

Representação Digital

2023-2024



UNIVERSIDADE
DE LISBOA



FACULDADE DE ARQUITETURA
UNIVERSIDADE DE LISBOA

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

20221380

BEATRIZ RAMOS



ÍNDICE

- Exerc. 1.1 – ACAD 2D
- Exerc.1.2 – ACAD 3D

ACAD ARQ
 1un. = 1mm 1m
 ACAD ARQ
 Units - 1mm - 1m

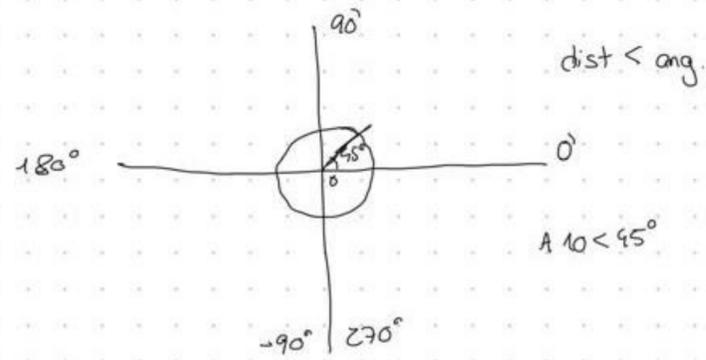
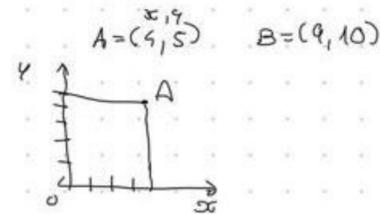
AutoCAD WORK SCALE = 1/1000 (x10)
 Zoom SCALE x10

coordenadas cartesianas (x,y)

Polar coordinates

Absolut coordinates

Relative coordinates



ABS coords. #

Relative coords @

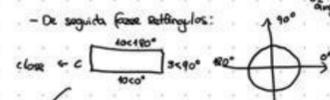
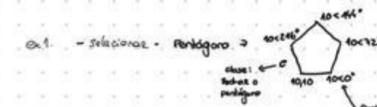
106%

4,5
 @ 5,5

Relative coords @

4,5
 @ 5,5

CHPROP



selecionar retângulo - copy - colar mais 4
 criar layers com os nomes a designar. cores
 selecionar objeto -> CHPROP -> Layer -> nome do "layer" -> enter

selecionar retângulo -> Comando "Align" -> selecionar os cantos do retângulo com o despontilho -> enter

criar texto -> escrever "1000 Relat. coordinate" -> selecionar -> usar o comando "CHPROP" -> Layer -> nome do layer "teor. 1" a cor.

ATTACH SCALE
 DIST -> DIST
 lista de tamanho/geometria -> LIST
 SCALE Factor
 0,80 = 0,0297 * sf
 sf = 0,80 / 0,0297 = sf = 26,936

DASHED
 HIDDEN

(1, 0,80, 0,0297)

L -> LINE
 O -> OFFSET -> linhas paralelas
 OSNAP -> Object snap
 TRIM
 FILLET

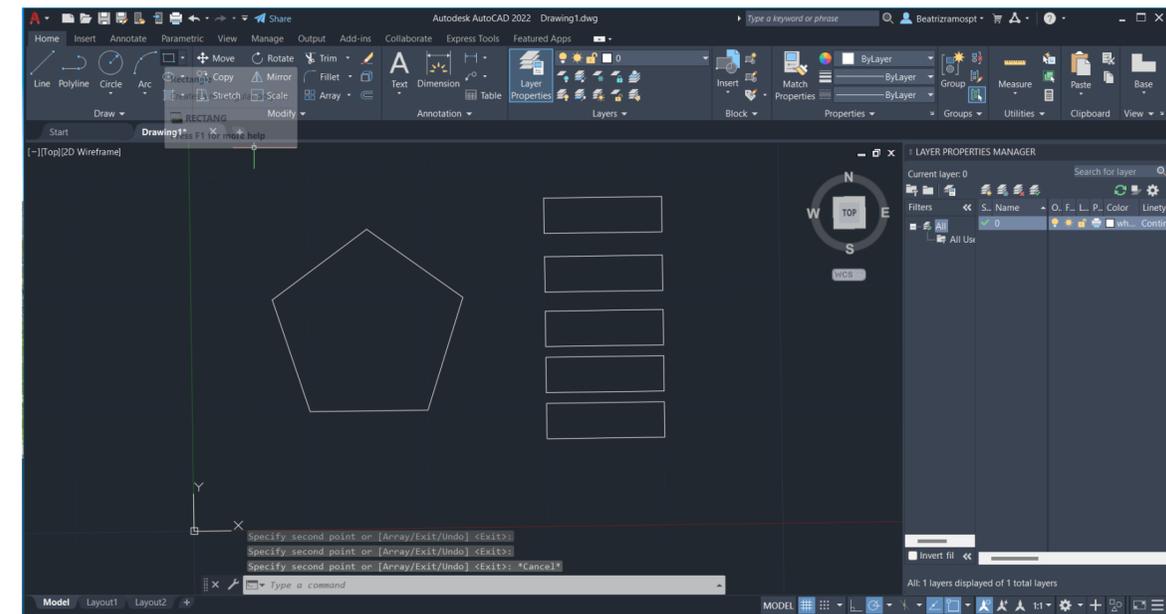
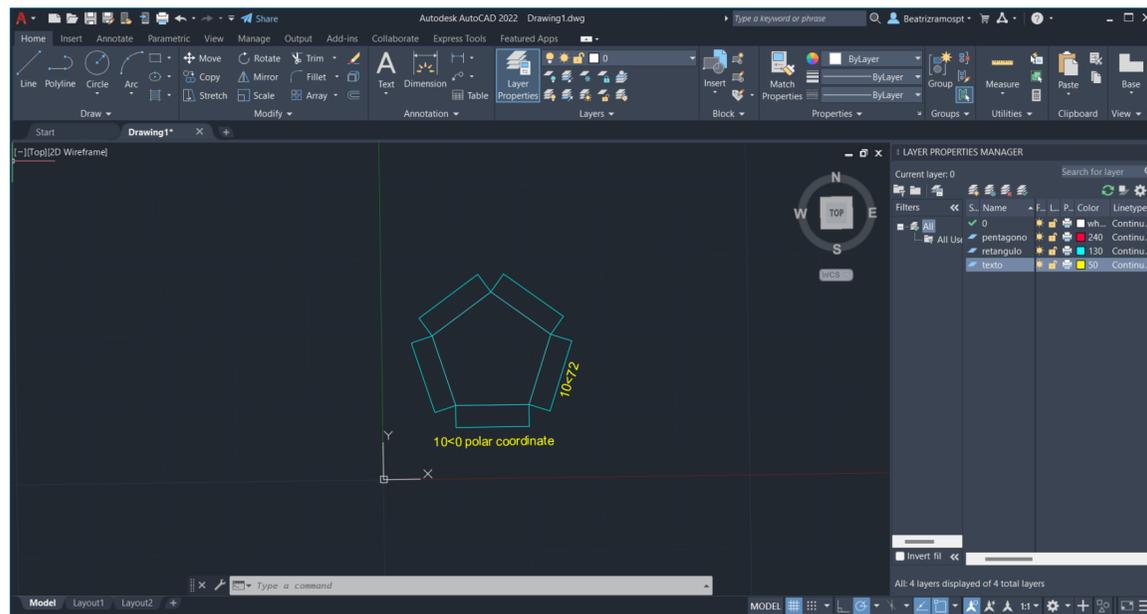
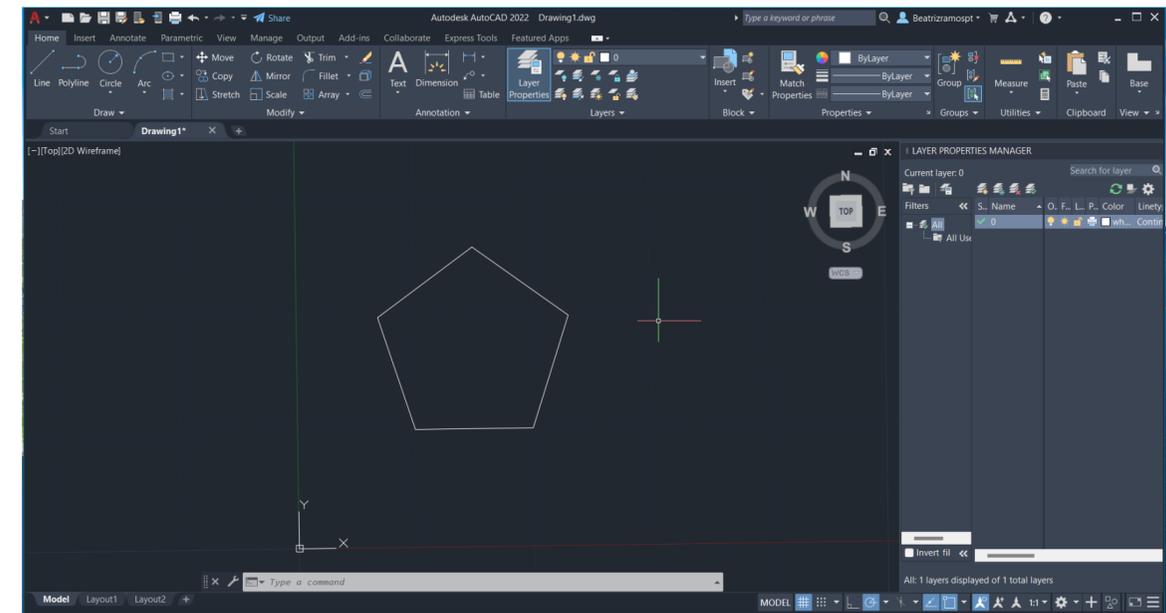
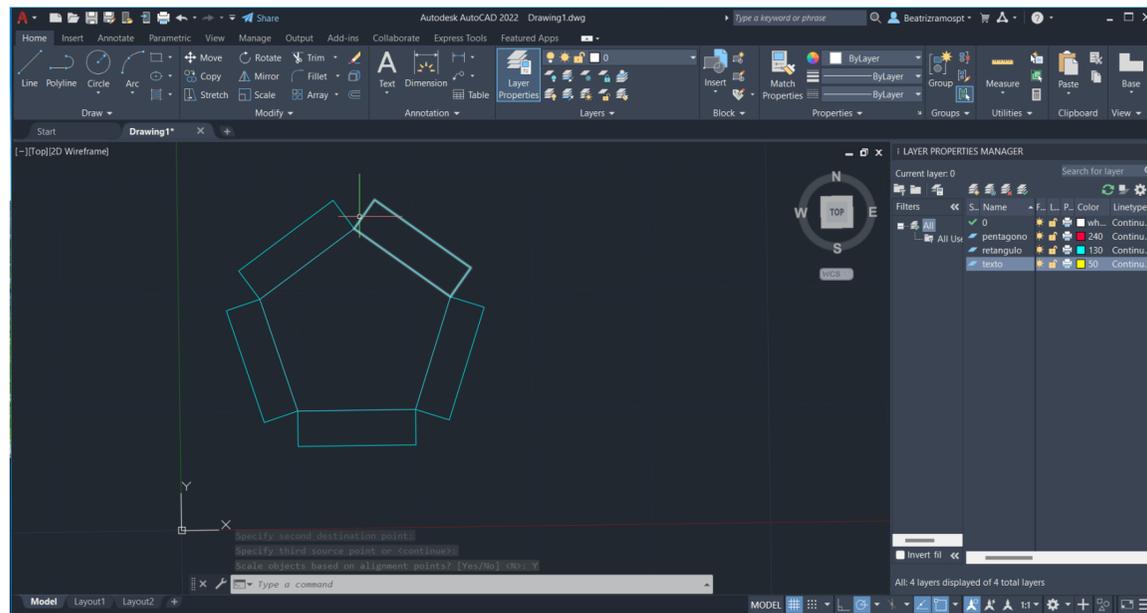
Fillet

