Representação Digital 2023-2024

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FACULDADE DE ARQUITETURA
UNIVERSIDADE DE LISBOA

Mestrado Integrado em Arquitectura
Ano Lectivo 2023-2024 1º Semestre
Docente - Nuno Alão 2º Ano

20238029

LAURA DELFRATE

U LISBOA | UNIVERSIDADE DE LISBOA

FACULDADE DE ARQUITETURA
UNIVERSIDADE DE LISBOA

ReDig

Mestrado Integrado em Arquitectura
Ano Lectivo 2023-2024 1º Semestre
Docente - Nuno Alão 2º Ano

ÍNDICE - Diário Gráfico

Host: ftp.fa.ulisboa.pt
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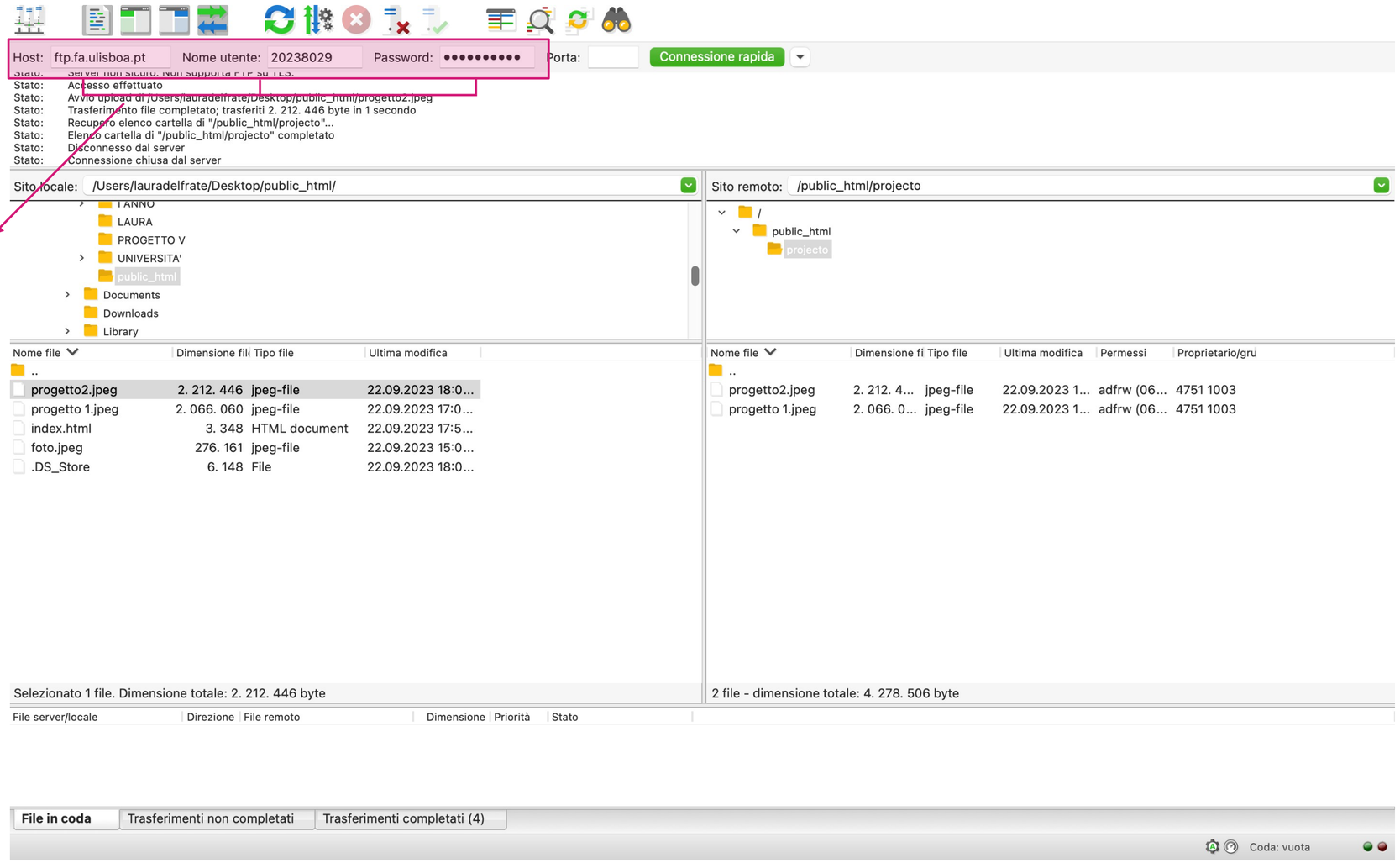

Published using INDEX

index.html

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<h1><strong></strong>LAURA DELFRATE </strong></h1>
<br>
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<p><em style="color:black; text-align:right; margin-left:80px; font-size:20; line-height:0.5;"><strong>a.e. 2023/2024</strong></em></p>
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<p><em style="color:black; text-align:right; margin-left:80px; font-size:20; line-height:0.5;"><strong>Faculdade de Arquitetura da</strong></em></p>
<p><em style="color:black; text-align:right; margin-left:80px; font-size:20; line-height:0.5;"><strong>Universidade de Lisboa</strong></em></p>

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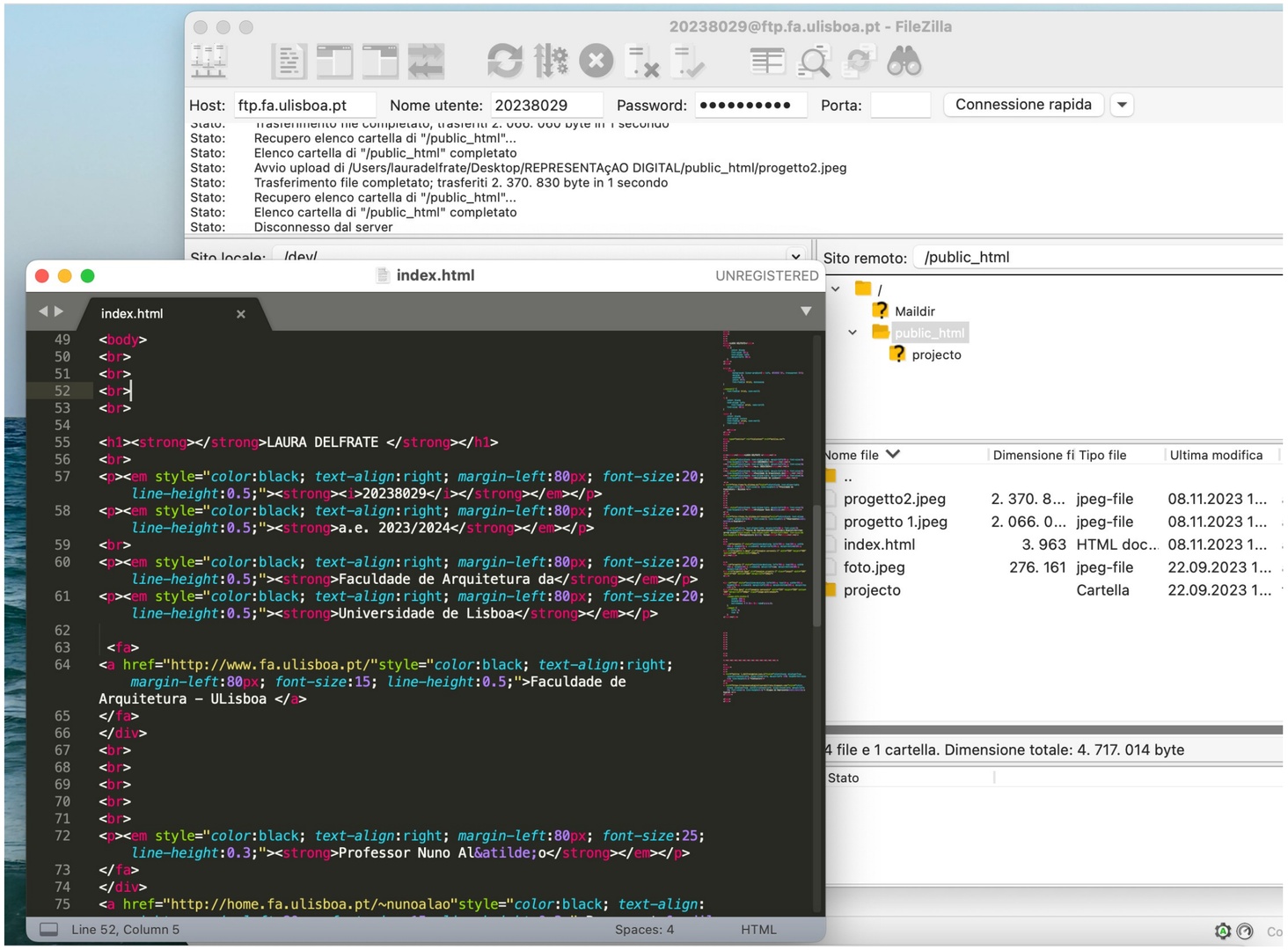
Line 52, Column 5 Spaces: 4 HTML



ReDig Semana 1

LAURA DELFRATE

20238029
a.e. 2023/2024

Faculdade de Arquitetura da Universidade de Lisboa
Faculdade de Arquitetura - ULisboa

Professor Nuno Alão
Representa¸ão Digital

*Arquitetura 2º Turma **F***

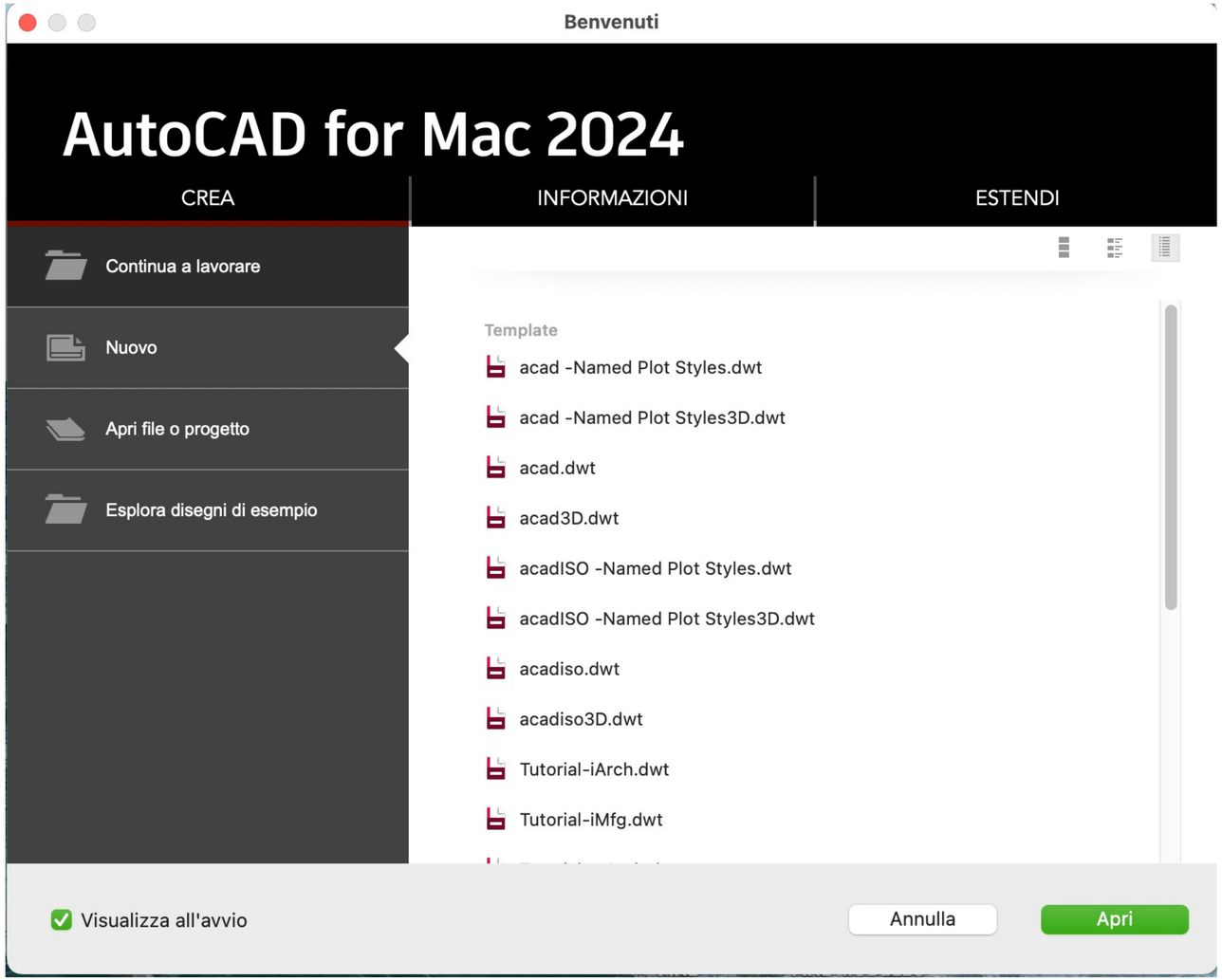
HTML PAGE

COMMANDS FOR SPECIAL CHARACTERS:

À - à
Á - á
´ -à
ã -ã
ê -ê
ç -ç
&ordom; °

Start Drawing:

- There are different template, we use acadISO.dwt



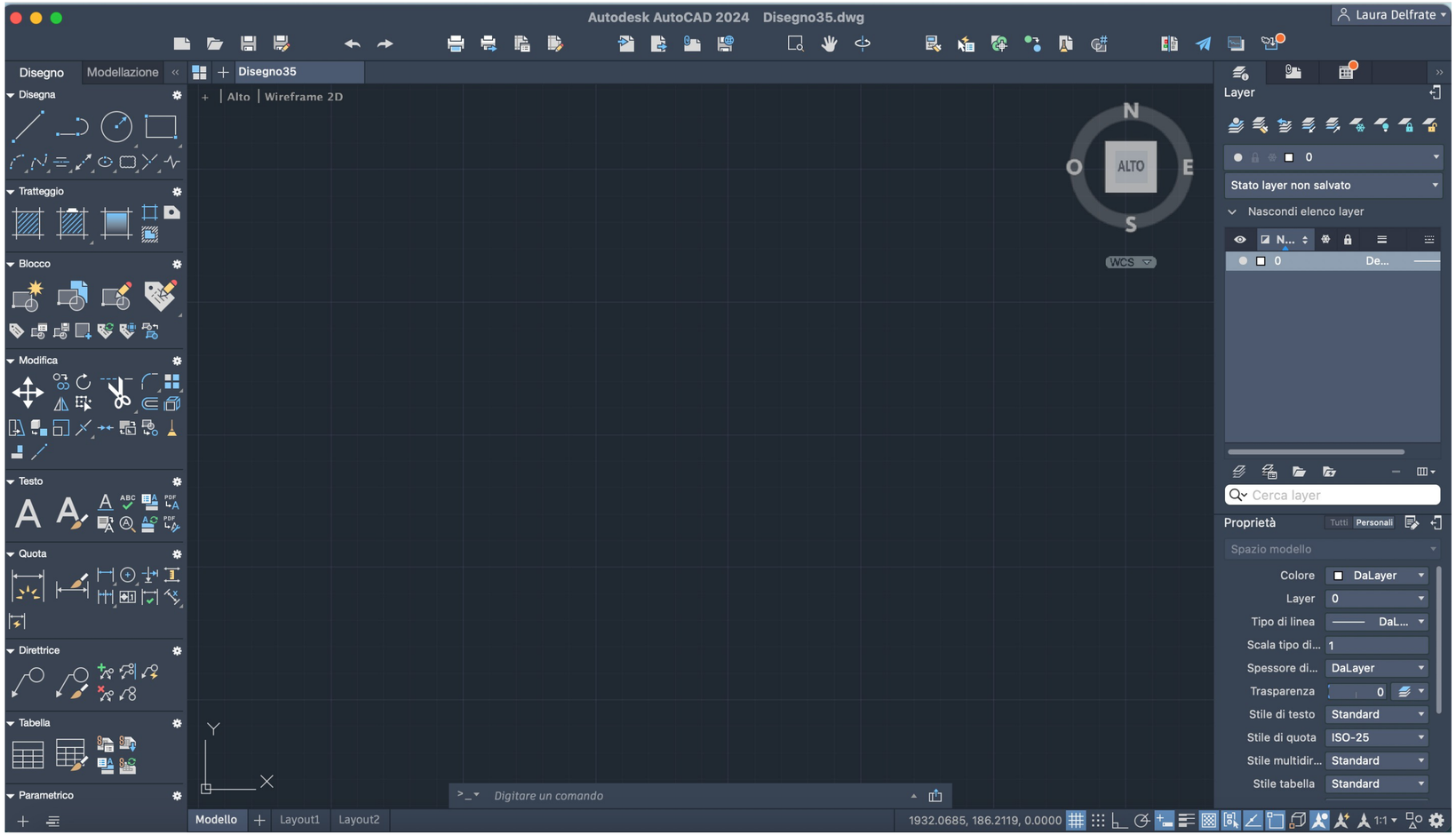
Menu

- On the background we can activate the grid, which divides the worksheet into 10 X 10 units

- Perpendicular

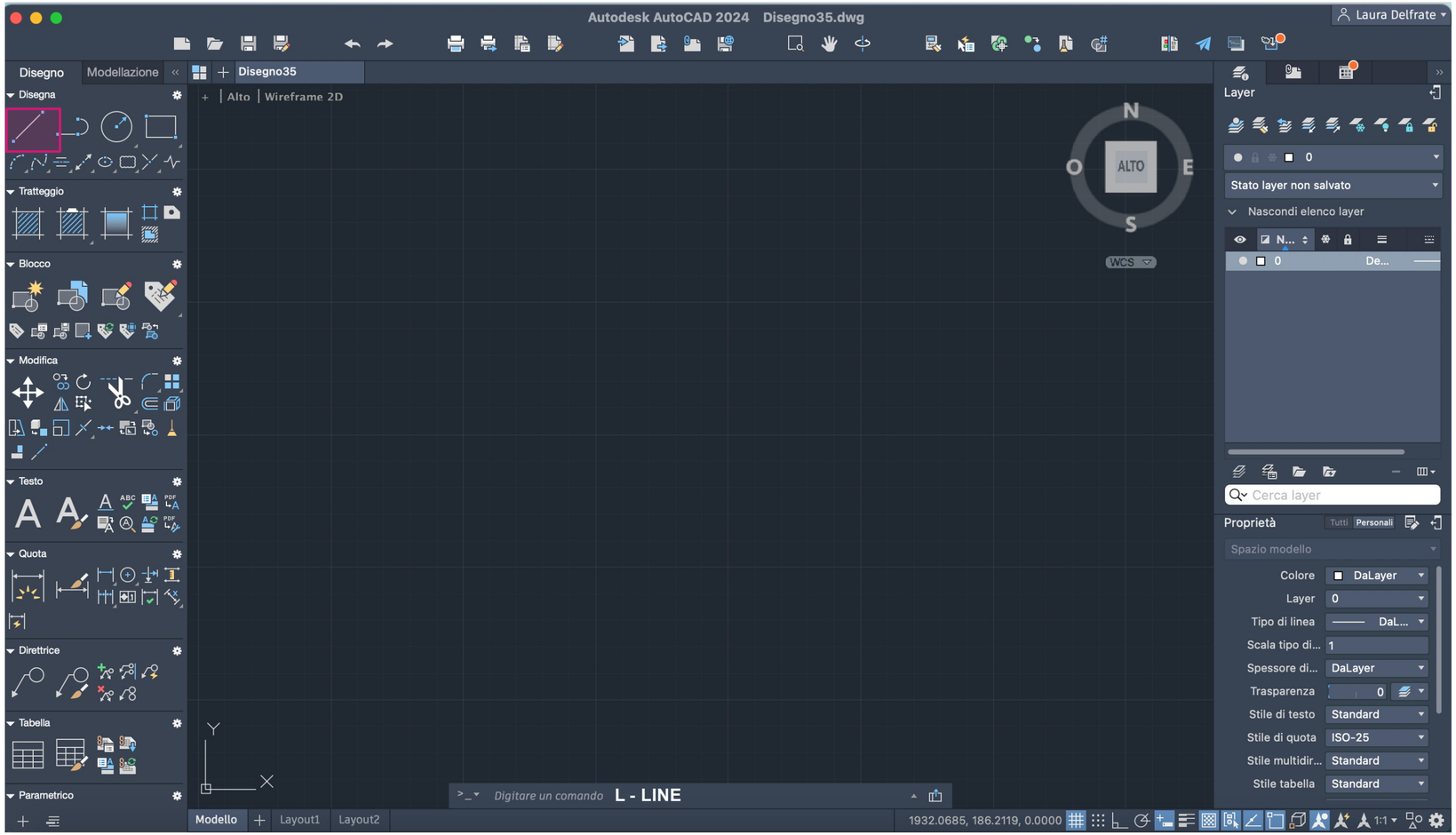
- Grid

AutoCAD works on a 1:1000 scale, so:
1 unit for architecture = 1m
1 unit for AutoCAD = 1mm
1m = 1000mm



Commands:

L - Line, press enter and then enter the coordinates



COORDINATES:

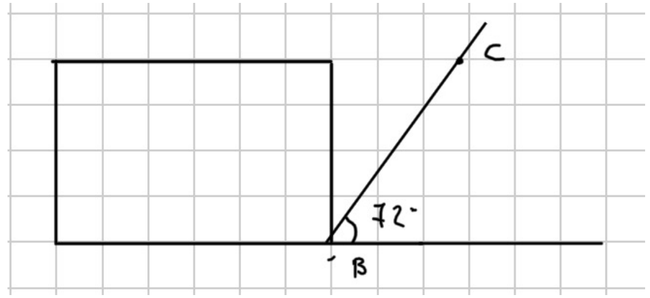
ABSOLUTE, RELATIVE, CARTESIAN, POLAR COORDINATES:

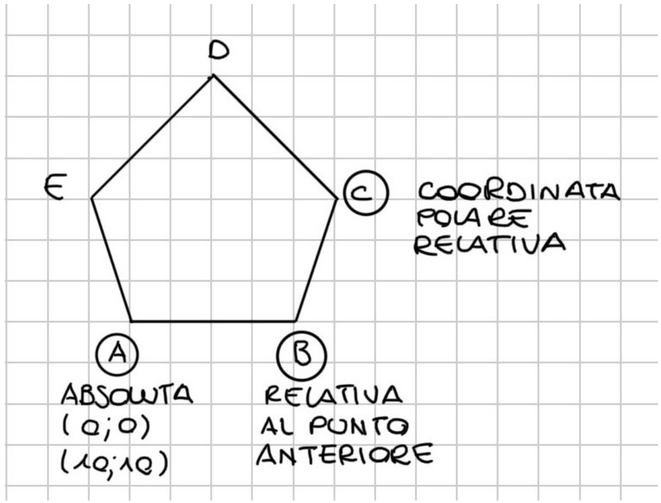
- ABSOLUTE COORDINATES are relative to (0;0;0), in other words, they are relative to the ORIGIN.

- RELATIVE COORDINATES are relative to the previous point.

- CARTESIAN COORDINATES, X, Y, Z

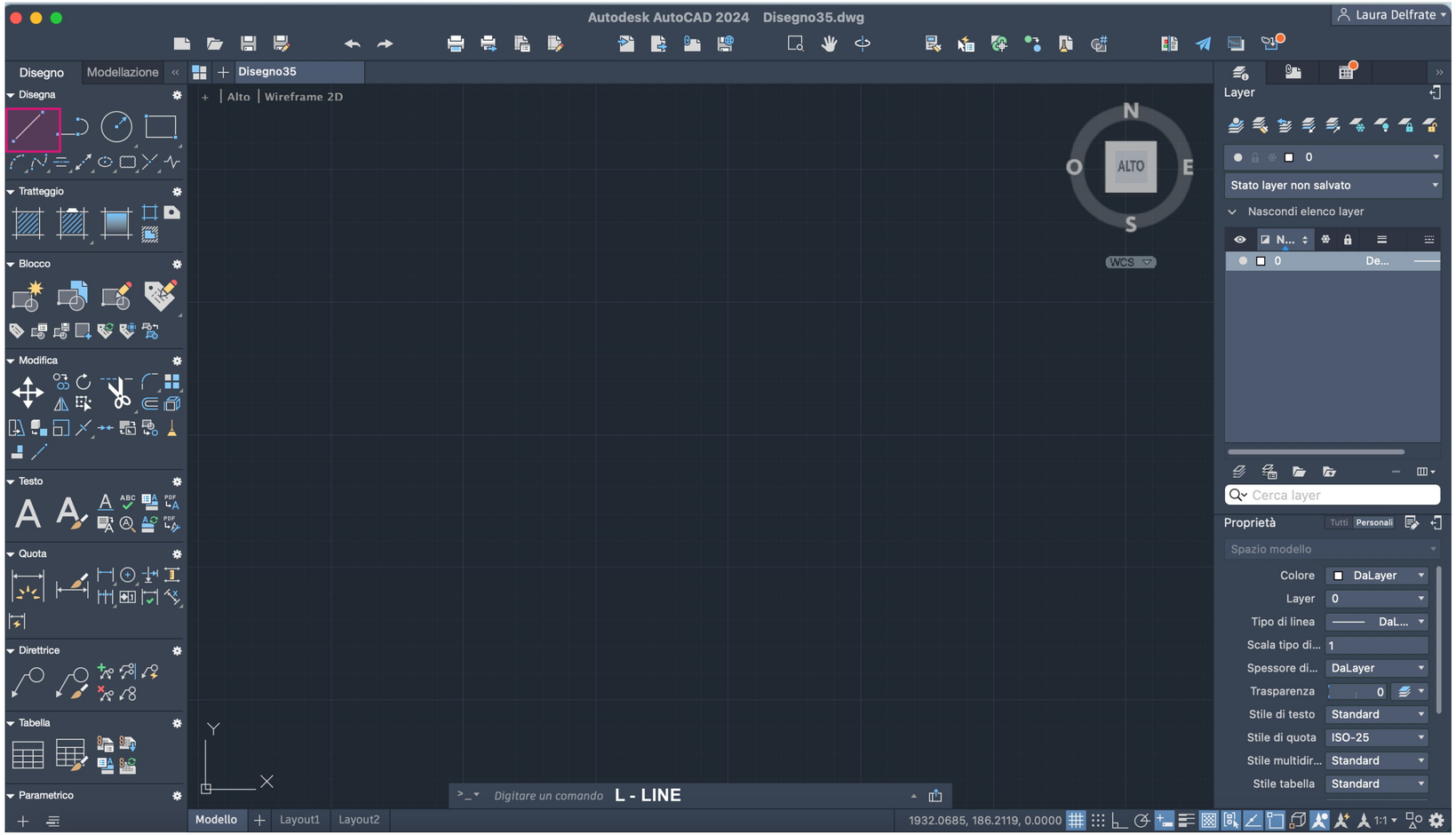
- POLAR COORDINATES, for example, for the pentagon, represent DISTANCE<ANGLE.





