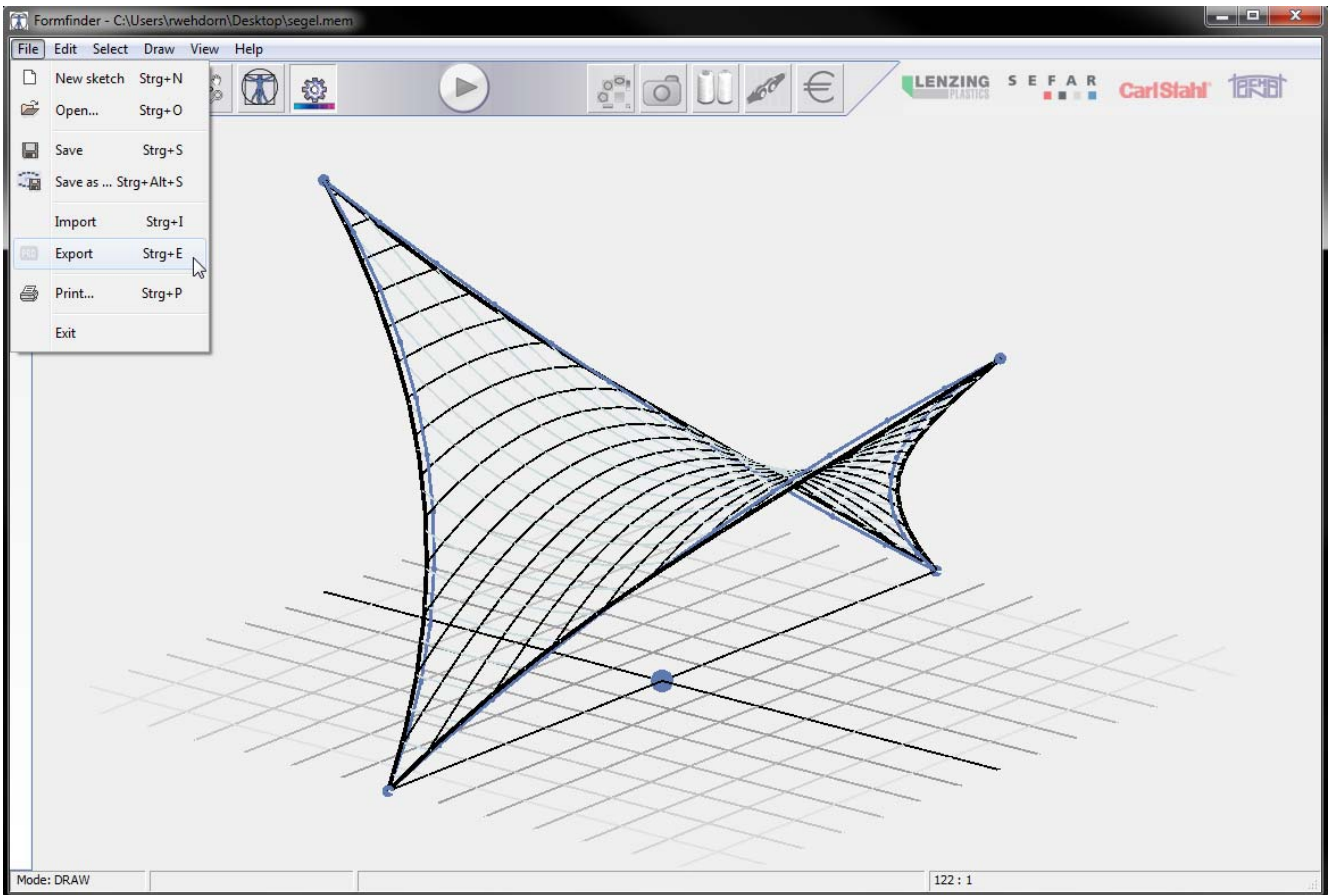


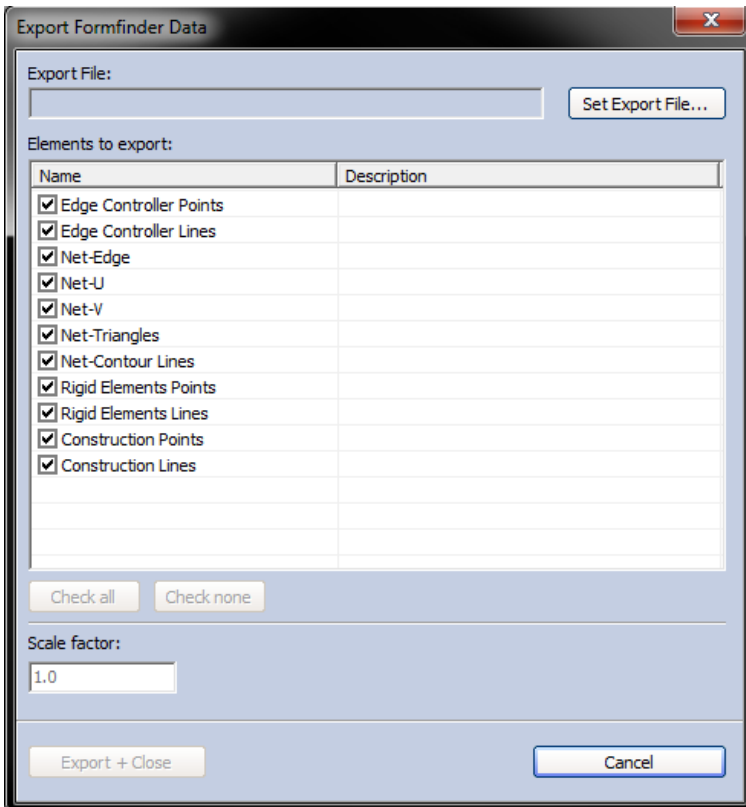
Formfinder 3.0

HOW TO ANALYSE A STRUCTURE IN RHINO 4.0

