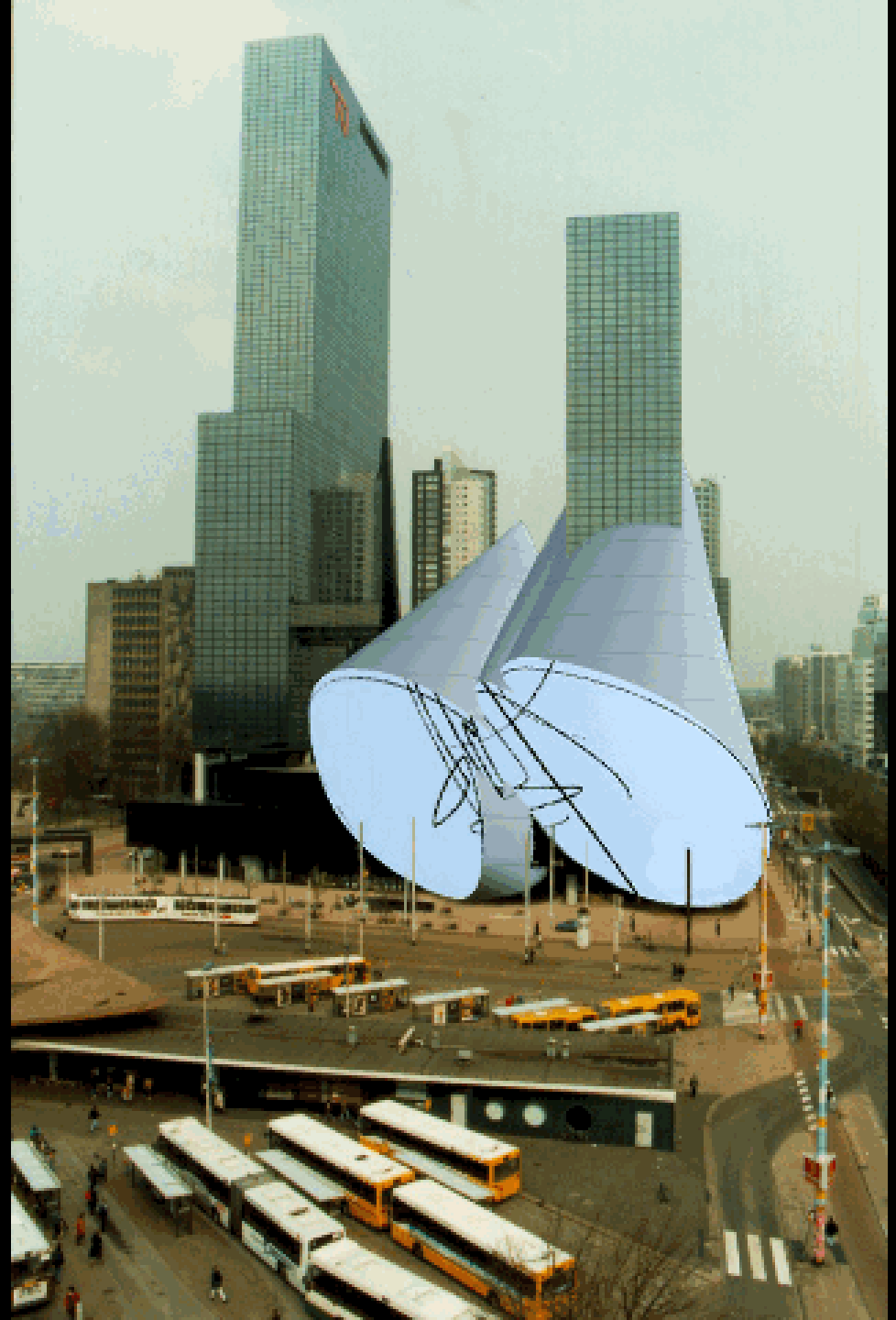
synchronize structure and skin

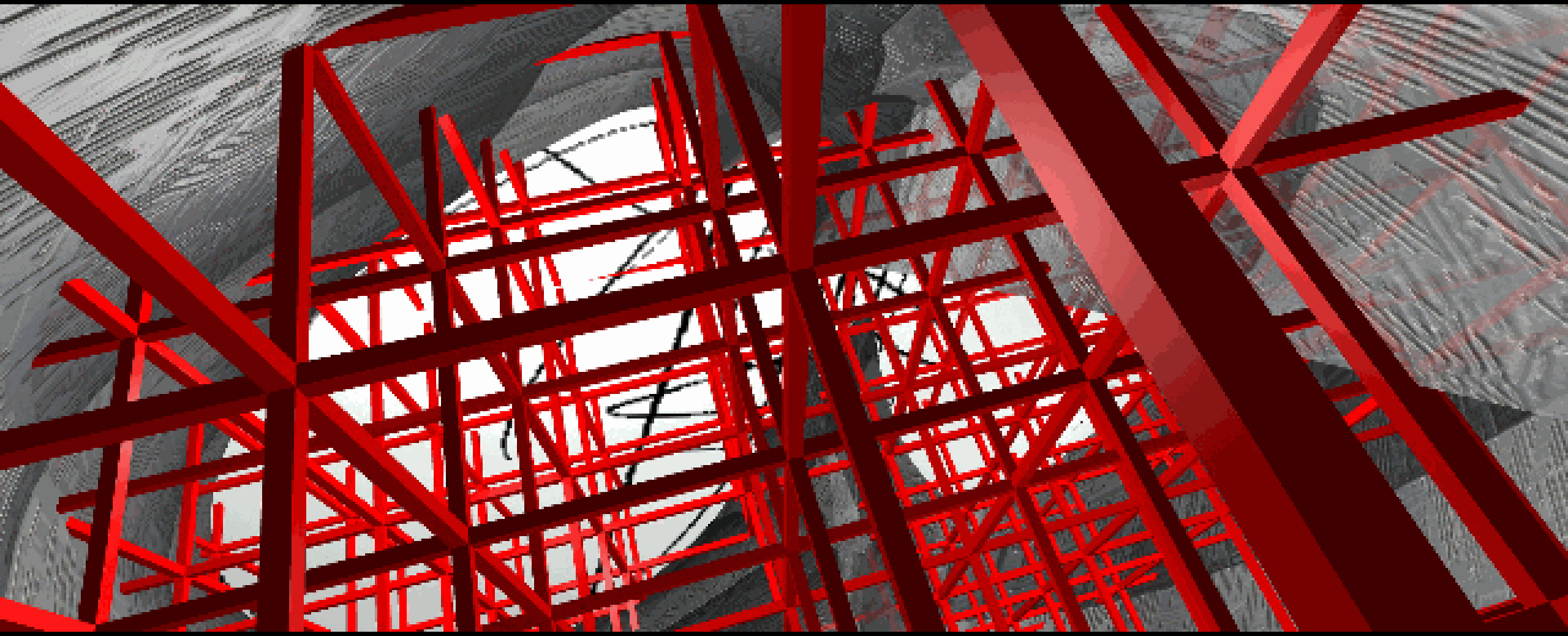
green engineering | kas oosterhuis | 180423

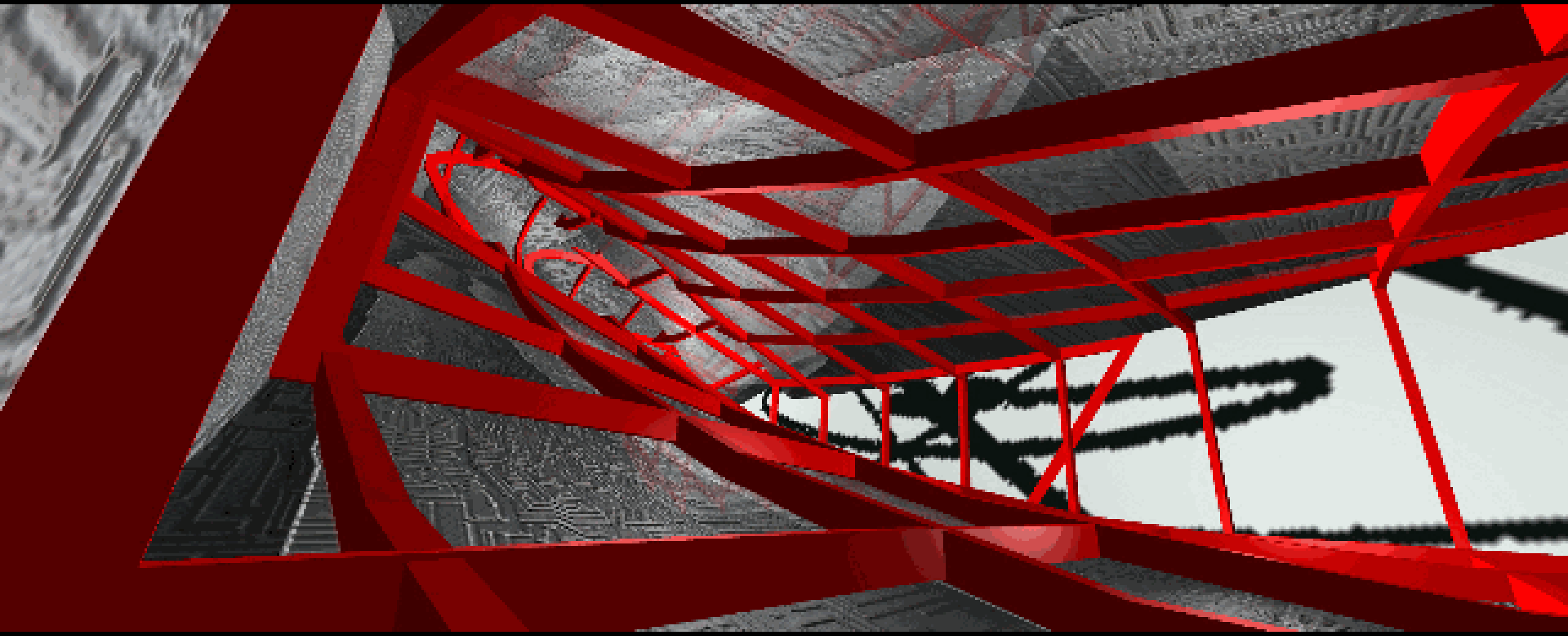
Sculpture City
Transfer Station
Water Pavilion
iWEB
A2 Cockpit
Bálna Budapest
Liwa Tower