near -> ponto pertencente à reta

Trim -> tirar o excesso a mais

75%

0,02
 0,1

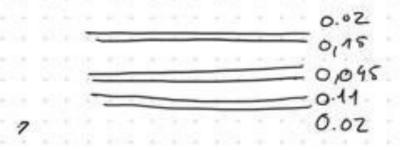


ReDig

Exerc. 1.1 – ACAD 2D

Nota 2 → ponto pertencente à reta

Ter. m → Erase o Linhas a mais

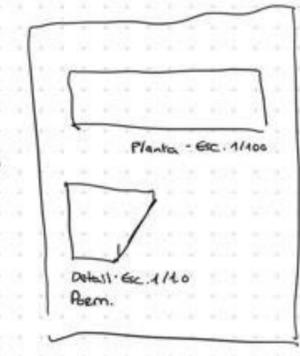


Ext → expandir

anelas - 0.05

Hatchprop →

Join → juntar



- 1/10 - formato
 - 1/100 - sem pesquisar
 - DIM
 - DIM LINEAR
 - DIM ALIGNER
 - DIM ANGSUAL
 - PLOT or PRINT
- 0.01 → Preto
distância de porta com parede 0,045
Porta - 0.4
anelas - 0.5

Hview → Polygonal

criar layer → viewport → VPLAYER

Ata da 2/11
Spline

Chamfeadas para indicar o ponto

Paralel - marcar o paralela fora (vertical) - clique no eixo

Delut

superfície 1/1e - 30

Shot - visualizar a superfície

Red-10

superfície paralela de superfície

Paralelidade de superfície

Rotote 3D

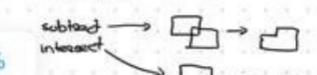
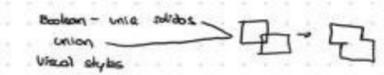
copiar tudo para o layer - fazer surface com disteiz - 30° - 40°