Commands:

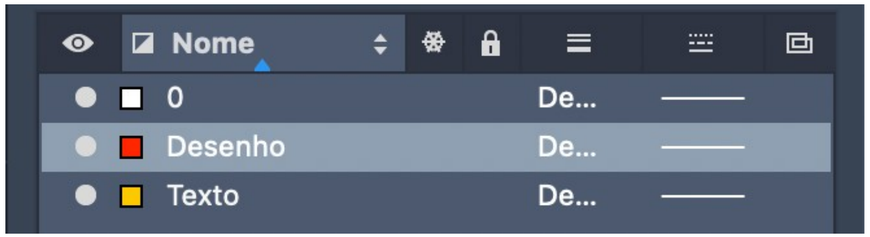
E - CANC
LI - LIST
LAyer -



Create 2 layers:
- One for drawing the polygon (red).
- Another for creating the text (orange)

Use the LINE command on the polygon layer to draw the pentagon:
Point A: (10,10)
Point B: (20,10) or (10<0)
Point C: (10<72)

Absolute Coordinates -#
Relative Coordinates -@

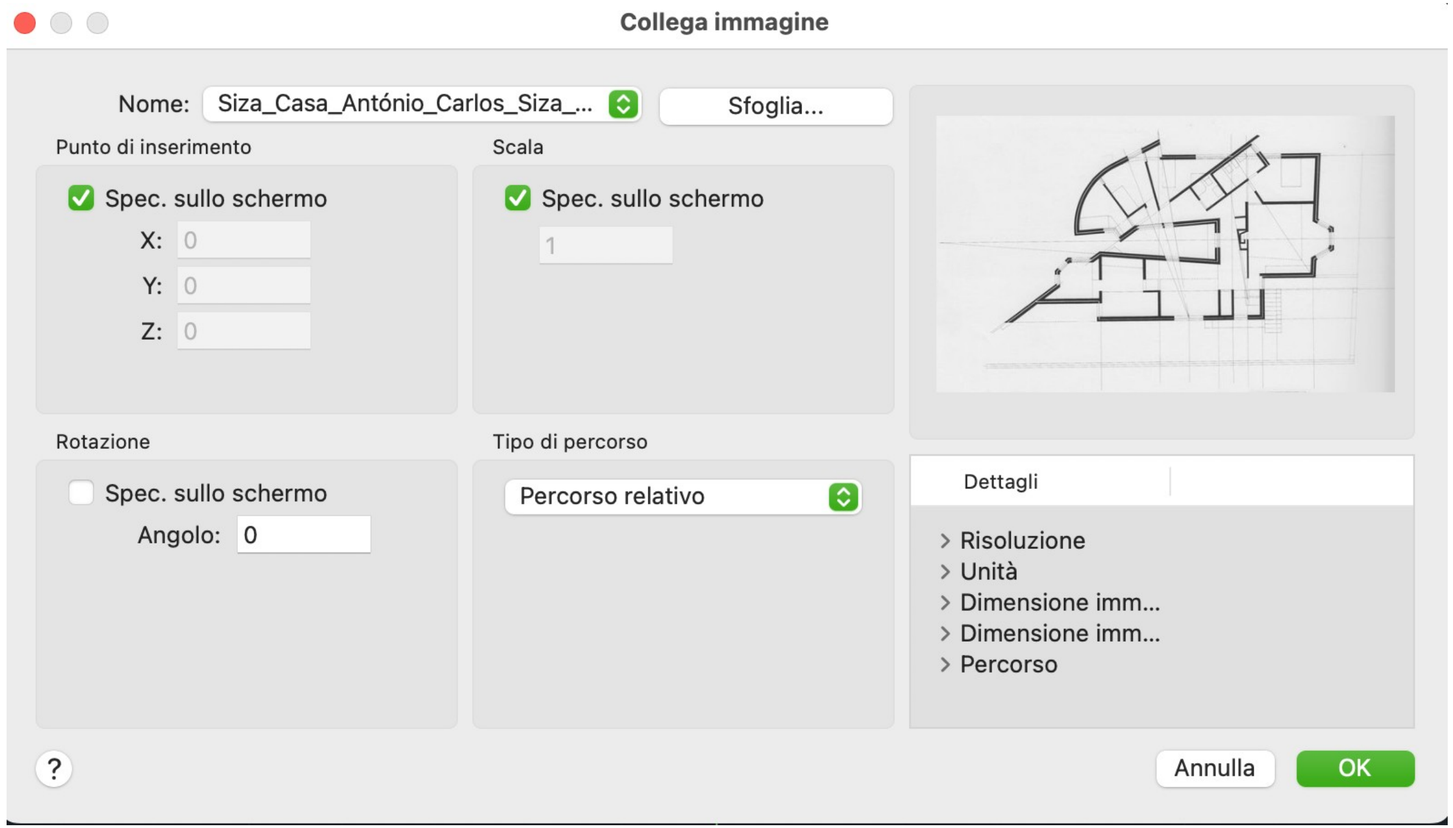


Commands:
U -United
C -Close
Dtext -Text
M -Move
Z -Zoom

CASA ANTONIO
CARLOS SIZA

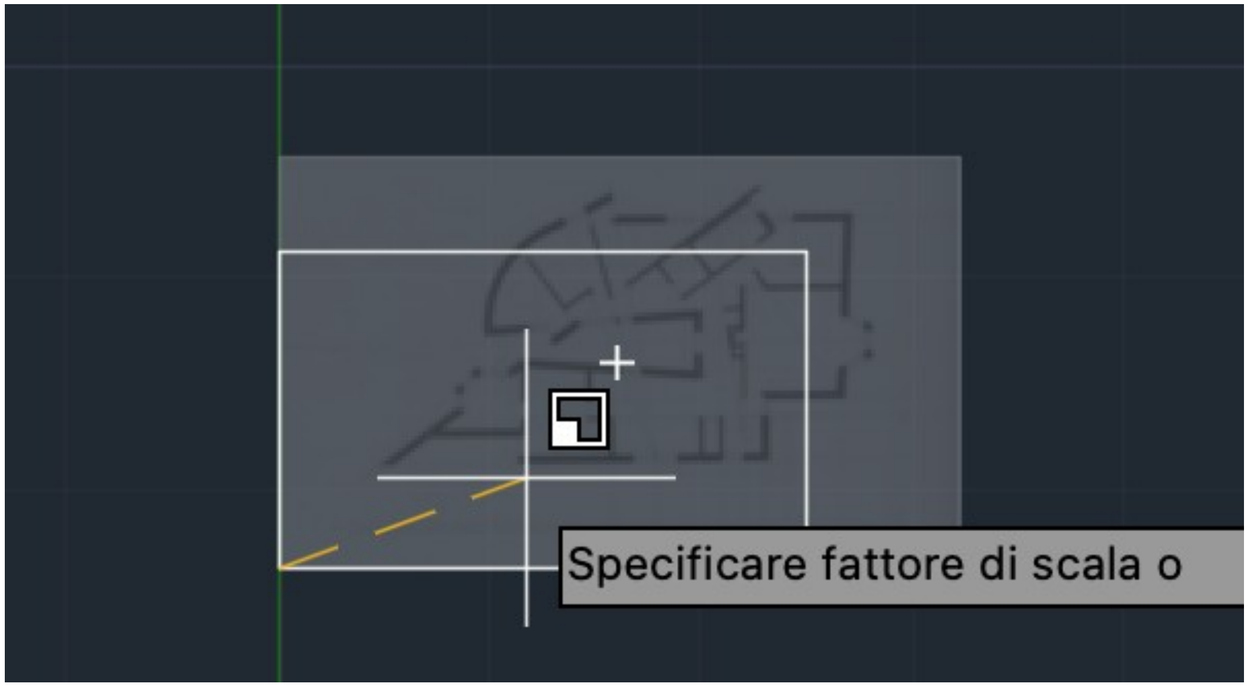
Commands:
ATTACH
Z -ZOOM
Ze -Zoom throughout the design

New DWG and insert the image with command Attach



Scale the image using the "SCALE" command, using a specific real-world measurement as a reference, in this case, a 2m long bed.

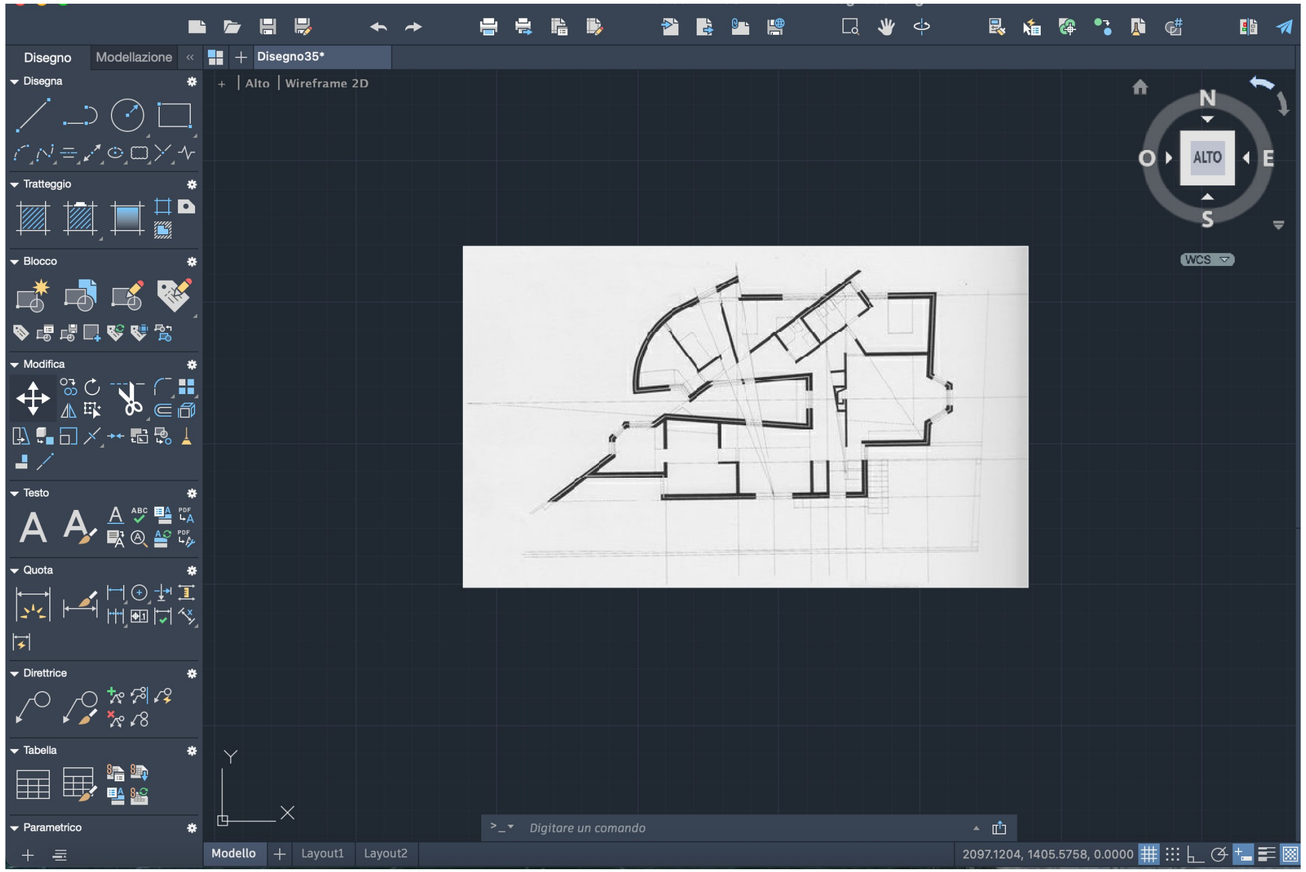
Create new working layers. By creating different layers, you can work simultaneously with two different representation scales, in this case, 1:10 and 1:100. You can then freeze one of them when it comes time to print



Commands:

DIST -DISTANCE, can use various commands such as DIST or DISTANCE to measure the distance between two selected points. LIST, AutoCAD, you can use commands like LIST or properties to obtain a list of information about elements within a geometric object. S -SCALE

Create new working layers. By creating different layers, you can work simultaneously with two different representation scales, in this case, 1:10 and 1:100. You can then freeze one of them when it comes time to print

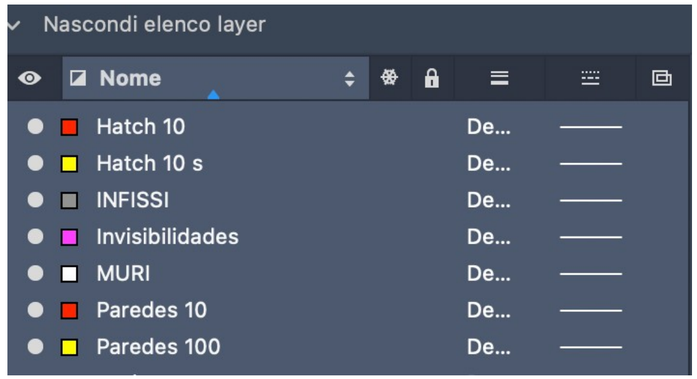


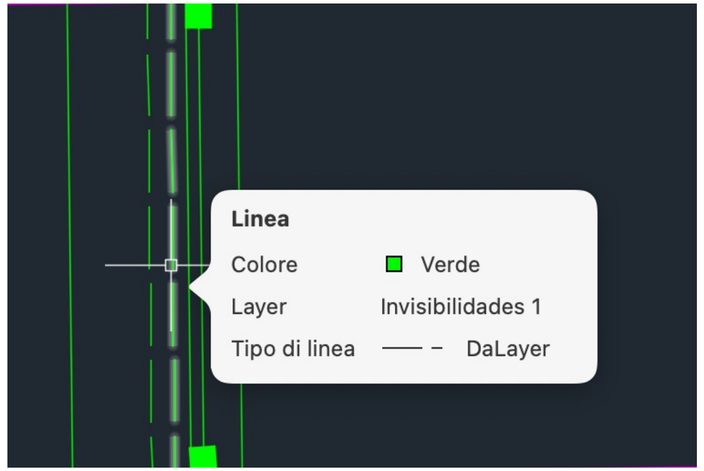
Commands:
DRAWORDER, change the display order of images and other objects

To change the layout of a line, as in the invisibility layer, you have to create a dotted line

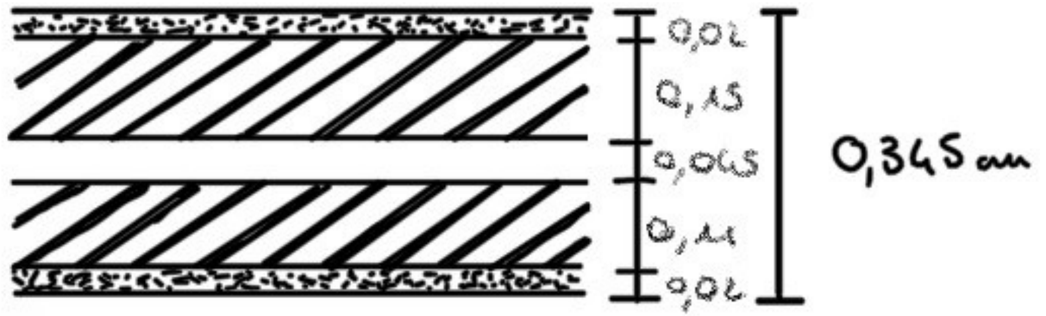
Commands:

CHprop - change the layout of a line. We can say also the distance from on dott to another one for create a dotted line



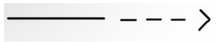


Wall thickness:
All wall = 34,5cm
Thickness 1 = 2cm
Wall 1= 11cm
Wall 2 = 15cm



Commands:

EX - EXTEND

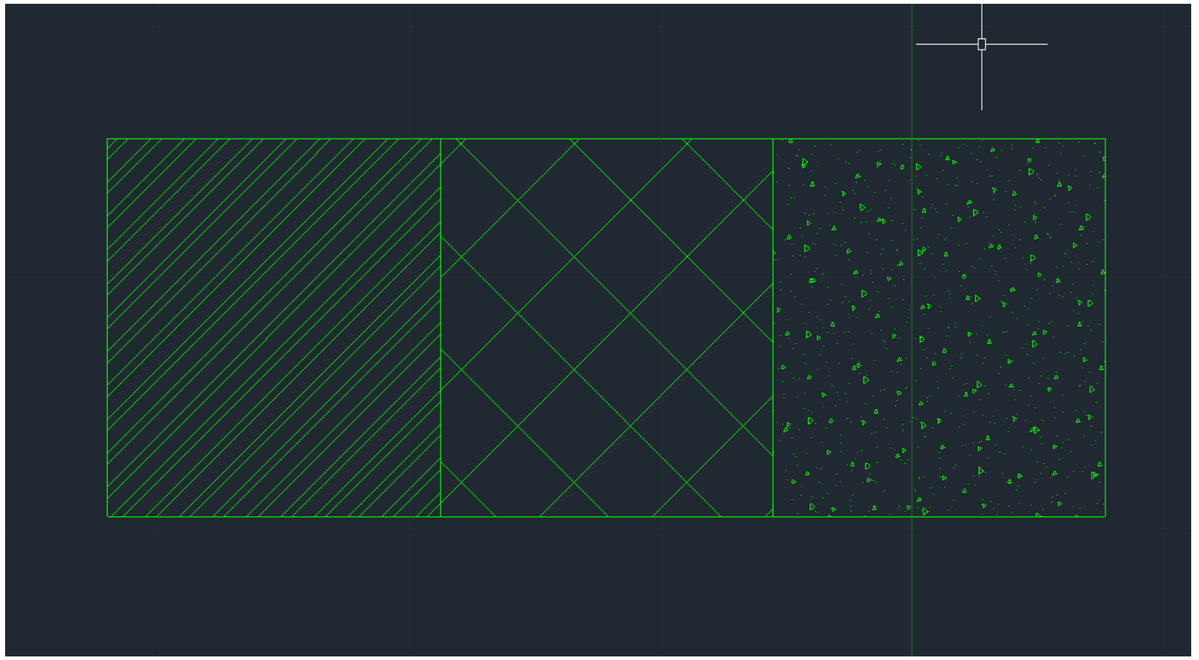


F -FILLET Choose the lines that meet at the corner you want to curve, and then specify the radius to achieve the desired curvature.

TRIM 

Can be used hatches that simulate the presence of materials in the walls, visible in 1:10 scale, for example

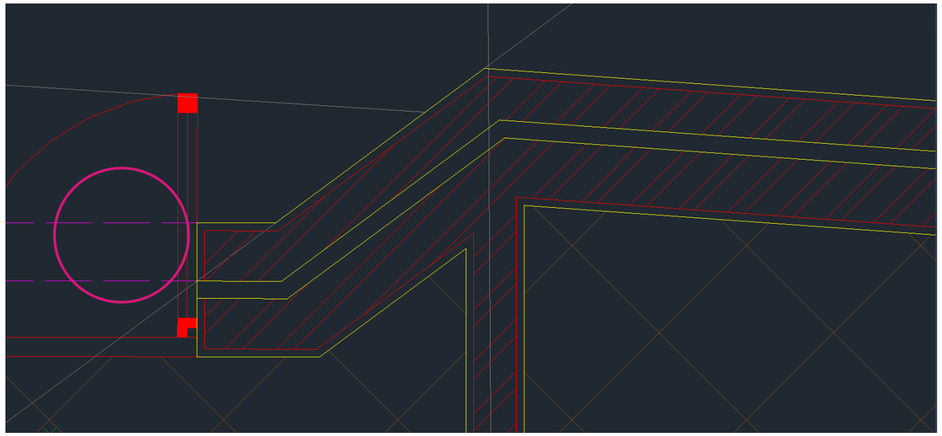
Commands:
HATCH

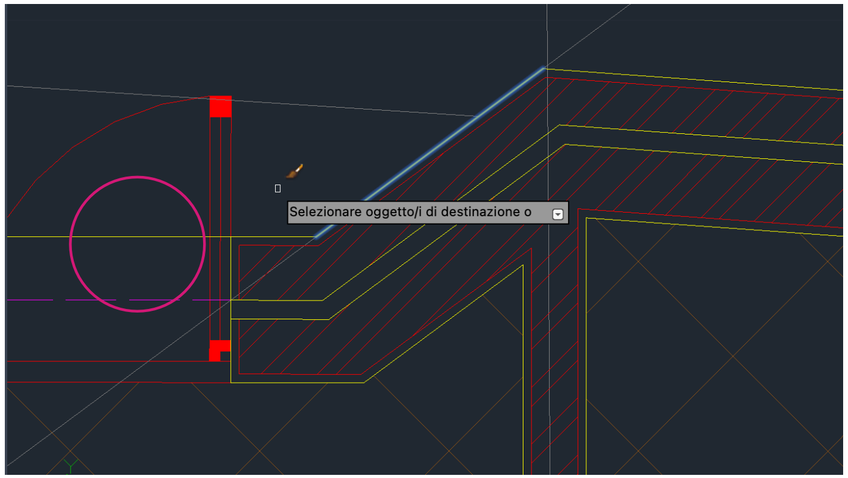


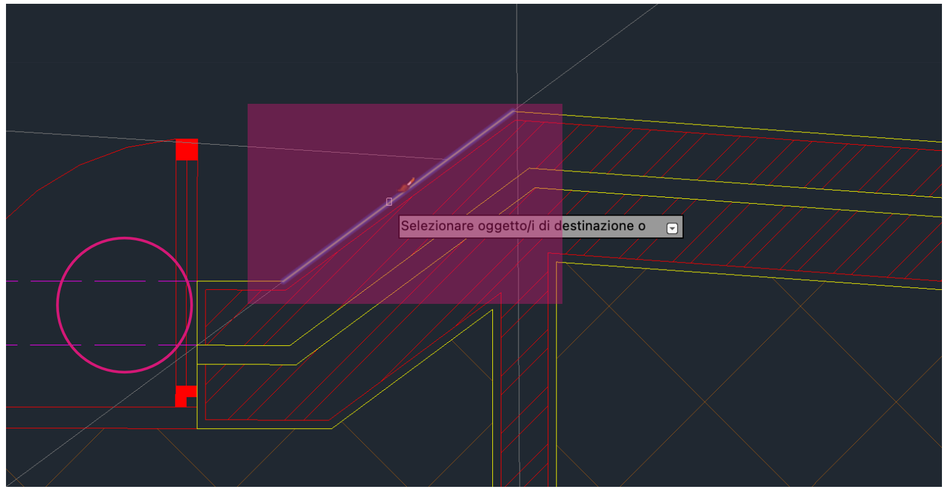
ANSI32 NET AR-CONIC

Commands:

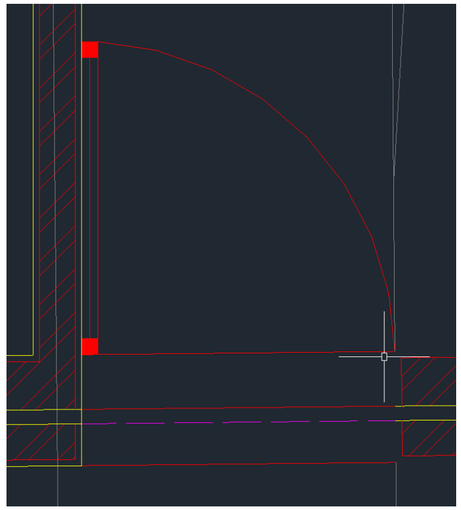
MATCH PROPERTIES, copy the properties of one object, such as a line, and apply them to another object. This allows you to quickly match the properties of one object to another.





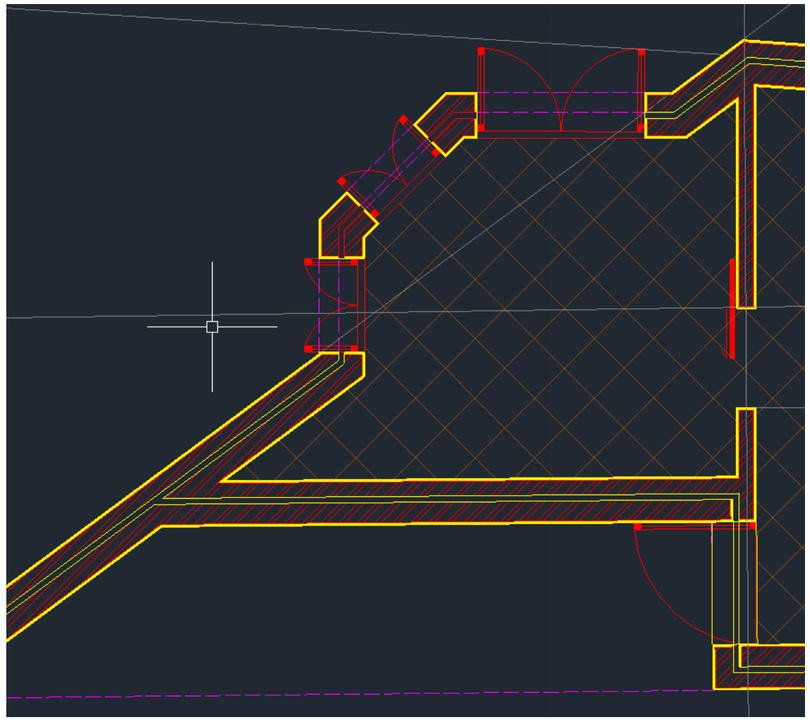


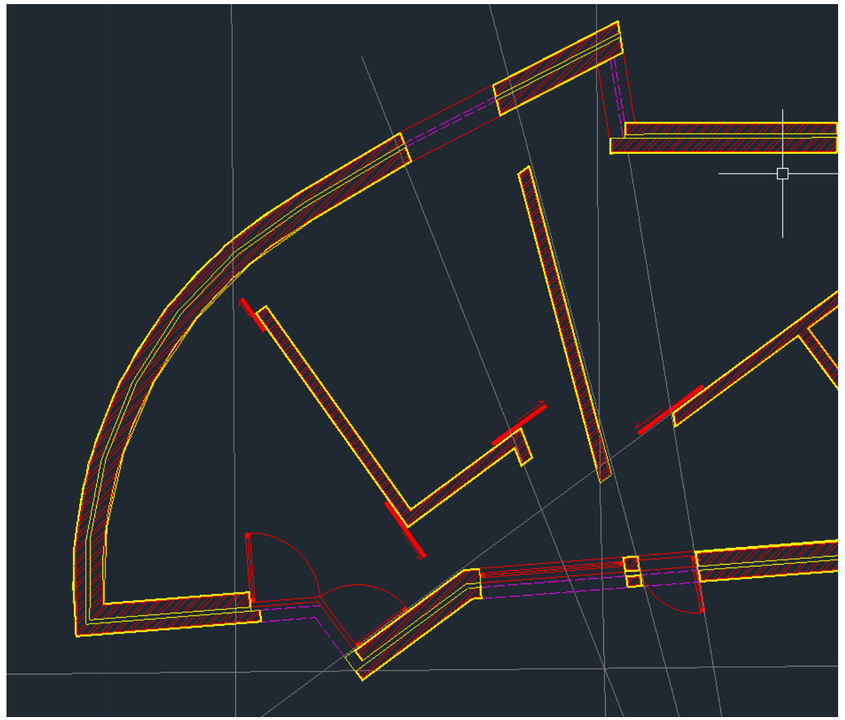
Commands:
OSNAP, object snap
NEAREST
DIVIDE
ARCO