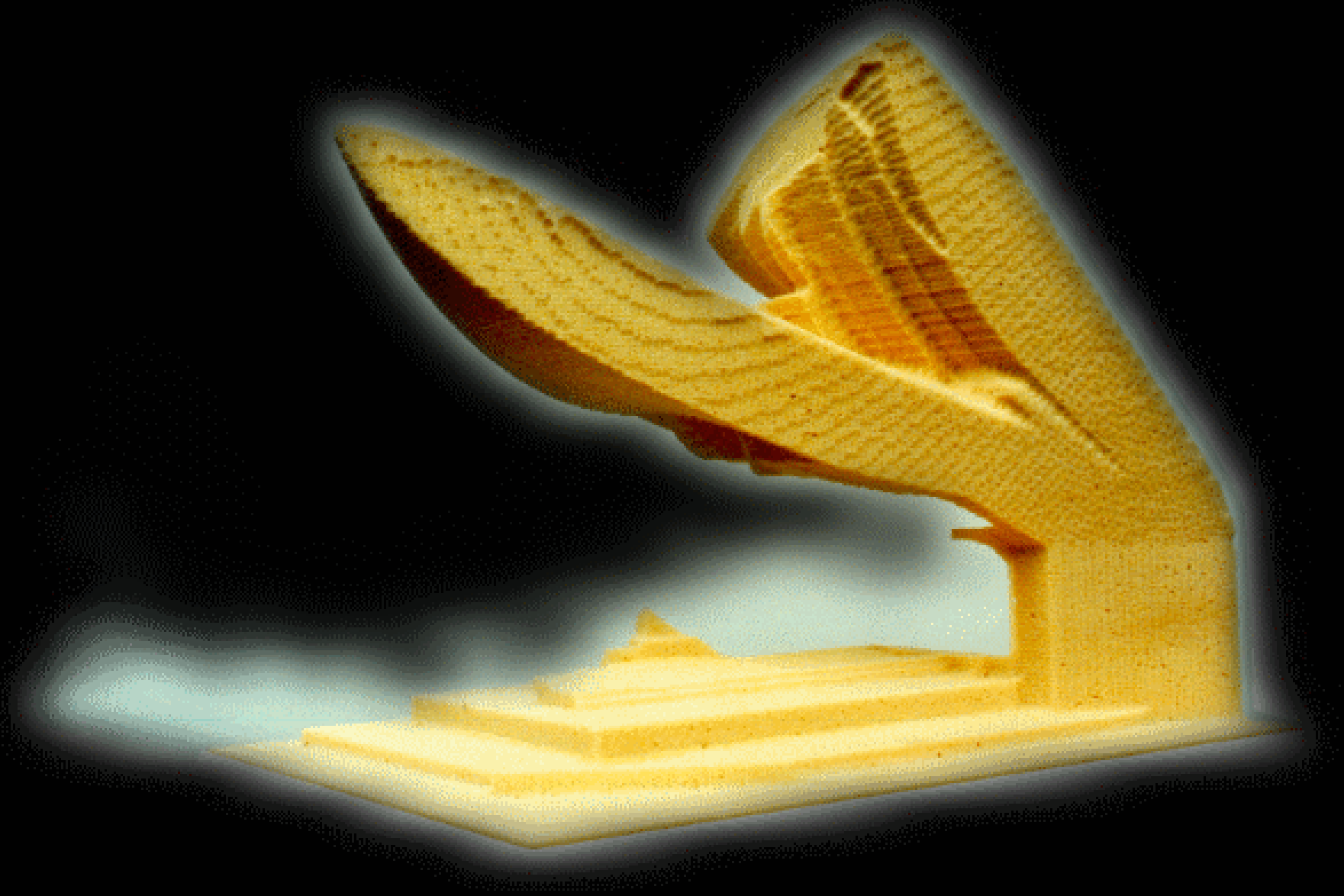
1994 | *Sculpture City*

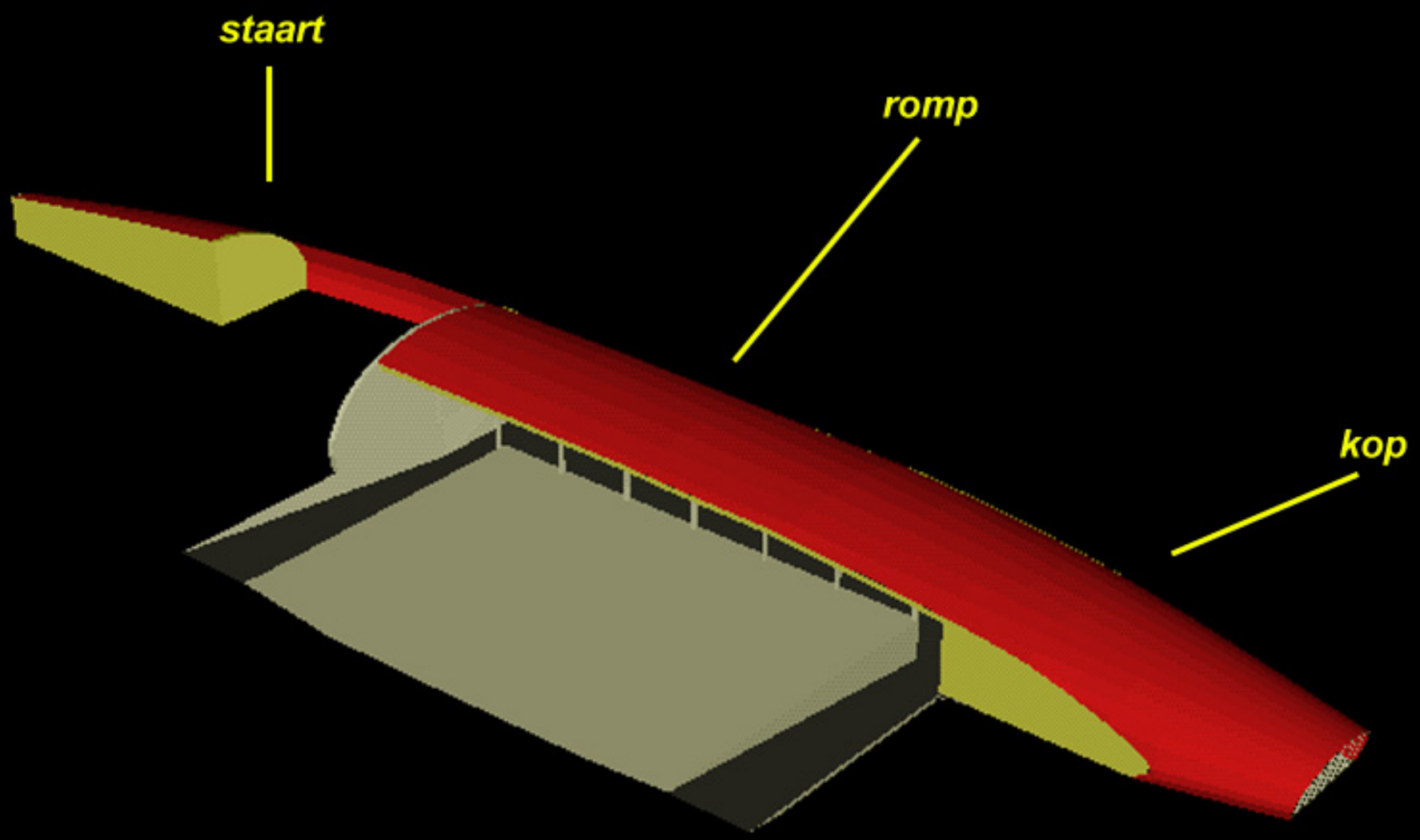
green #1 | fusion art and architecture





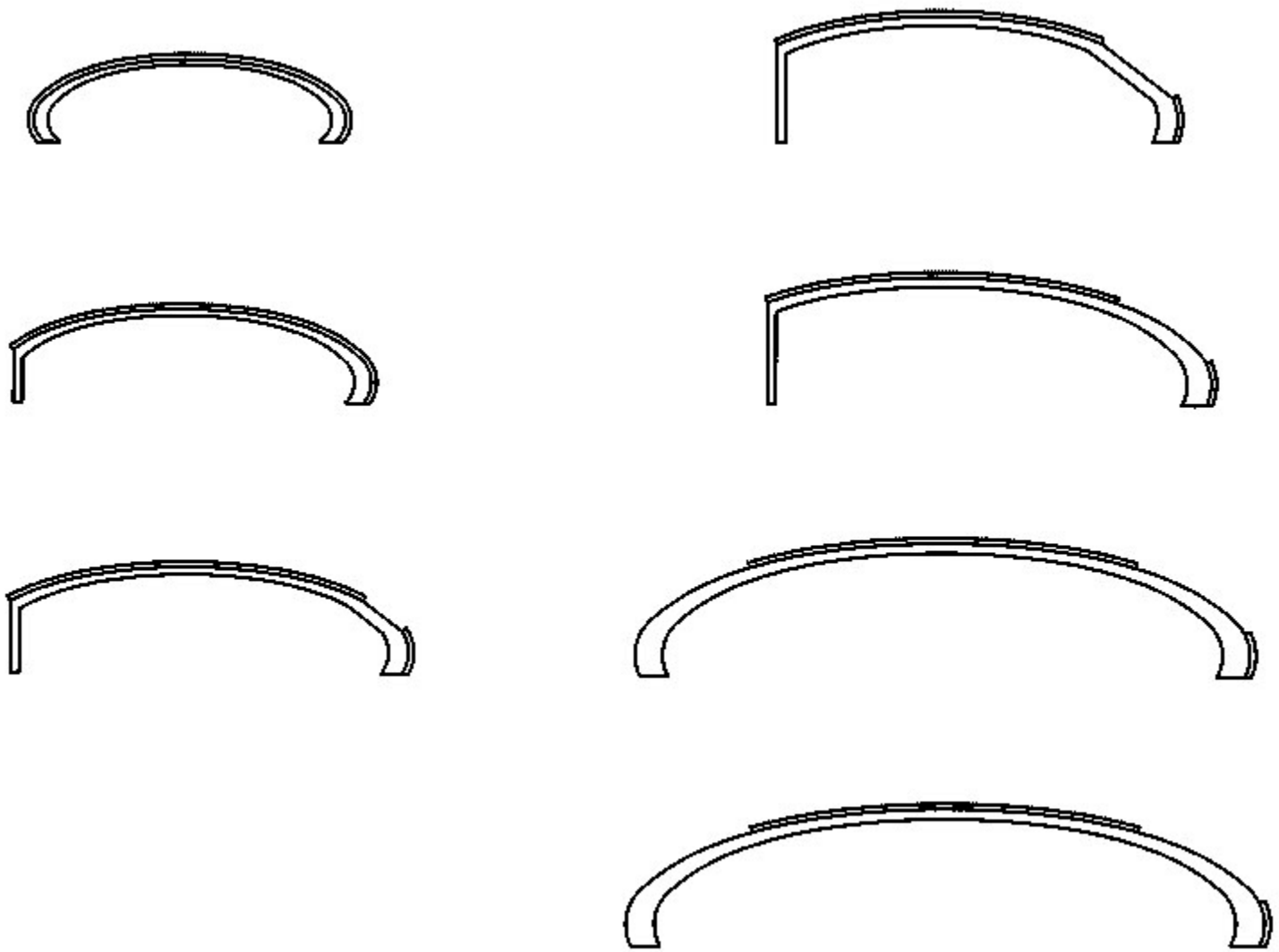




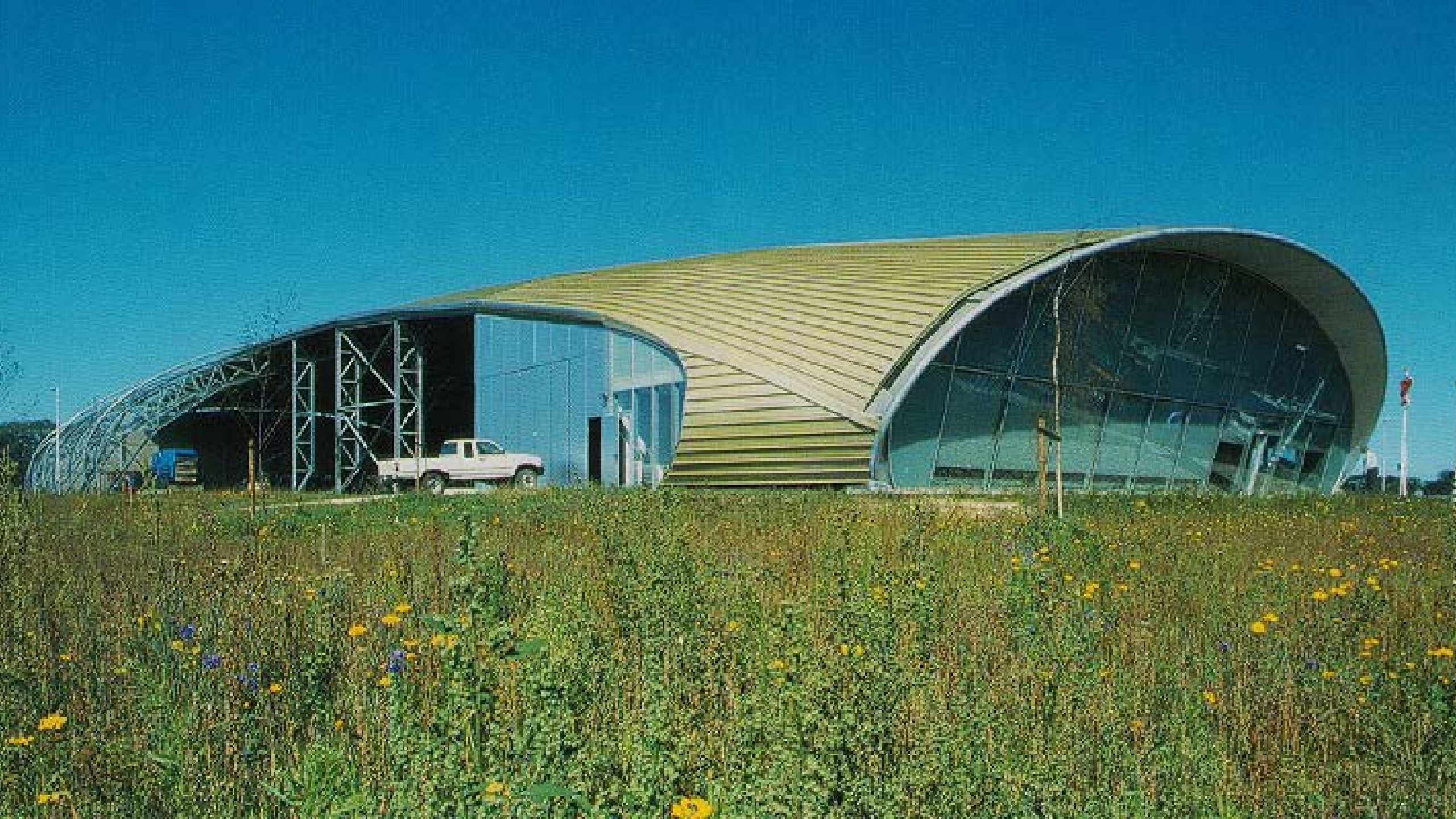

staart
romp
kop

1994 | *Transfer Station*

green #2 | loose envelop



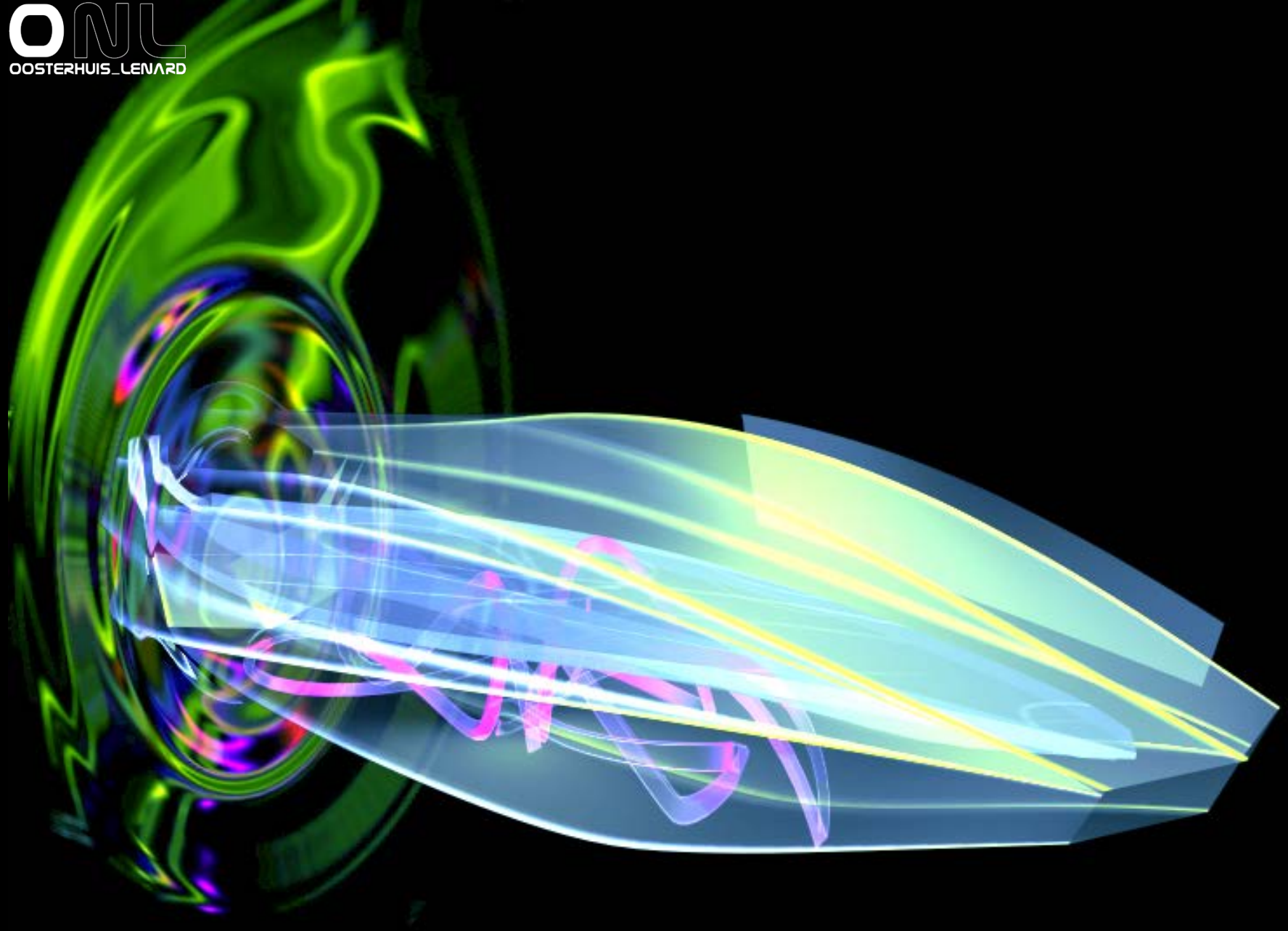
variable sections




oosterhuisassociates

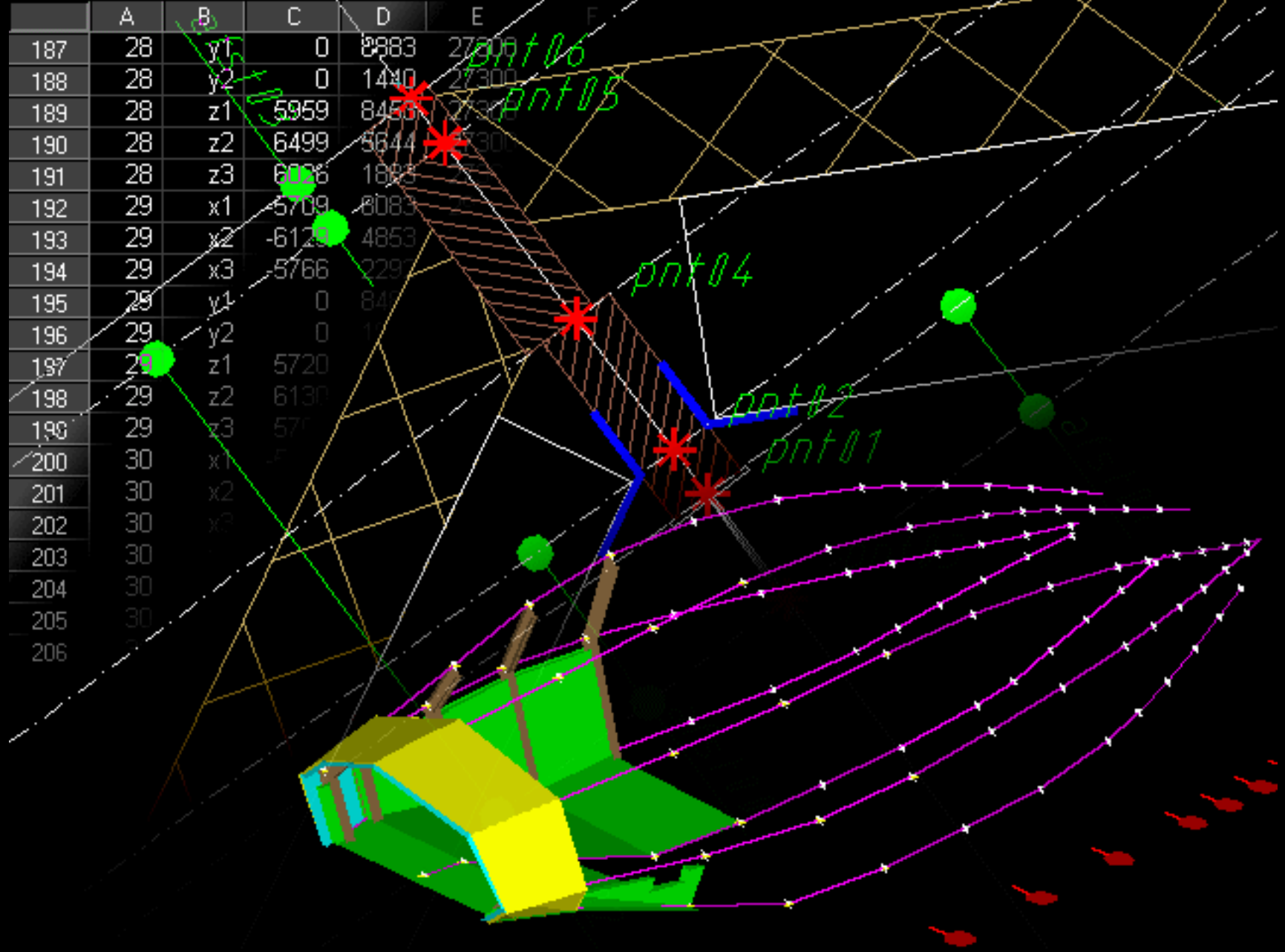