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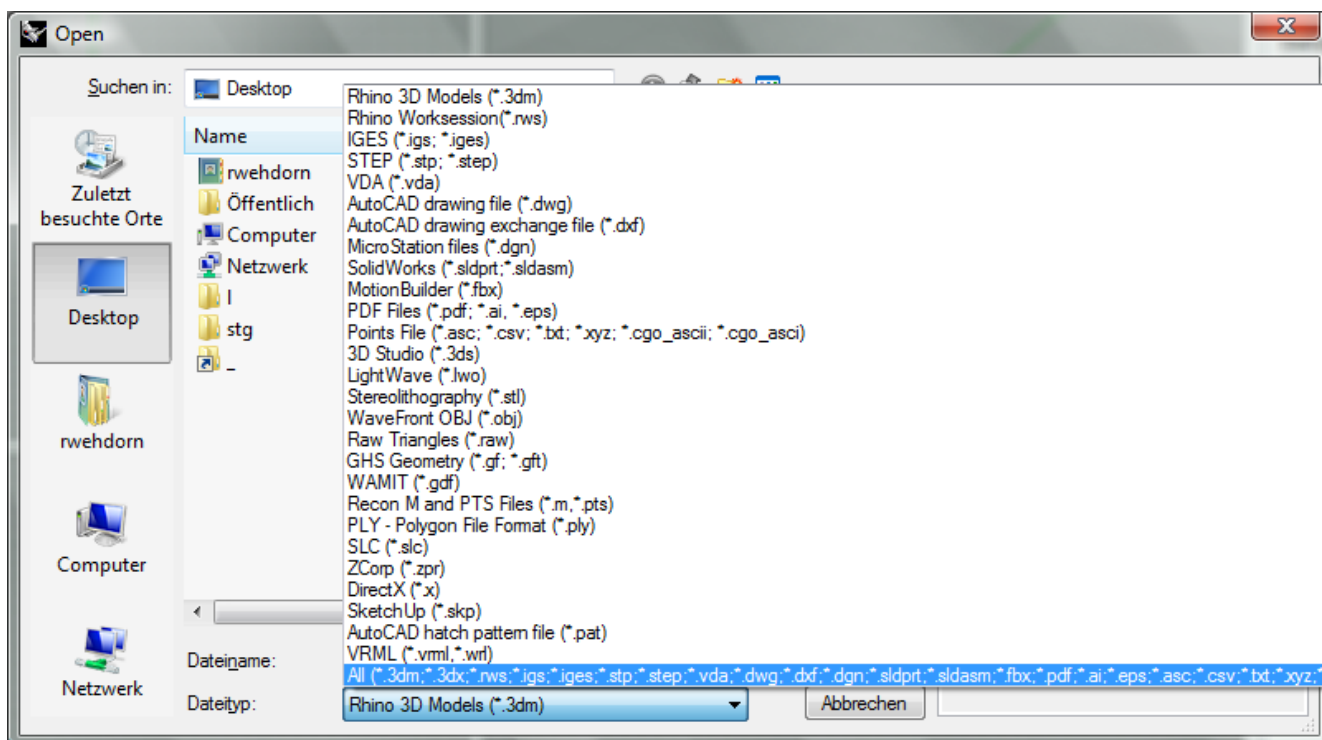


Create a simple structure to start.