Ata da 3

join

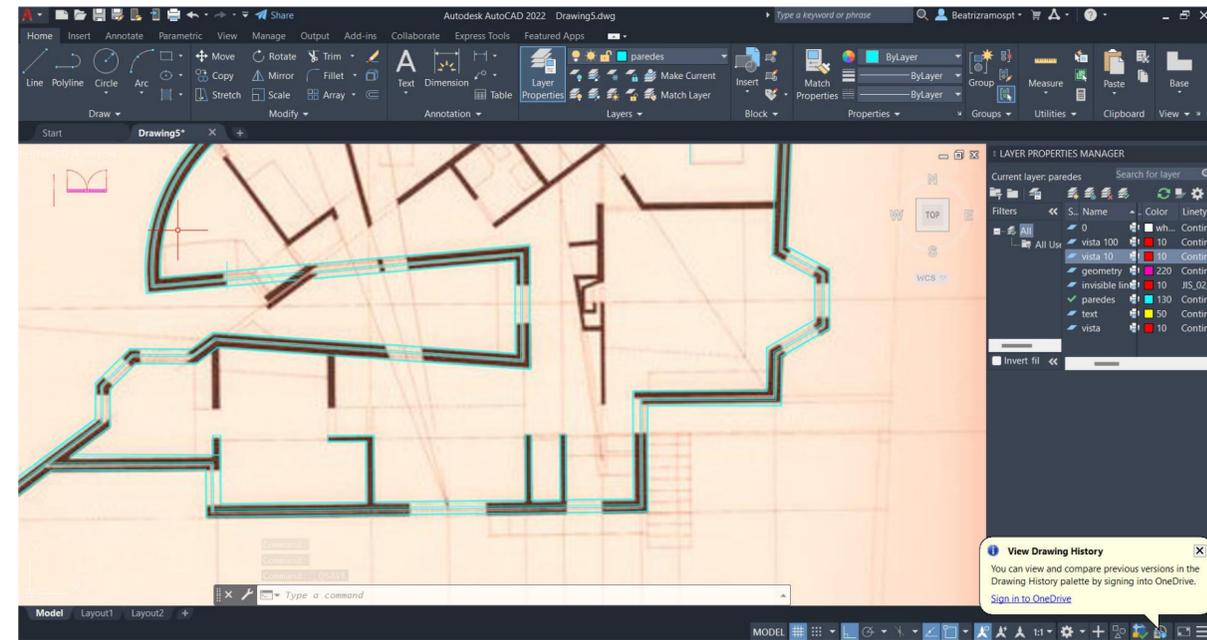
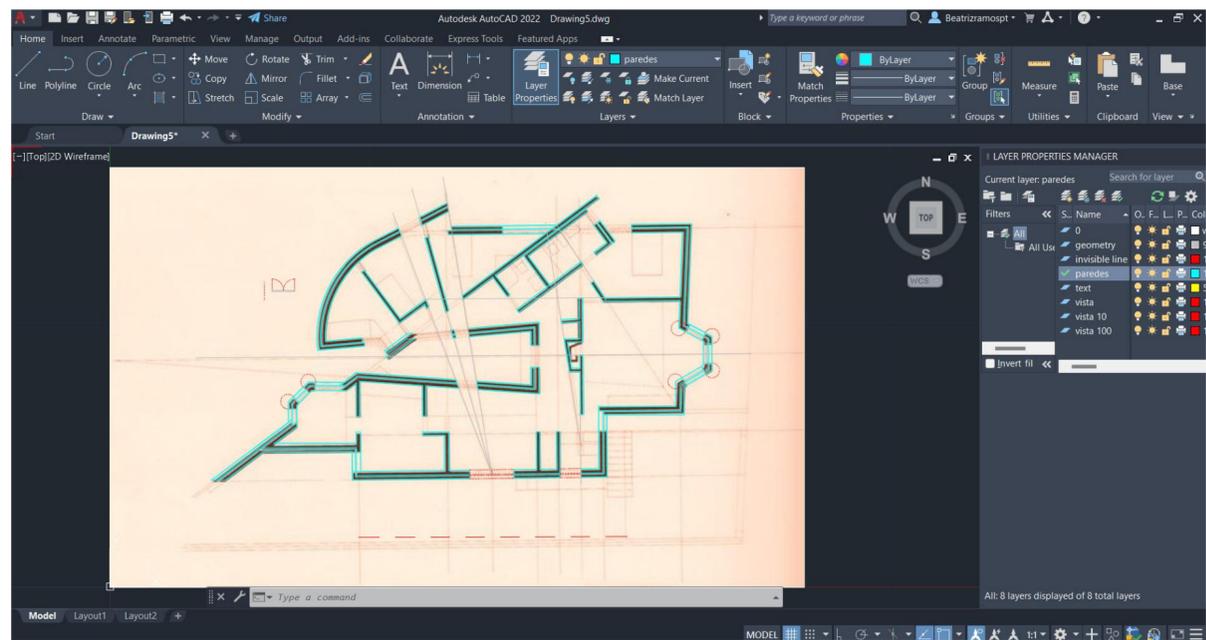
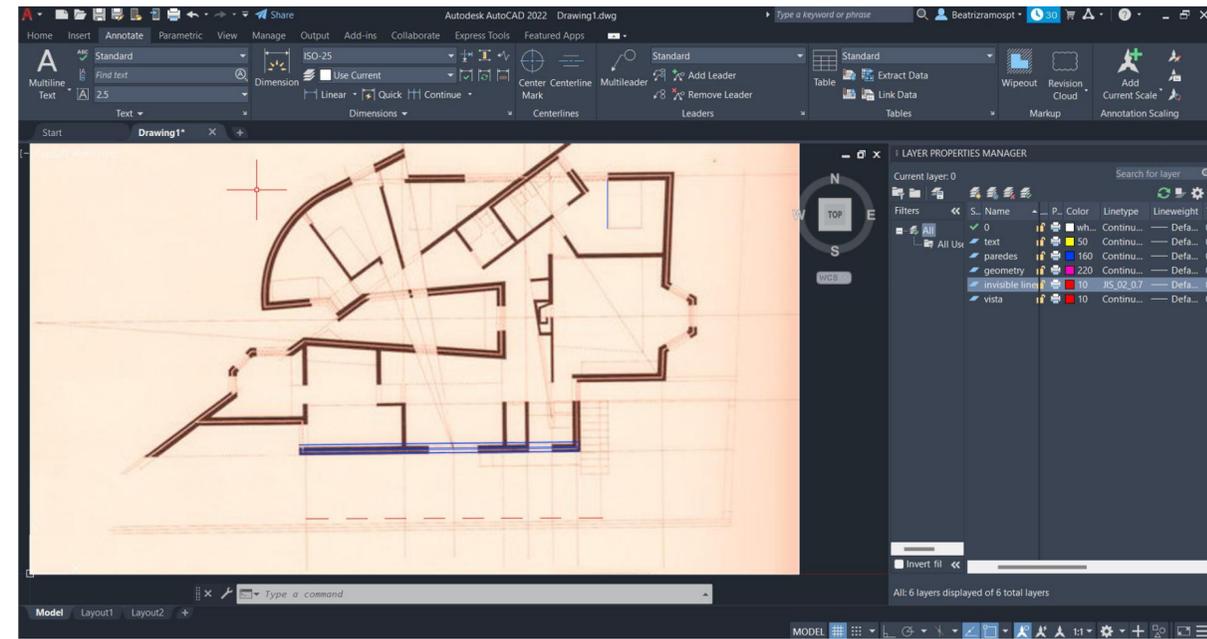
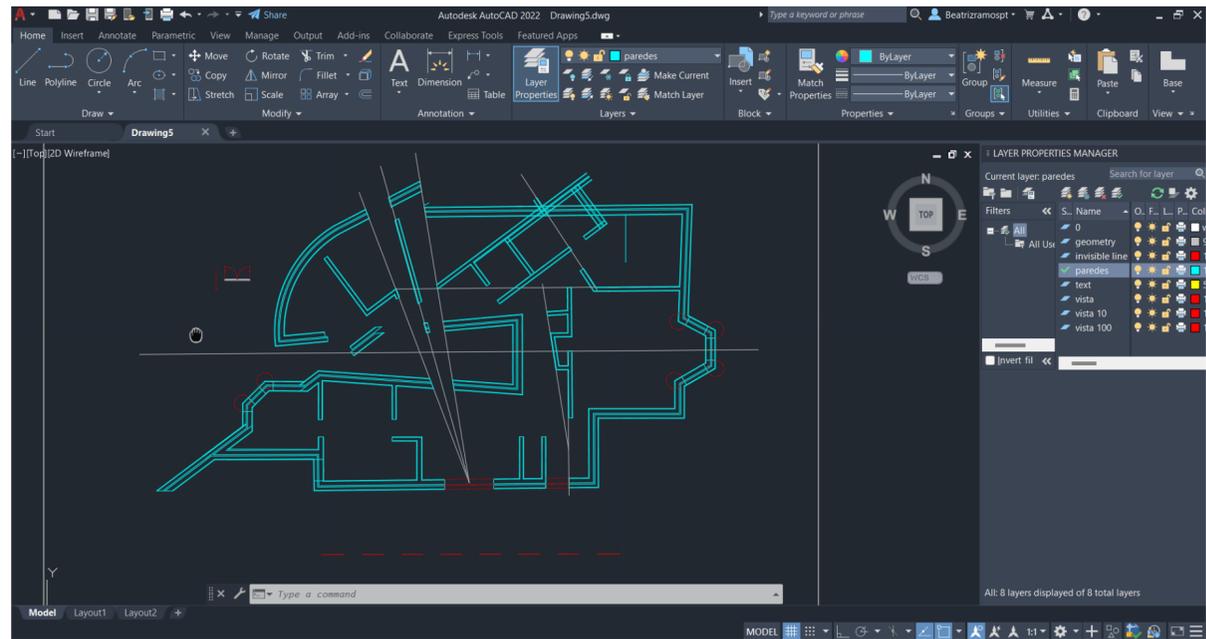
Redit