More examples where we have create arches

More examples

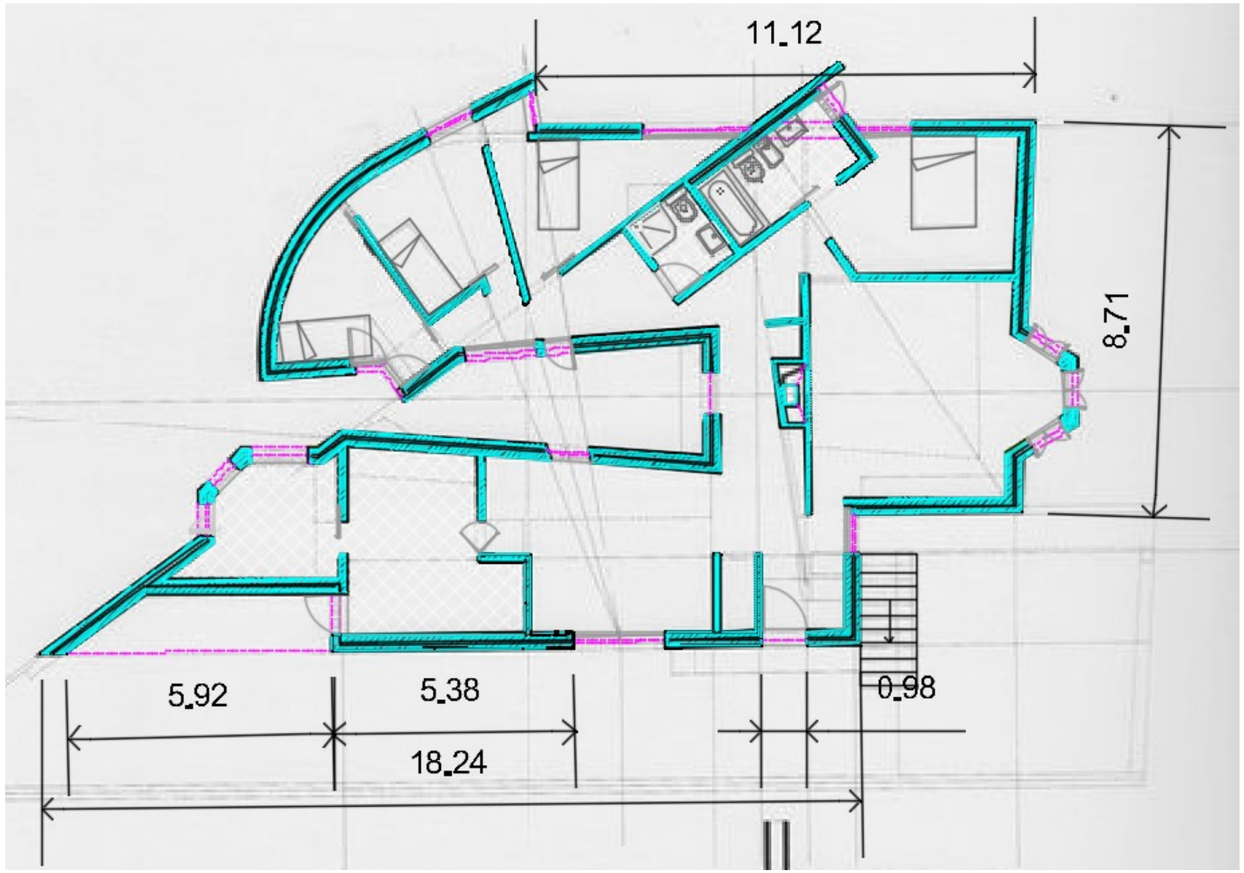




Commands:

DIMRAPID, for create a quota

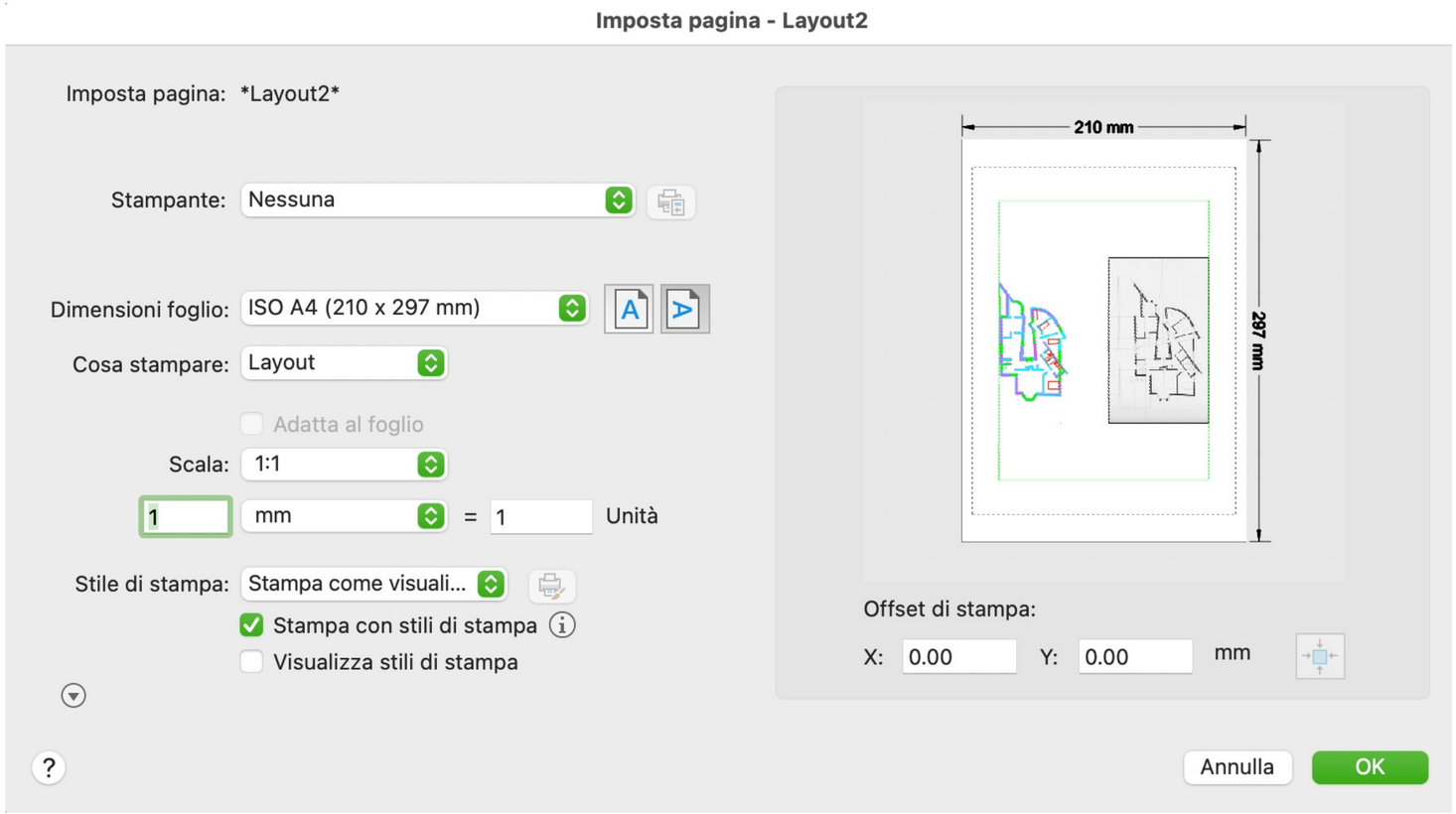
DIMSTILE, create and edit quota styles



LAYOUT:

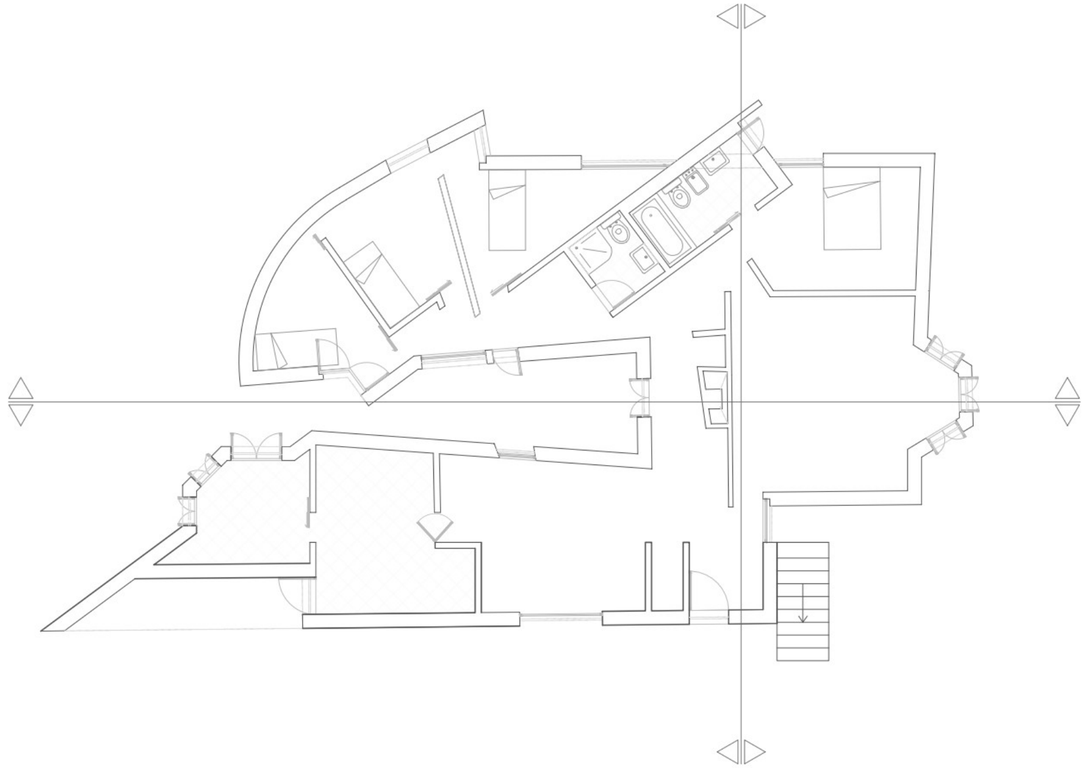
Create a NEW LAYOUT. Click on PAGE SETUP MANAGER

Printer: DWG to PDF.
Paper size: Choose a SHEET LAYOUT based on your requirements.



Scale 1:1 (AutoCAD works in a 1:1000 scale, so if you need a 1:100 scale, you must multiply it by 10). To do this, you can use the command Z + Enter, S + Enter, 10x + Enter, which means Zoom Scale 10x.

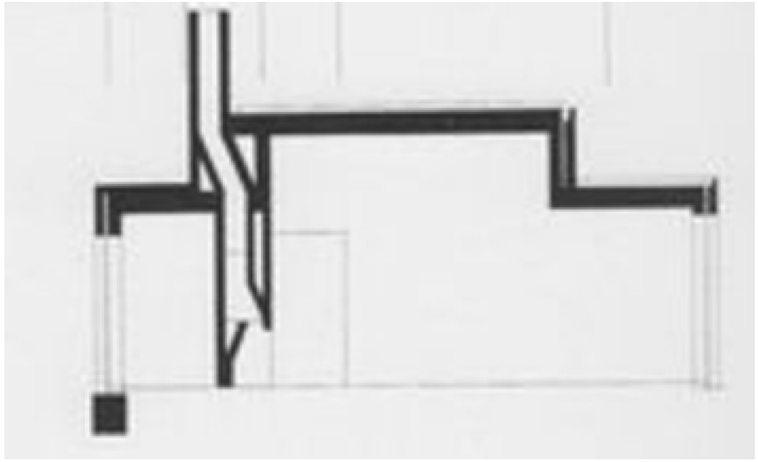
Use Page Set Up Manager to modify the sheet size, and use MView to create a window in the layout where you can draw and write on the layout page. You can also create the composition with MView windows, text, drawings, and make changes to scales, etc., including using the VPLAYER command to freeze different layers.

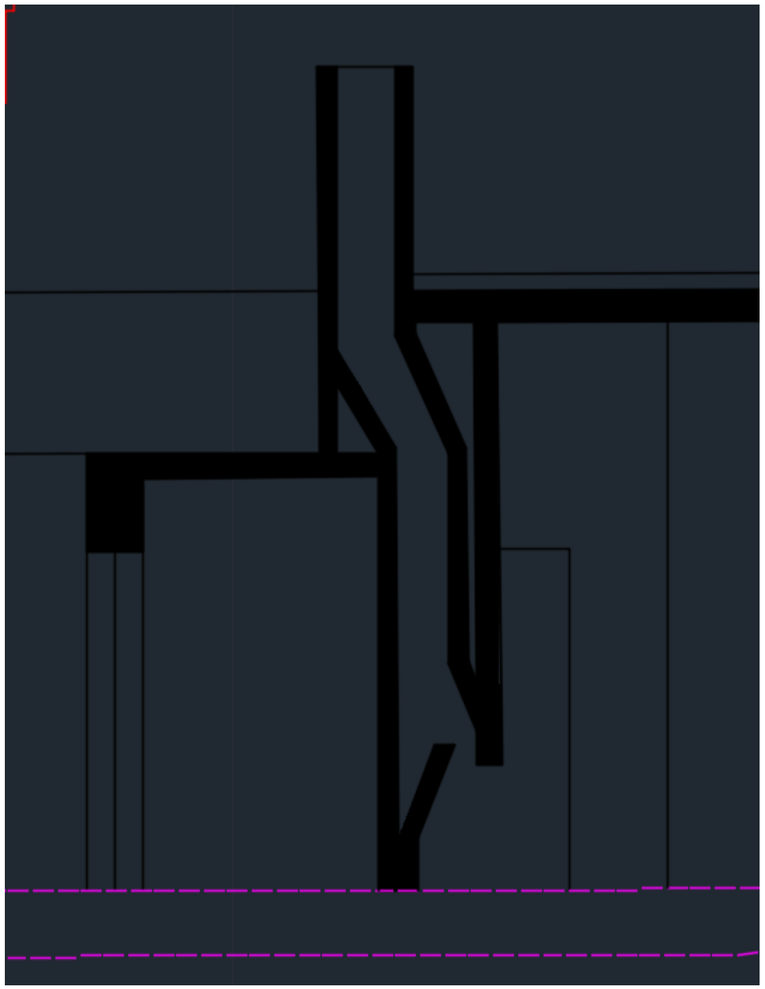


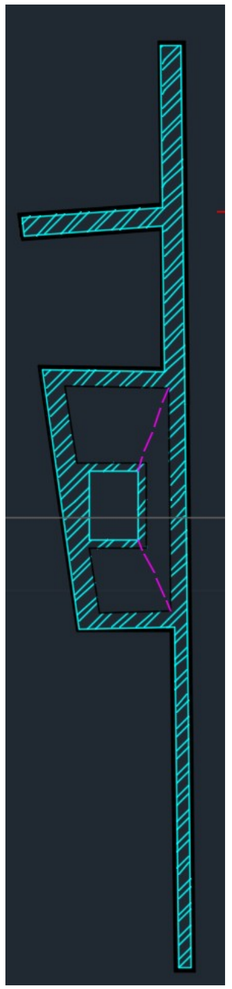
PLANTA 1/100

I create prospect and sections of the house.

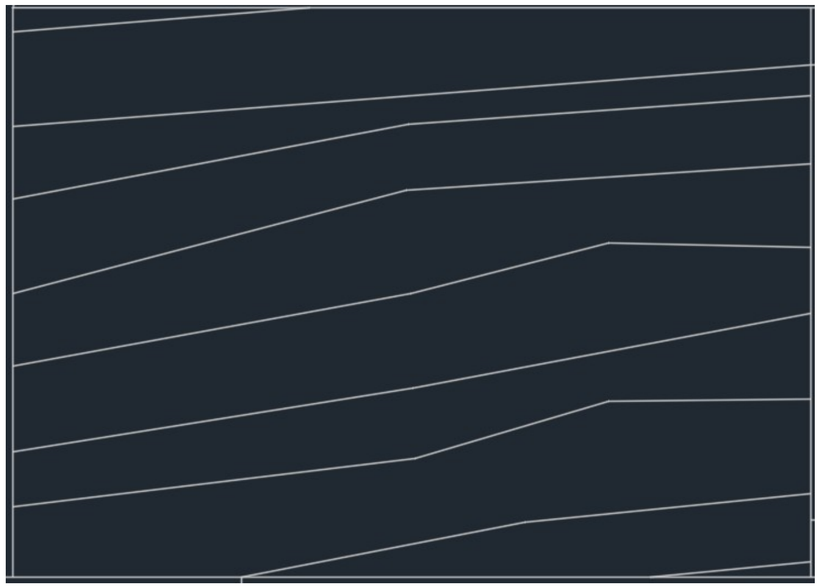
Starting from the dissected image of the fireplace, I can build the rest. Working in scale1:10 you can see, as in plan, ancehin prospectus and in section the materials

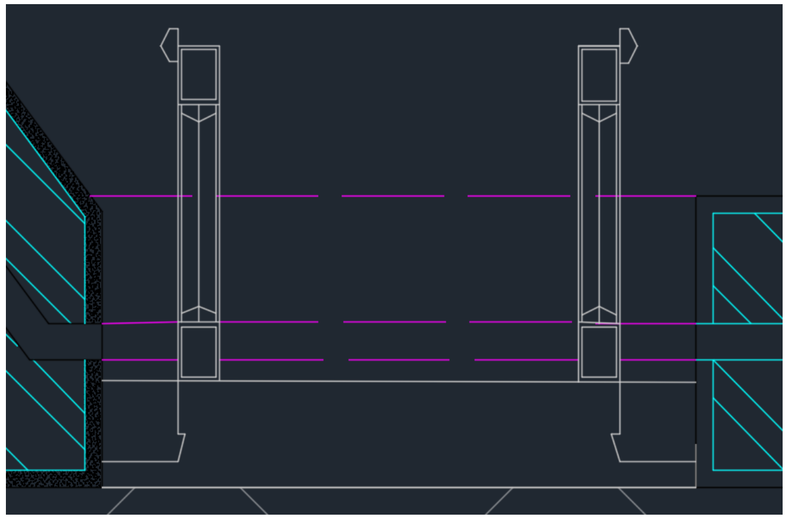




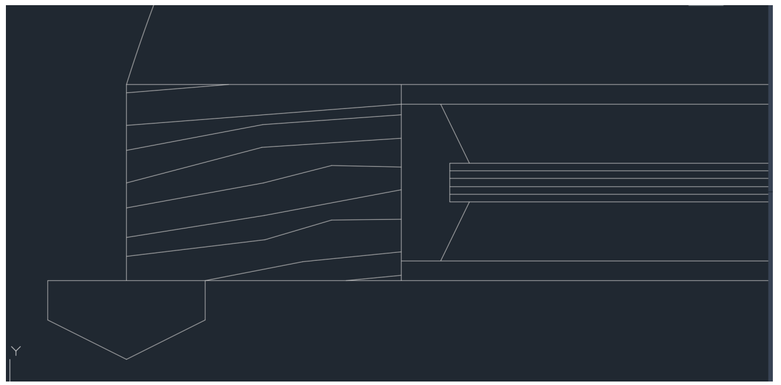


Commands:
SPLINE, to create a new texture (Madeira's Wood)





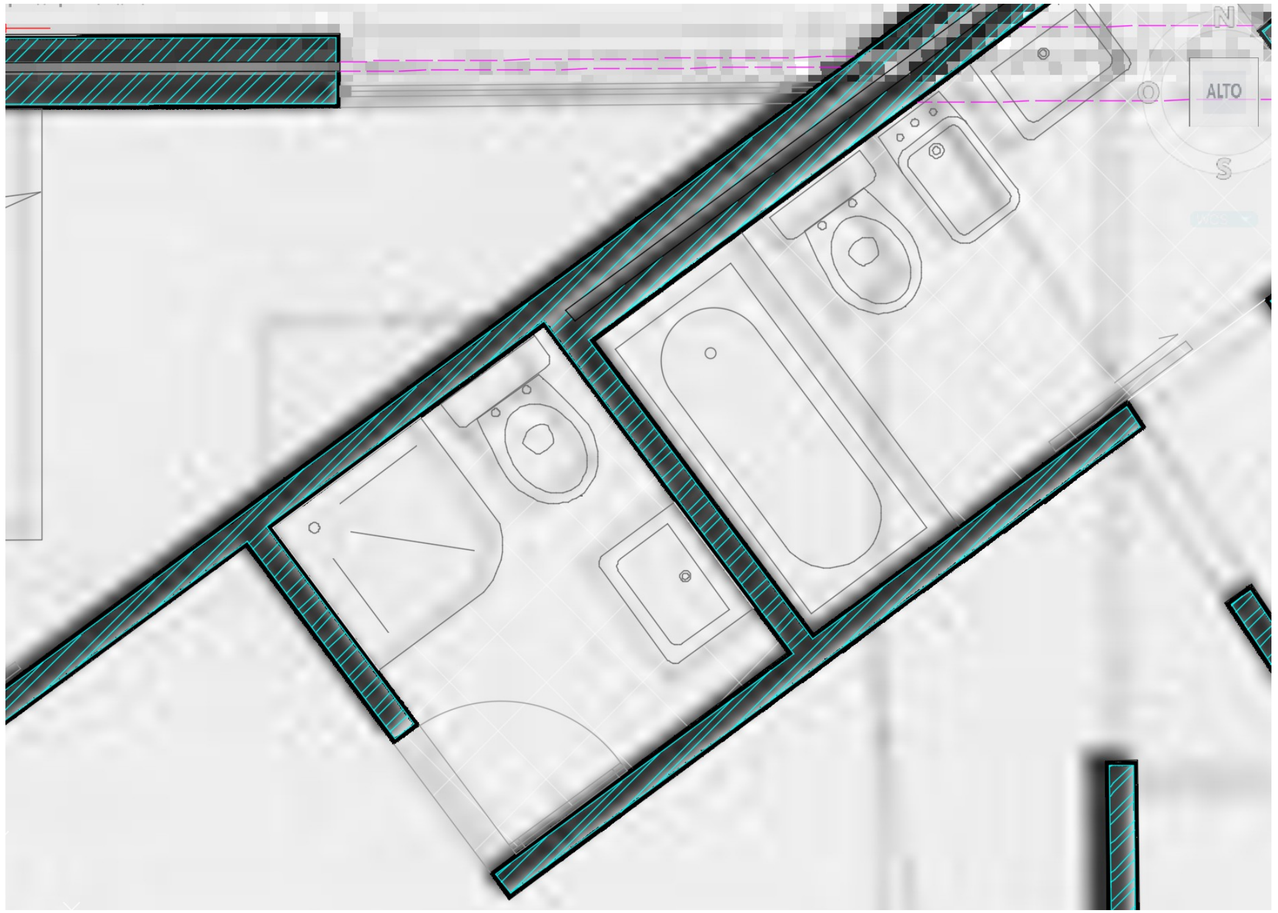
1:10 window



1:1 window

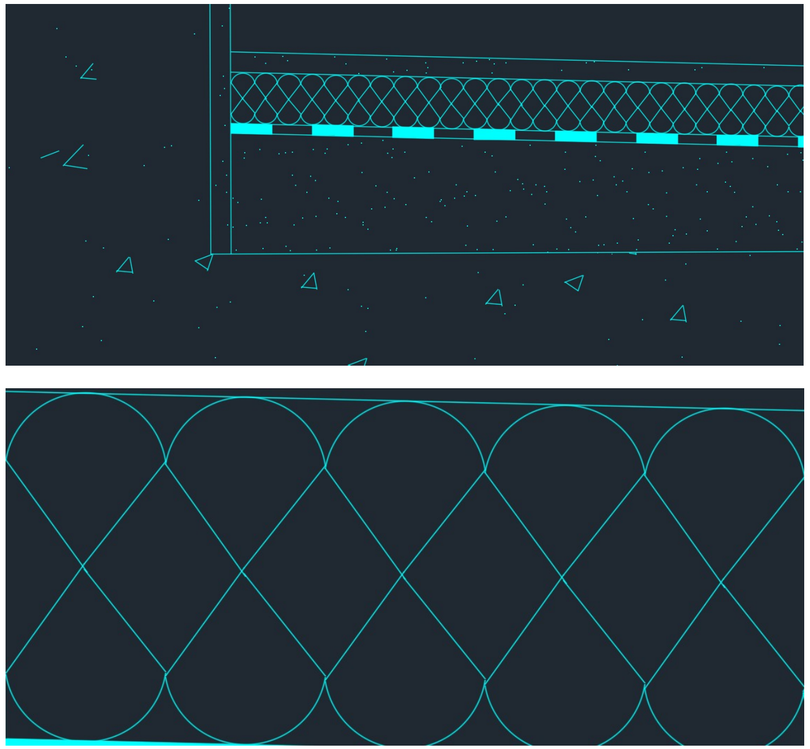
You can take furniture blocks from the internet

Commands:
Wblock, create a new block

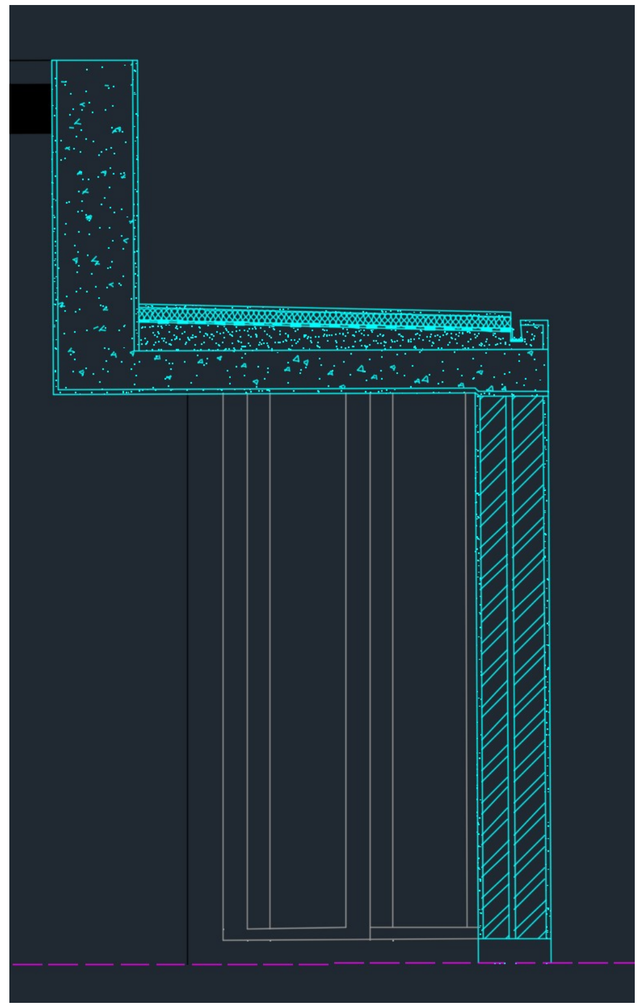


ReDig Semana 6

Thermal insulation and several screens that make up the interior of the walls in the elevations