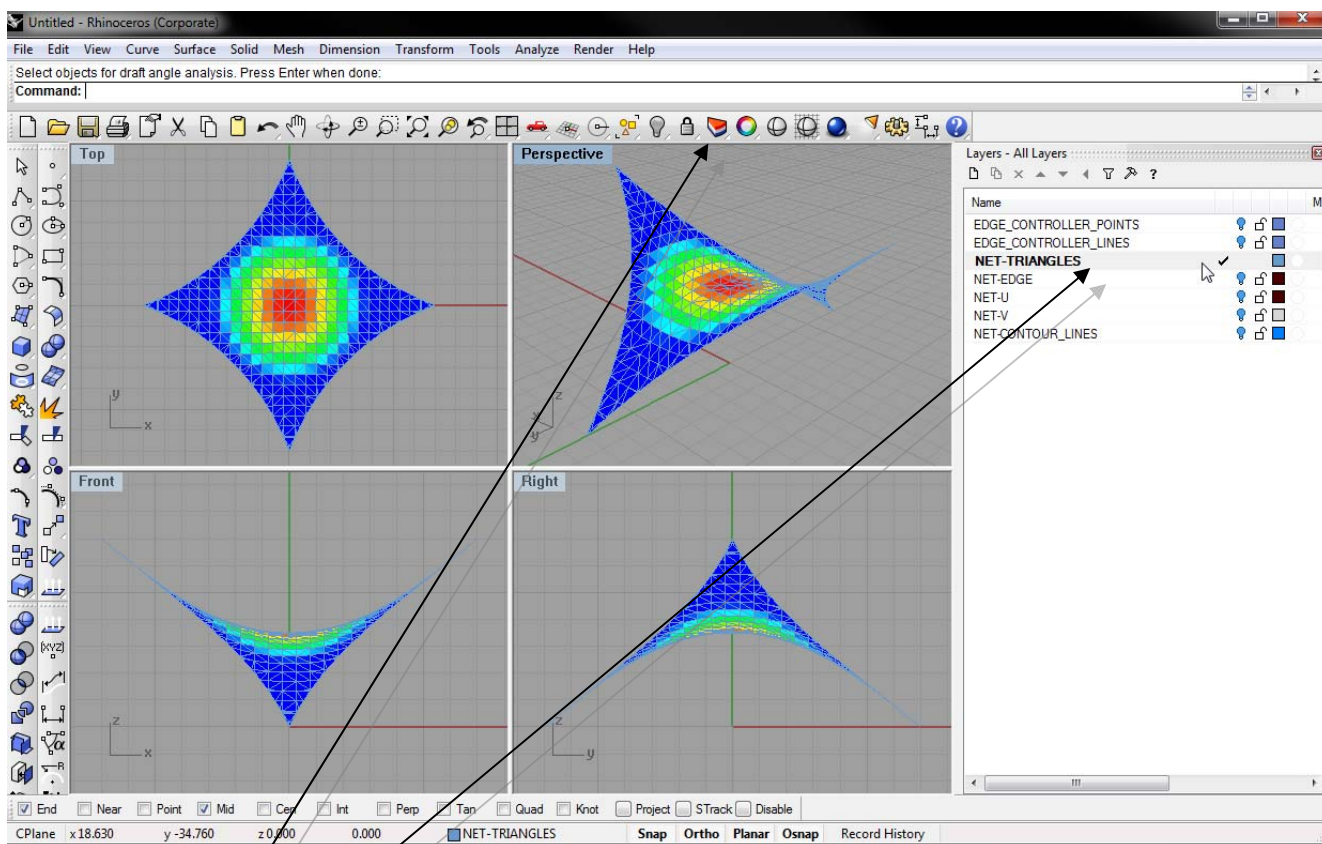


File / Export

Start Rhino 4.0



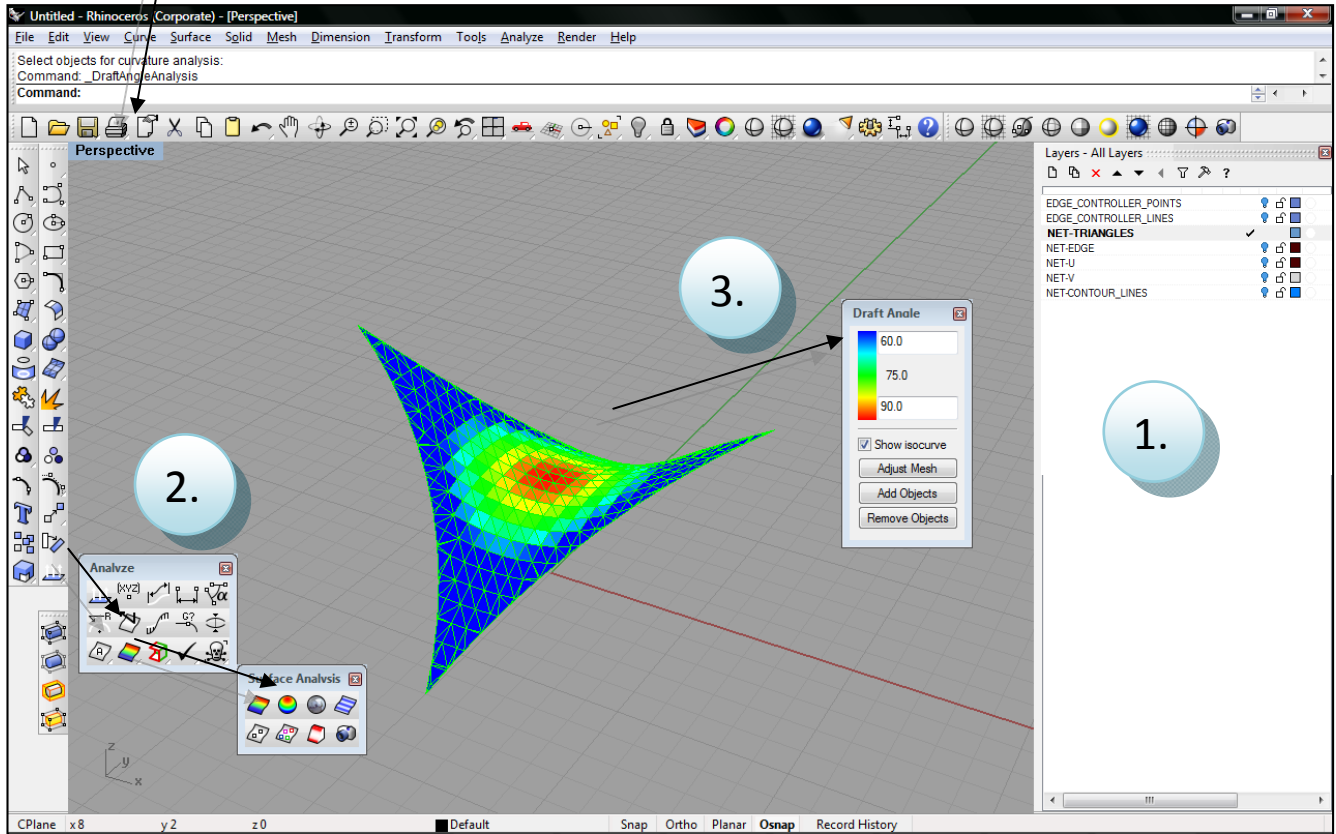
File / Open (and open DXF File exported from Formfinder Professional)



If Layers are not switched on:
 click on this Icon
 to open the Layermanager

A) ANALYSE DRAFT ANGLE

Click on "Perspective" to enlarge viewport



1. Layer "**NET TRIANGLES**"

Click on the lamp to ON/OFF a layer

Open "Analysis Panel" and from "_Surface Analyses" the second icon:

2 **DraftAngleAnalysis**

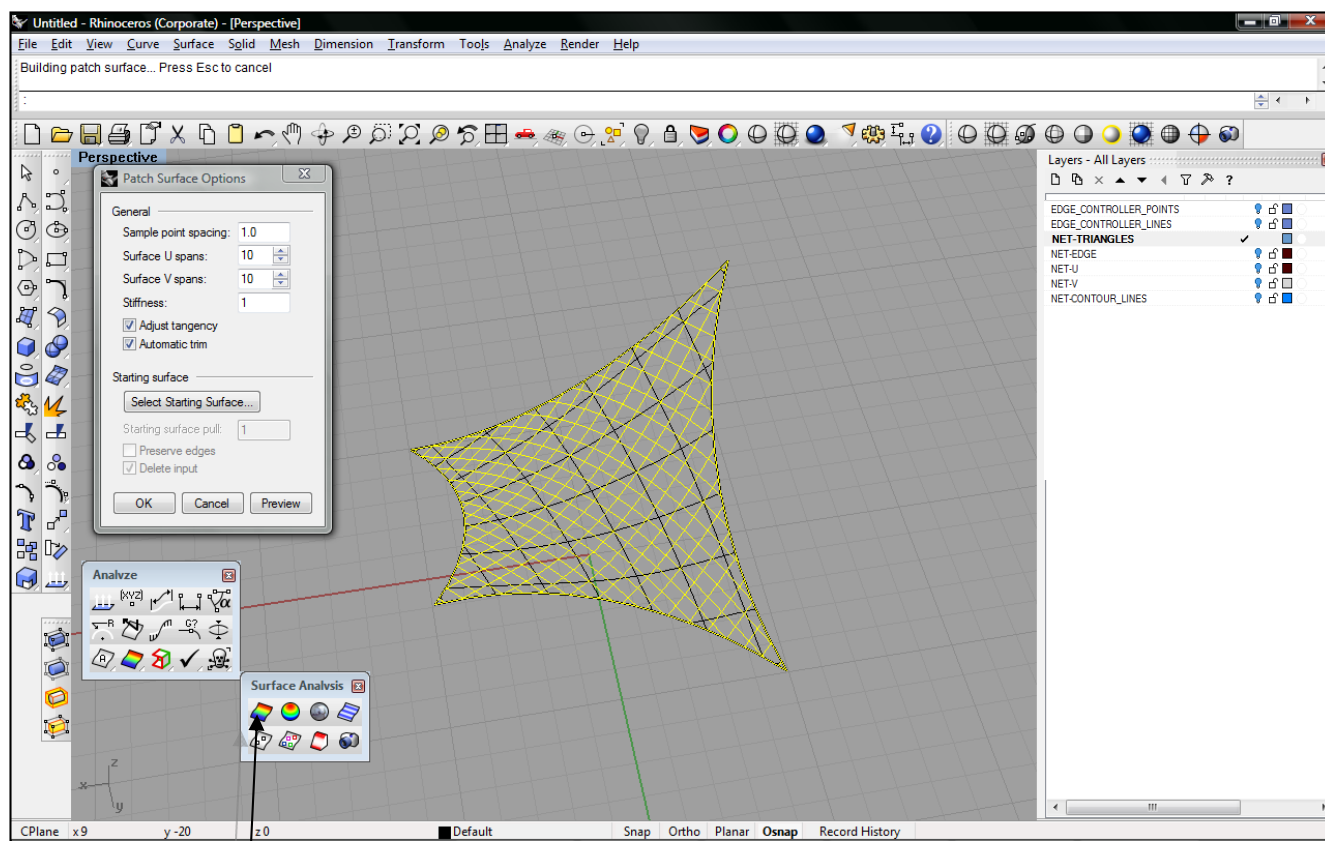
This command can also be input in the command line on the top

3. Set "Draft Angle" from eg. **60 to 90** degrees to where water or snow collects.

RESULT

These areas are higher influenced on water or snow.