curvas paralelas - coteado - 3,5 → duas paralelas



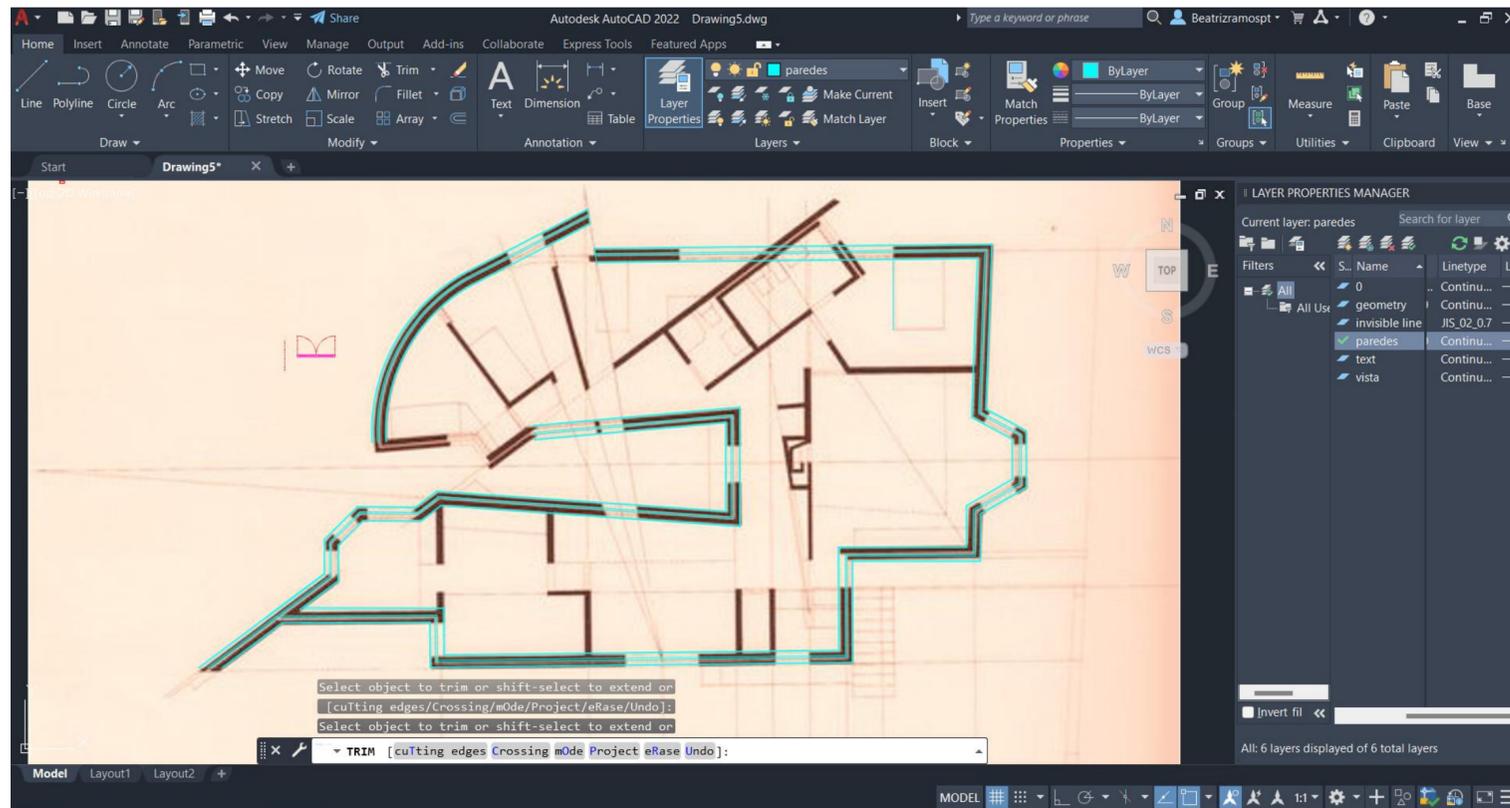
59%



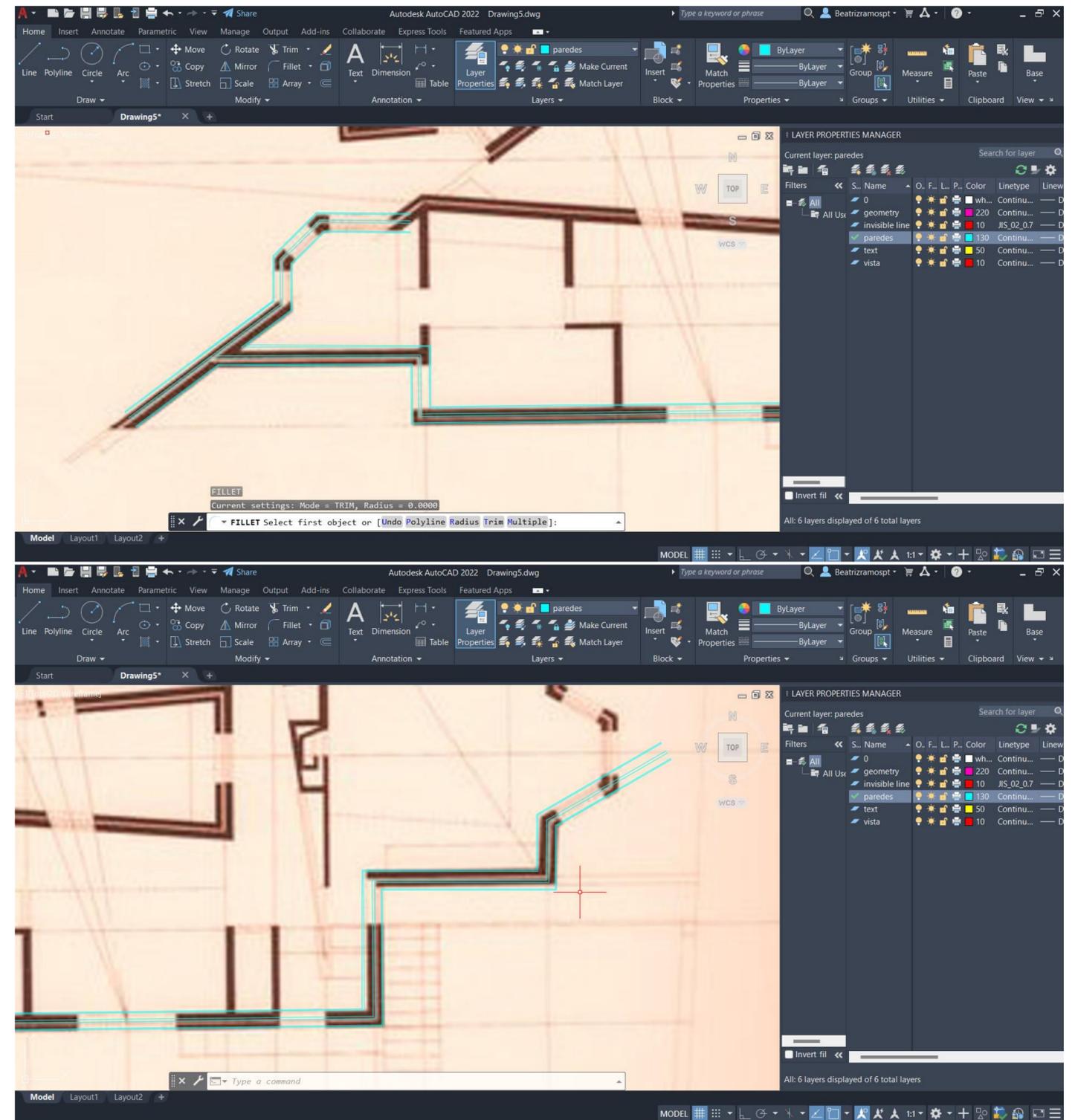


ReDig

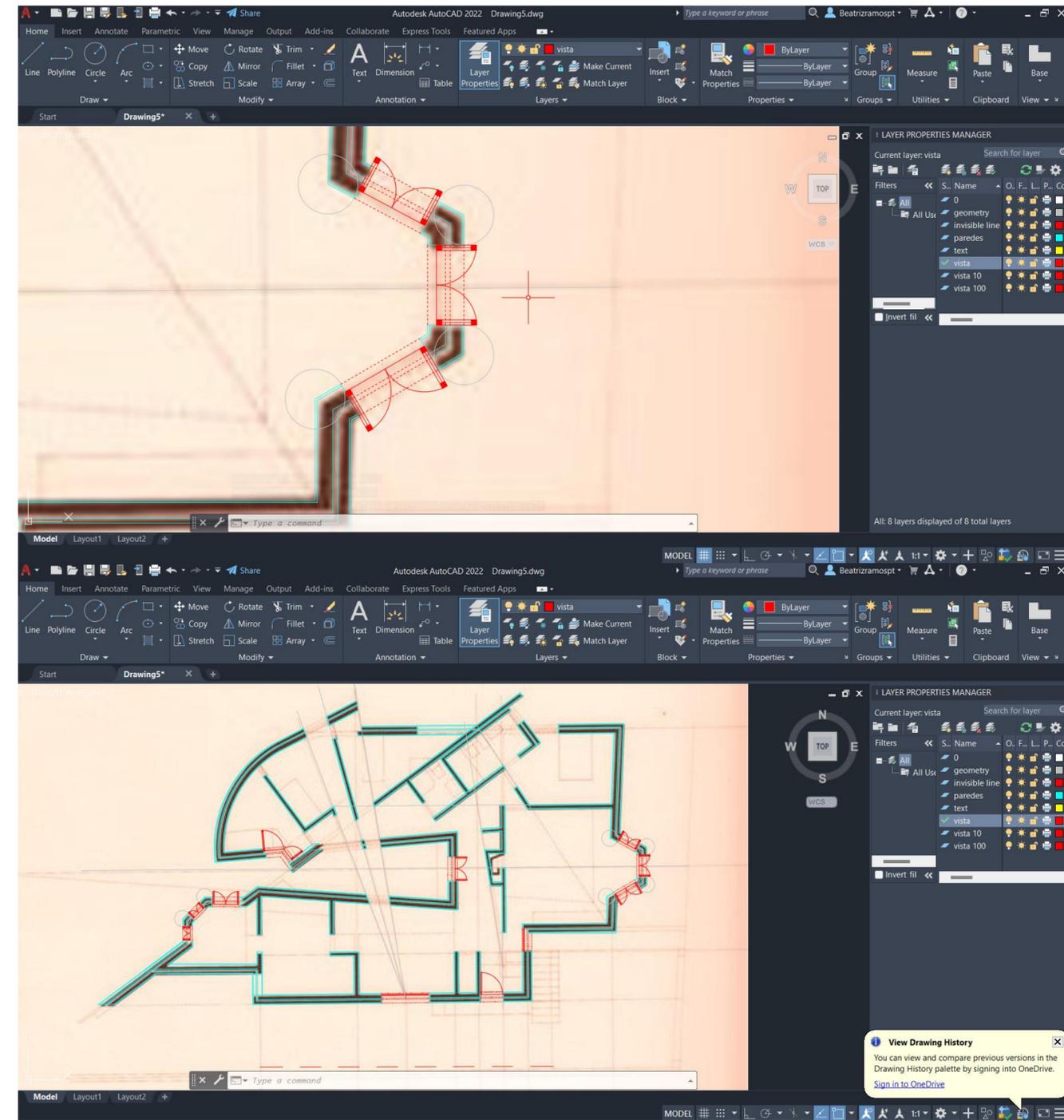