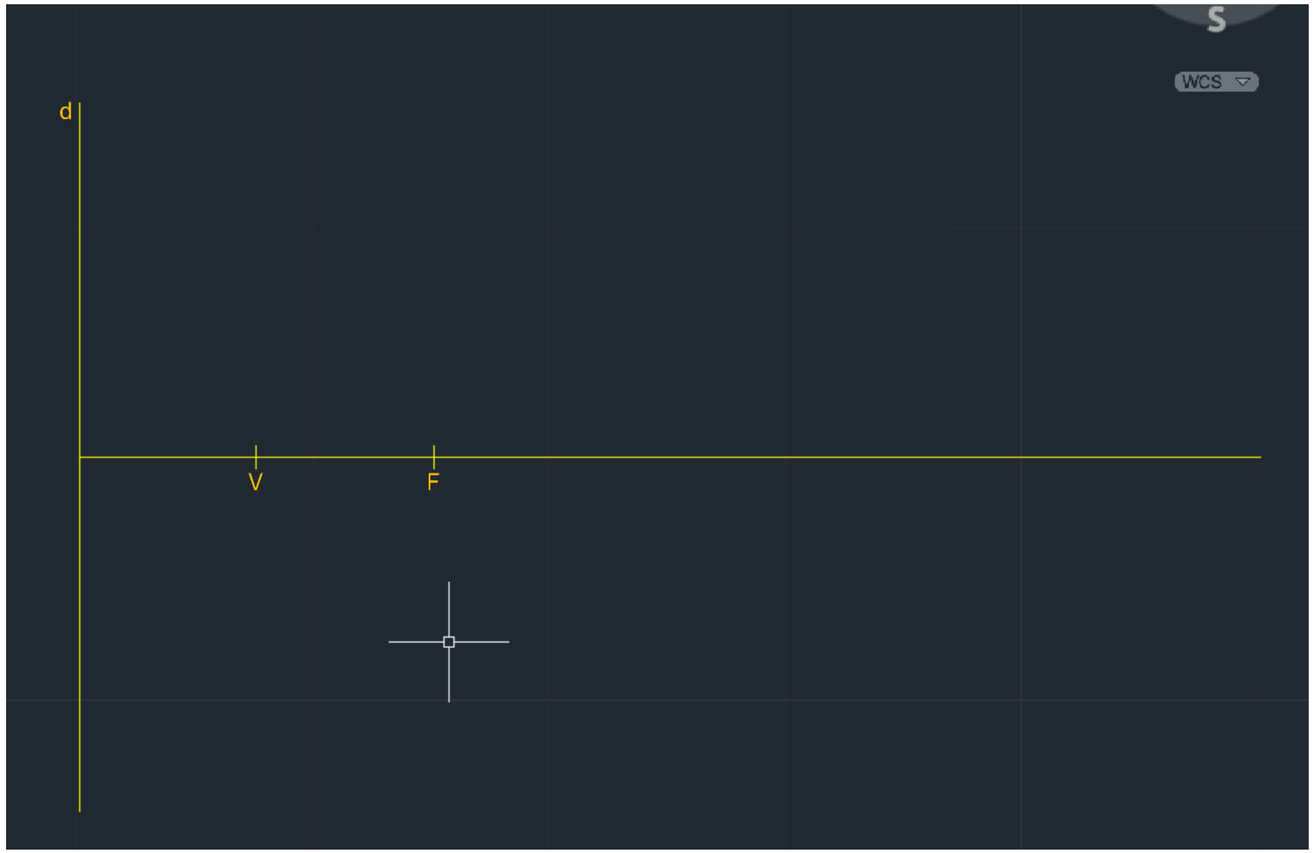
Thermal Insulation

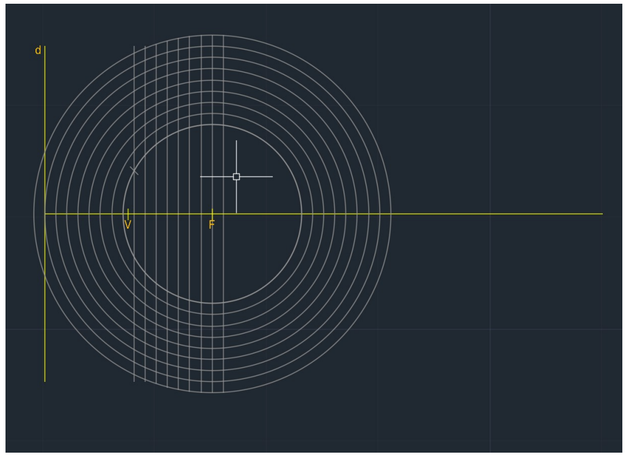


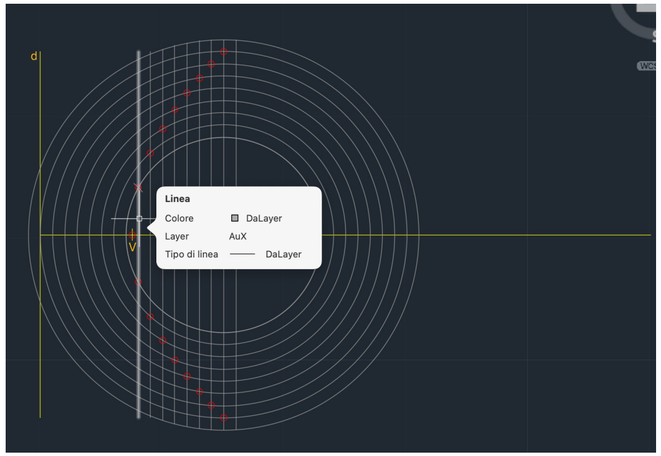
PARABOLA - CONICAL LINE

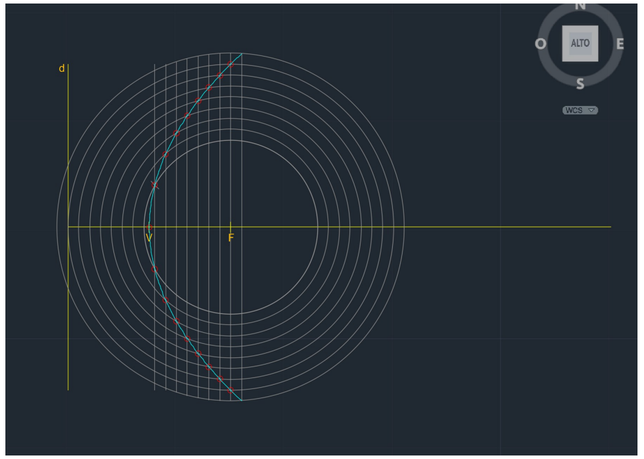
Distance defined by the focus point
perpendicular to the guideline we have an axis of symmetry where there is focus.

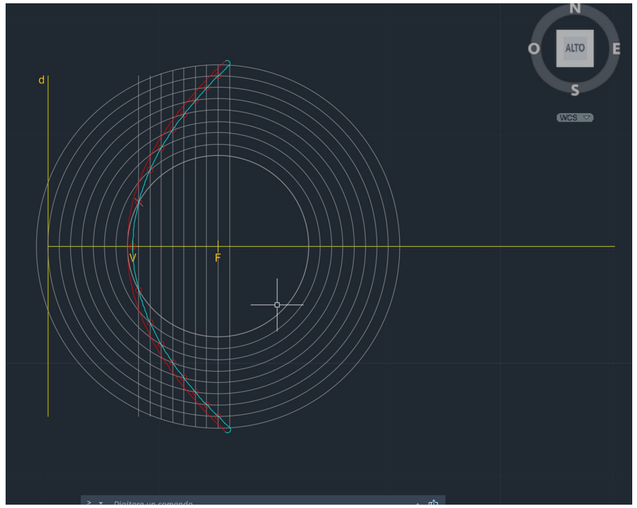
Circonferenza di raggio 8 in F e OFFSET dalla linea guida di 8, perchè la distanza deve essere uguale

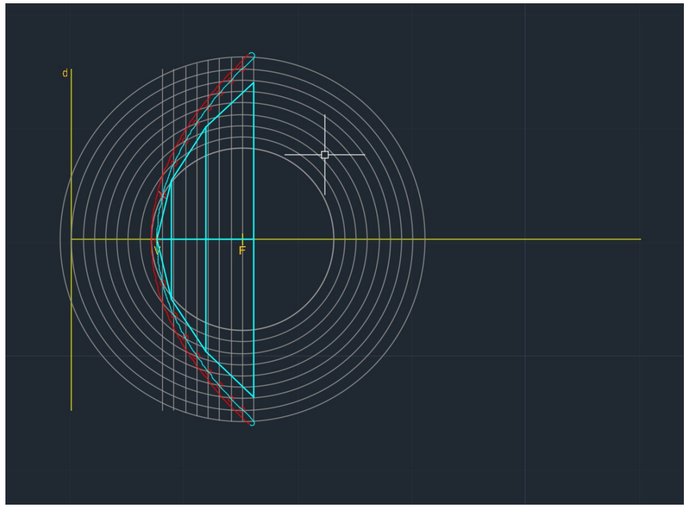












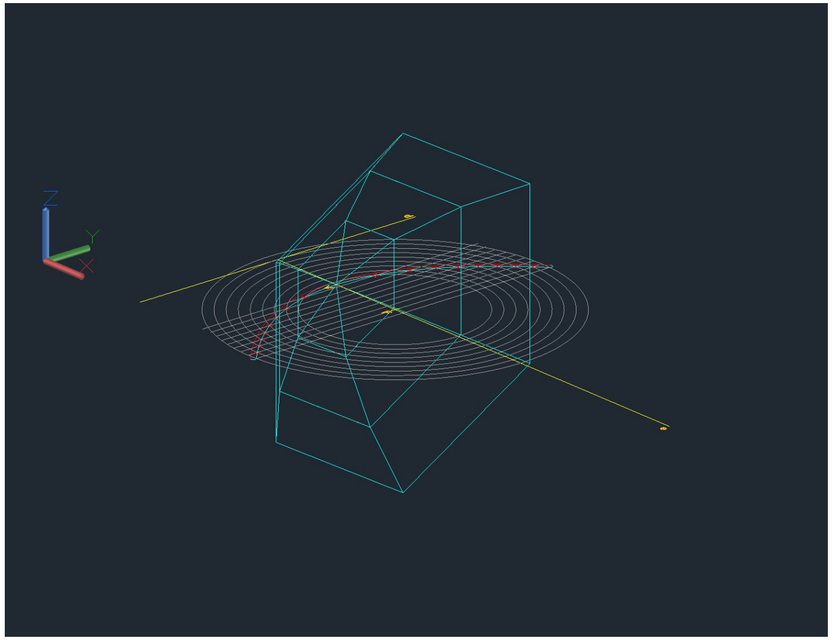
Commands:
SPLAIN, to make parabola

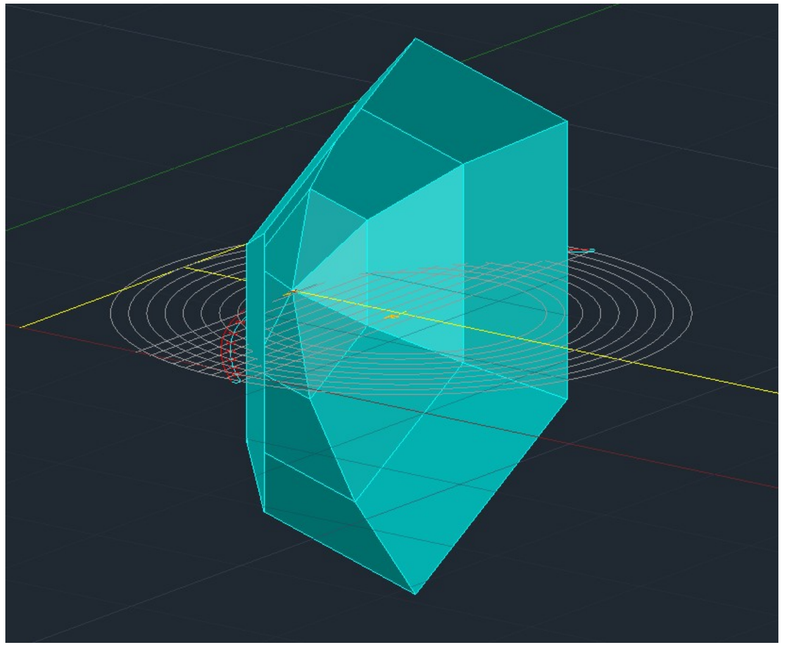
Commands:

Rev surf , select one the parables, select its axis and then punt 0 and 360° C orbit

Surf Tab, define elements

SHADE, can fill



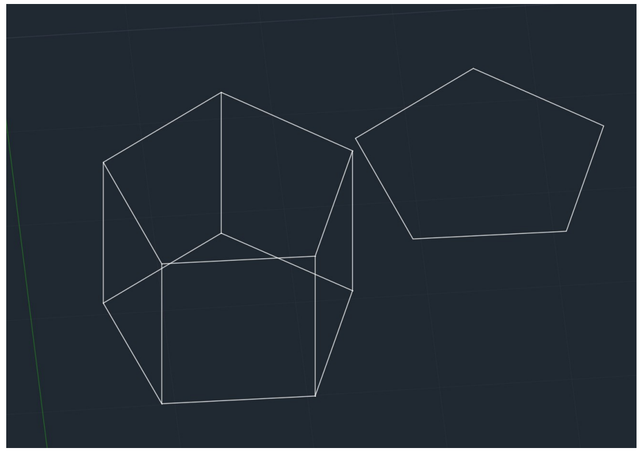


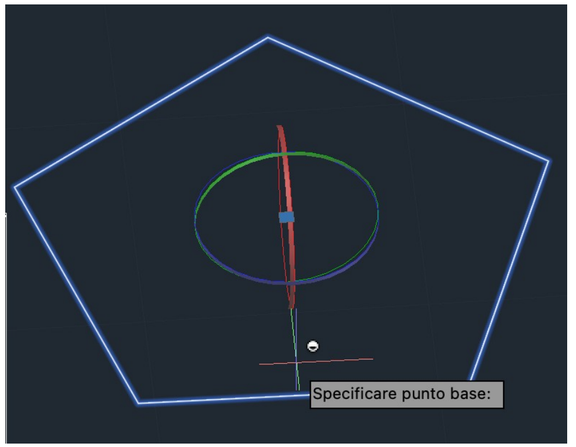
ReDig Semana 7

EXTRUSION

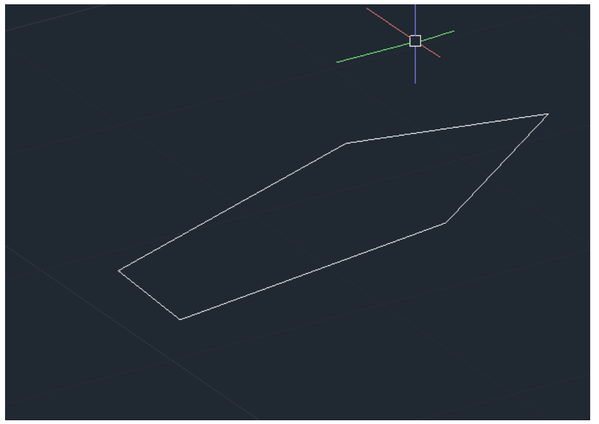
Extrusion, mechanical mode of production of 3d shapes.

Draw 2 pentagons

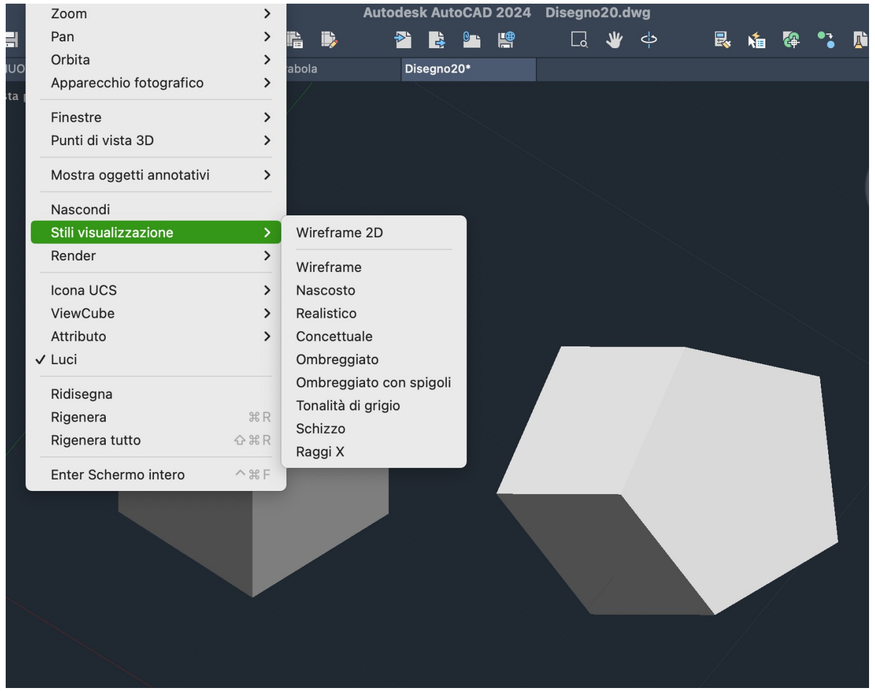


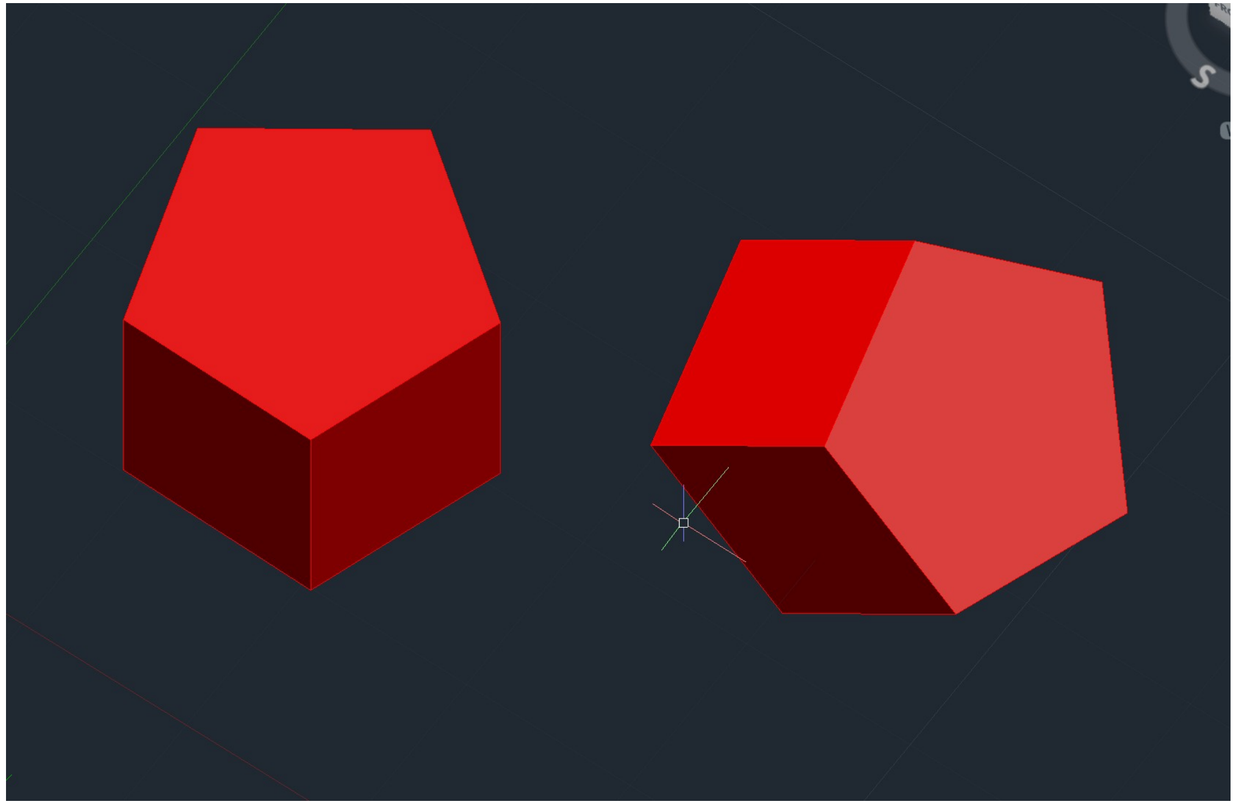


Commands:
EXTRUDE, allows you to use the shape to create a 3d structure
3D ROTATE, rotation around the x,y,z axis
HIDE, hide not visible edges

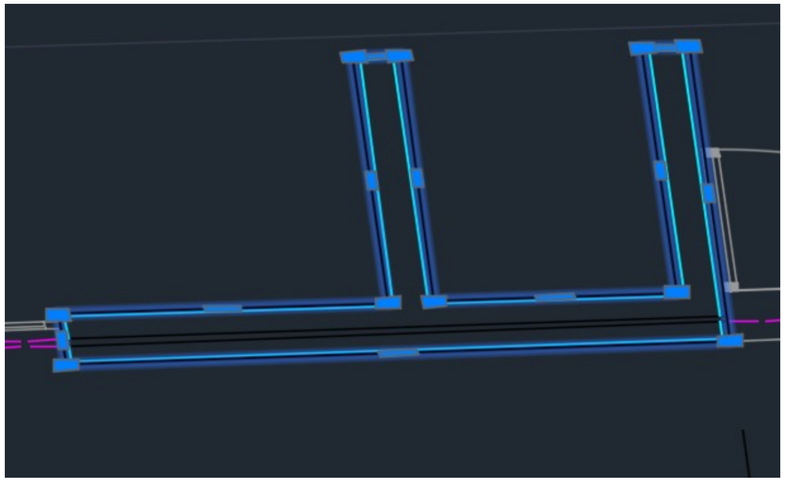


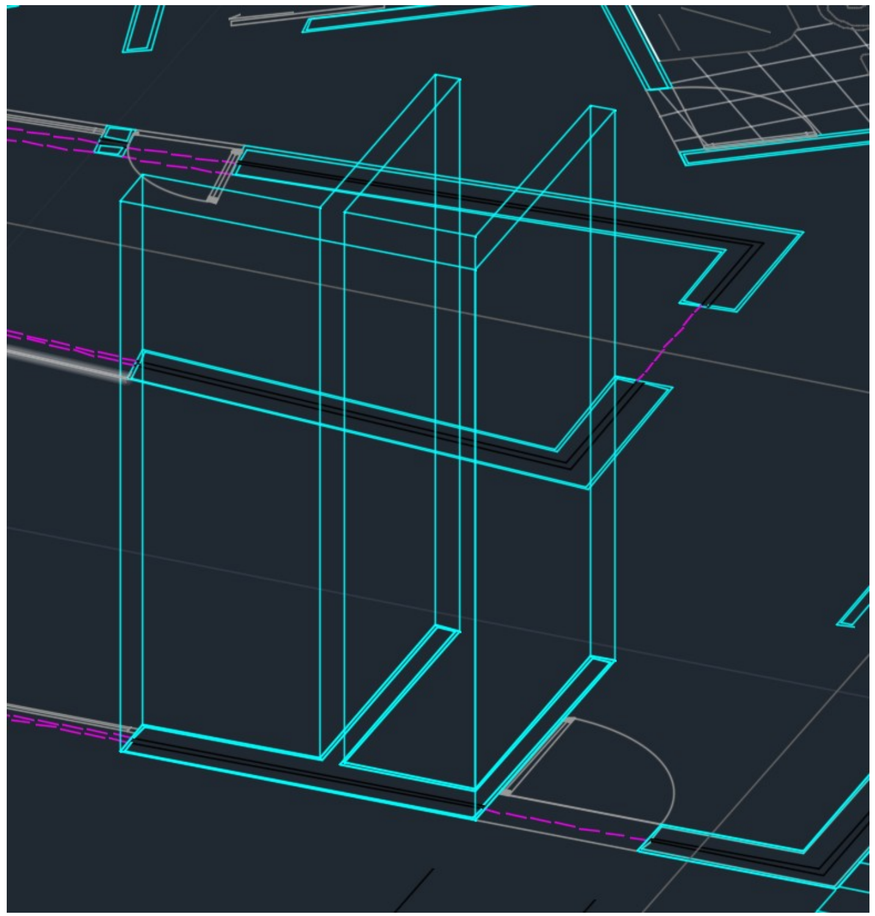
Commands:
VISUALSTYLES, allows you can choose different viewing options





We can extrude with solid mode or surface. We can extrude a plant, but before we have to make pedit of parts of the walls to unify, thanks to polylines

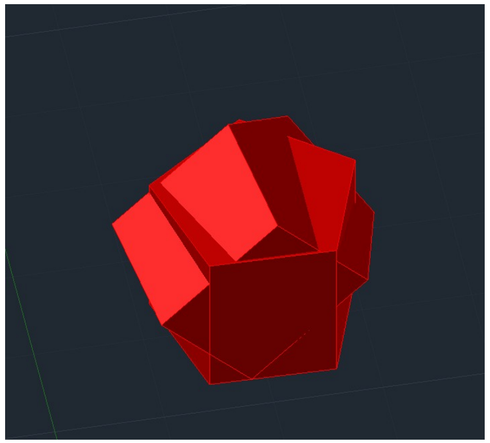


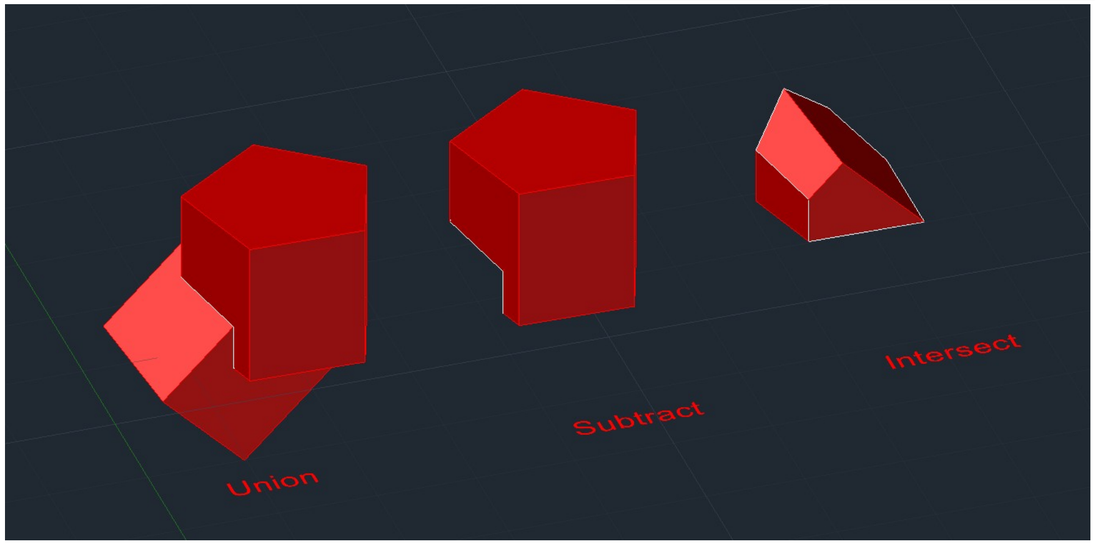


We can copy and put the pentagons one on top of the other.

In the subtract we have to select which object we subtract.