B) ANALYSE CURVATURE



1. Layer "**NET TRIANGLES**"

Click on the lamp to ON/OFF a layer

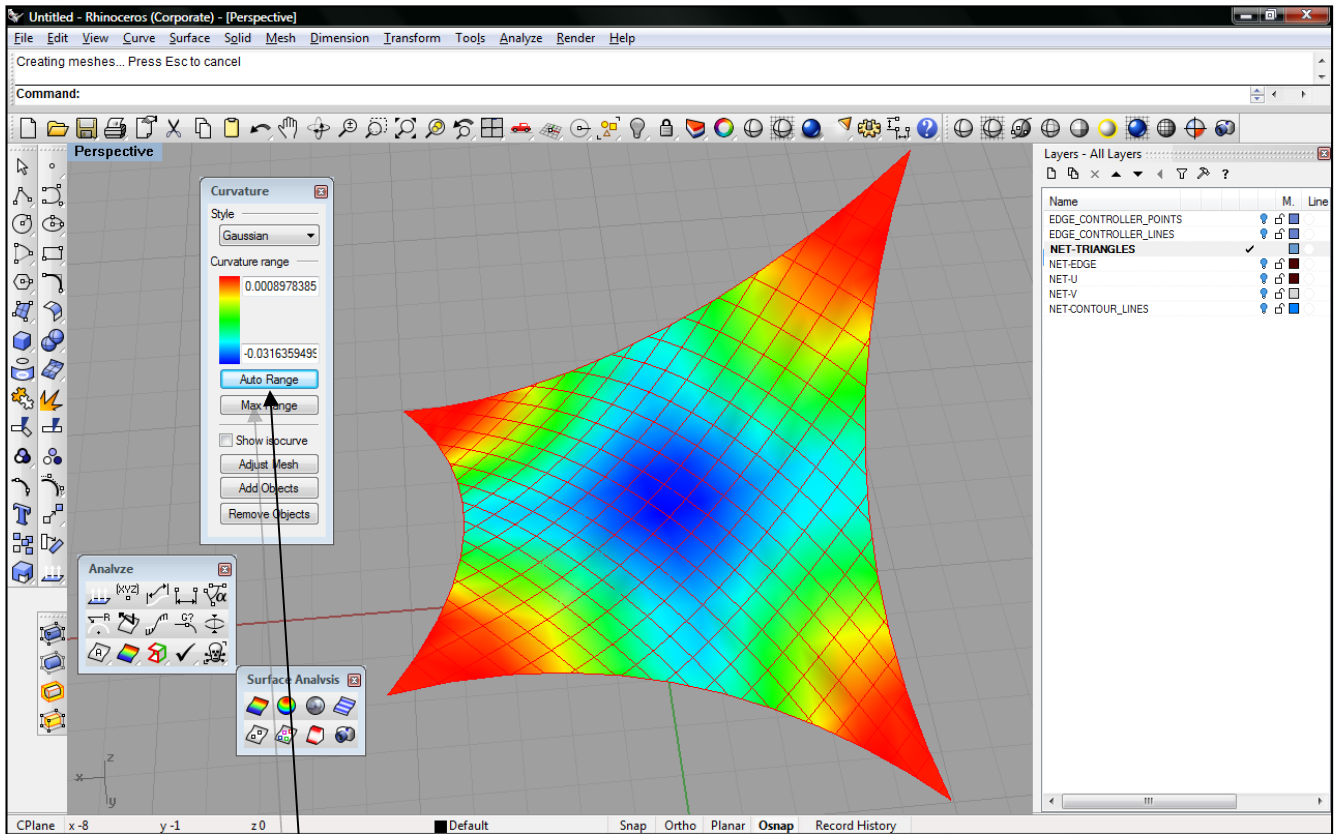
Open "Analysis Panel" and from "_Curvature Analysis" the first icon:

2. **PATCH**

This command creates a surface from the existing "NET".

3 **Curvature Analysis**

This command can also be input in the command line on the top



The Dialogue Curvature Analysis shows the "Gaussian Curvature"

Curvature of radius

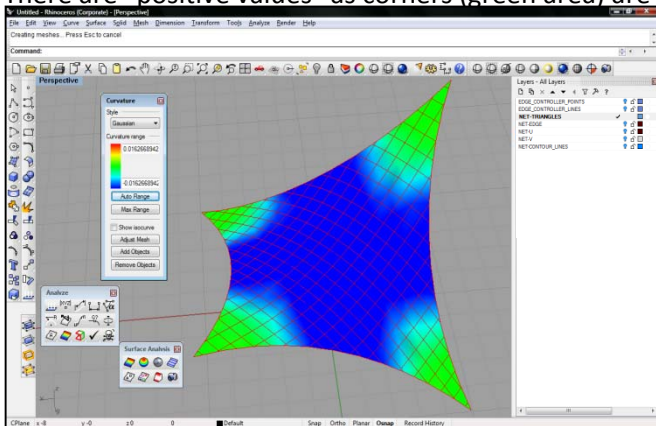
NEGATIVE VALUE = Anticlastic structure (blue to green area: these areas can be prestressed better)

POSITIVE VALUE = Synclastic structure e.g. Air-Supported Structures (red area: this area is on one hand flat and on the other not to be prestressed easily (as the structure system is not an air-supported structure).