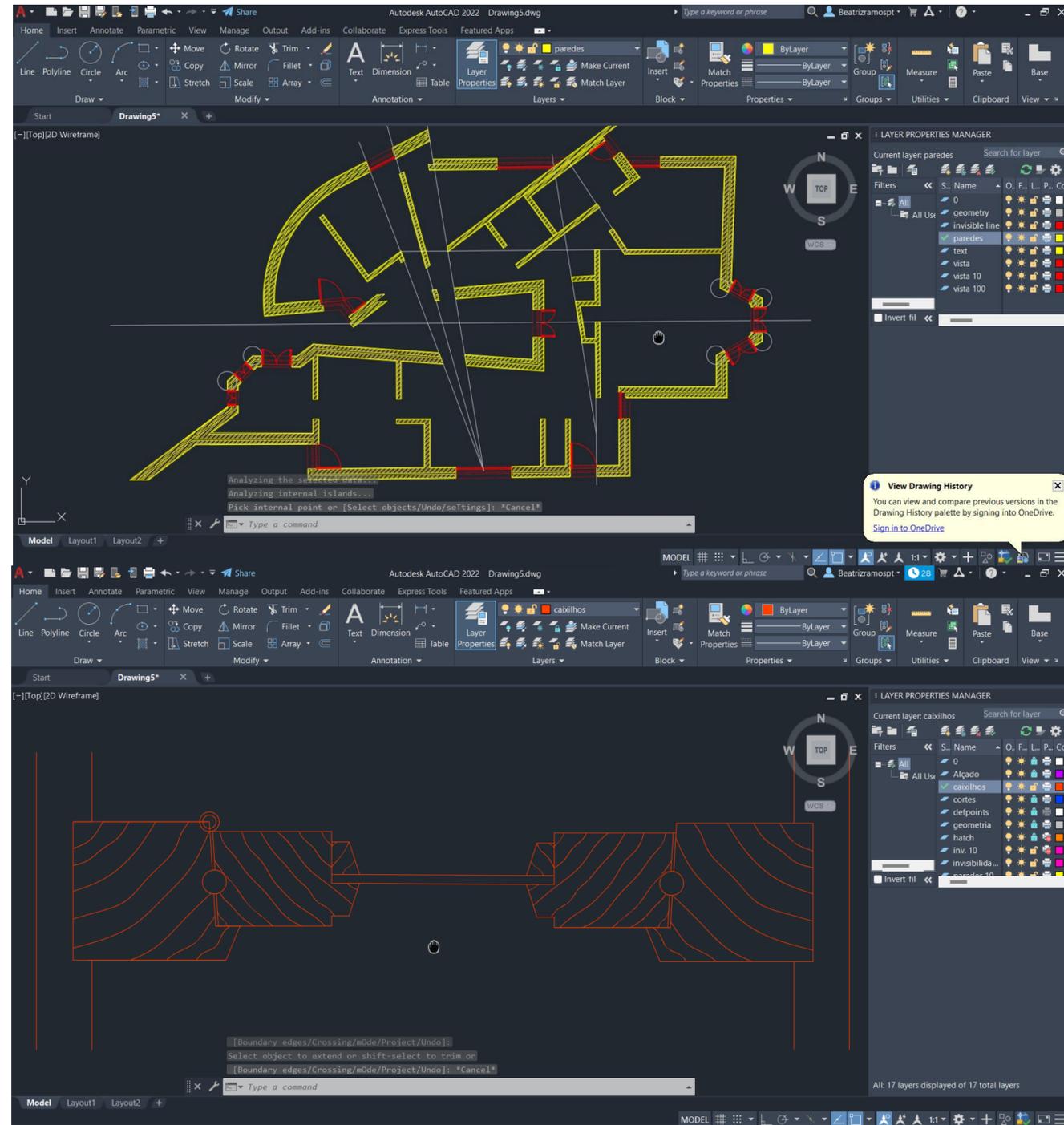
Exerc. 1.1 – ACAD 2D



ReDig

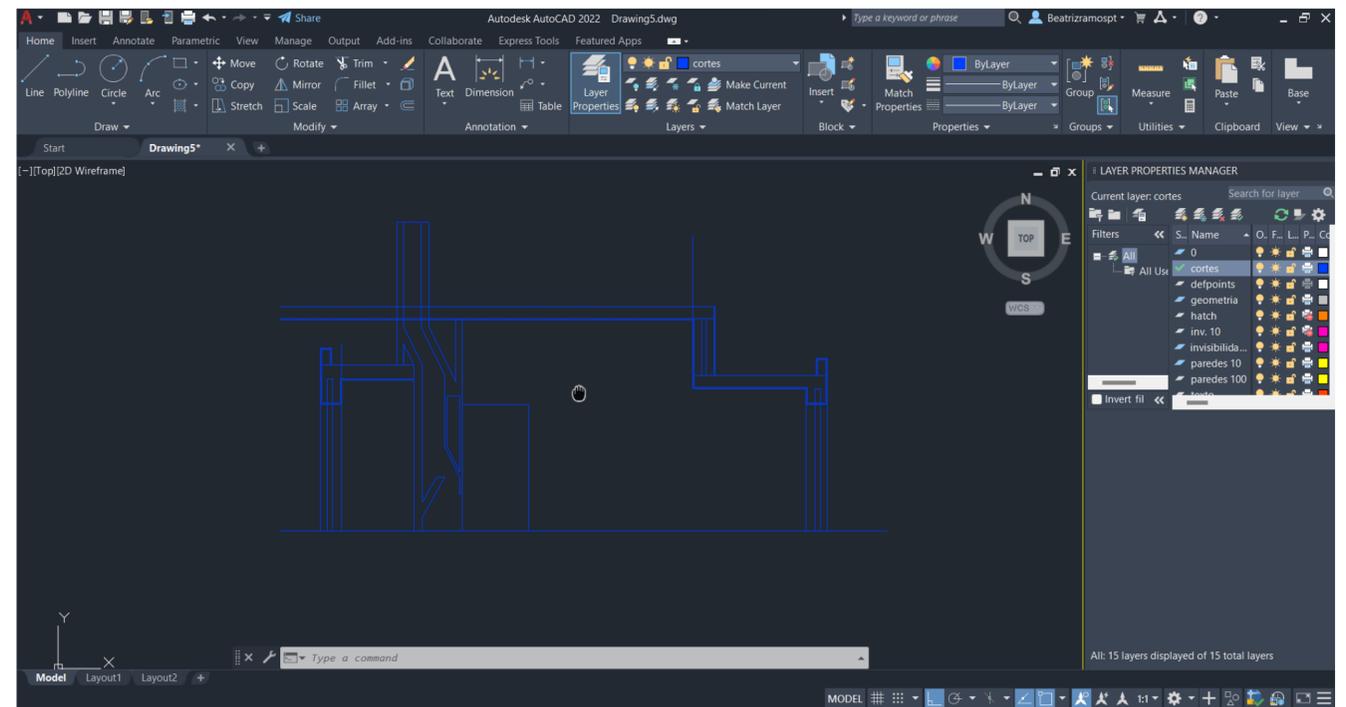
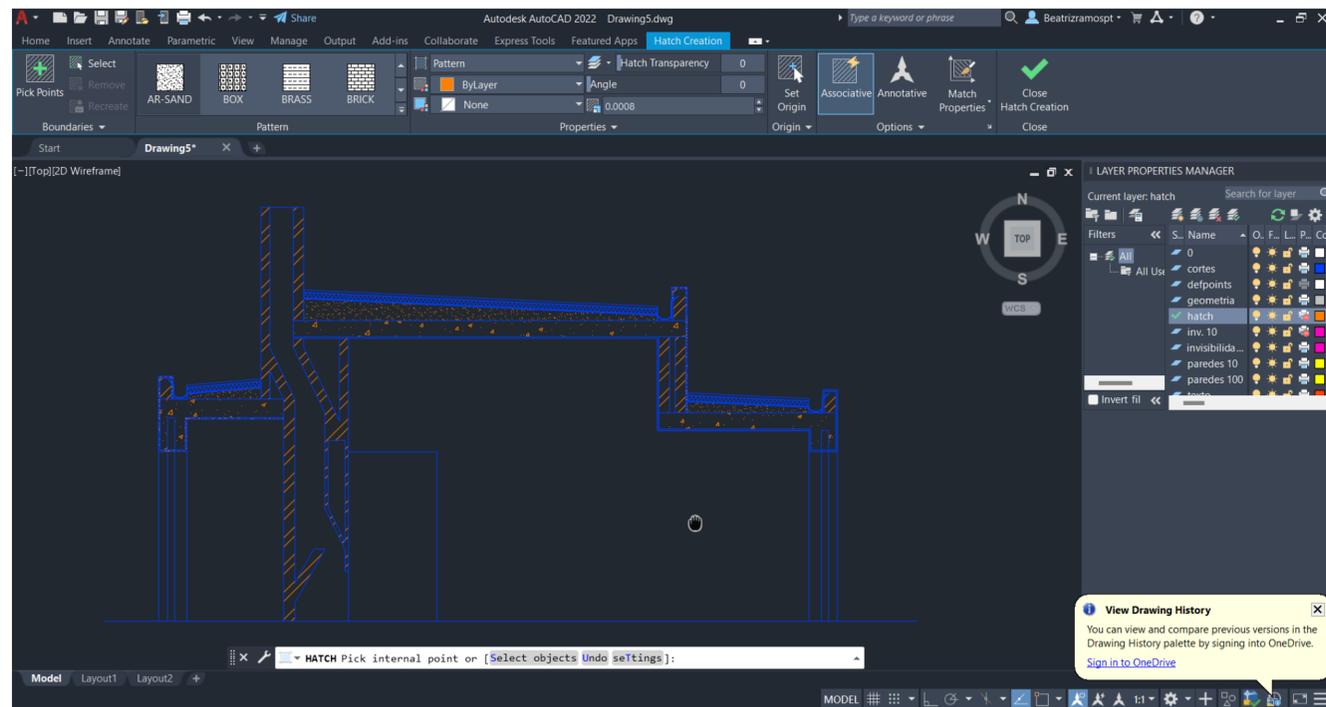