UNION/ADDITION-
SUBTRACT/
SUBTRACTION-
INTERSECT/
INTERSECTION-



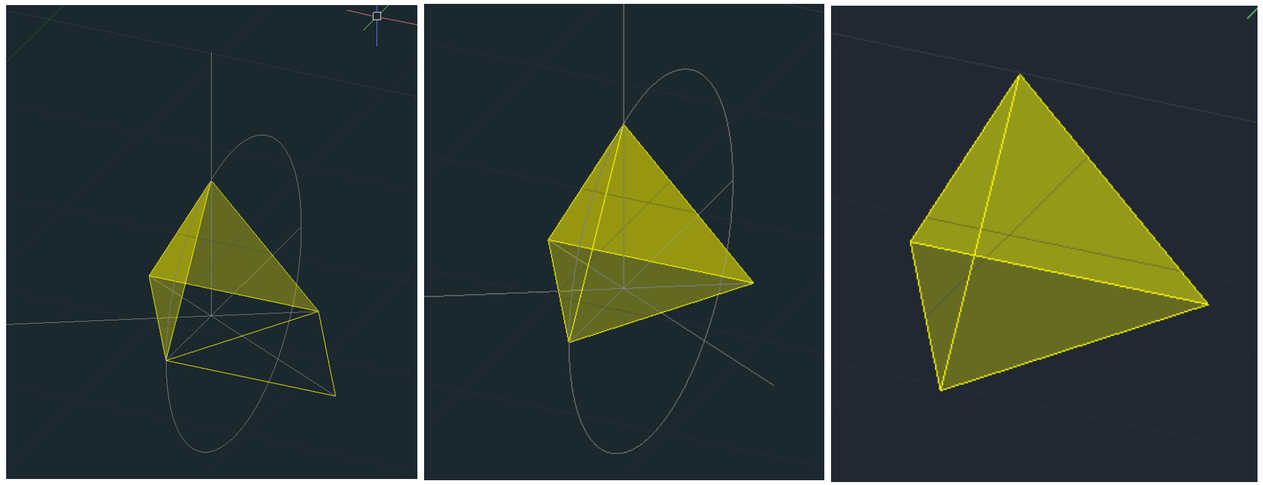


SOLID

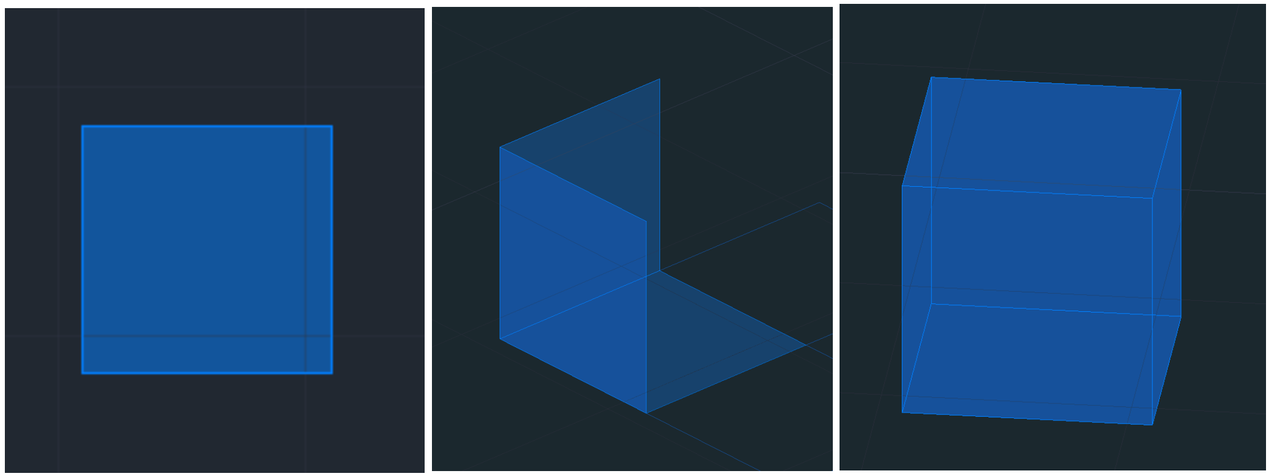
Regular polyhedra - edges of 10 units
TETRAEDRO - 4 triangular faces
HEXAEDRO - 6 quadrangular faces
OCTAEDRO - 8 triangular faces
DODECAEDRO - 12 pentagonal paces
ISOCAEDRO - 20 triangular faces

TETRAEDRO

Let's set up the four faces, create a circumference that we will then rotate by 90° vertically, drawing a vertical line from the center to the intersection with the circumference. Rotate the faces based on the found inclination.



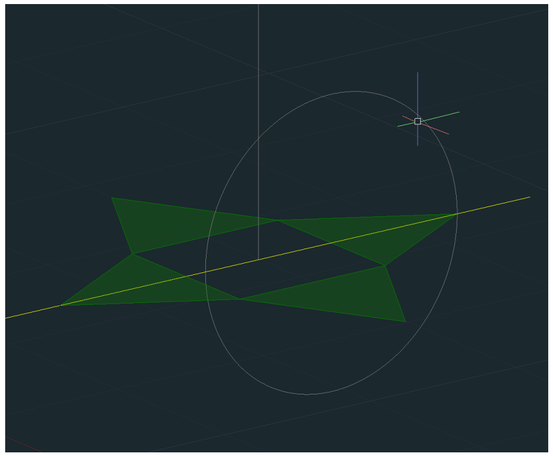
HEXAEDRO

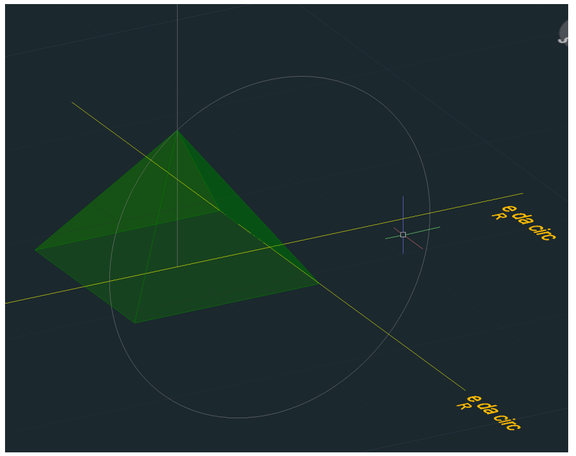


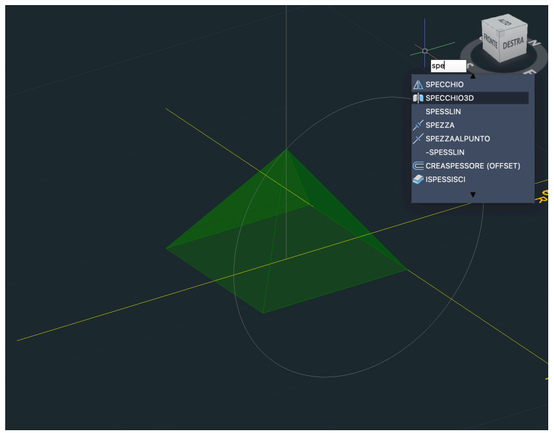
Commands:
CIRCUMFERENCE
3D ROTATE

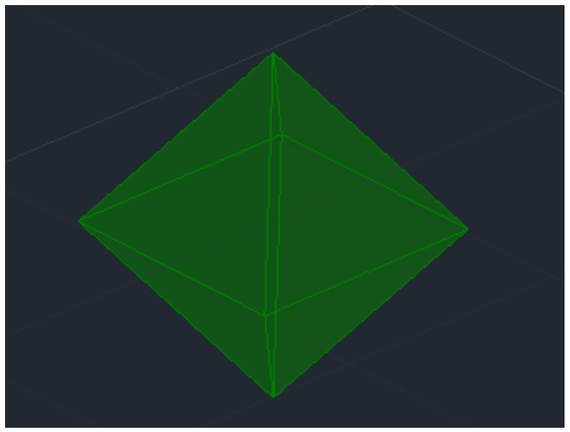
OCTAEDRO

Let's create two opposing square-based pyramids. Mirror the 3D faces we created in the first pyramid using a 3D mirror, selecting POLAR and setting it to 360°. Rotate the object by aligning the two bases, so that we have one pyramid pointing upward and one downward.



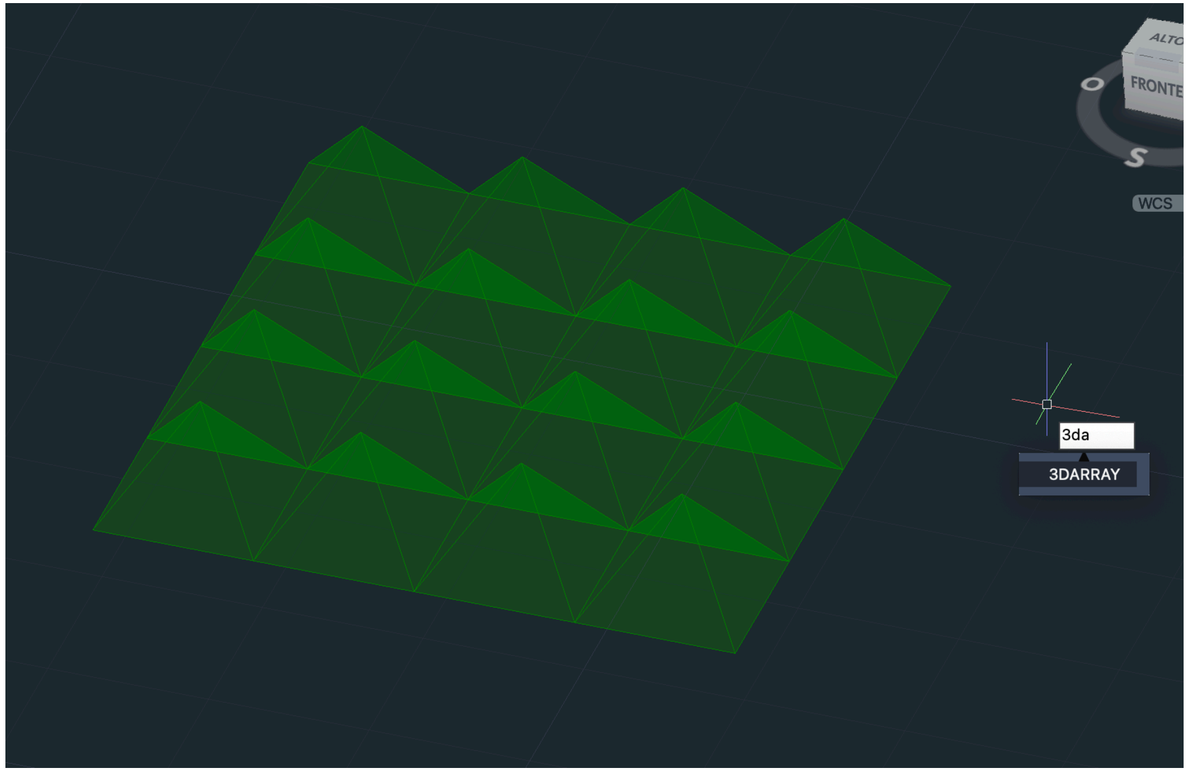


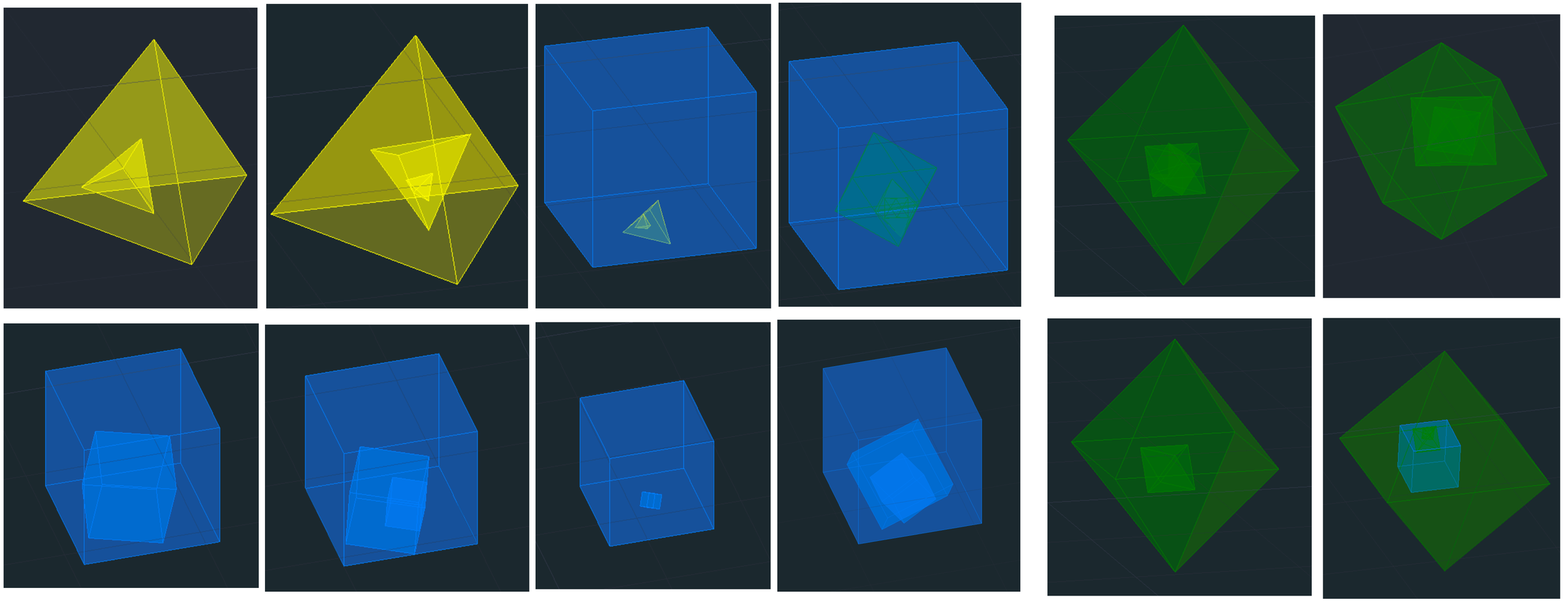




Commands:
3DMIRROR
3DARRAY POLAR and RECTANGULAR

Commands:
3DARRAY RECTANGULAR

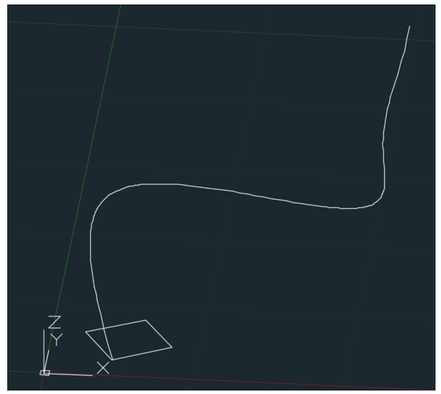


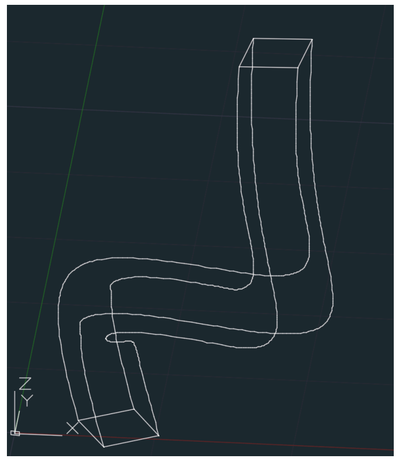


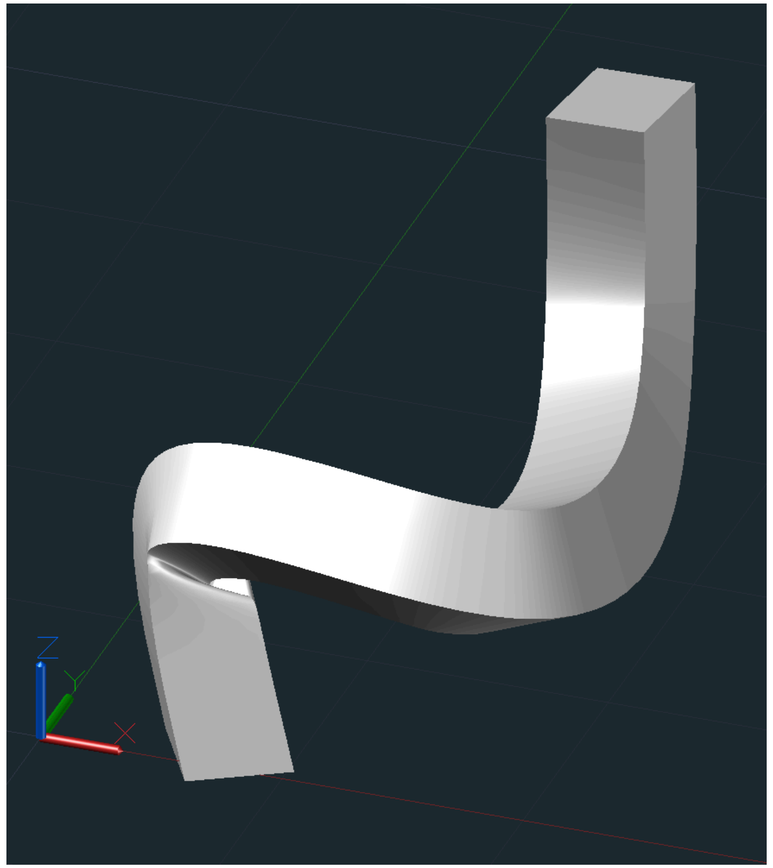
ReDig Semana 9

We make a square inside a grid. We make a Spline from the square. Extrude and than Pat

Commands:
SPLINE
EXTRUDE>Pat

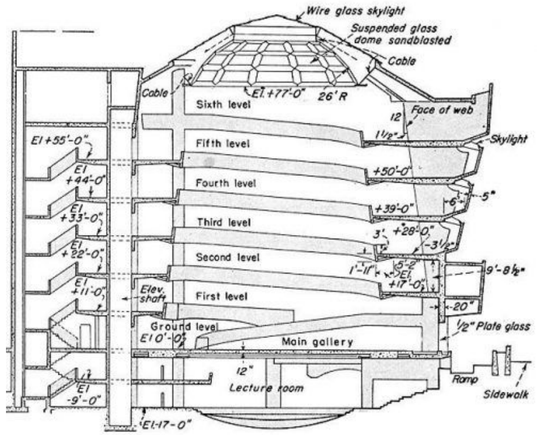


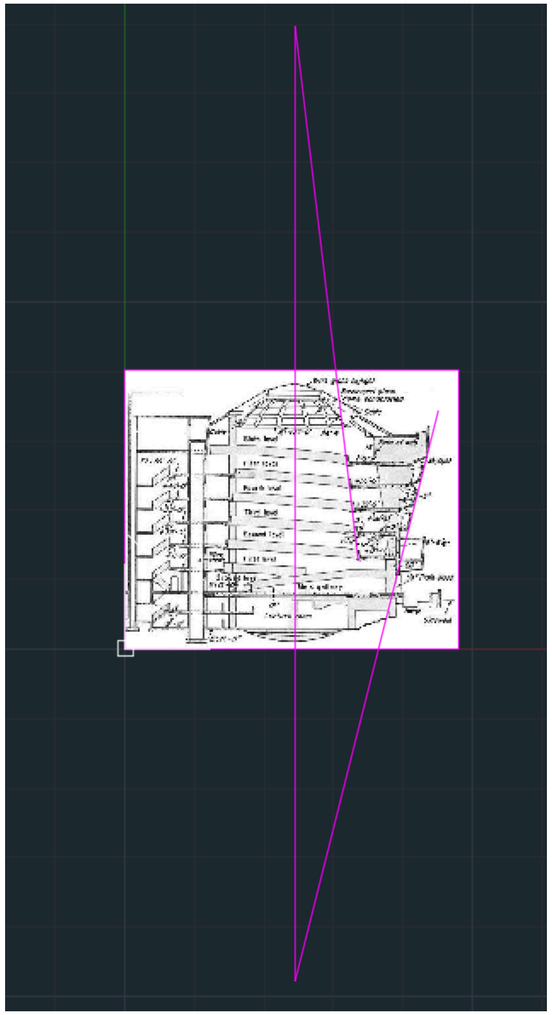


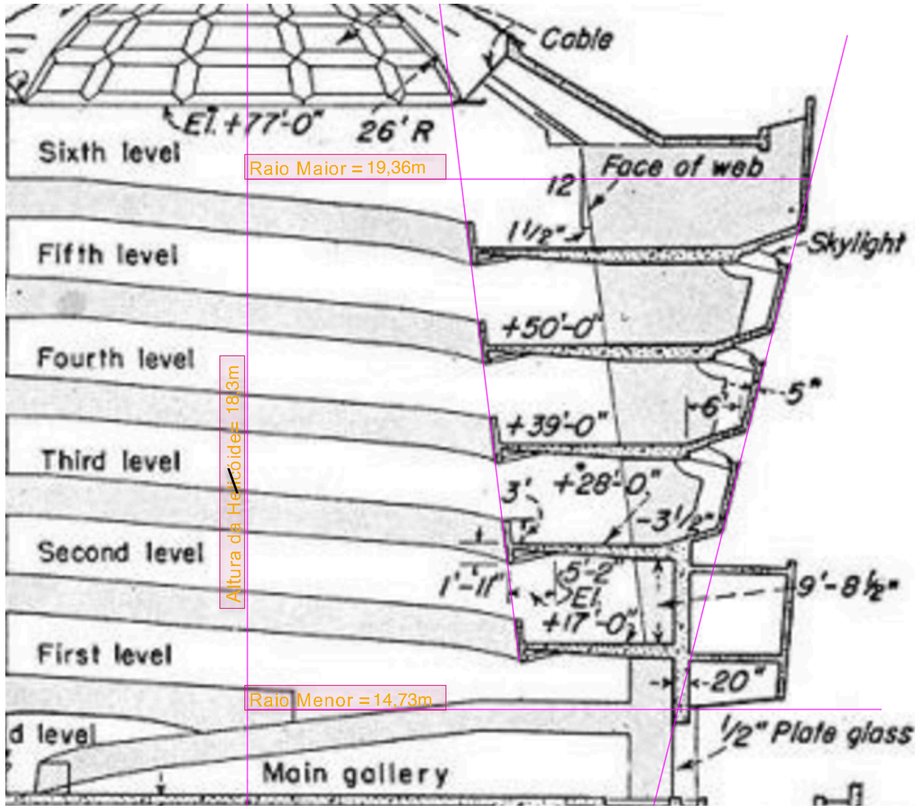


GUGGENHEIM

GUGGENHEIM


Wire glass skylight
Suspended glass dome sandblasted
Cable
El +77'-0" 26' R
Sixth level
Face of web
Fifth level
Skylight
+50'-0"
Fourth level
+39'-0"
Third level
+28'-0"
Second level
El +17'-0"
First level
Elev. shaft
Ground level
El 0'-0"
Main gallery
12" Lecture room
Ramp
Sidewalk
El -17'-0"

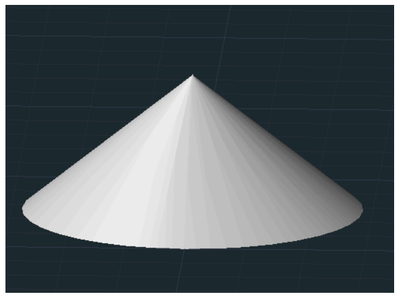


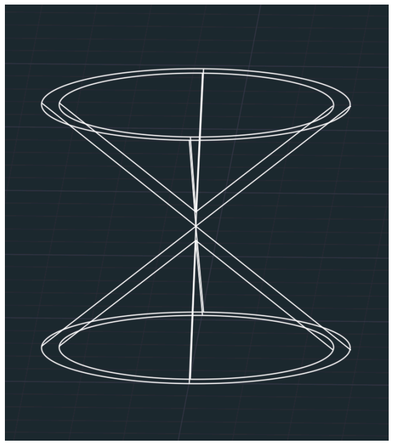

Cable
El. +77'-0" 26' R
Sixth level
Raio Maior = 19,36m
Face of web
Fifth level
Skylight
+50'-0"
Fourth level
Altura da Hemicoide= 18,3m
+39'-0"
Third level
+28'-0"
Second level
El. +17'-0"
First level
Raio Menor = 14,73m
Main gallery
1/2" Plate glass

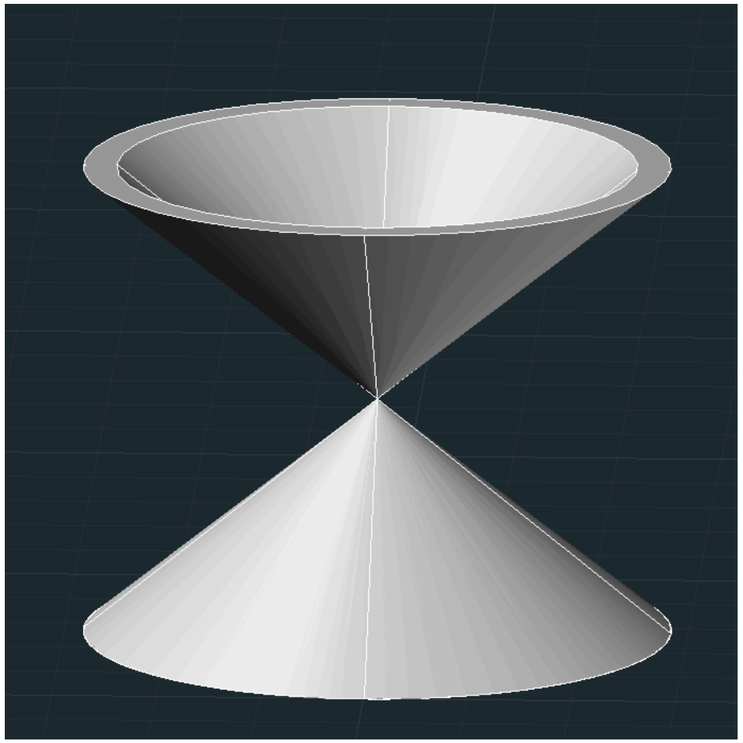
CONES

Draw a cone of radius 5 and 5 in height with center in the point (20,20). Give it a thickness of 1,5. Let’s create two square-based opposing pyramids.

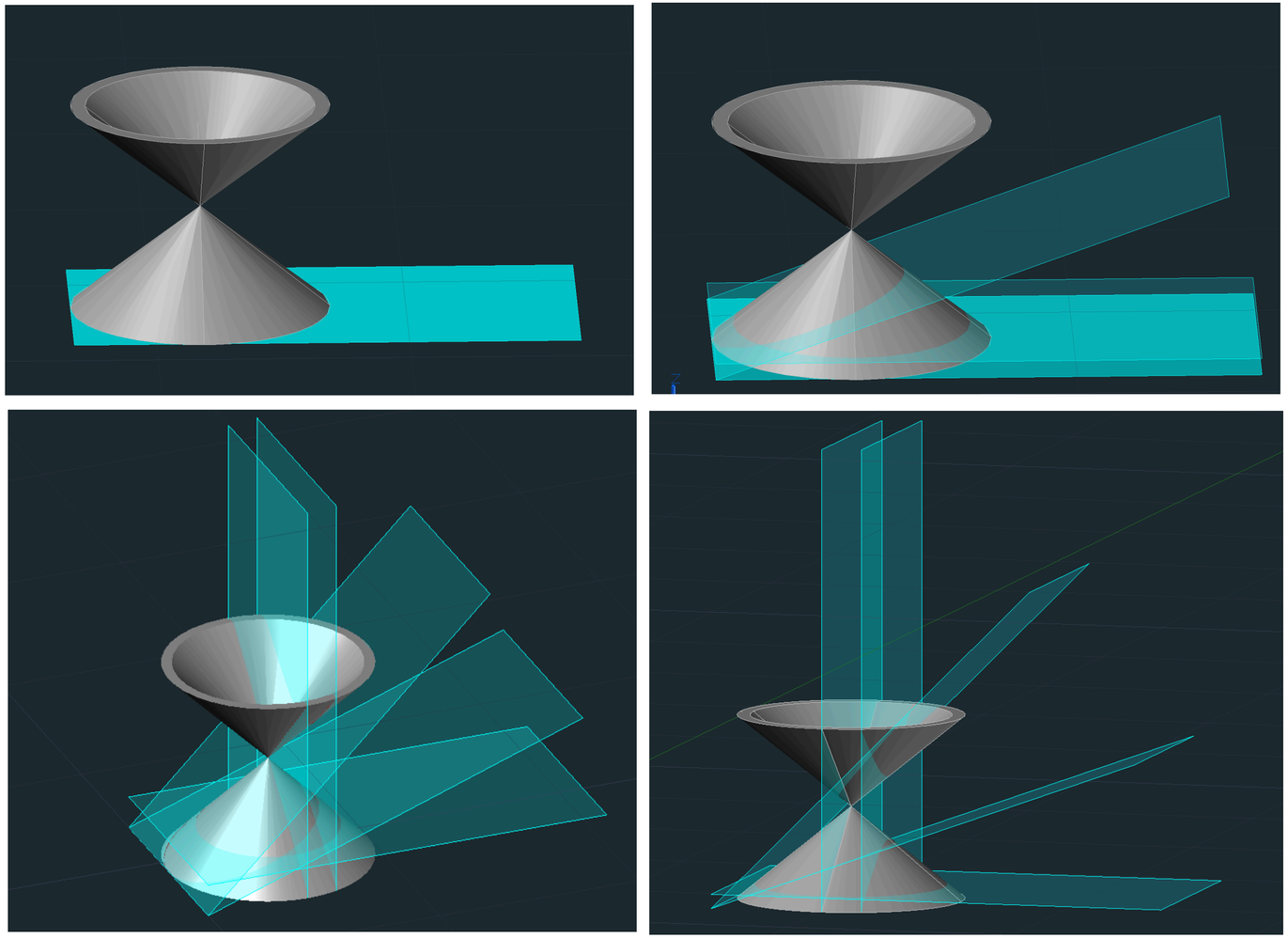
Mirror the 3D faces we created in the first pyramid using a 3D mirror, selecting POLAR and setting it to 360°. Rotate the object by aligning the two bases, so that we have one pyramid pointing upward and one downward.