1997 | *Water Pavilion*

green #3 | unibody



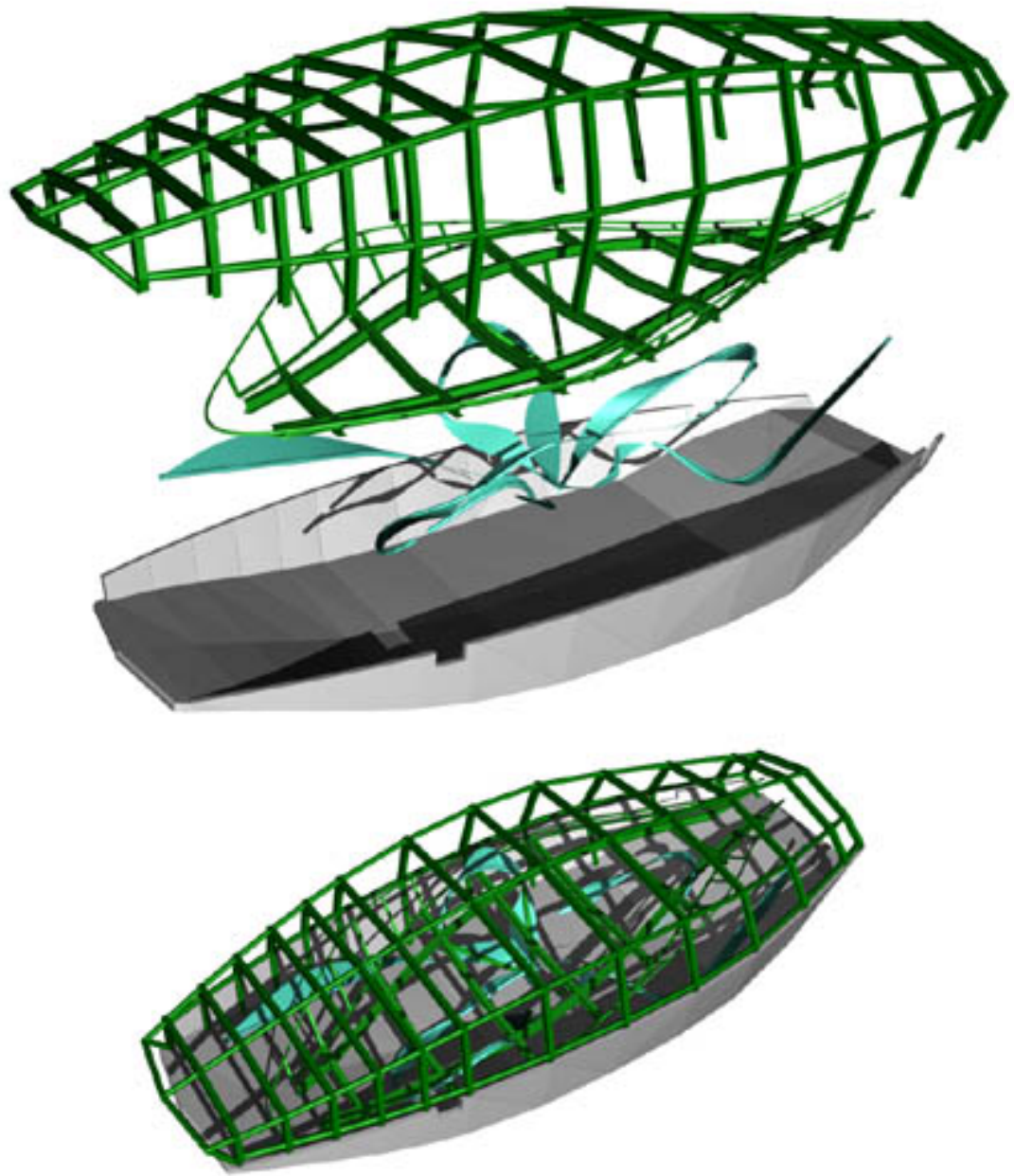
1997_waterpavilion

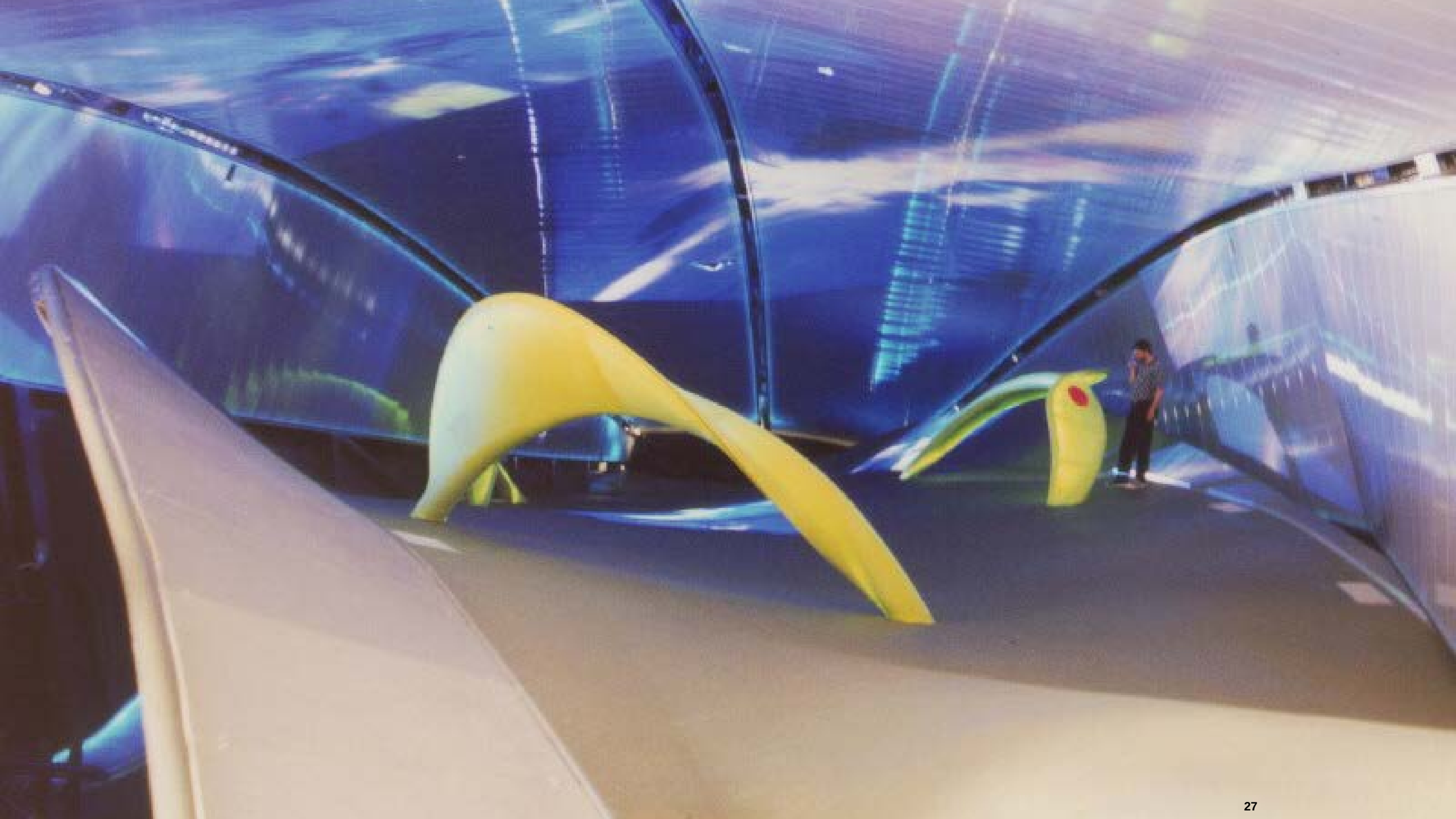
16 curves defining the shape



reference points

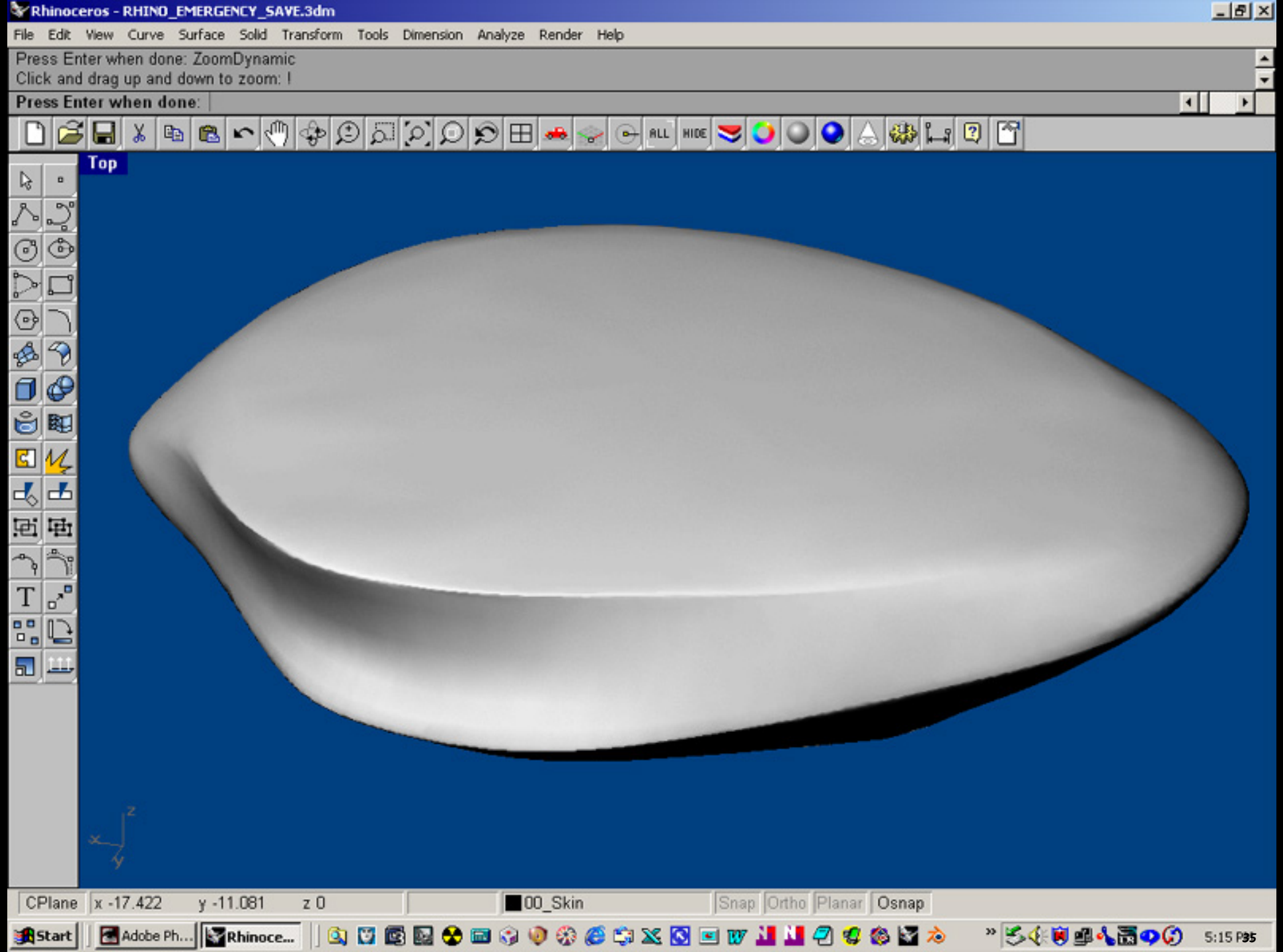
ONL
OOSTERHUIS_LENARD

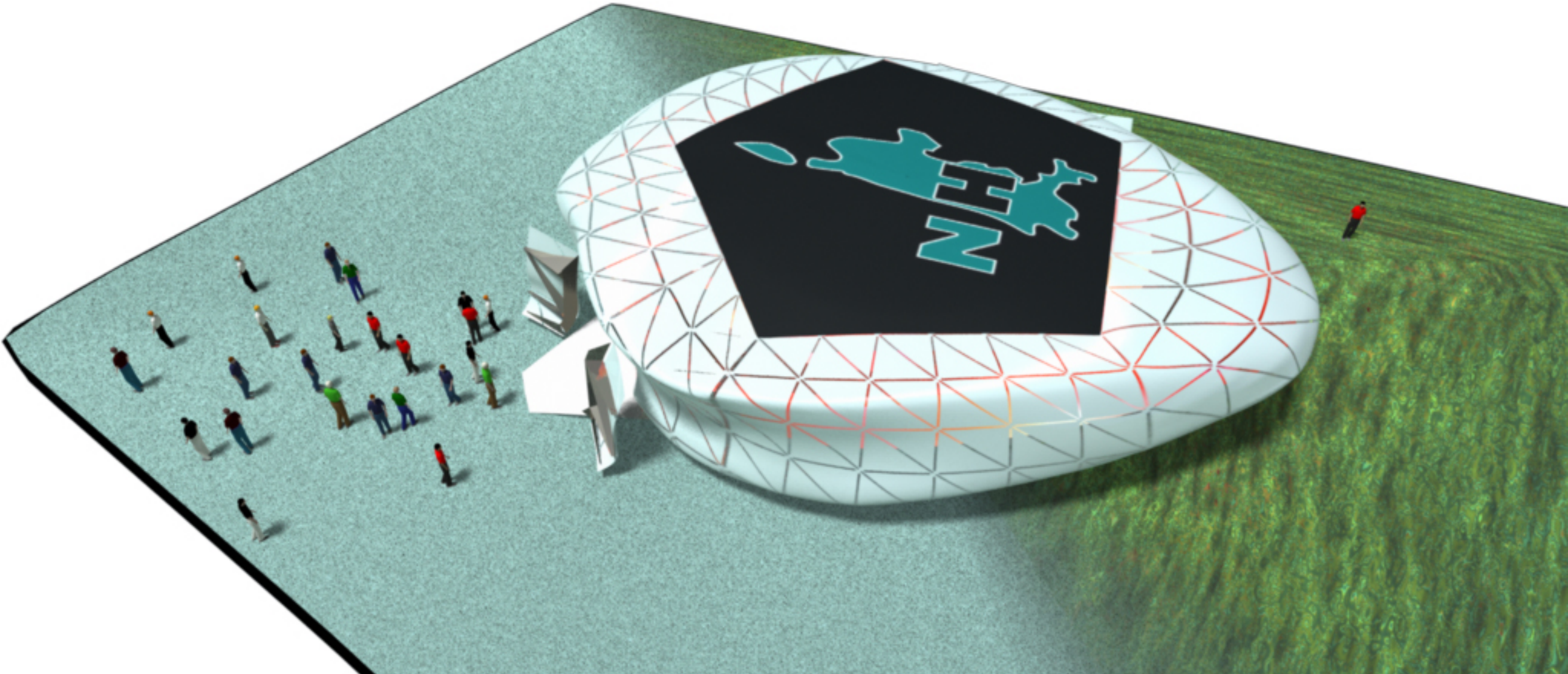


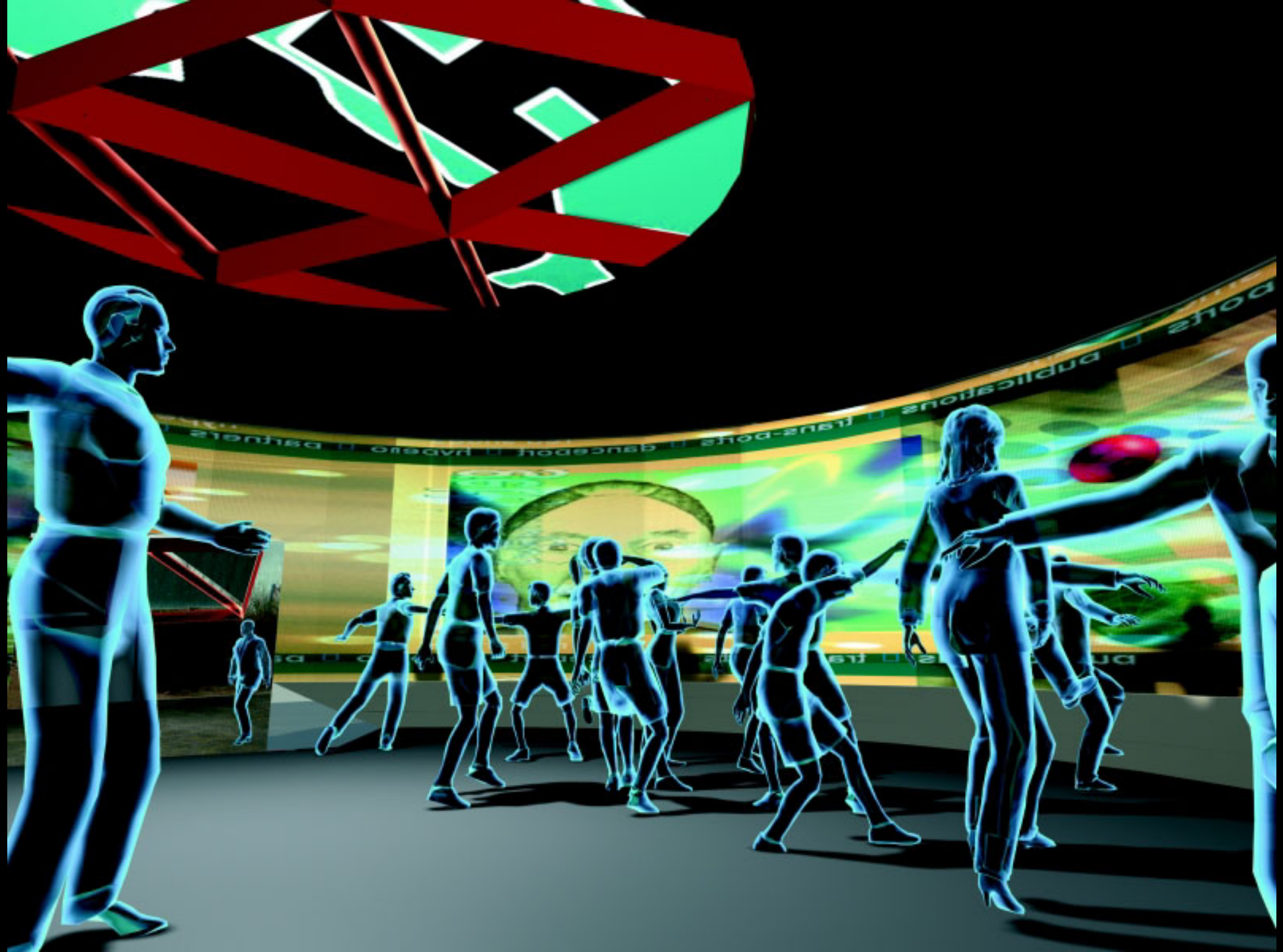


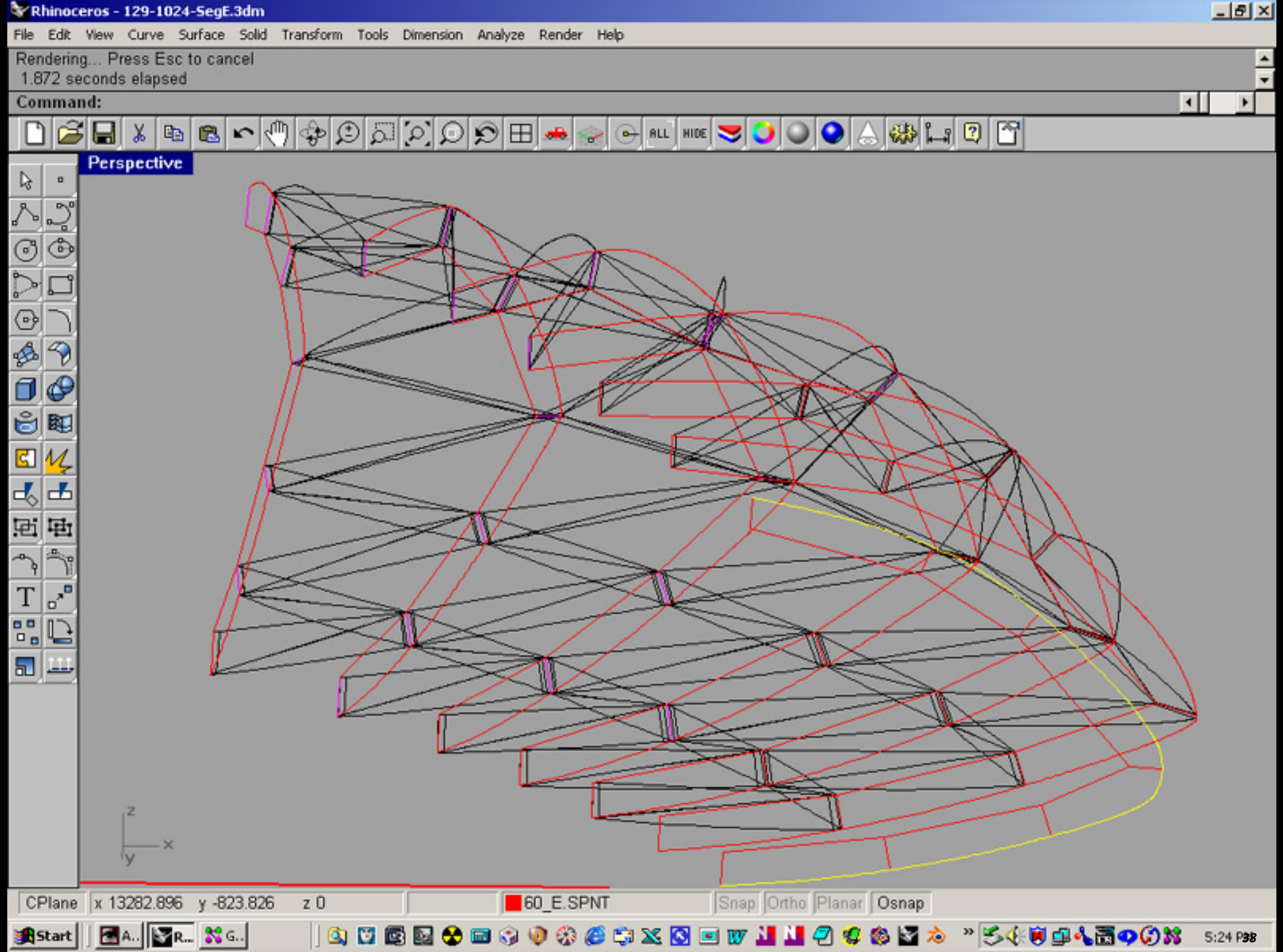