Exerc. 1.1 – ACAD 2D



ReDig

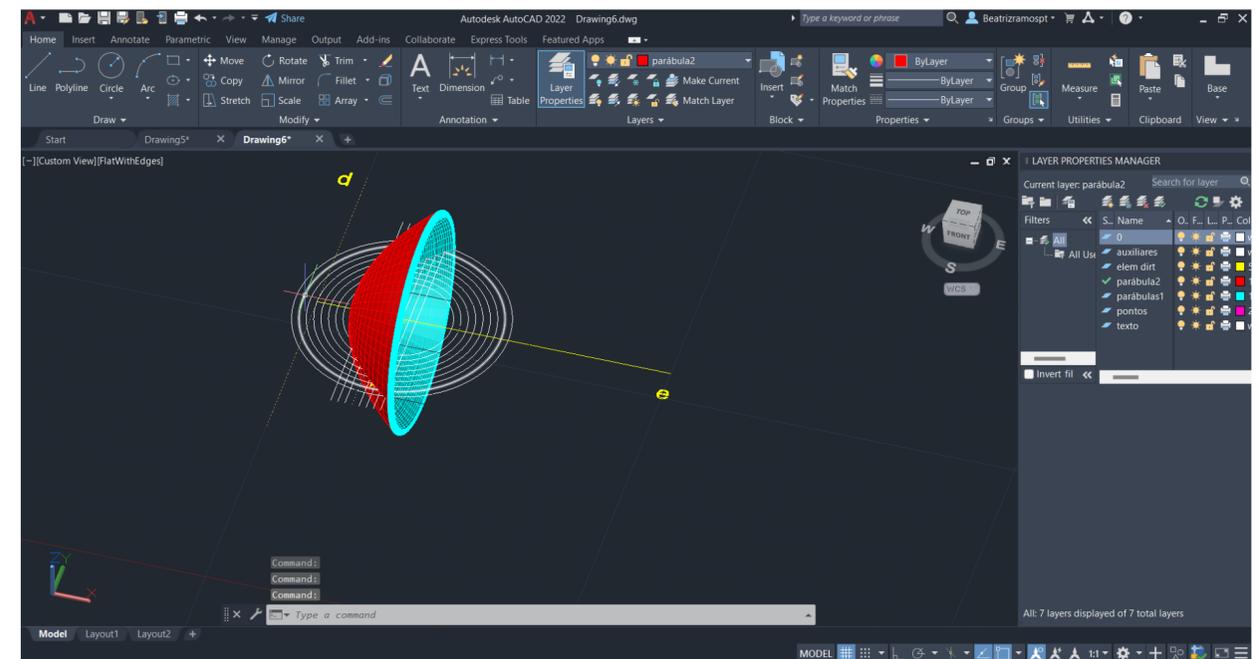
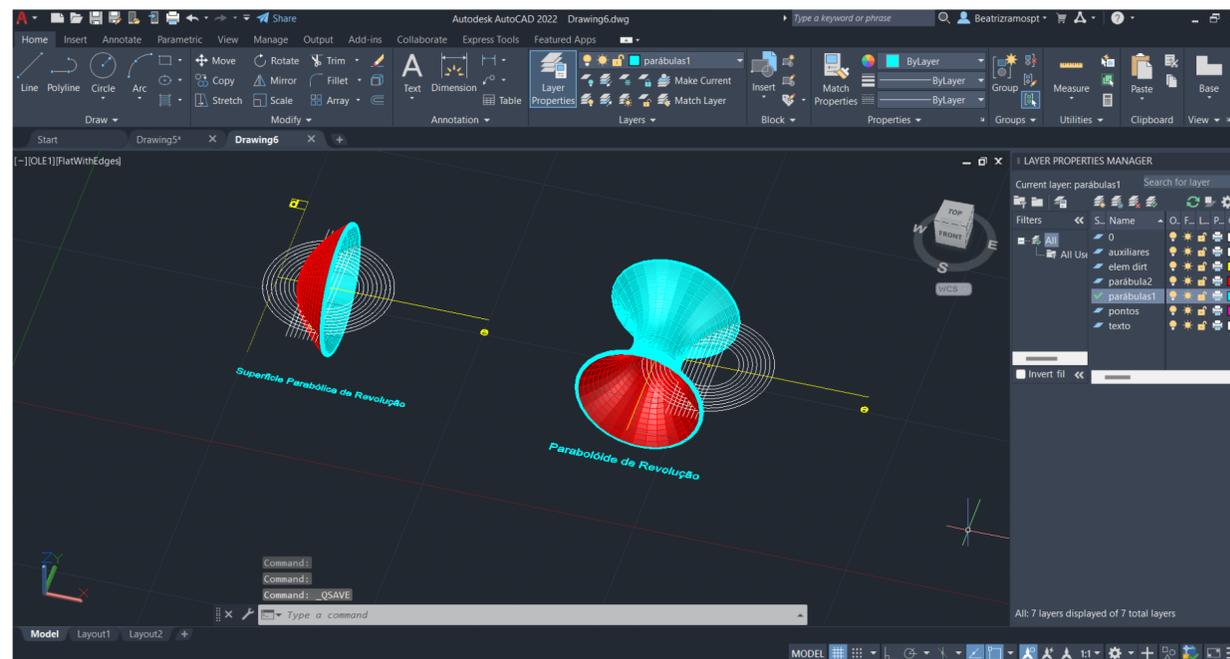
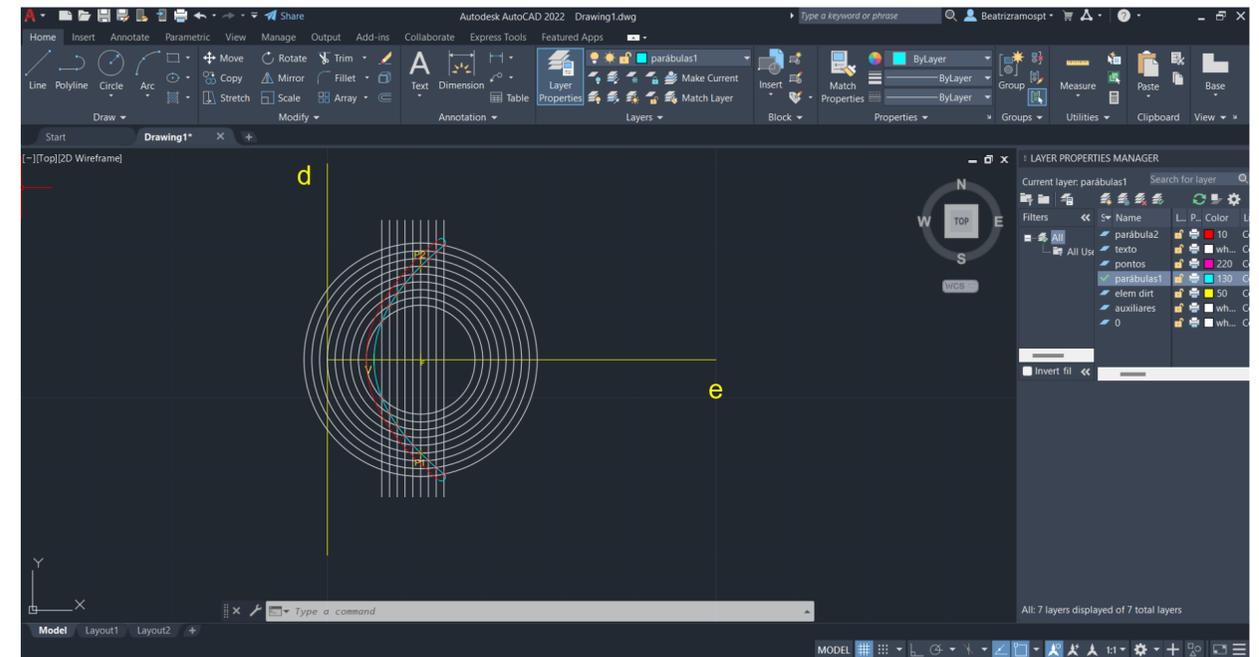
Exerc. 1.1 – ACAD 2D