RESULT

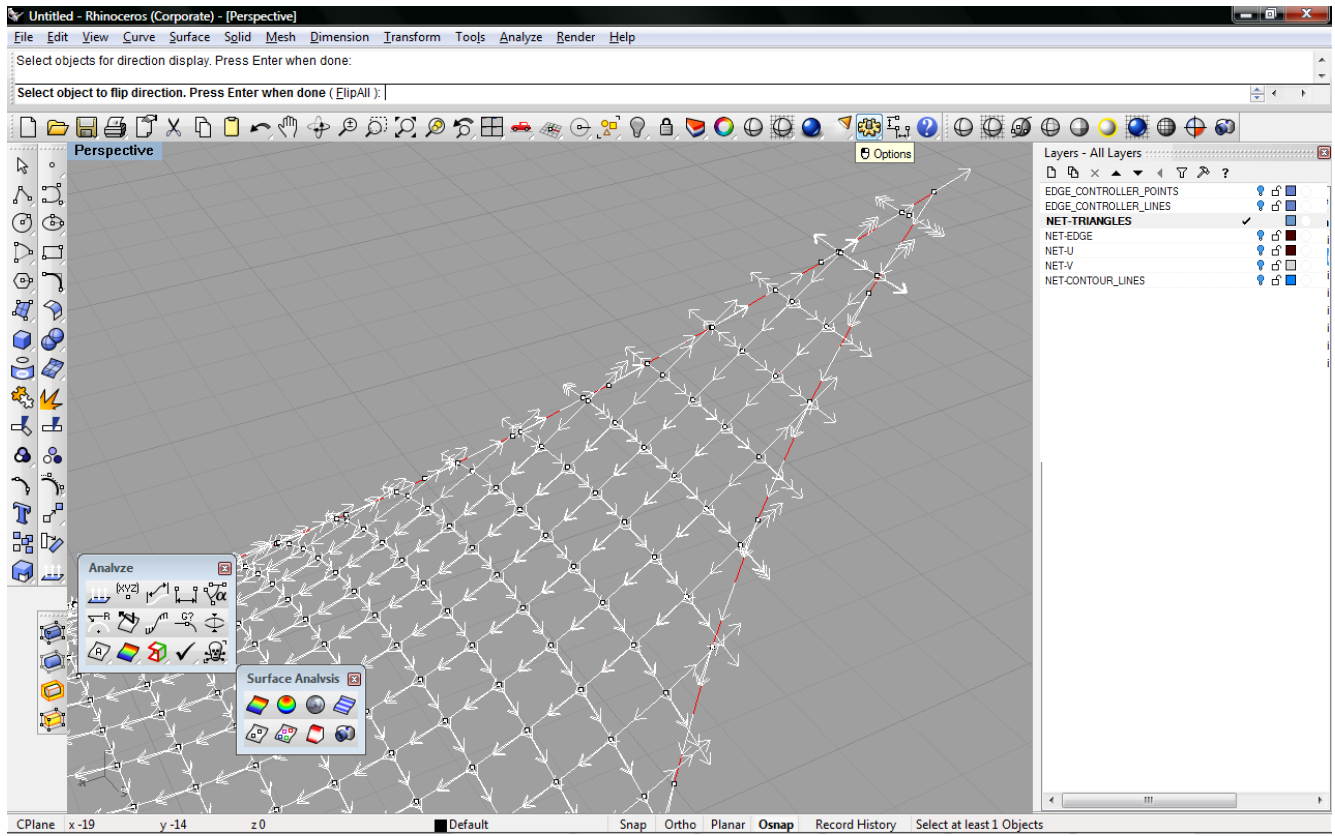
NOT TO MANY AREAS SHOULD HAVE POSITIVE VALUES. Small areas can be ignored in some cases. But if there are more positive values please discuss it with your structural engineer.


There are "positive values" as corners (green area) are "flat" (and even curved in the other direction).