2002 v1 | 2007 v2 | *iWEB*

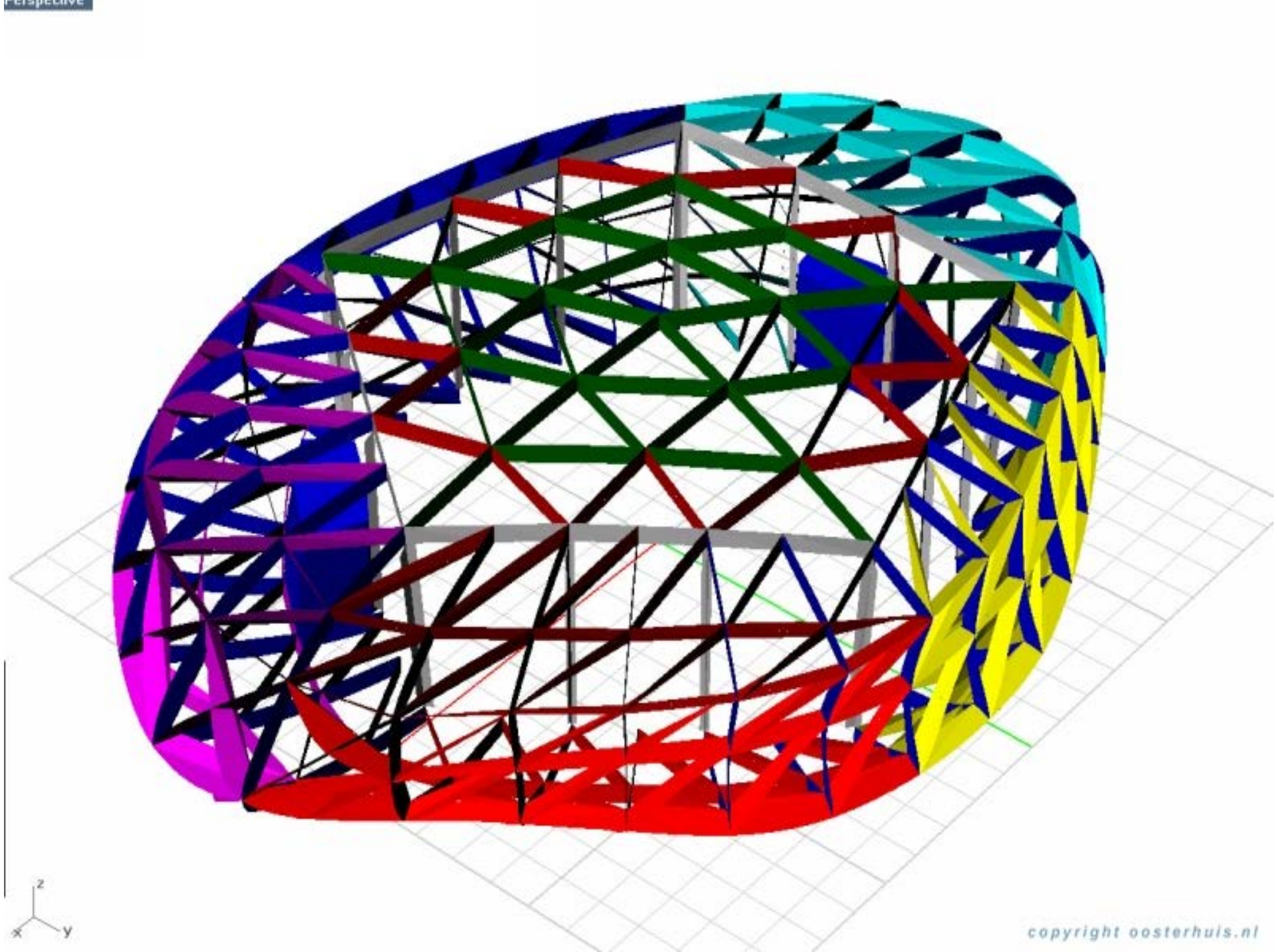
green #4 | second life

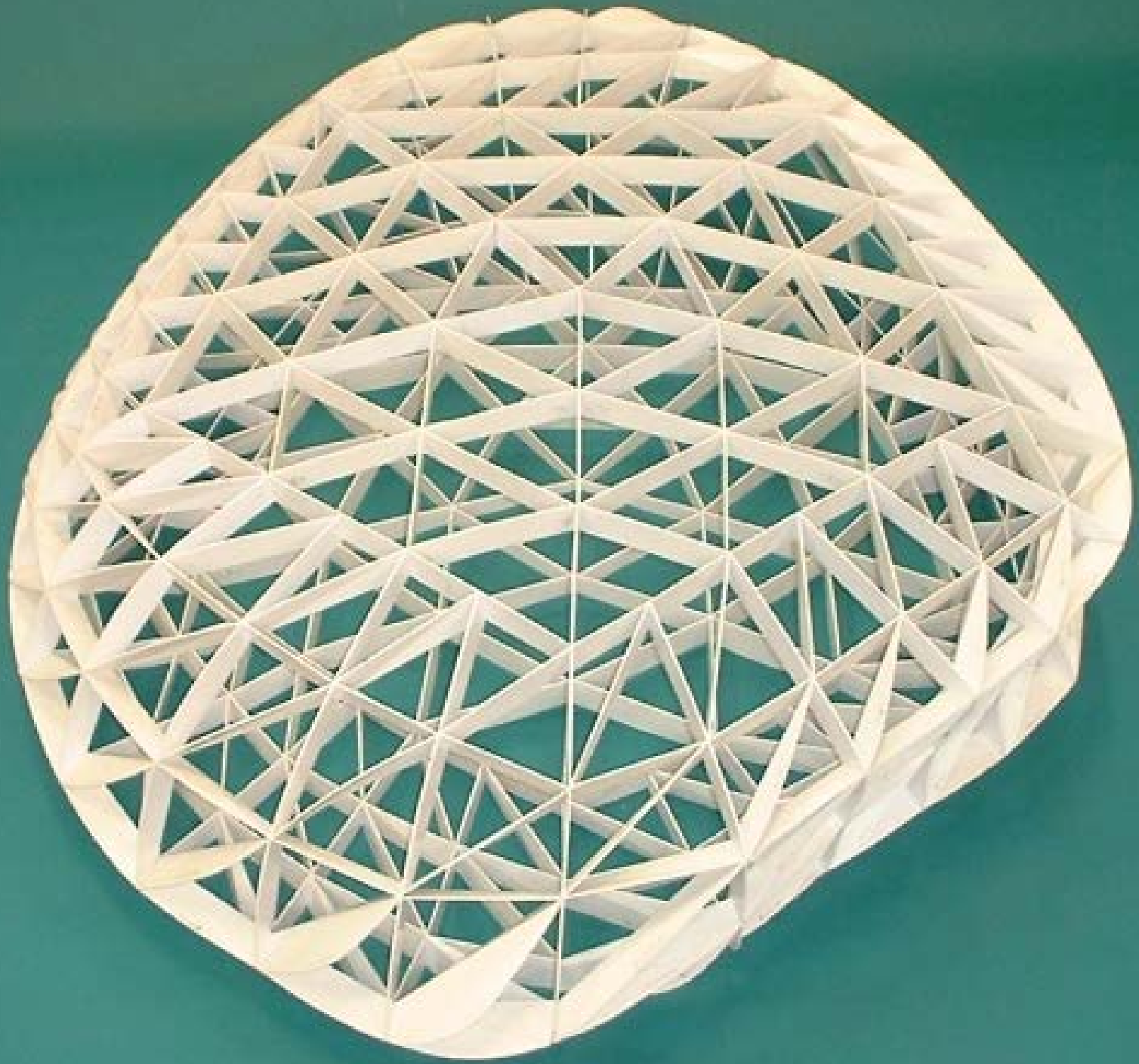

Rhinoceros - RHINO_EMERGENCY_SAVE.3dm
File Edit View Curve Surface Solid Transform Tools Dimension Analyze Render Help
Press Enter when done: ZoomDynamic
Click and drag up and down to zoom: !
Press Enter when done:
ALL
HIDE
Top
CPlane x -17.422 y -11.081 z 0
00_Skin
Snap Ortho Planar Osnap
