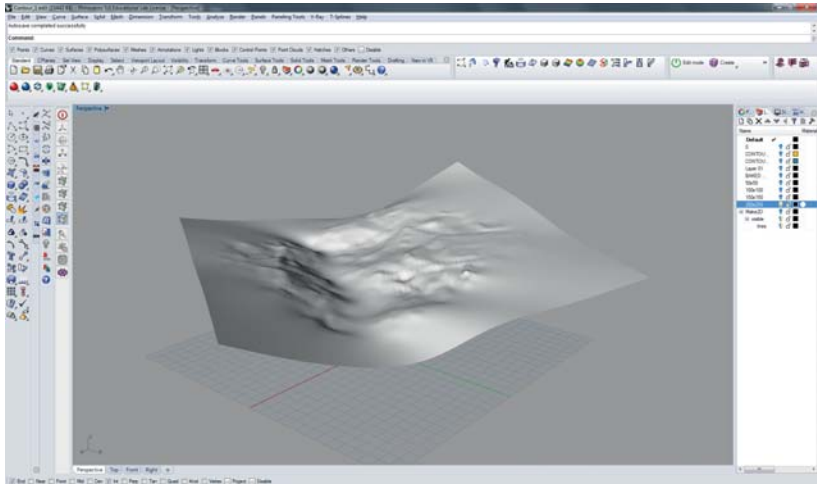
6. PATCH SURFACE OPTIONS

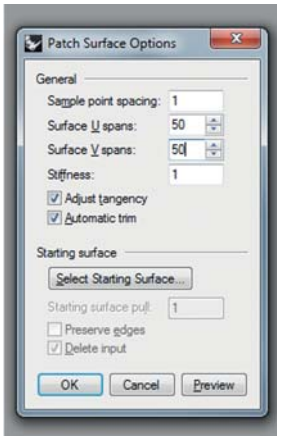
Change settings in the surface UV span directions to determine the amount of detail

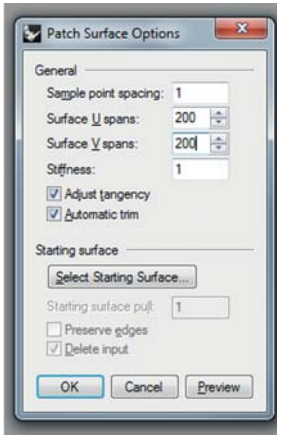
Smaller number of UV (10 x 10) = less detail
Larger numebr of UV (200 x 200) = more detail

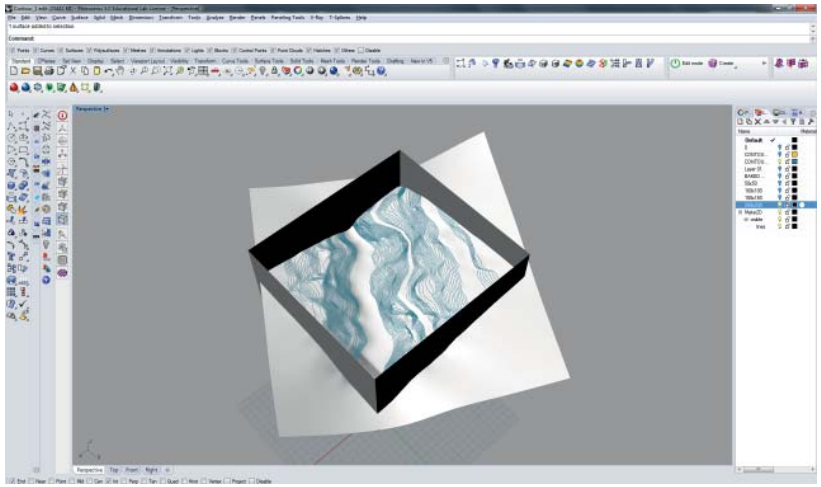
Note: A large number of UV will take a longer time to generate