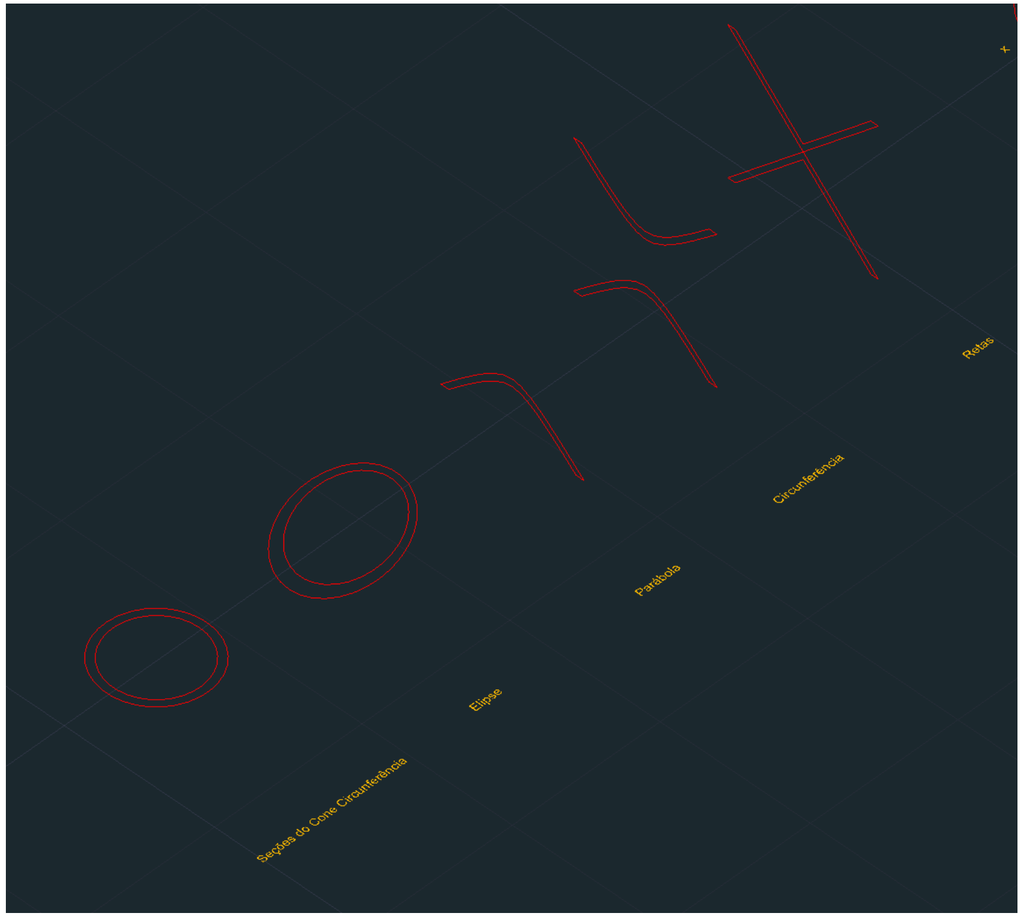




- Now let’s draw 5 rectangles that will be the secant planes, which will create:
- GIRTH
- ELLIPSE
- PARABLE
- HYPERBOLE

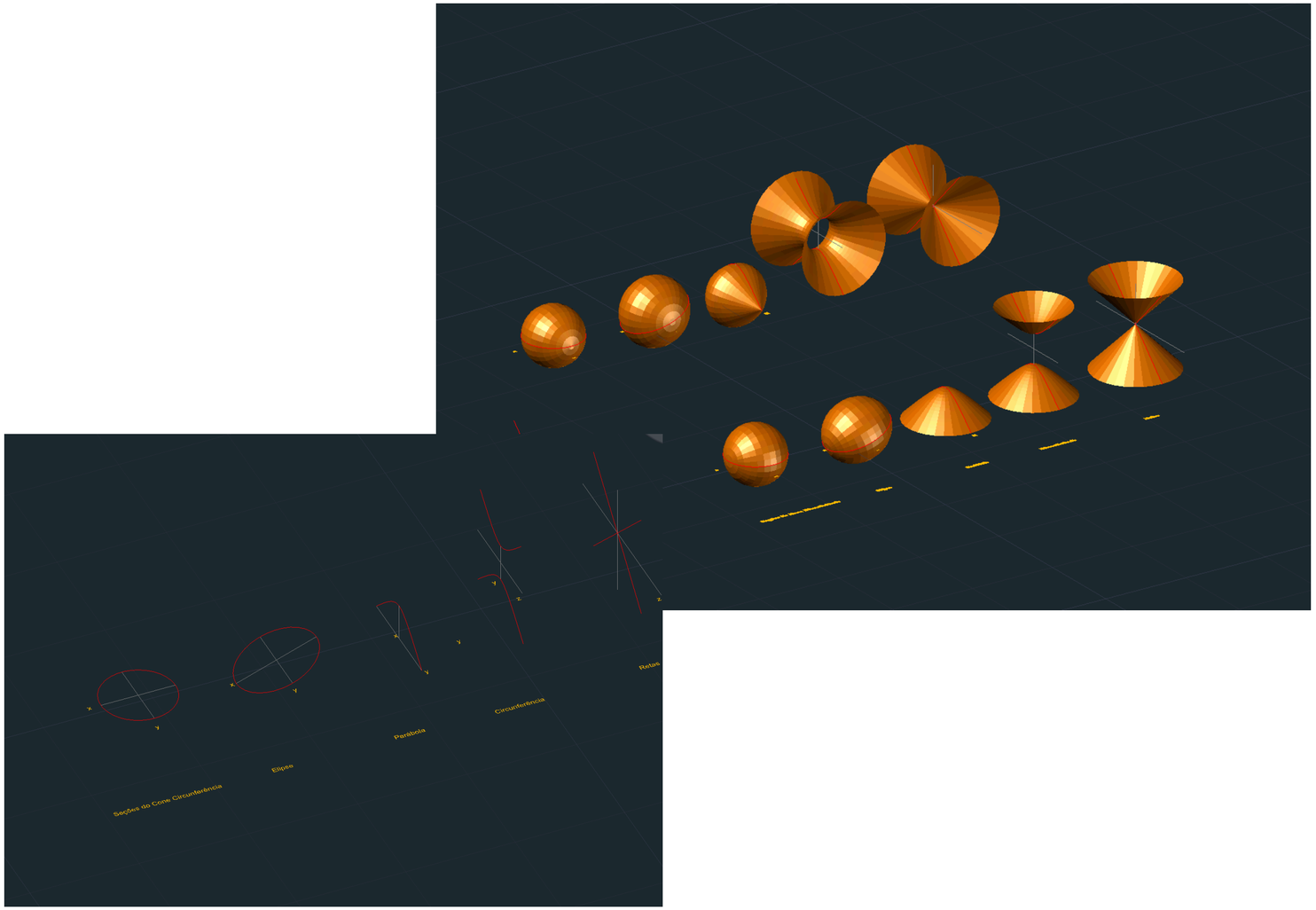



Seções do Cone Circunferência
Elipse
Parábola
Circunferência
Retas


Seções do Cone Circunferência
Elipse
Parábola
Circunferência
Retas

Let’s create the surfaces through the axis of revolution (x,y,z)

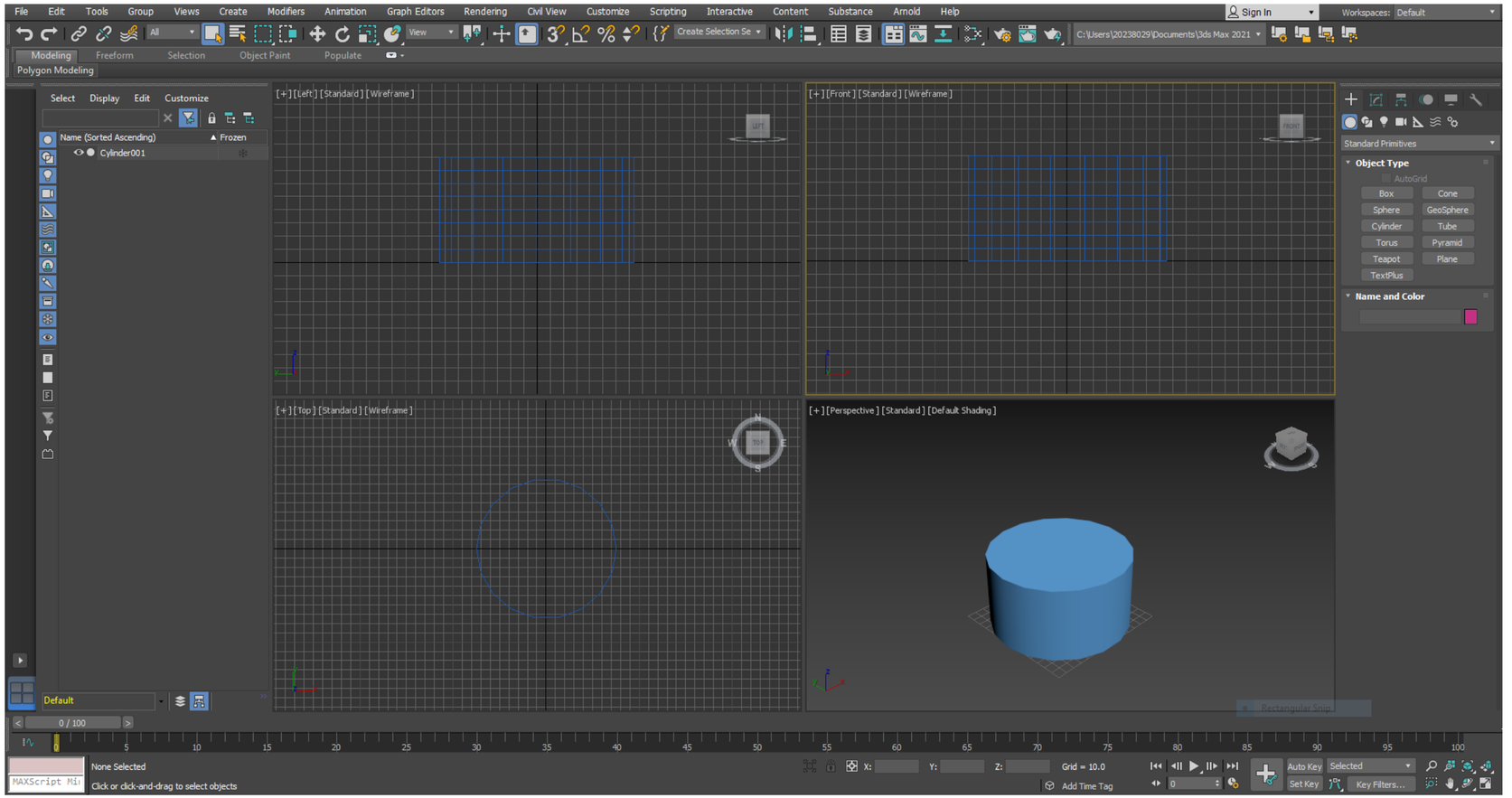
Commands:
REVSURF



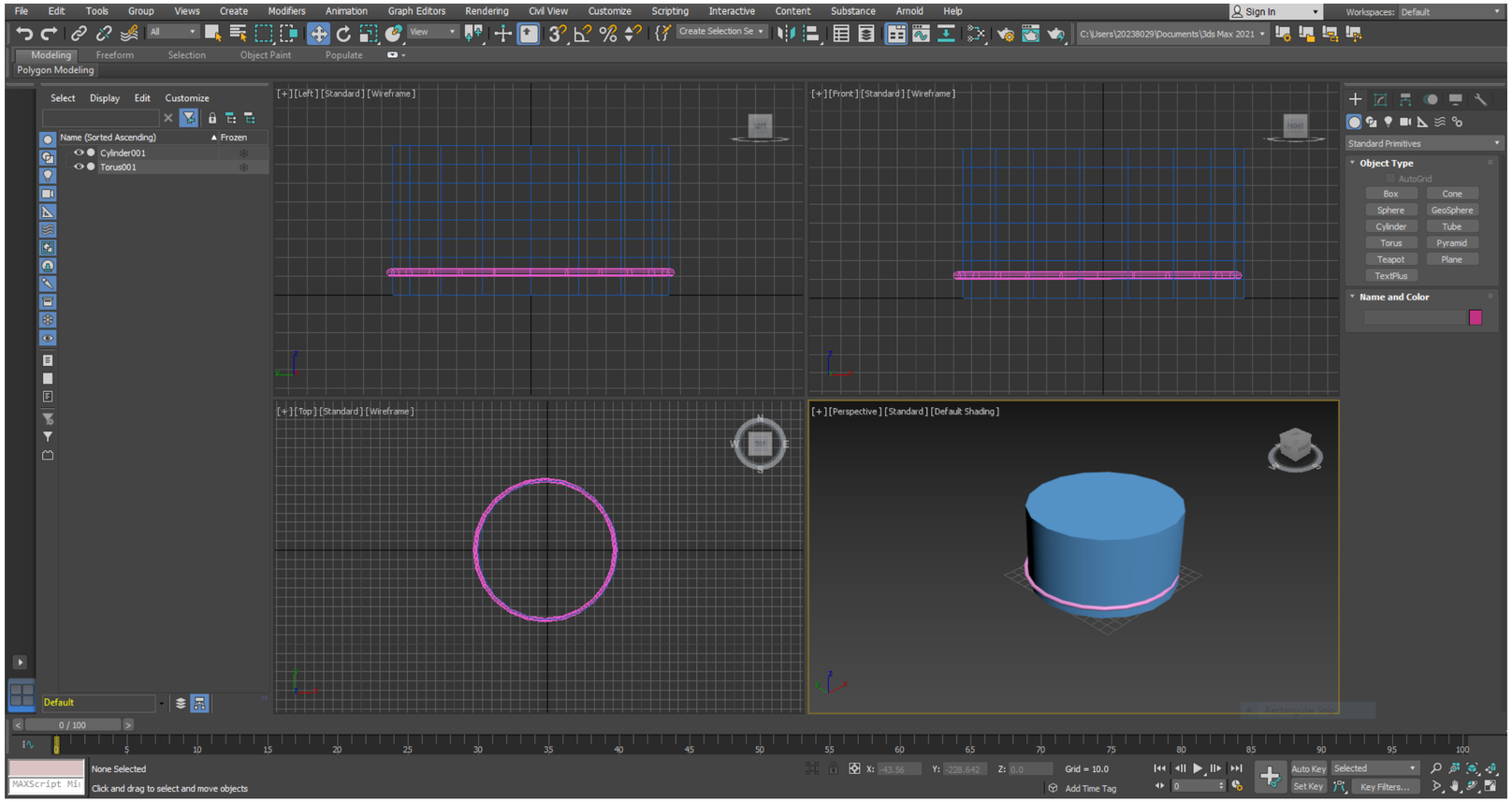
3Ds MAX

Construction of a light bulb

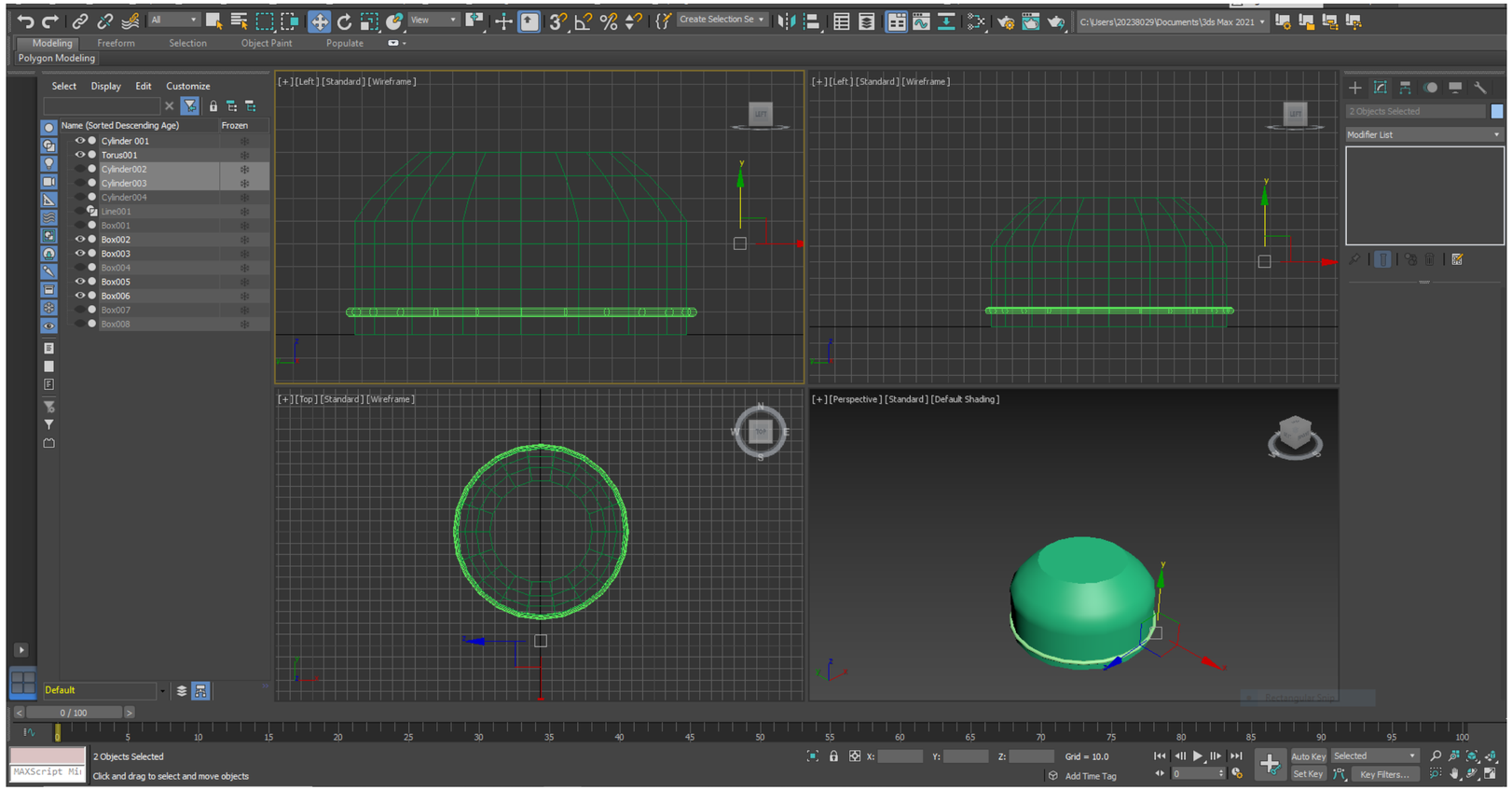
We create a cylinder with 75 radius, 80 height and 8 height segments



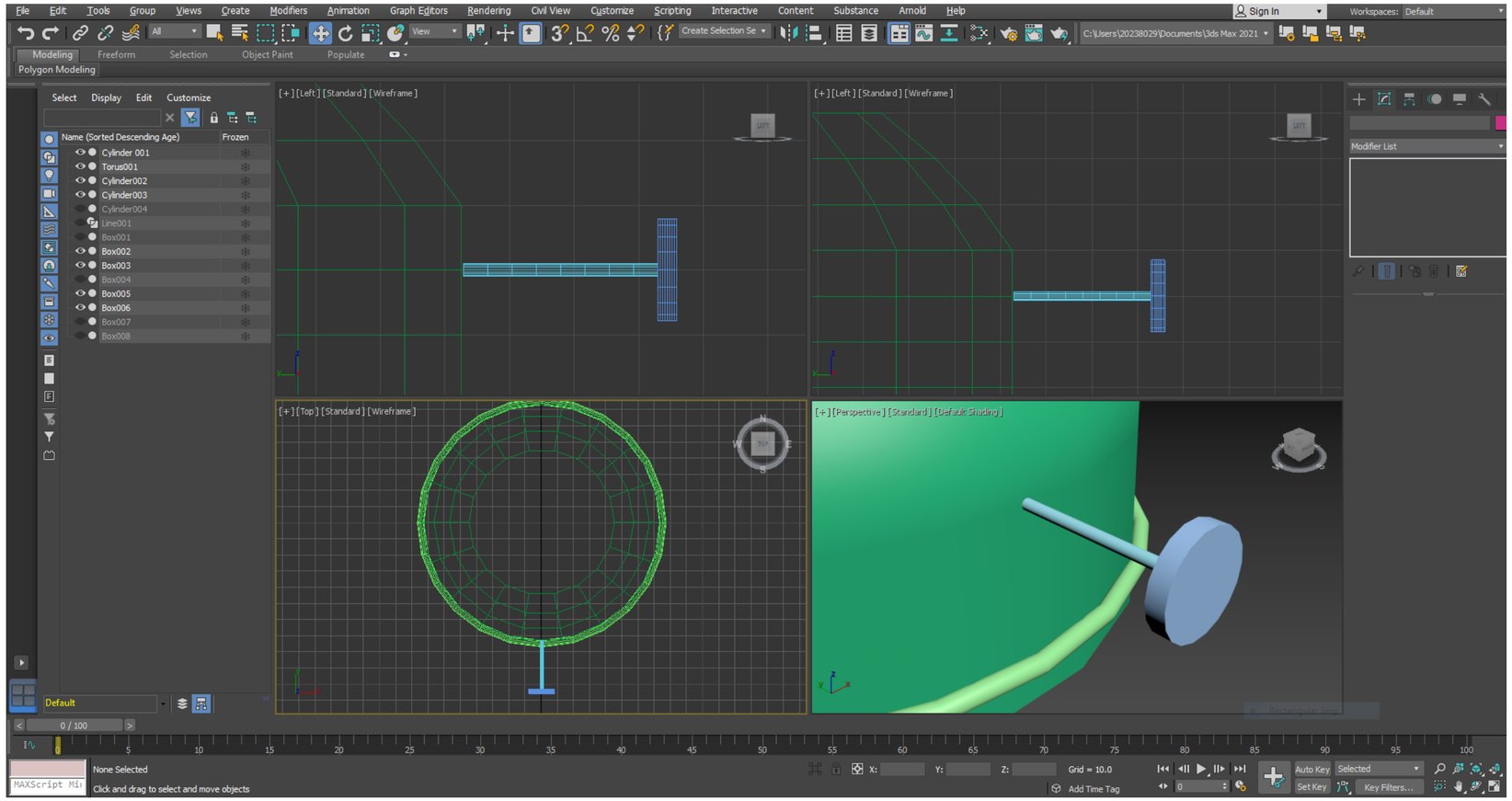
We add a TORUS in the cylinder with the first radius coinciding with that of the cylinder and the second radius of 2



With the option TAPER, in MODIFIER LIST and enter the values in "Limits" and "Taper"

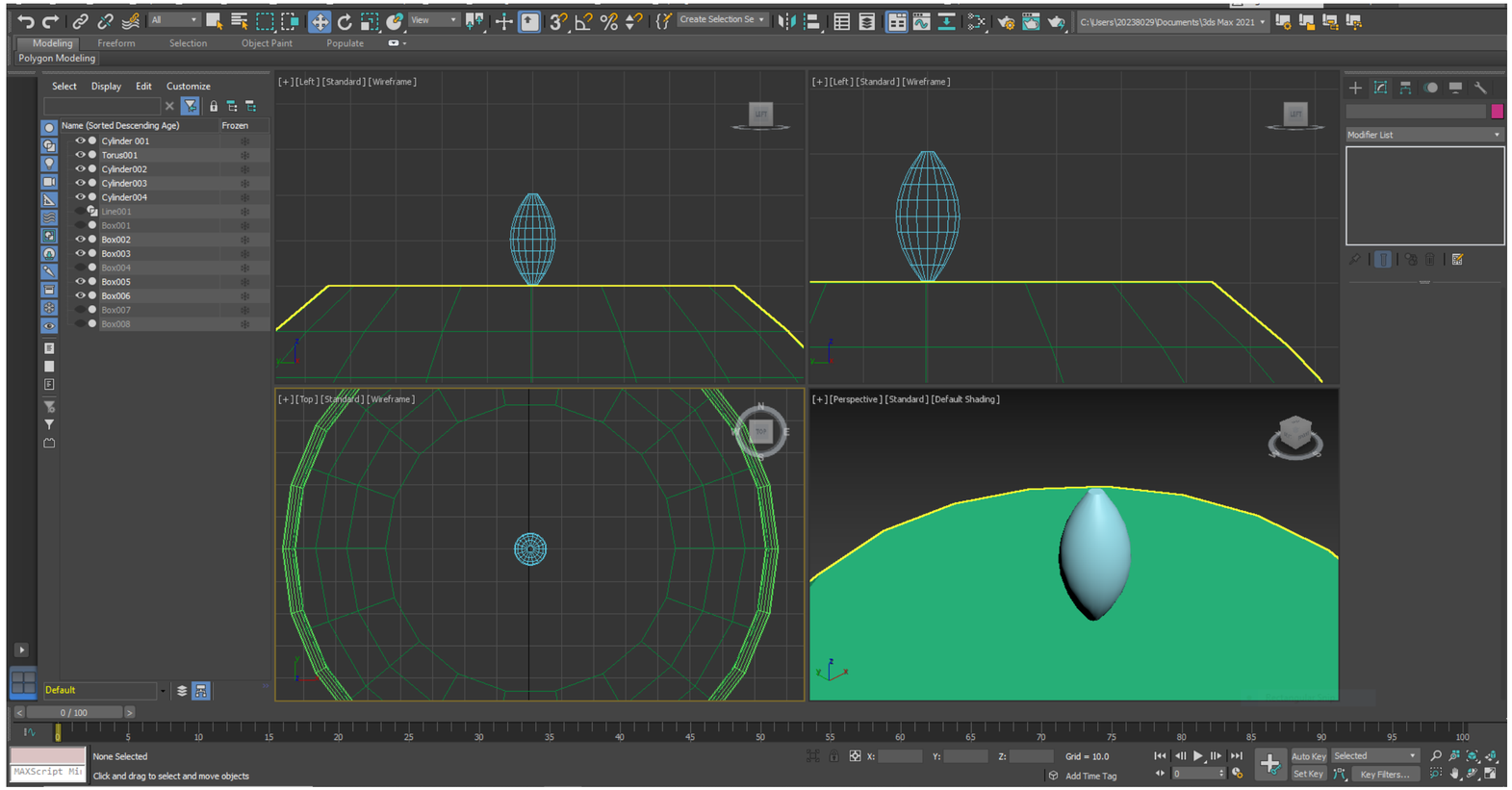


We draw 2 cylinders one for the screw and one for the wheel



FLAME

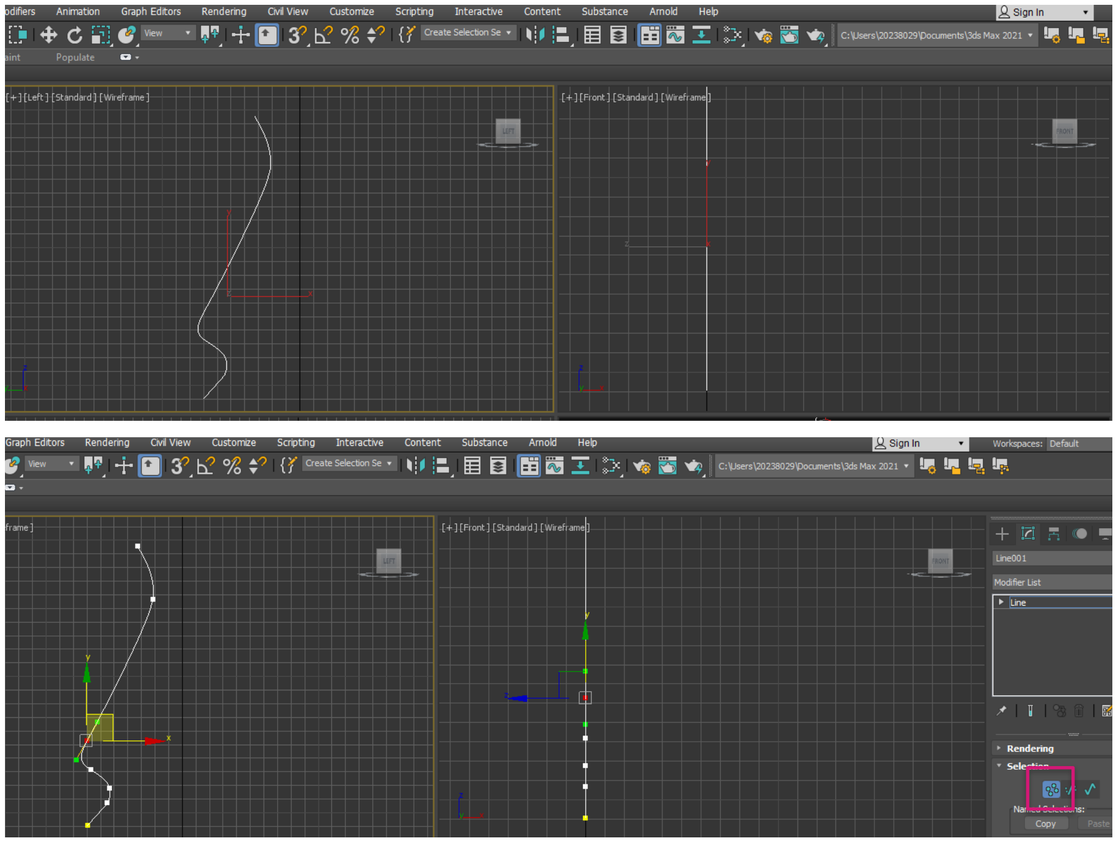
To build the flame, we start by creating a cylinder above the lamp. In Modifer List, we select the STRETCH command, until we get the shape of a flame. By changing the values in NOISE, we can achieve a more realistic effect