Start
Adobe Ph...
Rhinoce...
5:15 PM



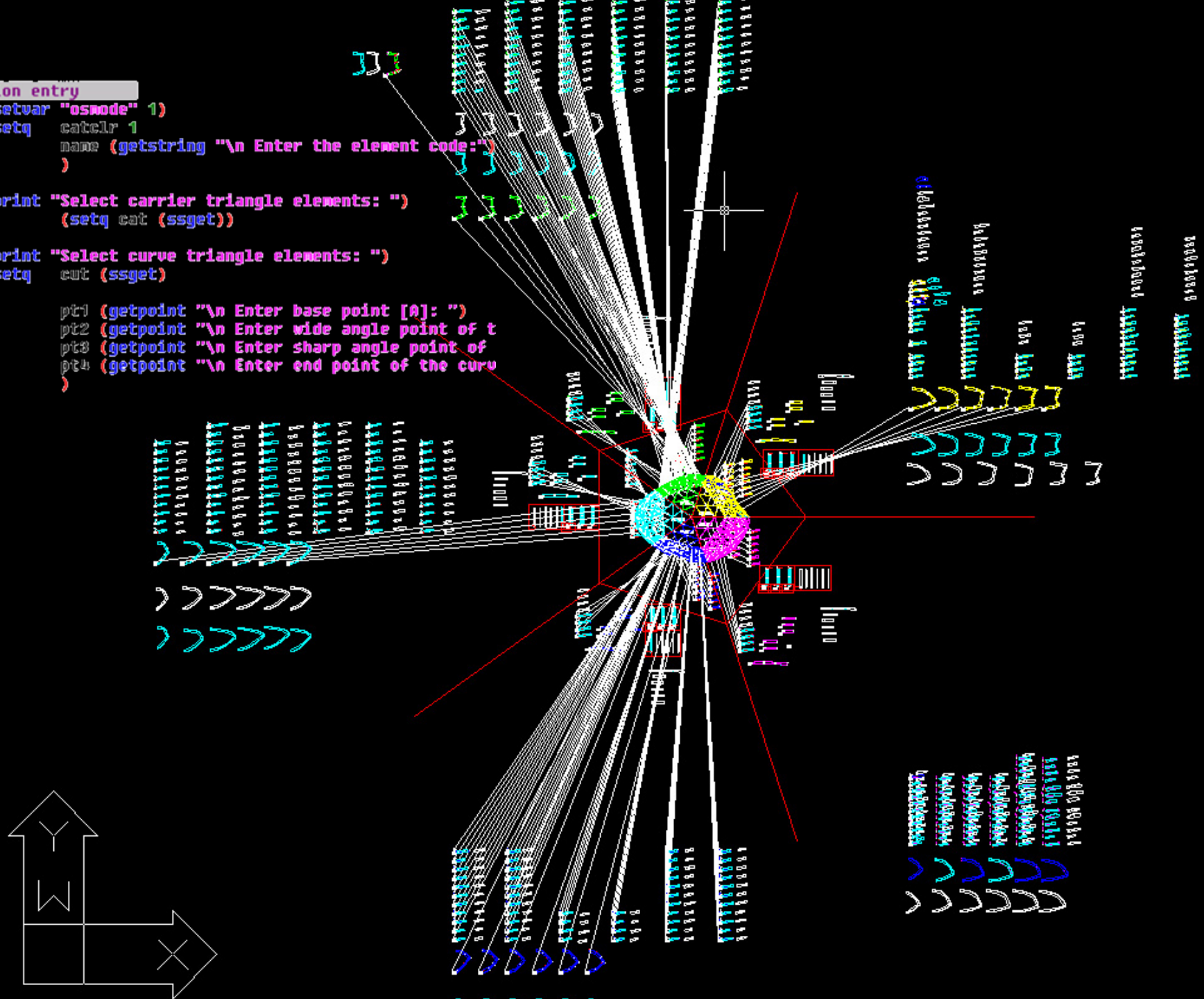


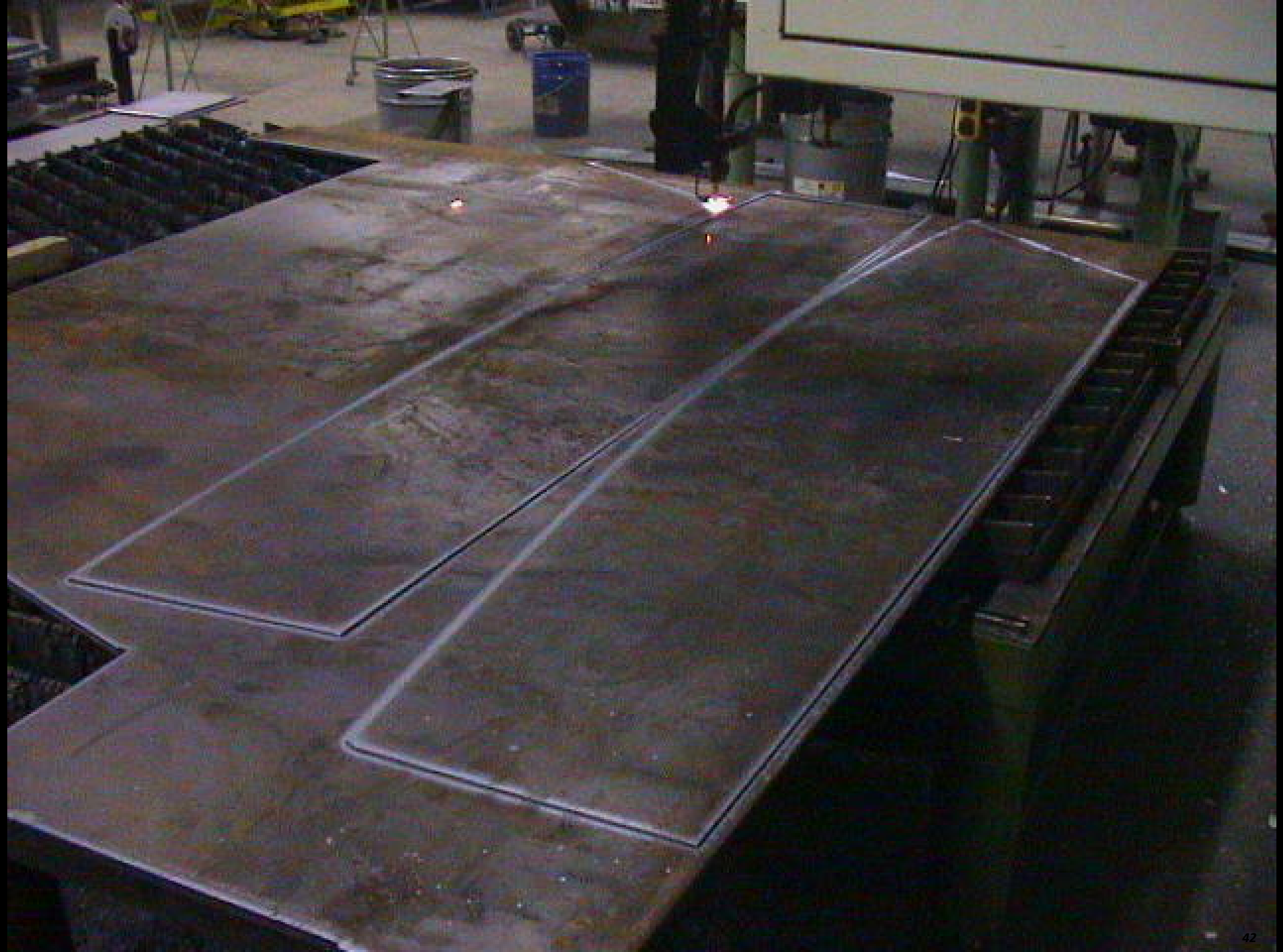

Rhinoceros - 129-1024-SegE.3dm
File Edit View Curve Surface Solid Transform Tools Dimension Analyze Render Help
Rendering... Press Esc to cancel
1.872 seconds elapsed
Command:
ALL
HIDE
Perspective
z
x
y
CPlane x 13282.896 y -823.826 z 0
60_E.SPNT
Snap Ortho Planar Osnap
Start
5:24 PM