ReDig

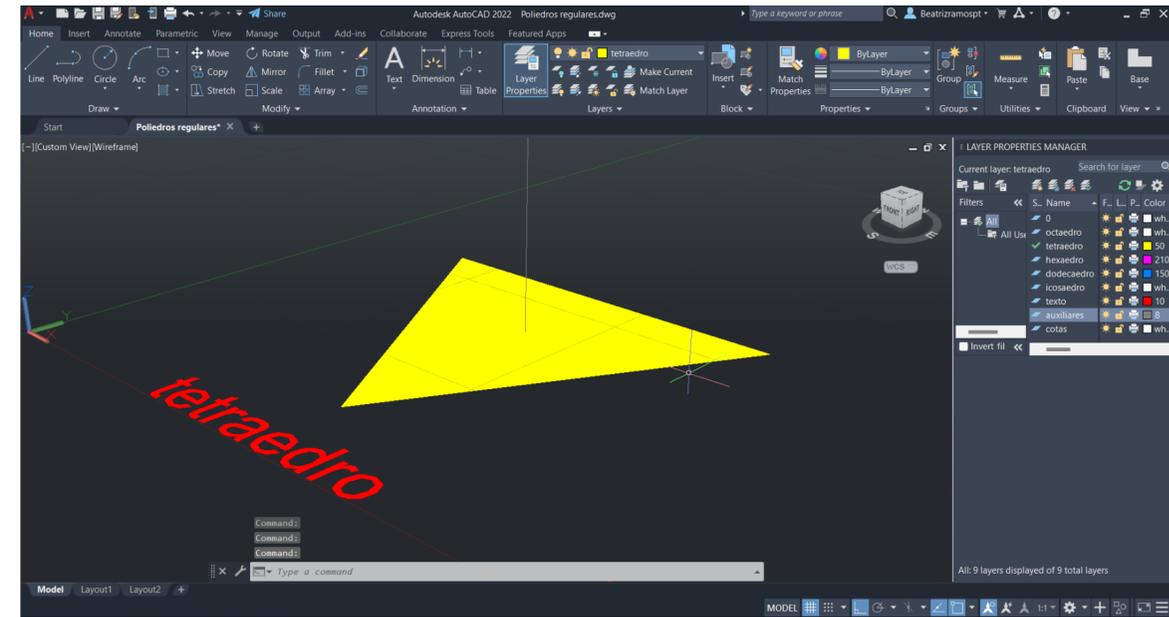
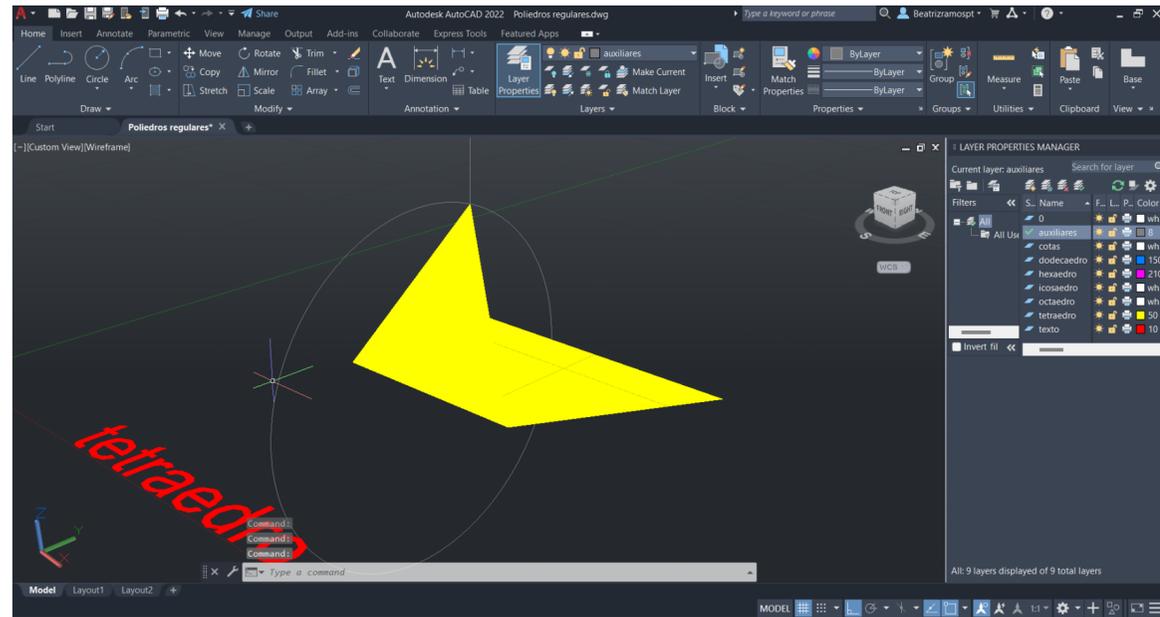
Exerc. 1.1 – ACAD 2D