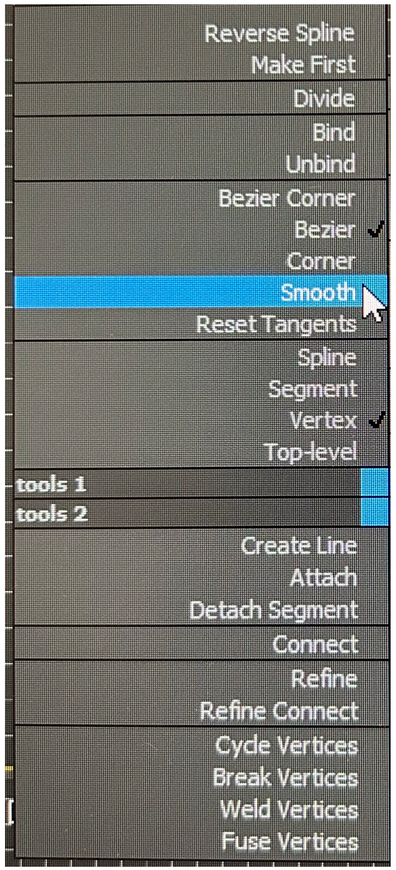


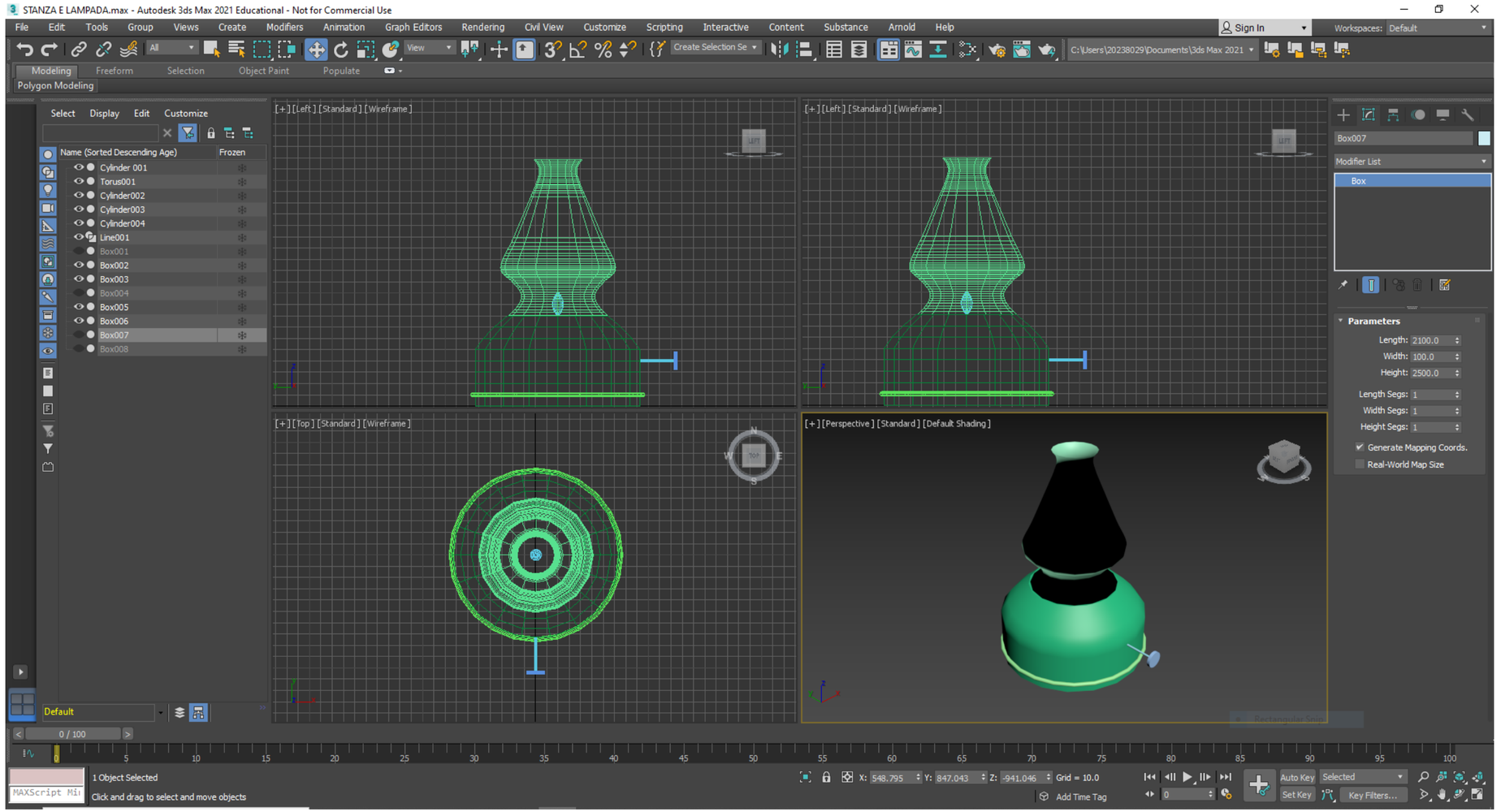
CAMPANULA

To build the glass bell, we start by drawing lines that recall the shape. Let’s round the vertices with the commands:
MODIFIER> SELECTION> VERTEX

SMOOTH or BAZIER to shape the shape.
To model in a three-dimensional way we go in Modifier List, LATHE





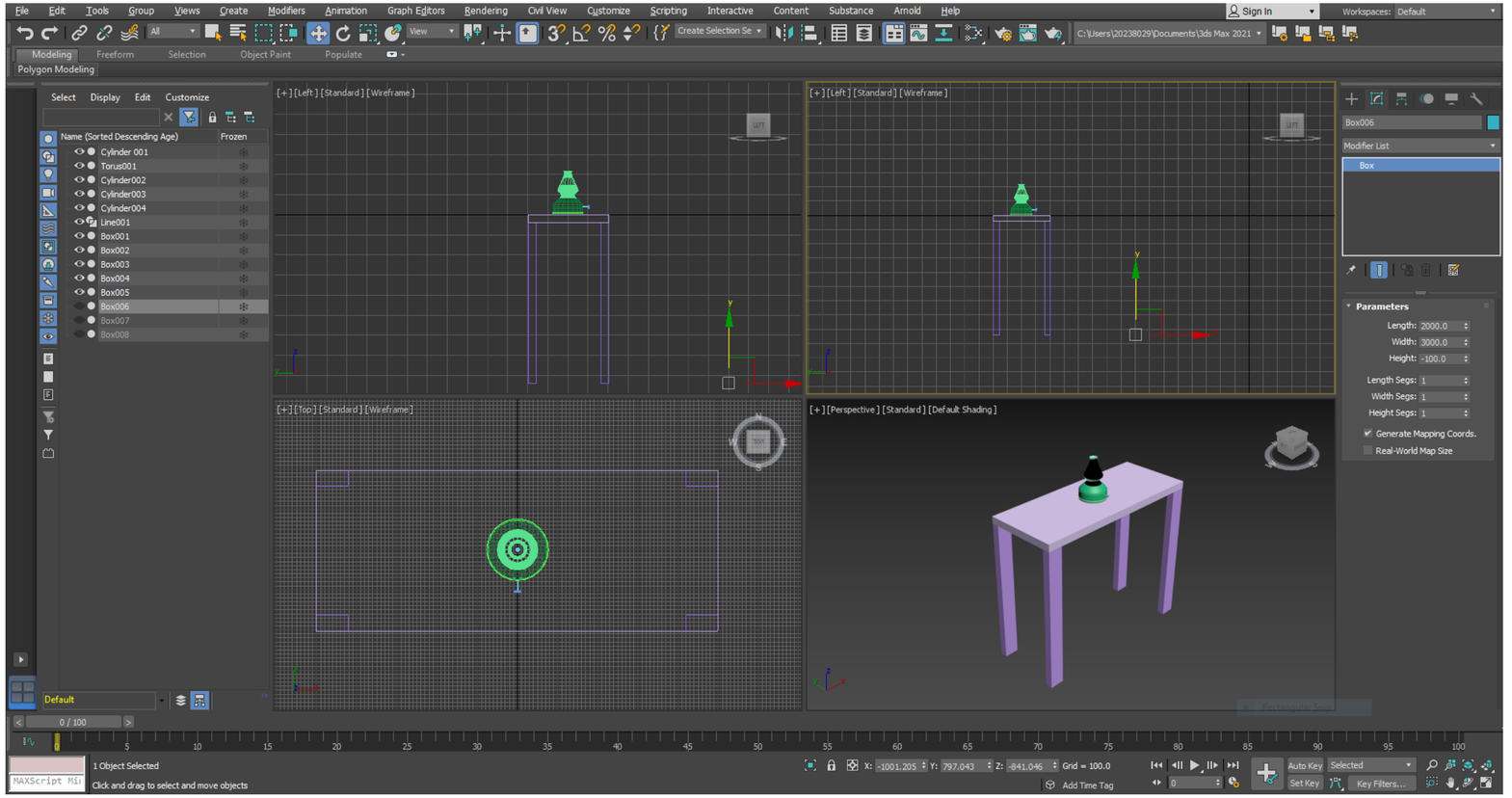


ReDig Semana 11

TABLE

To build the table with the command BOX create a box of: 400x1000x-40

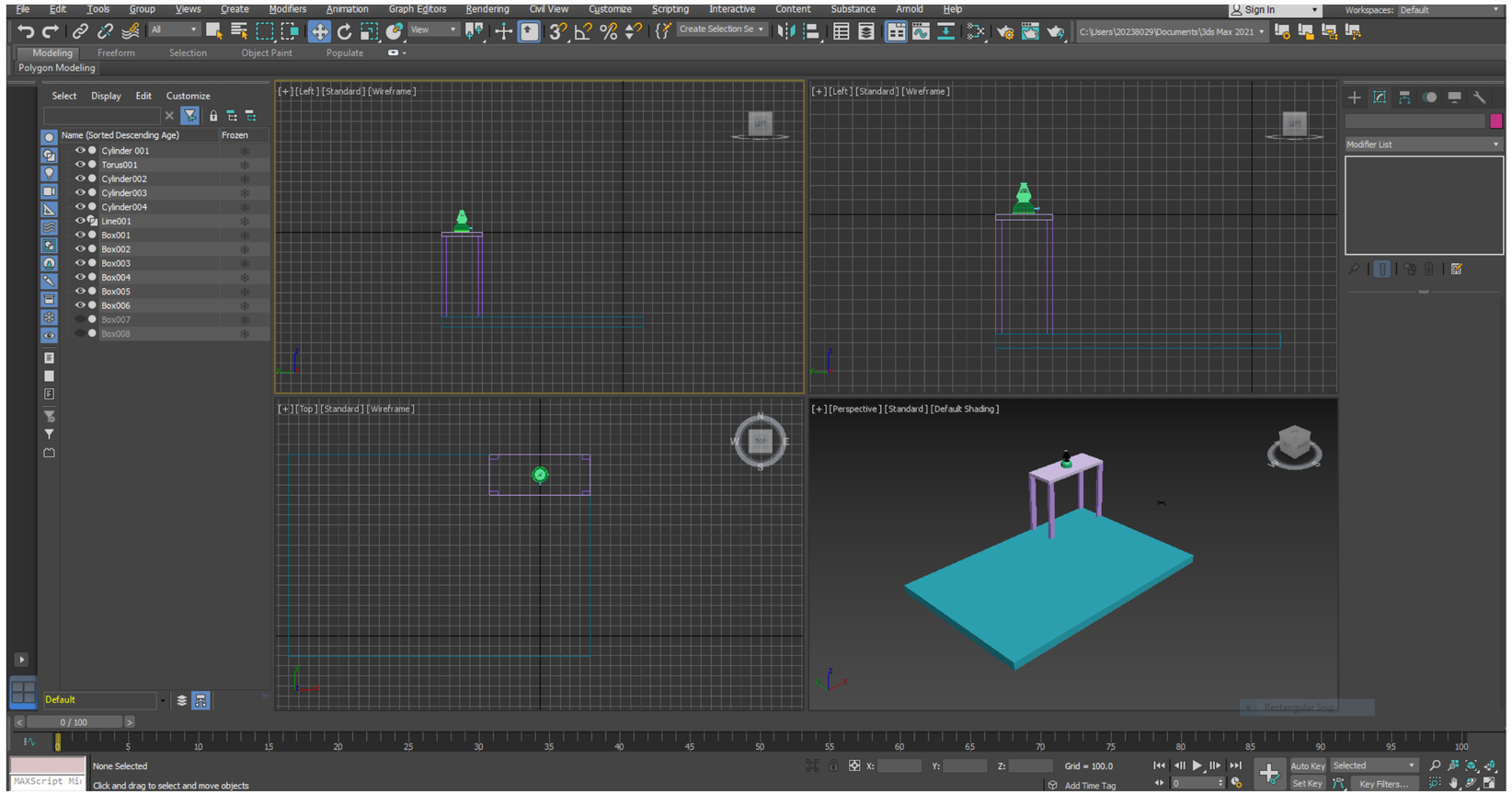
We create another Box of: 40x80x-800, which then we will copy another 3 times to go to form the legs

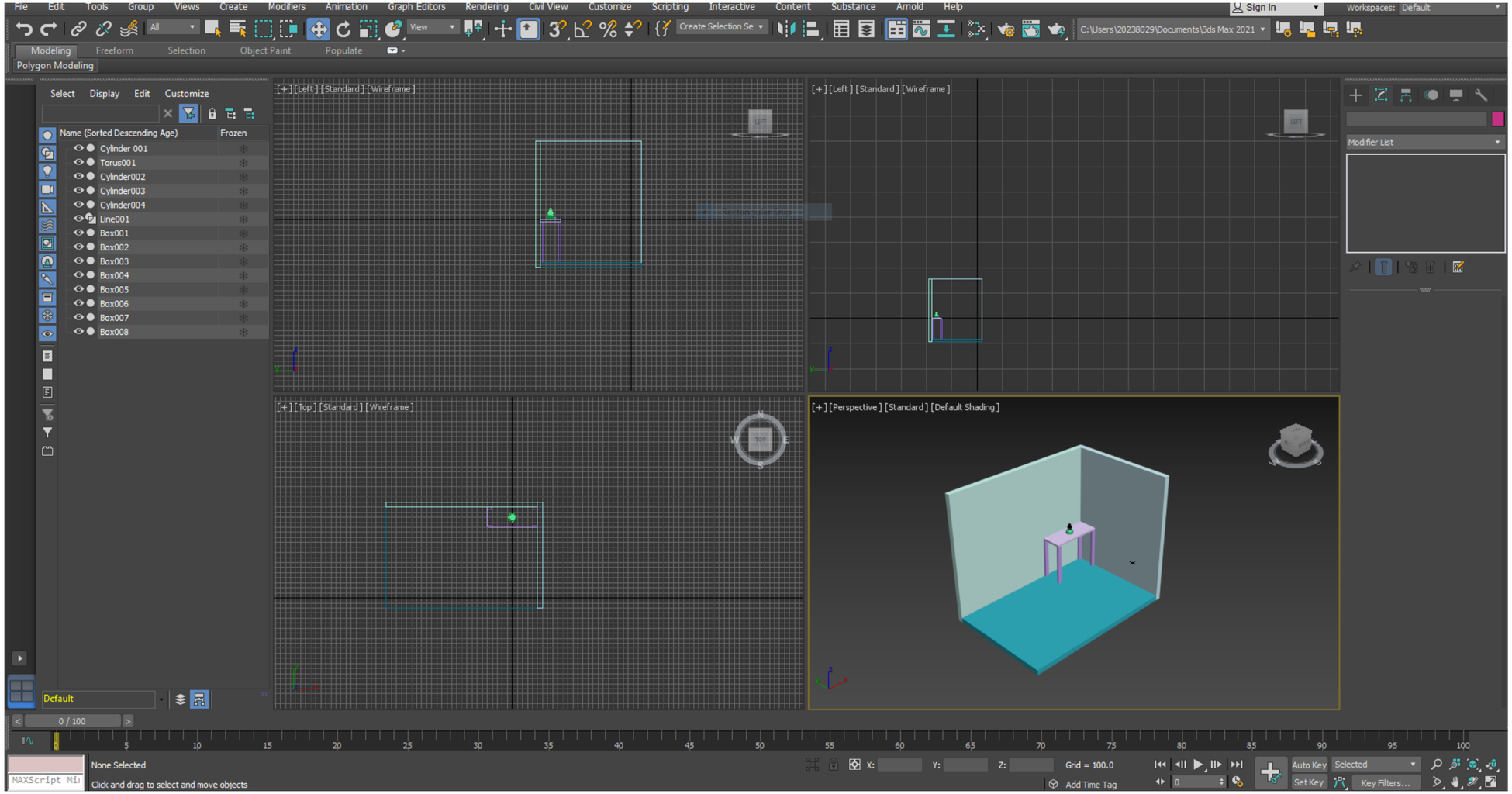


WALLS and FLOOR

To build the floor we always use the Box command, with dimensions: 2000x3000x-100

Regarding the walls, the dimensions are:
2100x100x2500
3000x100x2500



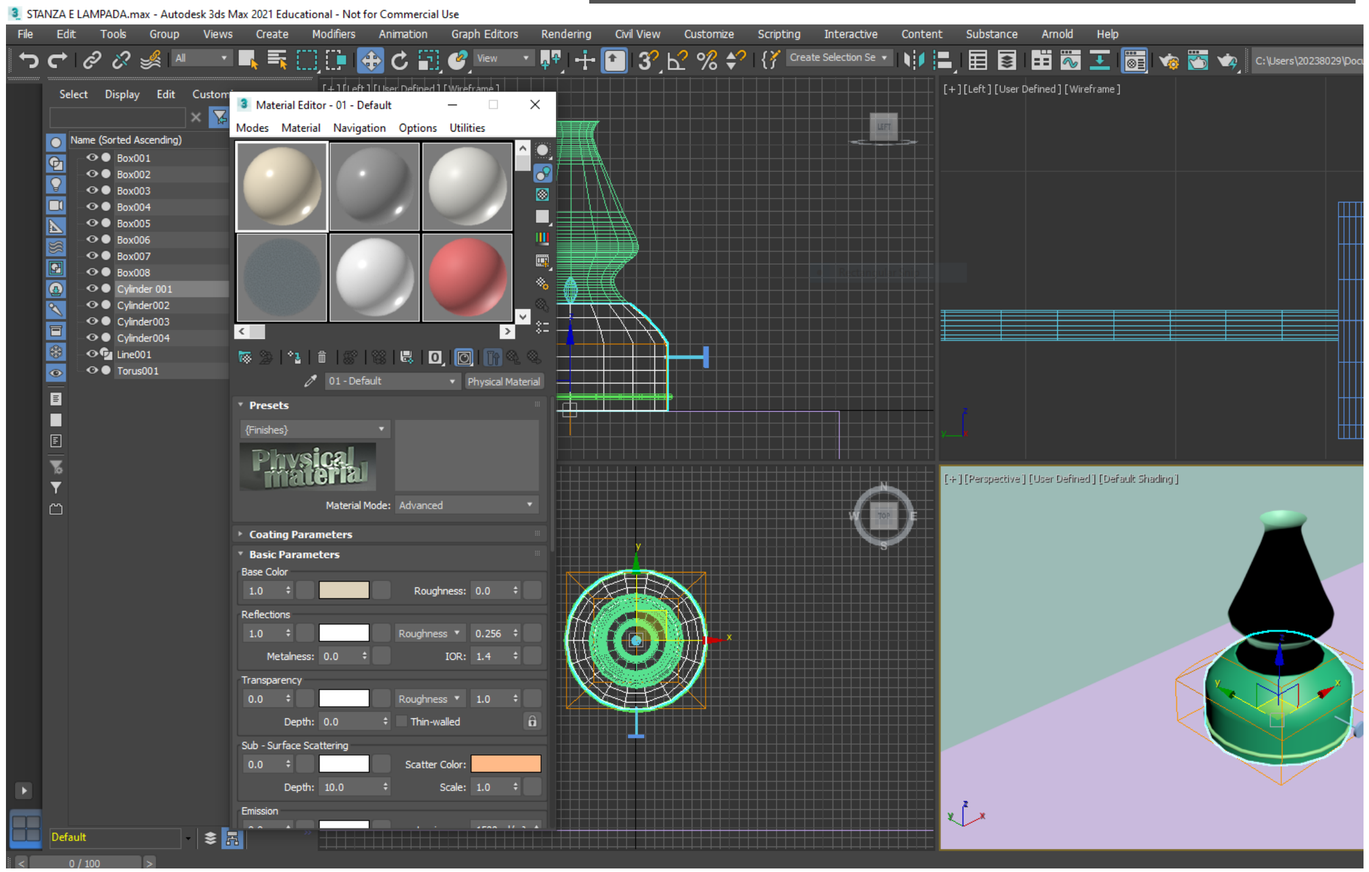


ReDig Semana 11

MATERIALS

In "MATERIAL EDITOR", we select the COMPACT MATERIAL EDITOR mode, obtaining a library of predefined materials.