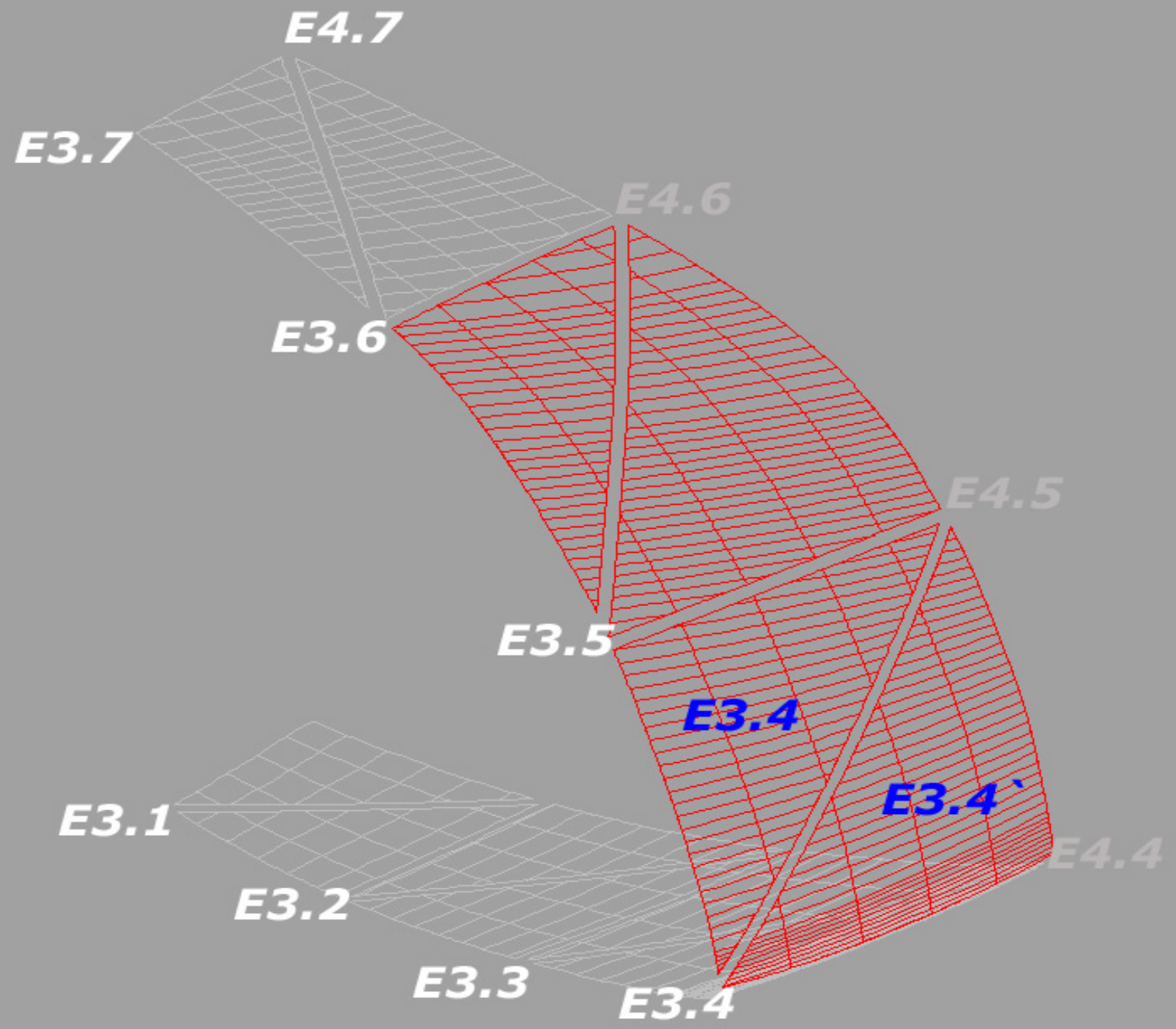

Perspective
z
x
y
copyright oosterhuis.nl



```
ion entry
setvar "osmode" 1)
setq    catclr 1
        name (getstring "\n Enter the element code:")
        )

print "Select carrier triangle elements: ")
        (setq cat (ssget))

print "Select curve triangle elements: ")
setq    cut (ssget)

        pt1 (getpoint "\n Enter base point [A]: ")
        pt2 (getpoint "\n Enter wide angle point of t
        pt3 (getpoint "\n Enter sharp angle point of
        pt4 (getpoint "\n Enter end point of the curv
        )
```







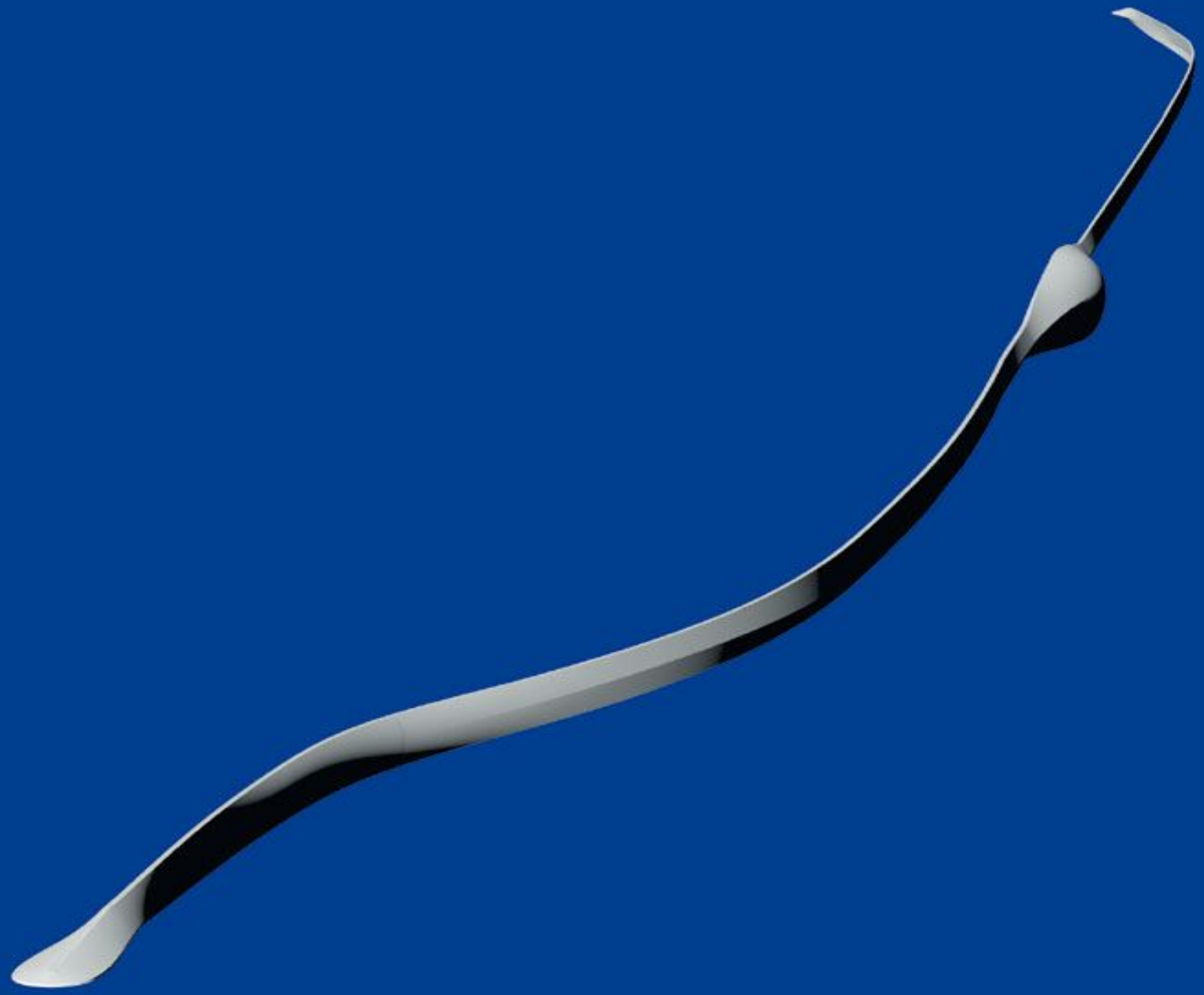
segment E3


BOUWKUNDE

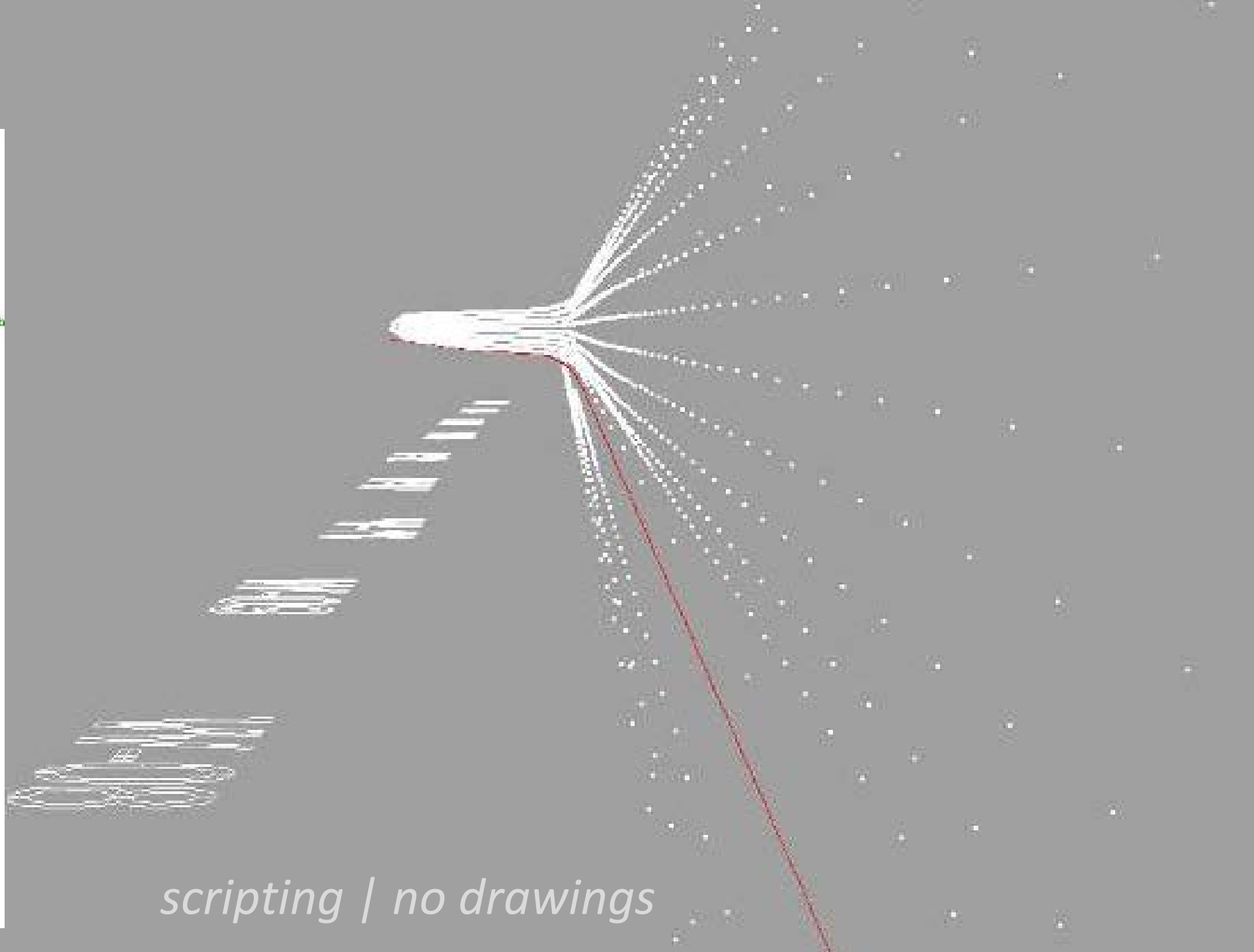
2005 | *A2 Cockpit*

green #5 | file to factory


HESSING
HESSING



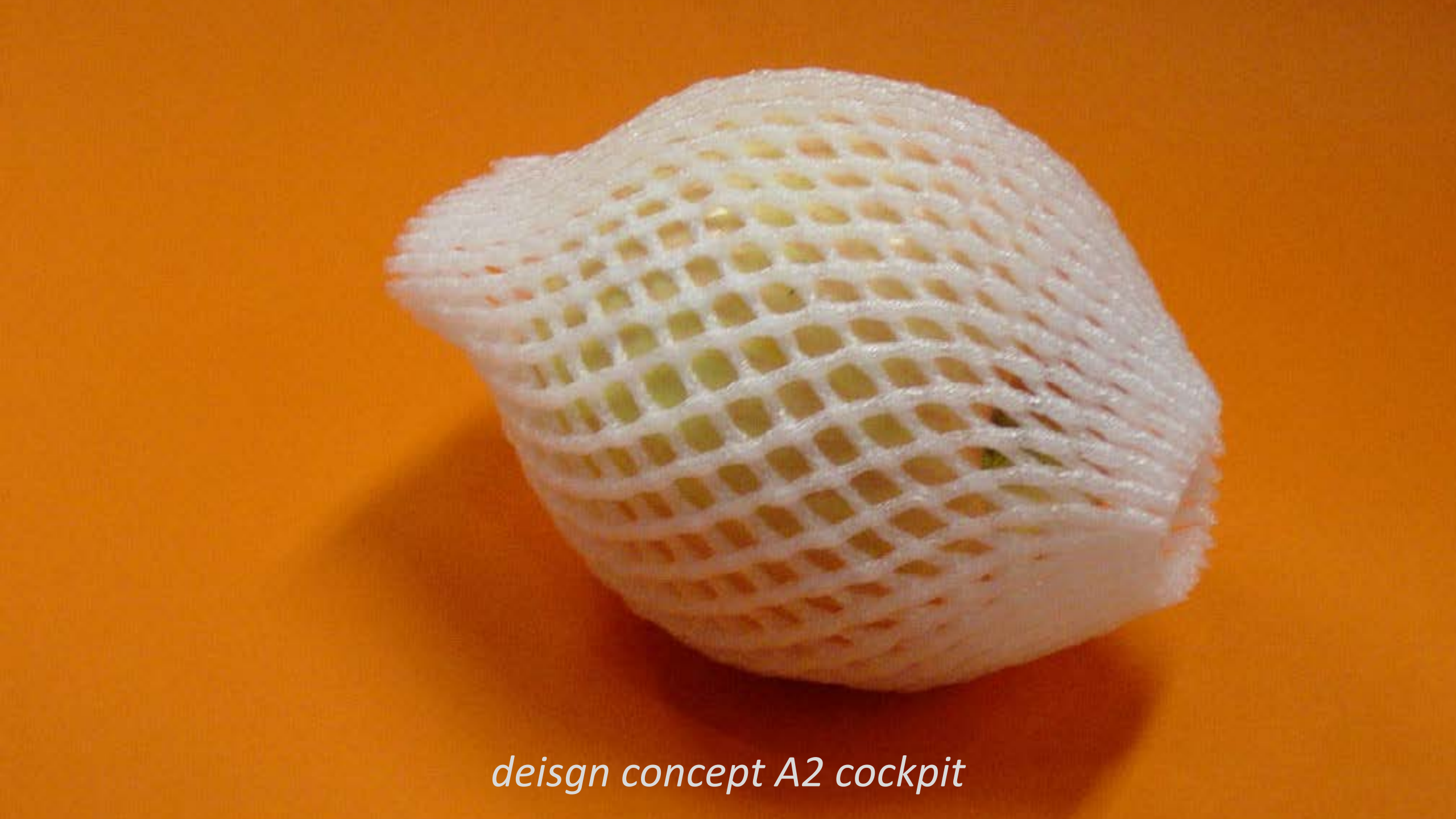
```
  nrc=(ceil((k*2+ll+(h-1)*24)/2)+1) as integer
  nrc-=1
  c=nrc as string
  if c.count==1 then c="0"+c

  ss3.name="axis3Dglass"+c
  updateshape ss3
  l0.addnode ss3
  ss3.wirecolor=l0.wirecolor
 )

--5.5 builds closed splines into layer "p glassplates b

  da2=(da^2+db^2-dc^2)/(2*da)
  dh=sqrt(abs(db^2-da2^2))
  np1=[0.0,0.0,0.0]
  np2=[da,0.0,0.0]
  np3=[da2,dh,0.0]
  gp1=splineshape()
  addnewspline gp1
  addknot gp1 1 #corner #line np1
  addknot gp1 1 #corner #line np2
  addknot gp1 1 #corner #line np3
  addknot gp1 1 #corner #line np1
  close gp1 1
  updateshape gp1
  gp1.wirecolor=color 0 255 0
  gp1.pos.x=b[2][1].pos.x+(k-1)*3500
  gp1.pos.z=b[1][1].pos.z
  move gp1 [0,(2000+1500*(g-1)),0]

  la2=(la^2+lb^2-lc^2)/(2*la)
  lh=sqrt(abs(lb^2-la2^2))
  np2=[0.0,0.0,0.0]
  np1=[la,0.0,0.0]
  np3=[la2,-lh,0.0]
  gp2=splineshape()
  addnewspline gp2
  addknot gp2 1 #corner #line np1
  addknot gp2 1 #corner #line np2
  addknot gp2 1 #corner #line np3
  addknot gp2 1 #corner #line np1
  close gp2 1
  updateshape gp2
  gp2.wirecolor=color 0 255 0
  gp2.pos.x=b[2][1].pos.x+(k-1)*3500
  gp2.pos.z=b[1][1].pos.z
  move gp2 [0,(2500+1500*g),0]

  if k!=1 then
```