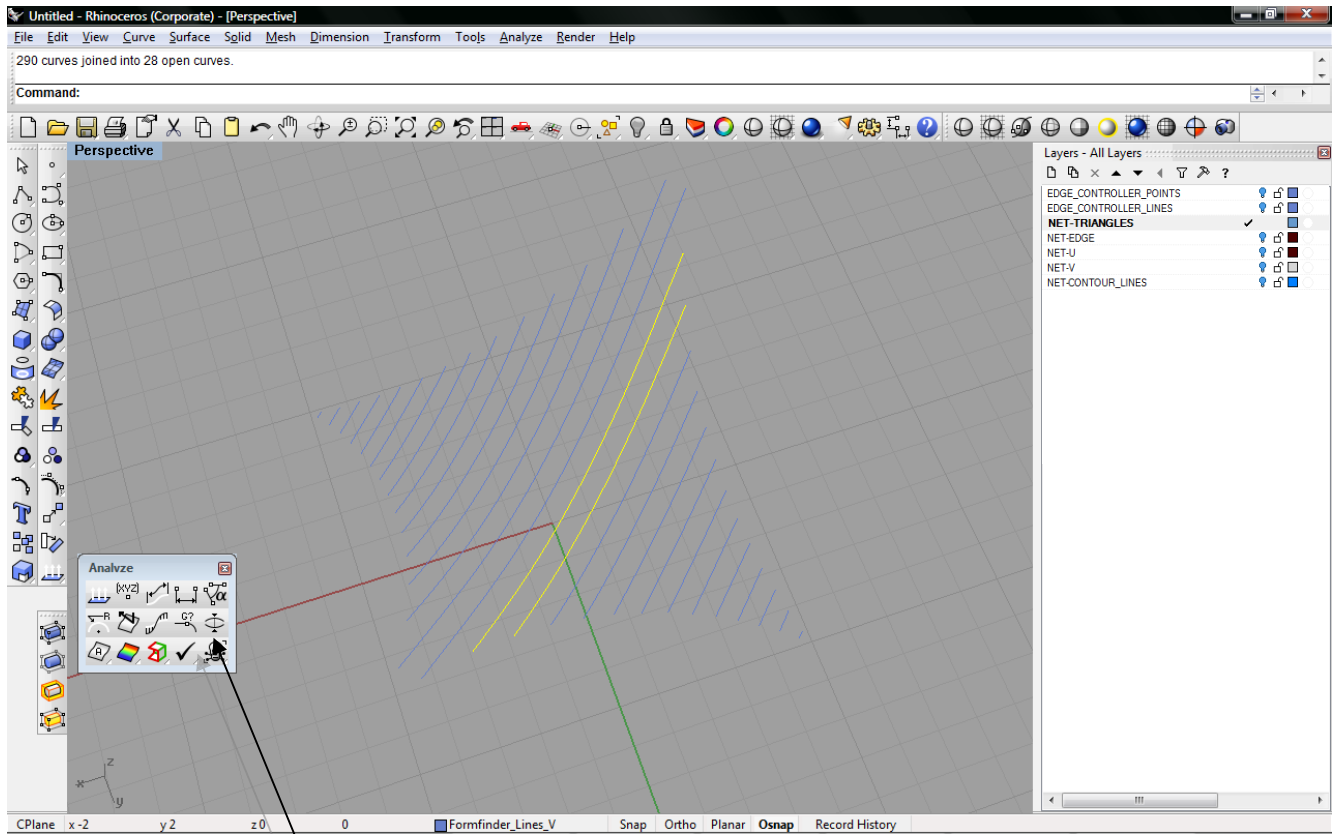
If you click on "Auto Range" you can re-adjust the colors.

C) ANALYSE DIRECTION



1. Layer "**Net-U**" or any other
Click on the lamp to ON/OFF a layer
2. Open "Analysis Panel"
and click on the first Icon: "_Analyse Direction" 
3. Result visualises the orientation of the "Net"
If some surface elements you create are not correct use the "right Mouse" to flip orientation

D) ANALYSE CURVE DEVIATION



1. Layer "**Net-V**"

Click on the lamp to ON/OFF a layer

2. **_SelectAll** and **_Join**

These two commands can also be input in the command line on the top

3. Open "Analysis Panel"

and click on the Icon: "**_CrvDeviation** "

Result

Information on tolerances between the two selected curves.