Custom materials can also be added



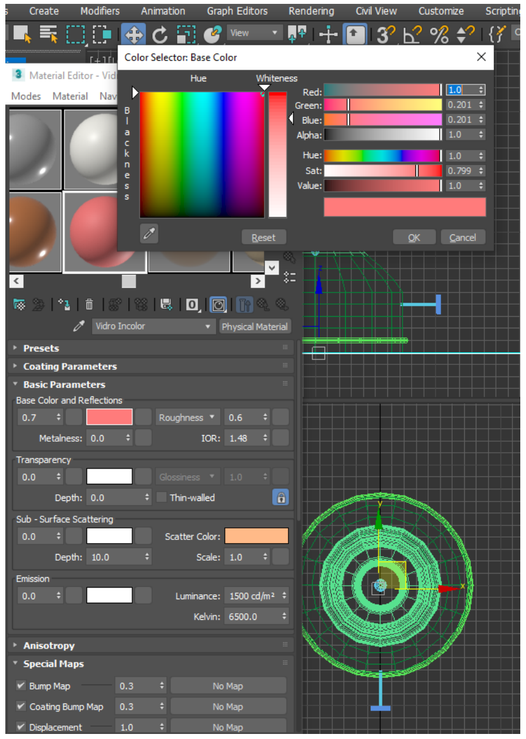
Allows you to regulate the light

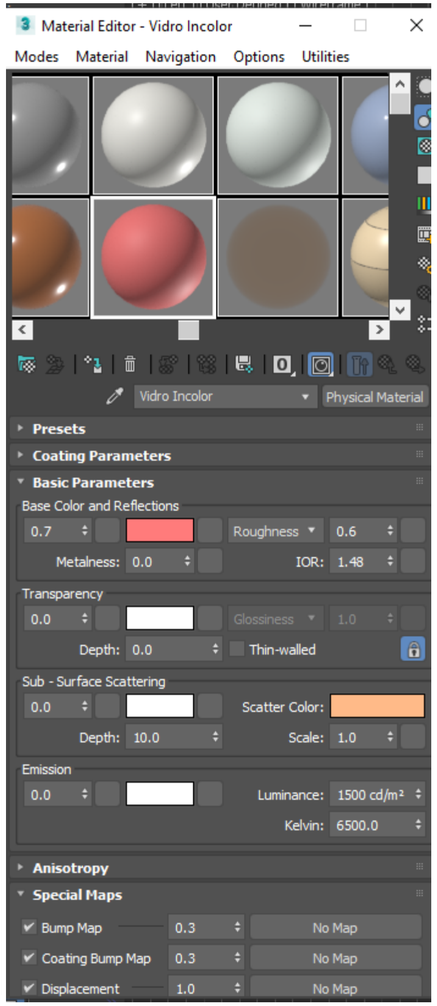
Allows you to create a pattern behind the sample that is useful for transparent objects

I can repeat definitions, example: tile

Lets you see if it will interfere visually

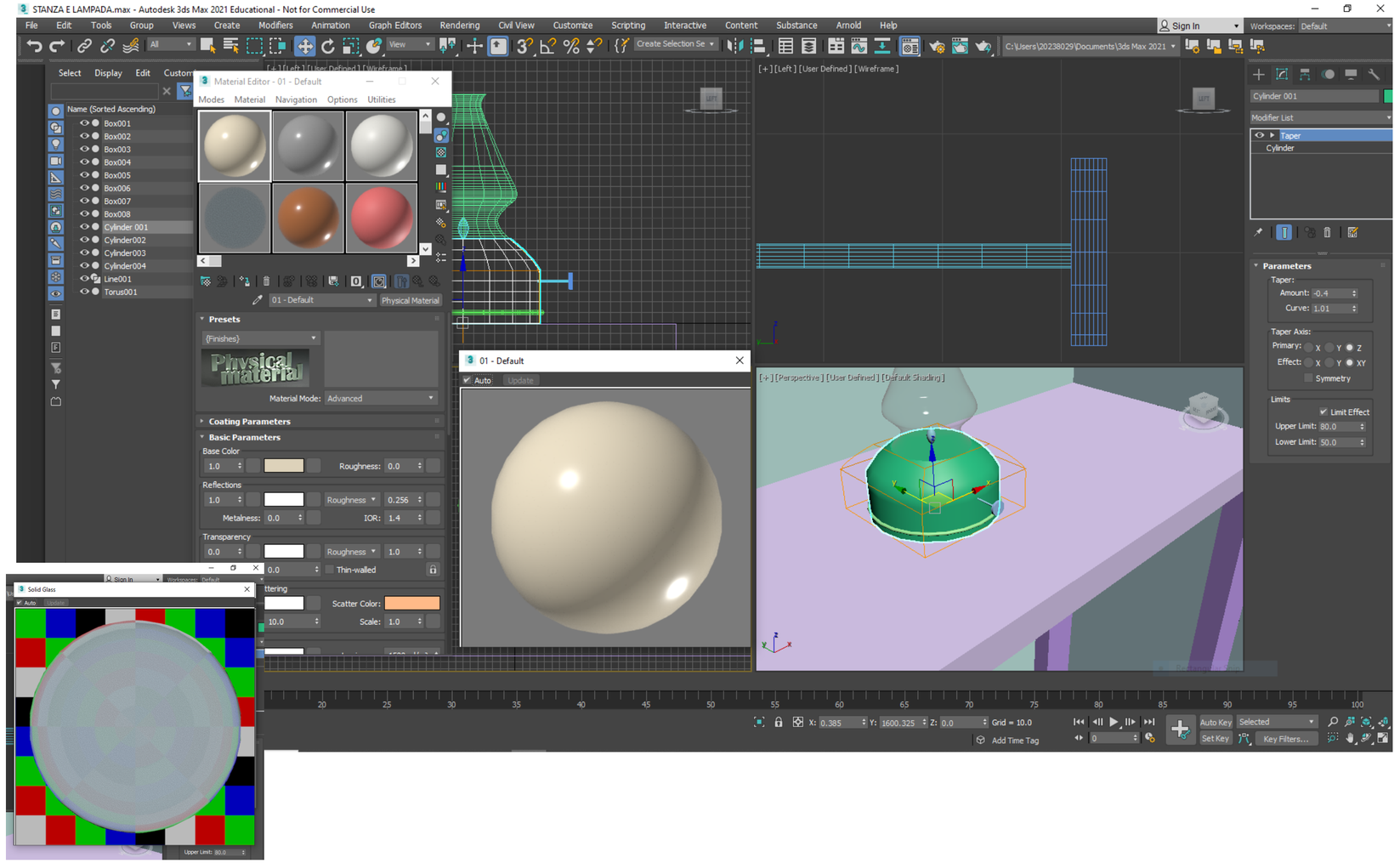
I can change the colors of the objects, just drag what I want on top of the desired object





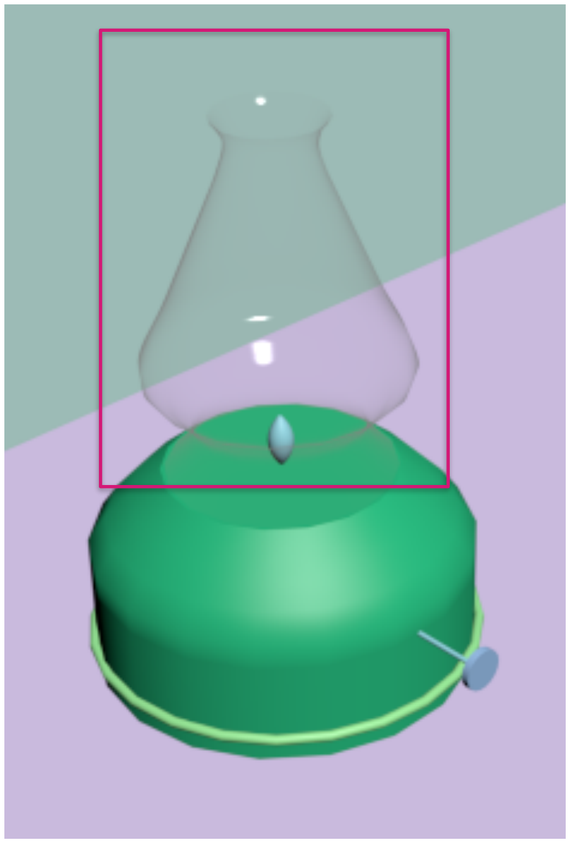
We drag the desired material on the selected object, so as to give it the required appearance

In this case, using glass, you can apply a background to the material, so as to see how much is its transparency

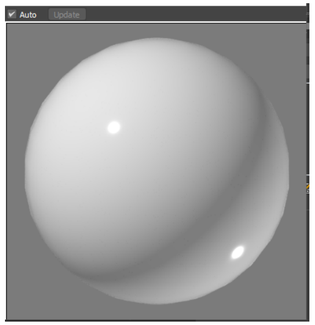


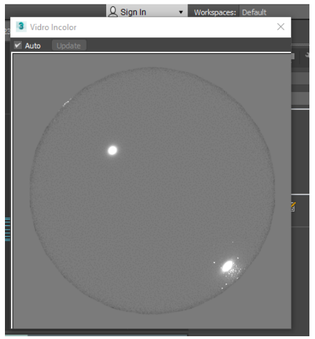
- Select a slot that does not need and change name for colorless glass and then all the features that interest us modify

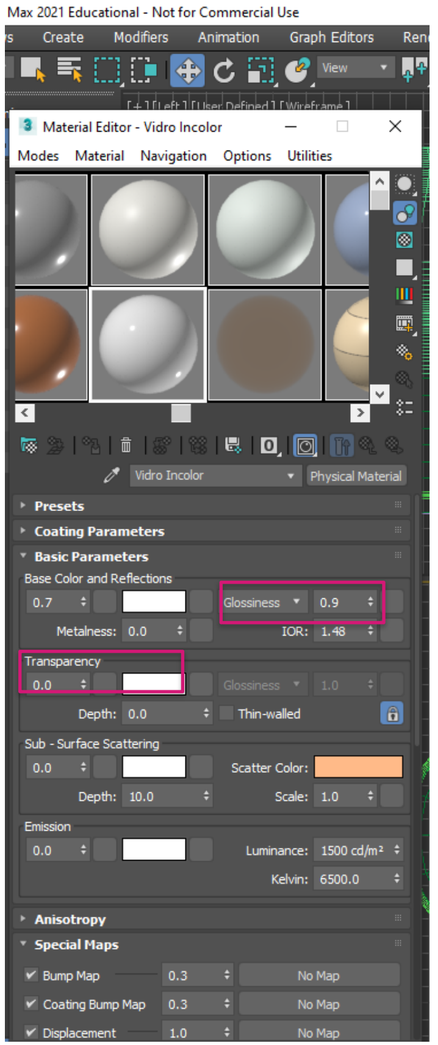
- I change to:
- color to white and then the
- Glossiness to 0.90
- Transparency 1



PROCESS



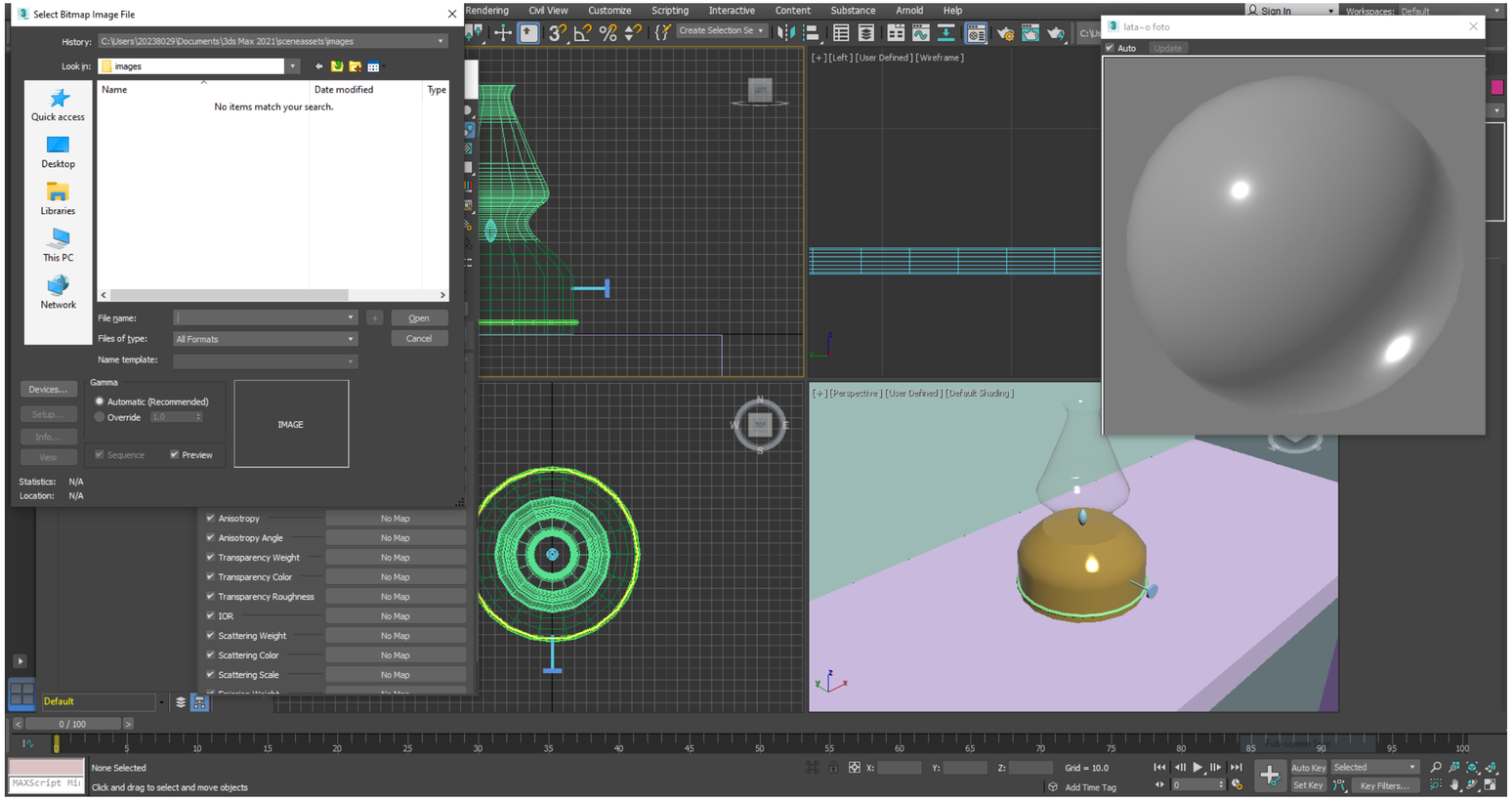




HOW TO CREATE A MATERIAL FROM A PHOTOGRAPH

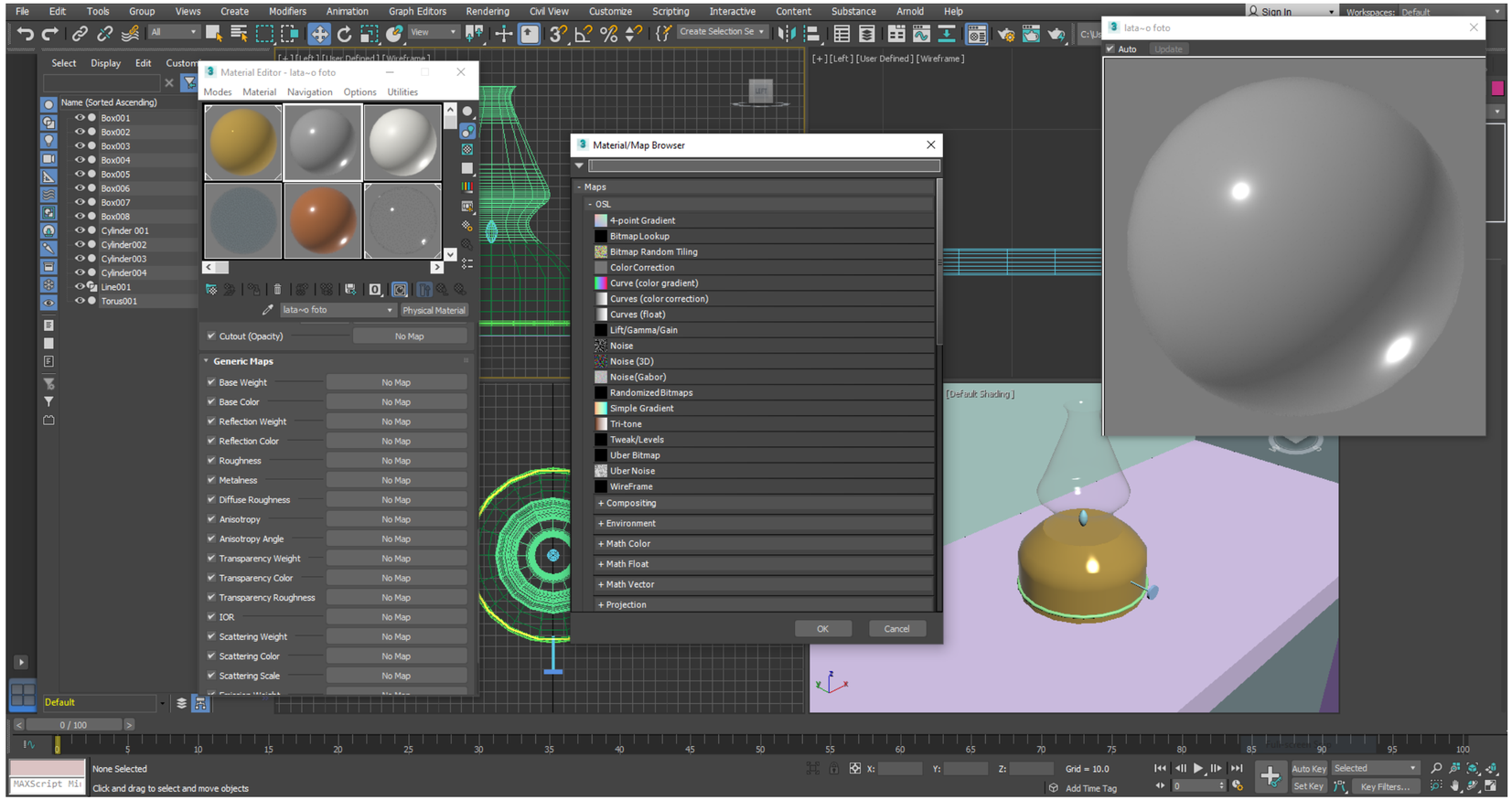
Procure an image with the final JPG extension.

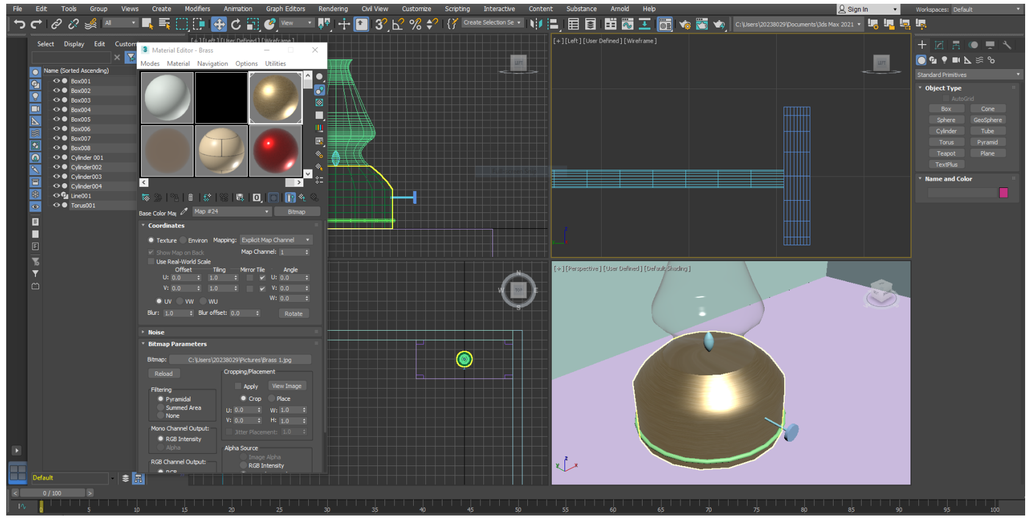
Then MATERIALEDITOR > Mode Compact > I give a new name

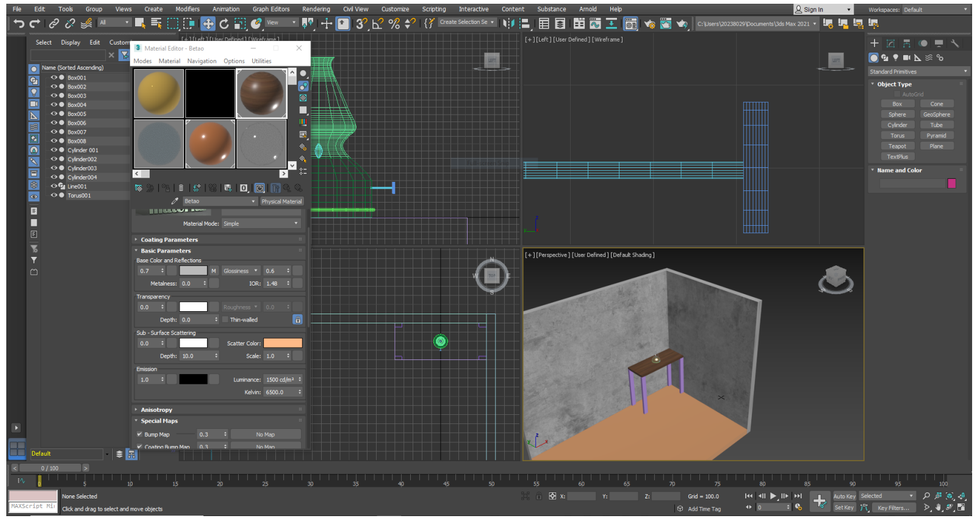


Generic Maps > Base Colour > General Bitmap and introduce the image

Then through the different commands you can adjust the watermark, the color...

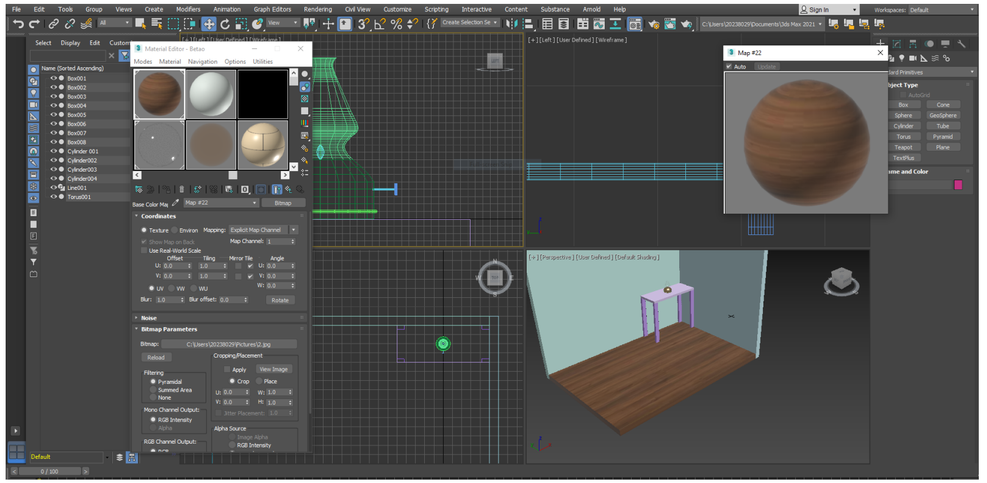




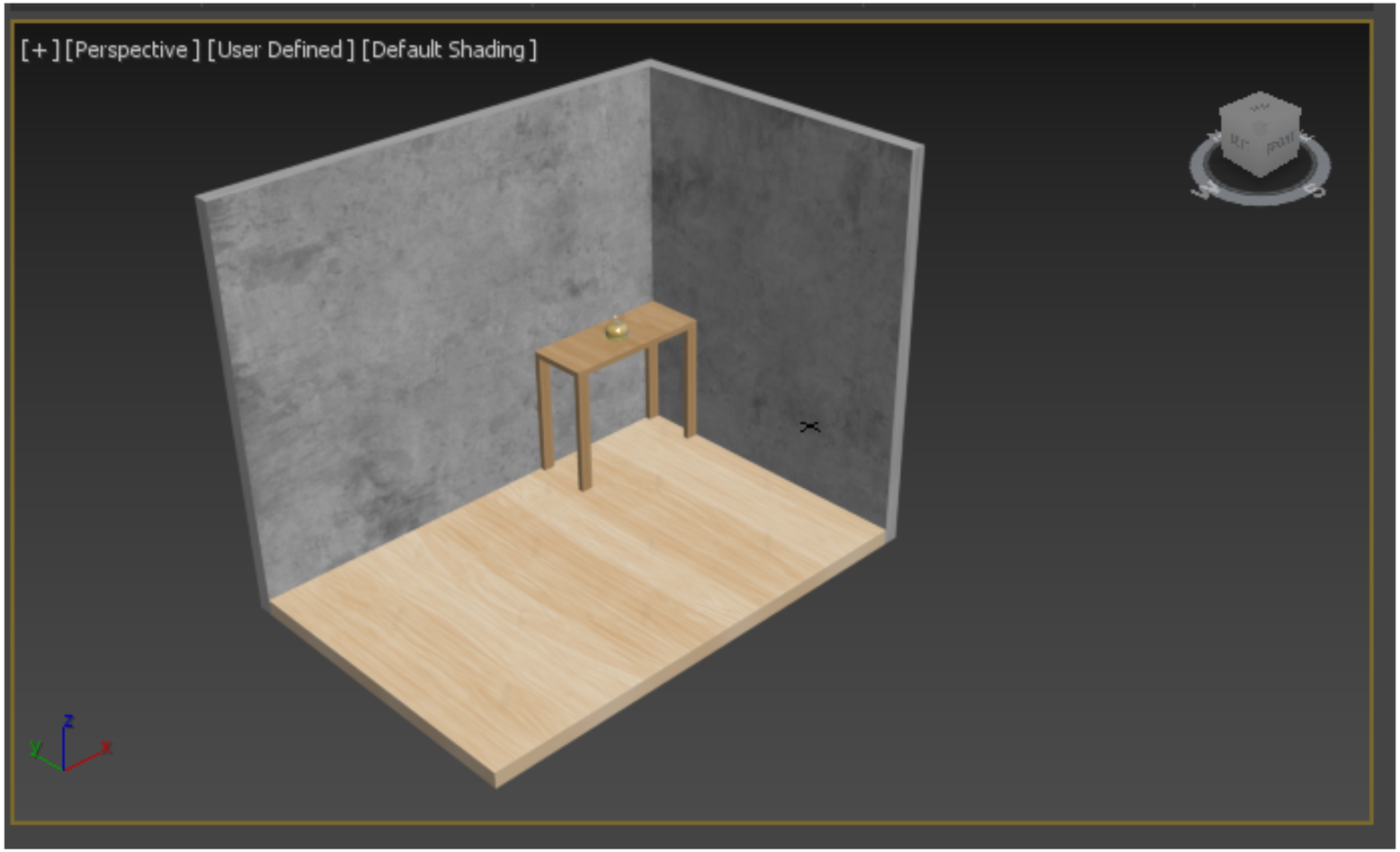


In this case, 3 images have been inserted, which recall different textures:

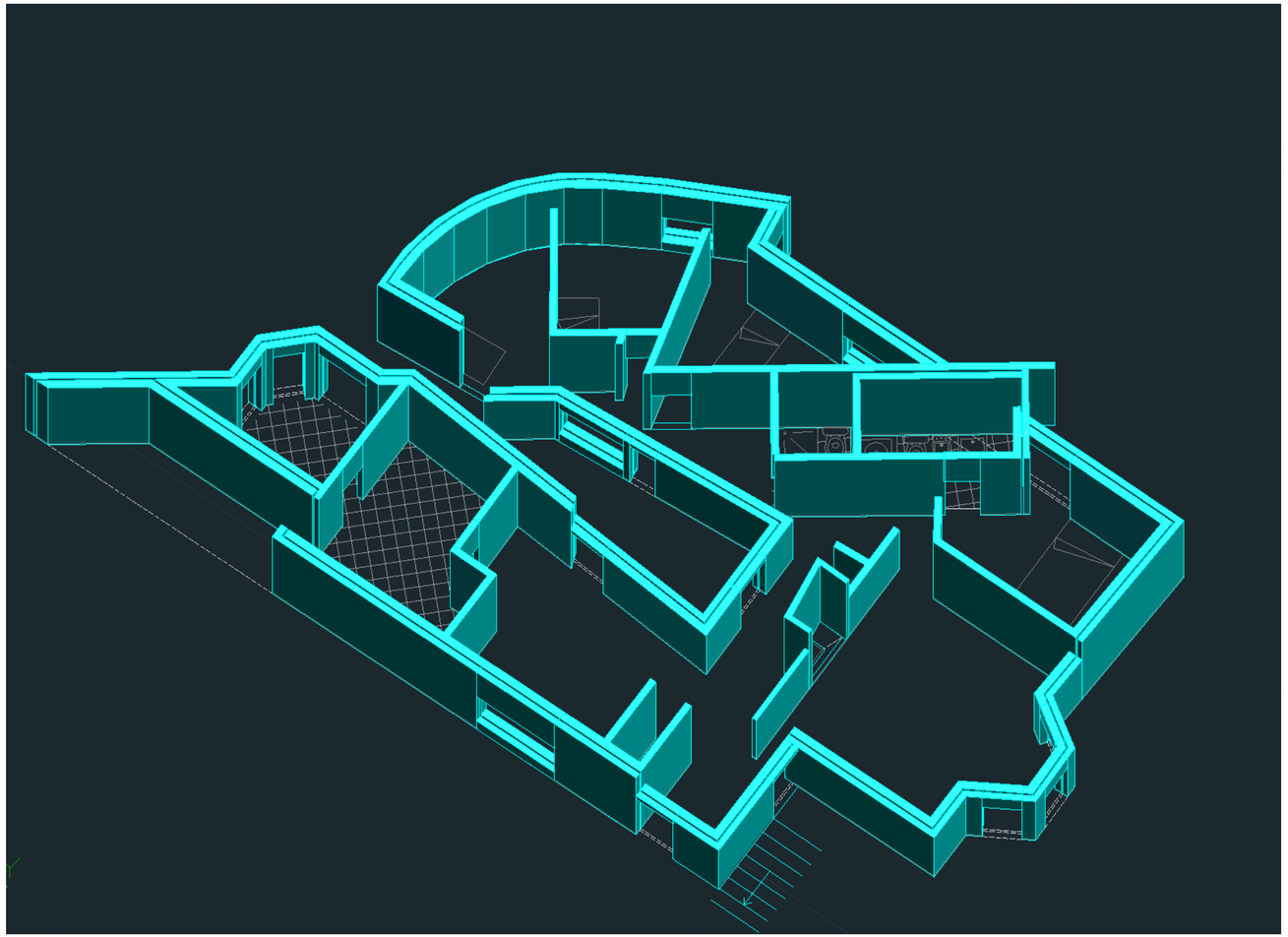
- Copper
- Concrete
- Madeira



Final result of the design realized with the insertion of the chosen materials



CONTINUAZIONE DELLA REALIZZAZIONE 3D DELLA CASA ANTONIO CARLOS SIZA



Realization of tiles and furniture,
then transfer to 3D Max