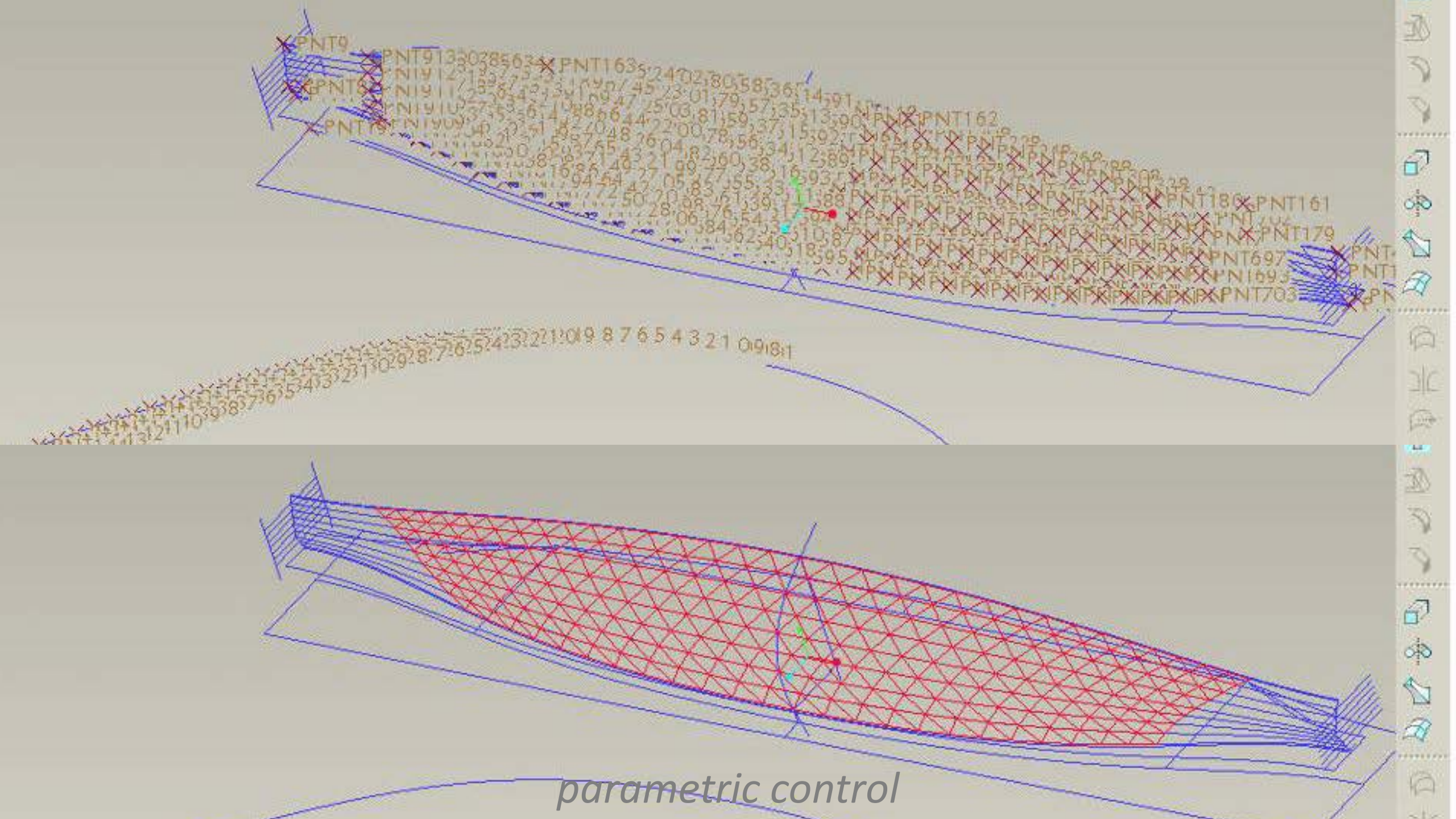
scripting | no drawings

40.000 unique ID’s

dry assembly_30m a day



deisgn concept A2 cockpit

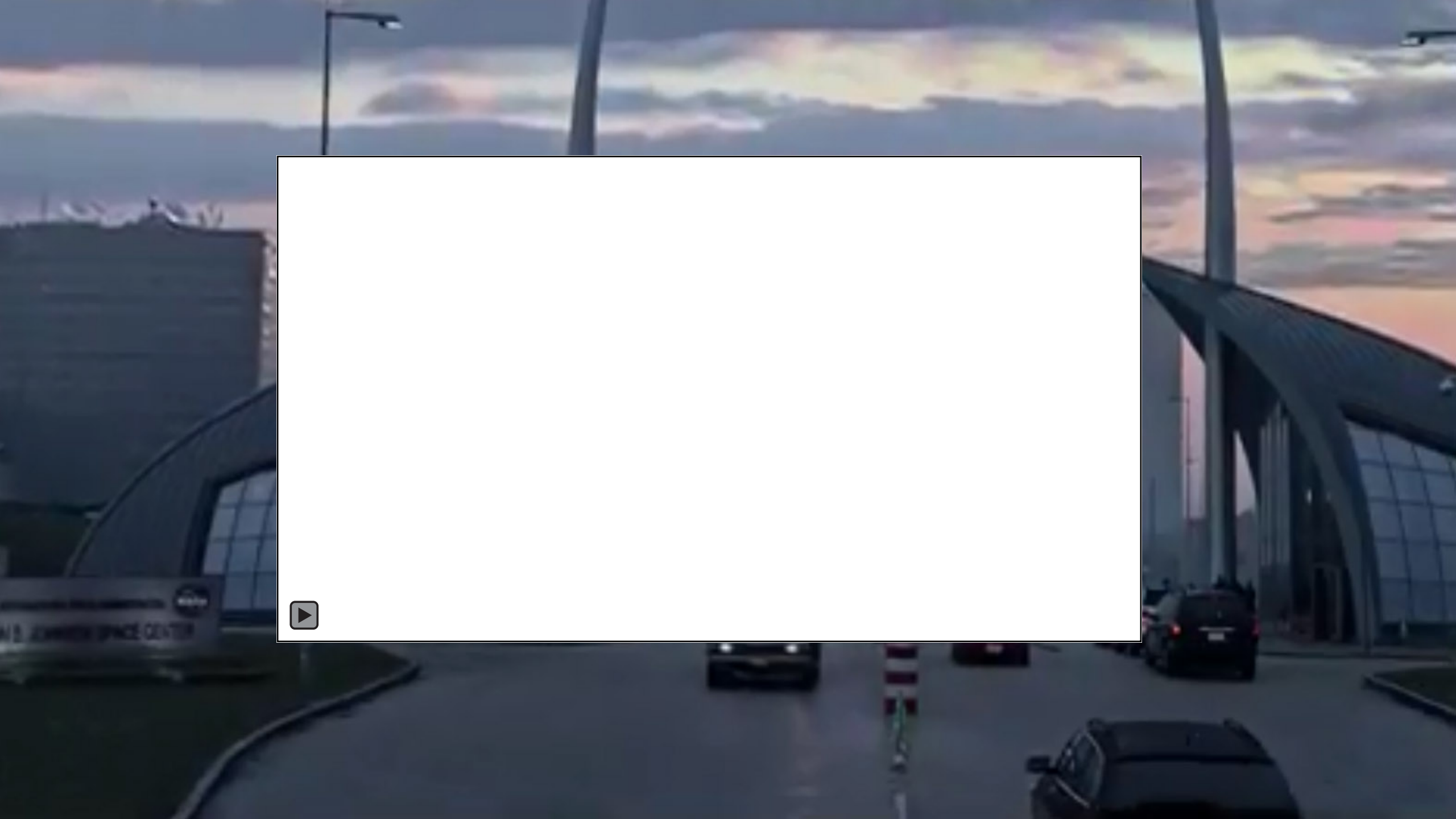

parametric control


unique building components

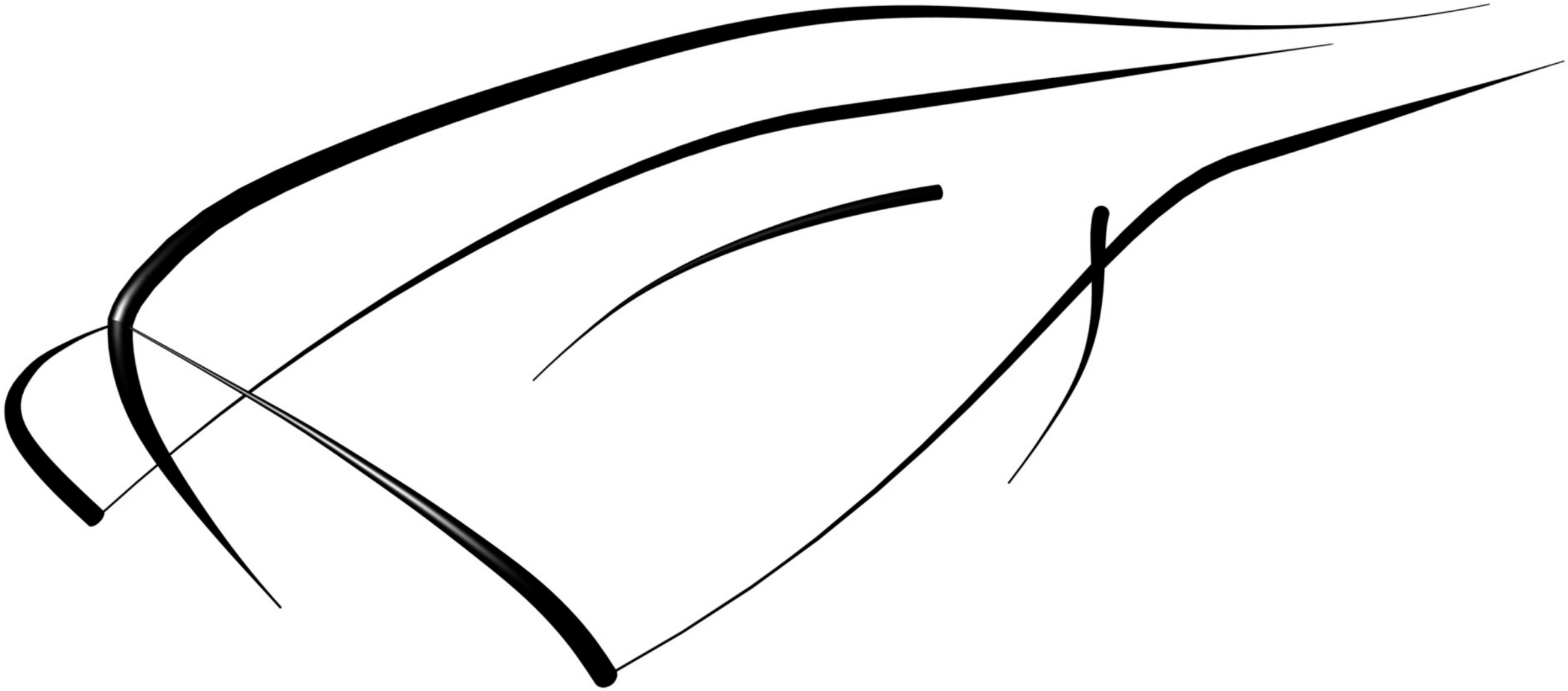

HESSING
HESSING

2012 | *Bálna Budapest*

green #6 | connected working groups



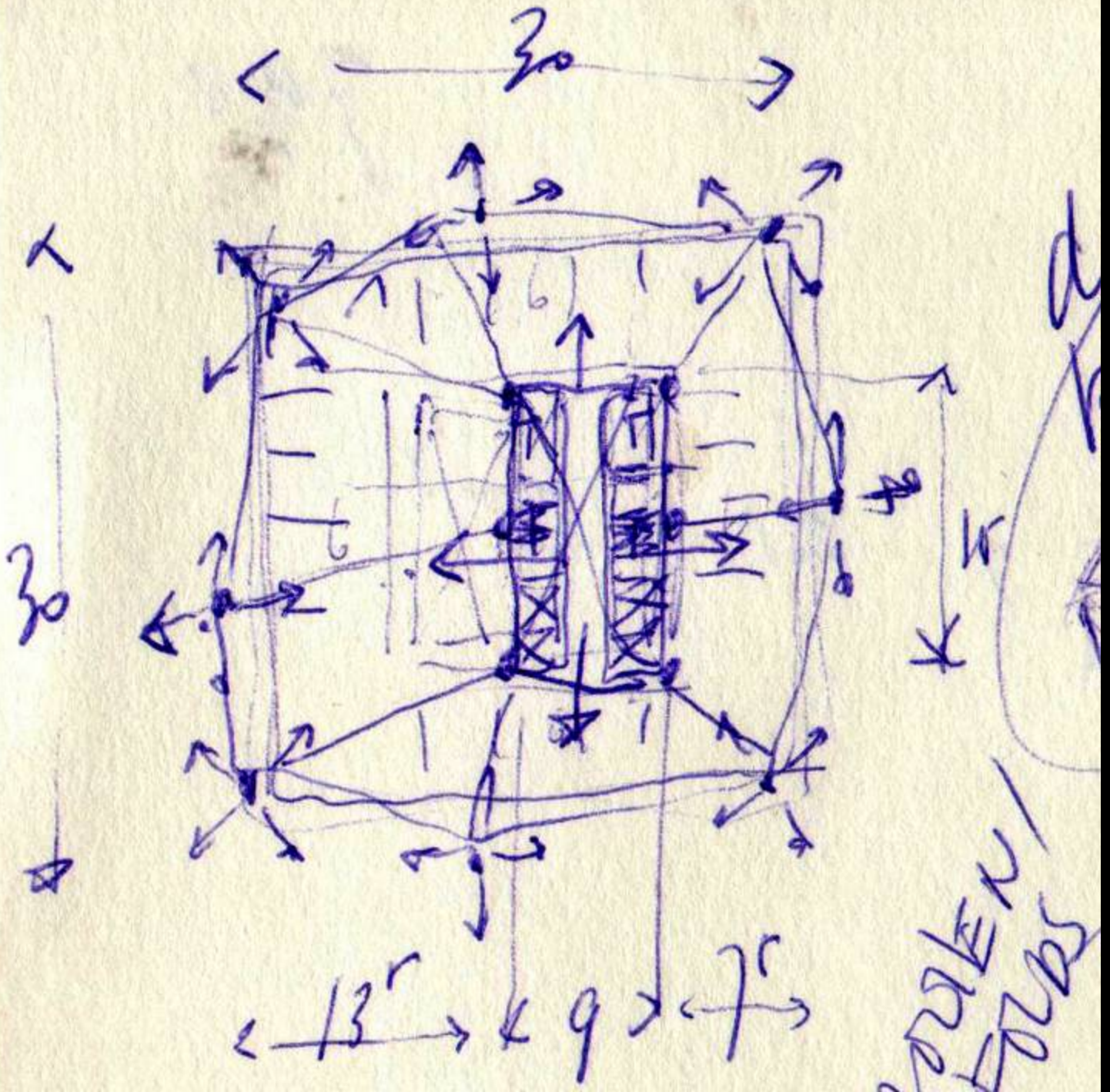

GigaContact

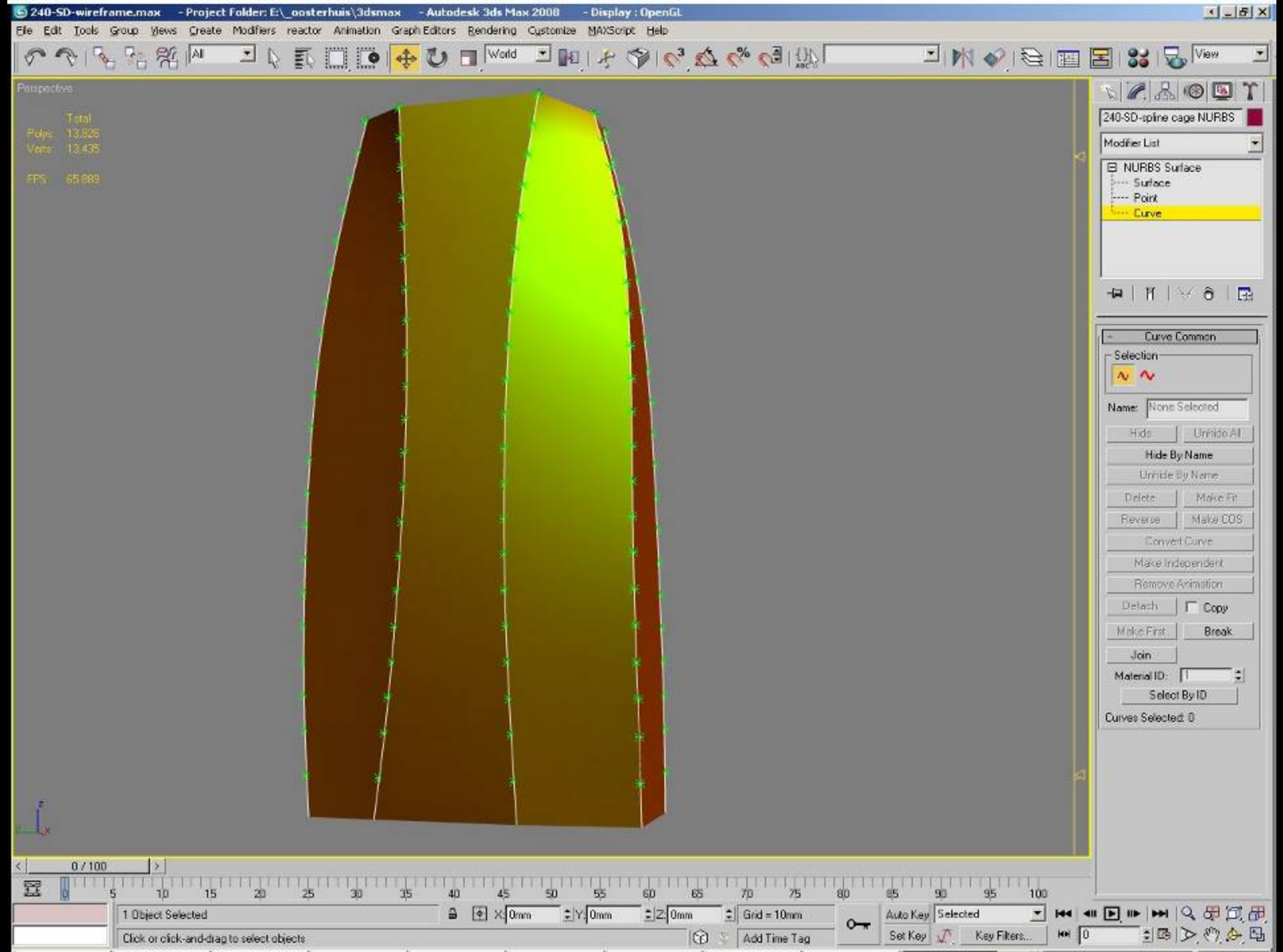


2014 | *Liwa Tower*

green # 7 | parametric interconnectivity


مكاتب للإيجار البرج الدولي
International Tower OFFICES
600 525 526 TO LET
NBAD
كابيتال هاوس
CAPITAL HOUSE
LIWA TOWER


30
30
15
13
9
7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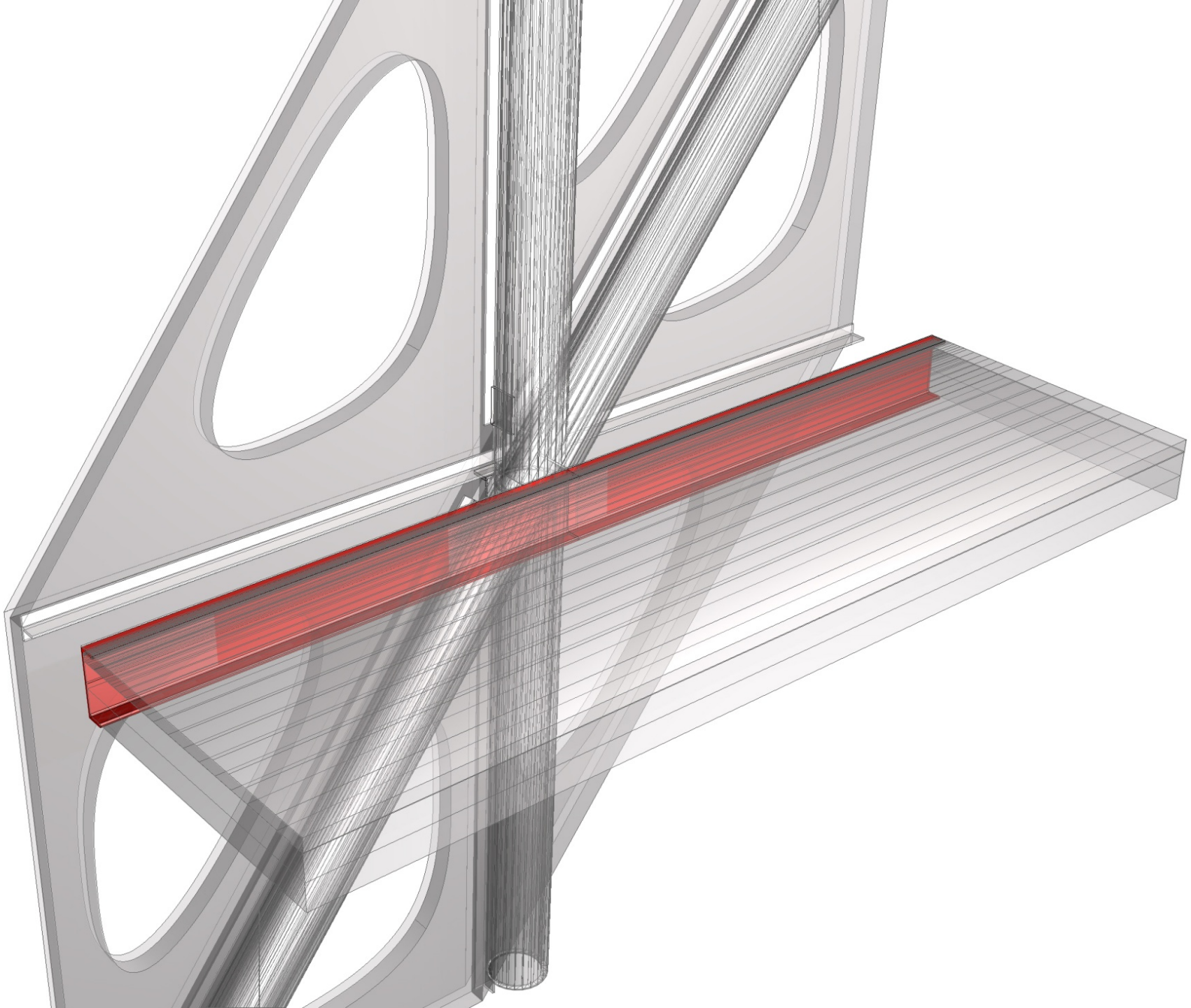
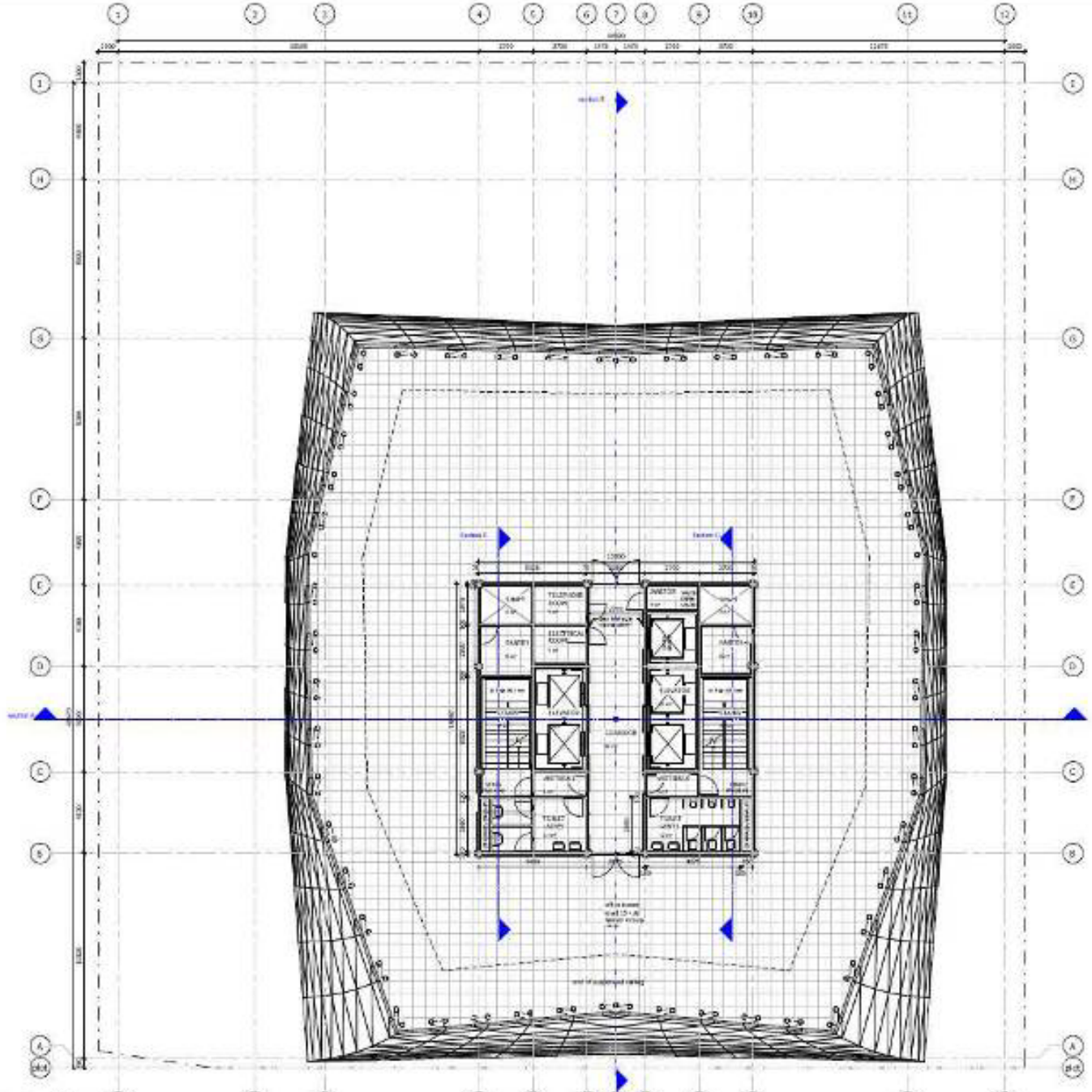
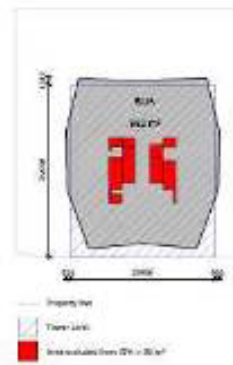
File Edit Tools Group Views Create Modifiers reactor Animation Graph Editors Rendering Customize MAXScript Help
Perspective
Total
Polys: 13,826
Verts: 13,435
FPS: 65.889
240-SD-spline cage NURBS
Modifier List
NURBS Surface
Surface
Point
Curve
Curve Common
Selection
Name: None Selected
Hide
Unhide All
Hide By Name
Unhide By Name
Delete
Make Fit
Reverse
Make CDS
Convert Curve
Make Independent
Remove Animation
Detach
Copy
Make First
Break
Join
Material ID: 1
Select By ID
Curves Selected: 0
0 / 100
1 Object Selected
Click or click-and-drag to select objects
Grid = 10mm
Add Time Tag
Auto Key
Selected
Set Key
Key Filters...





tower level 15
1 : 100



tower level 15
1 : 600

ADNEC

ONL

240
A
122


Hamoodah Properties
CES FOR RENT
6176788
6176792


NBAD
NBAD

green #1	*fusion art and architecture*
green #2	*smooth spacious envelop*
green #3	*unibody*
green #4	*second life*
green #5	*file to factory*
green #6	*connected working groups*
green #7	*parametric interconnectivity*