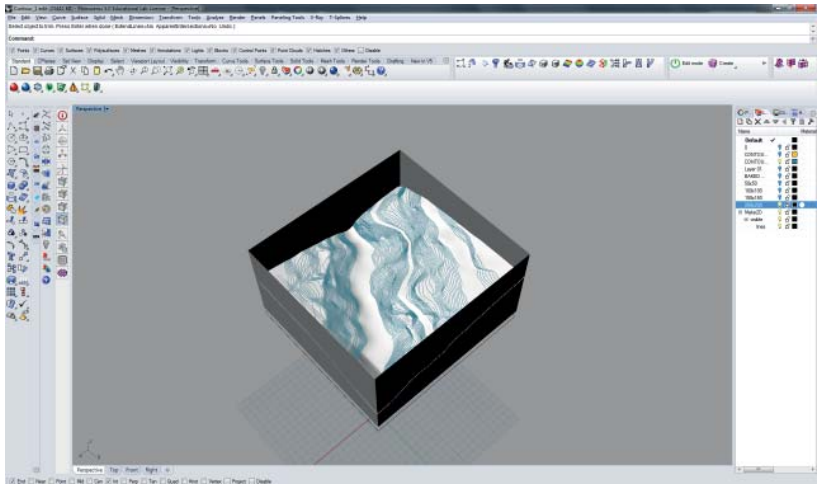





Patch Surface Options
General
Sample point spacing: 1
Surface U spans: 50
Surface V spans: 50
Stiffness: 1
Adjust tangency
Automatic trim
Starting surface
Select Starting Surface...
Starting surface pull: 1
Preserve edges
Delete input
OK
Cancel
Preview


Patch Surface Options
General
Sample point spacing: 1
Surface U spans: 200
Surface V spans: 200
Stiffness: 1
Adjust tangency
Automatic trim
Starting surface
Select Starting Surface...
Starting surface pull: 1
Preserve edges
Delete input
OK
Cancel
Preview



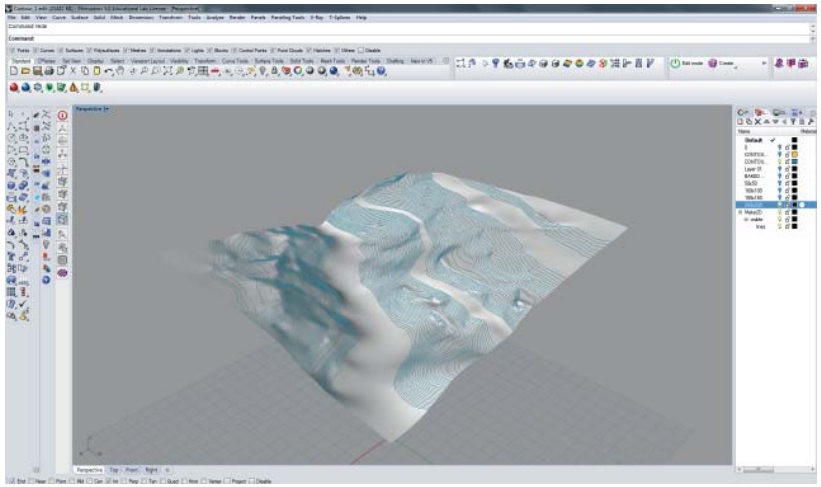


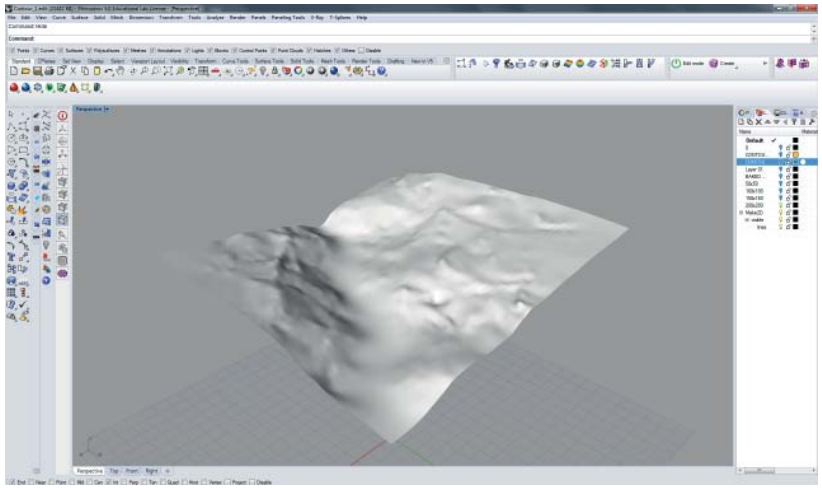
7. TRIM

Patch will create a surface that might extend outside of the boundary, to trim unwanted extensions,

Trim with boundary:

1. Select boundary
2. Create trim box: type command “Extrudecrv”
3. Type command “Trim”
4. Trim unwanted part of surface
5. Hide or delete trim box





8. FINISHED SURFACE

You have now completed a terrain model.