Comandos usados:
REVSURF
ORBIT
SURFTAB
SHADE



ReDig

Exerc. 1.2 – ACAD 3D

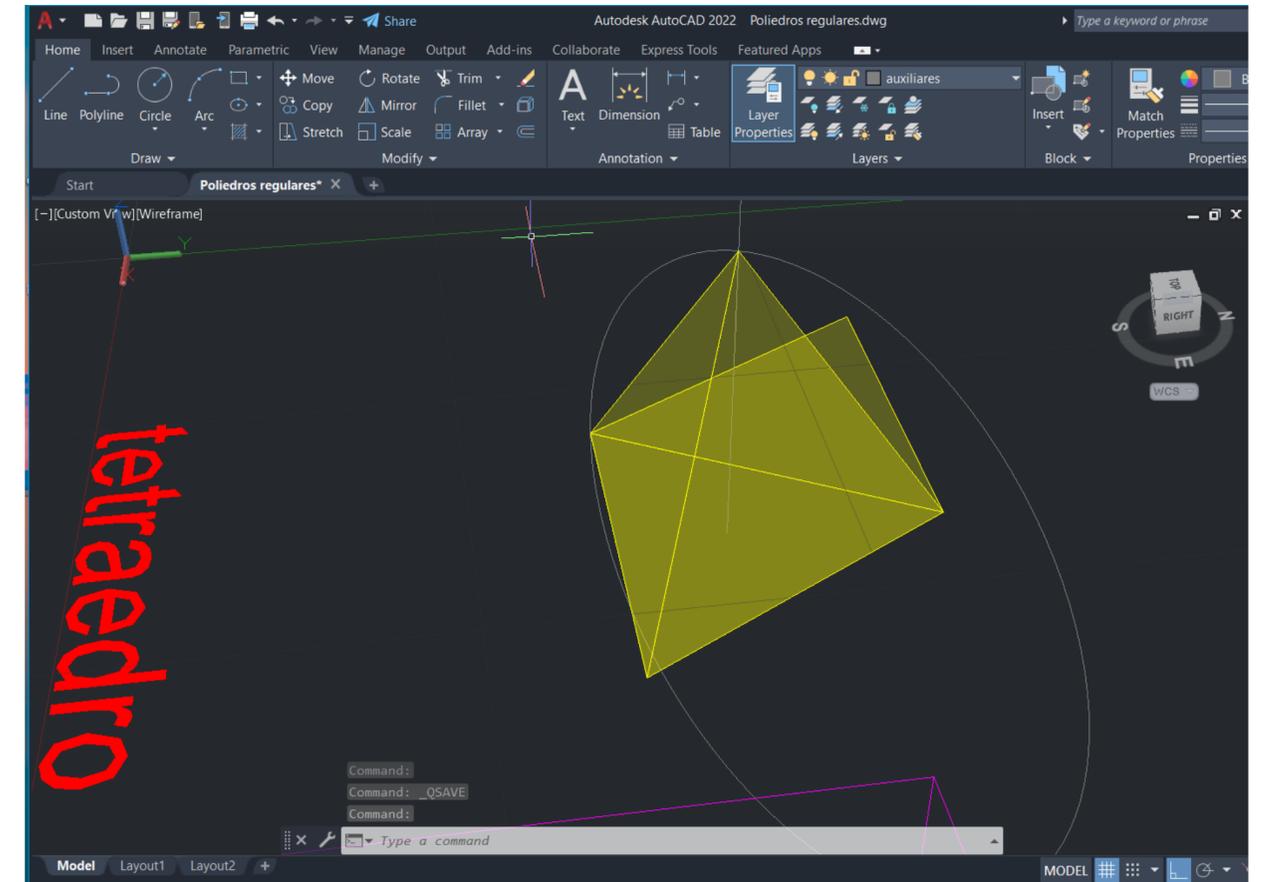


ReDig

Exerc. 1.2 – ACAD 3D

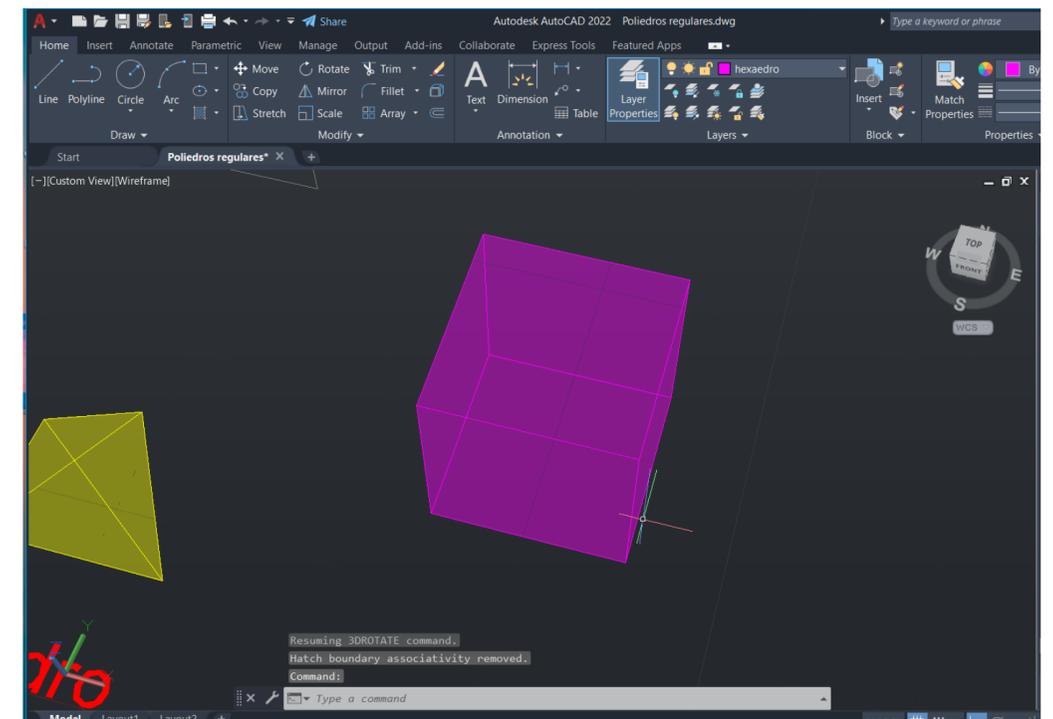
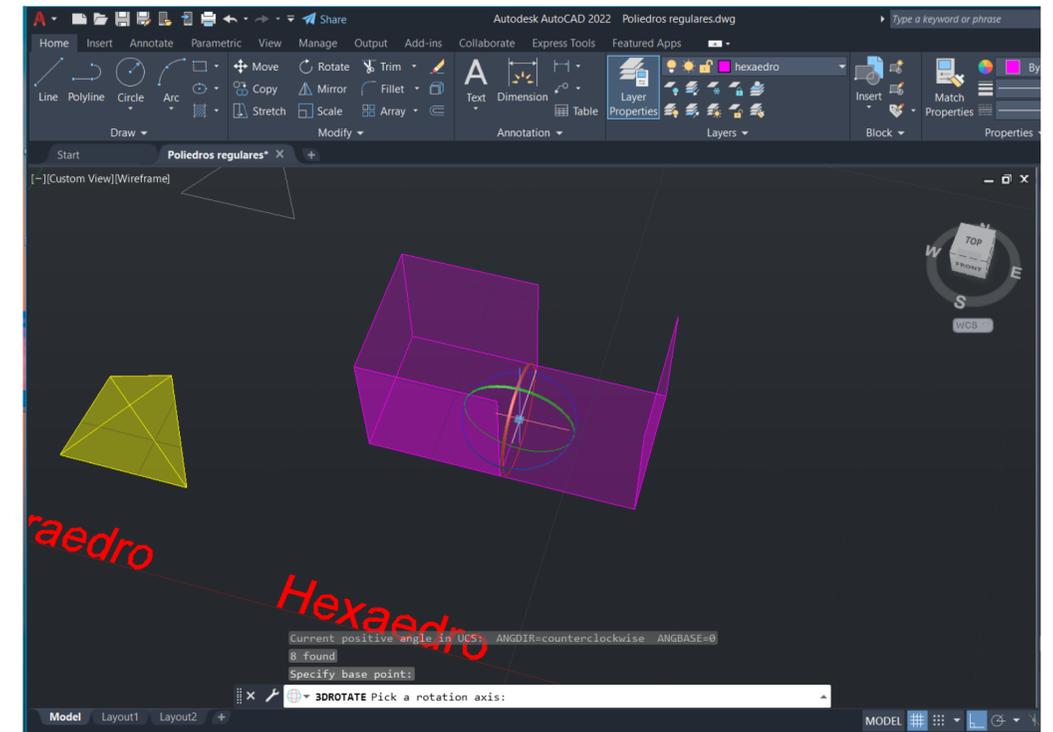
Tetraedro:

- Construir um triângulo com 10 cm de lado (@10x120 e depois fazer close) e fazer o comando MIRROR para fazer os outros triângulos.
- Utilizar o comando HATCH (transparency – 75%) e o comando GROUP.
- Fazer uma linha vertical auxiliar e uma circunferência – Usar o 3DROTATE e selecionar a circunferência e rodar até ficar vertical.
- Usar o comando 3DROTATE para rodar o triângulo até à linha de intersecção entre a linha vertical auxiliar e a circunferência.
- Para concluir o poliedro, utilizar o comando ROTATE para rodar a figura e utilizar novamente o 3DROTATE e rodar as fases.



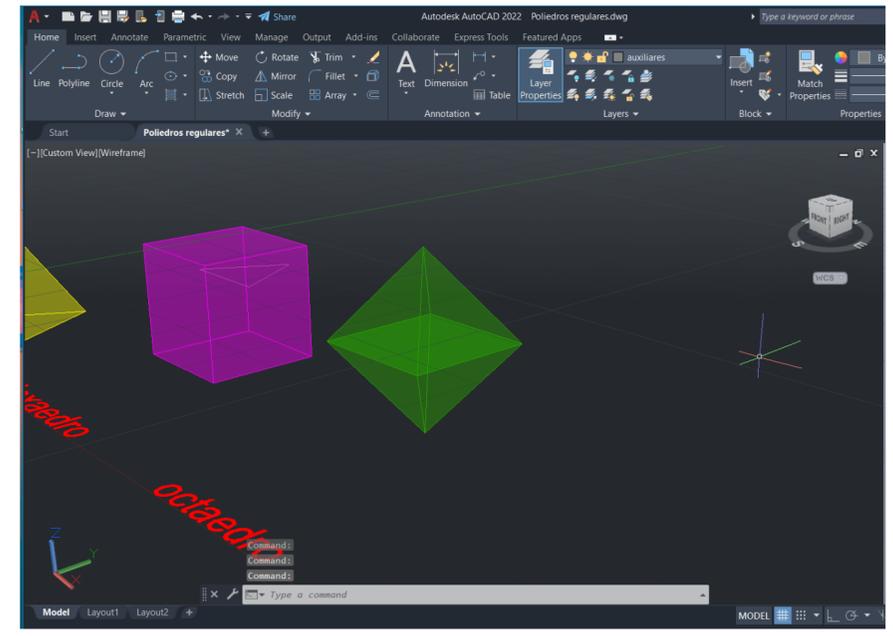
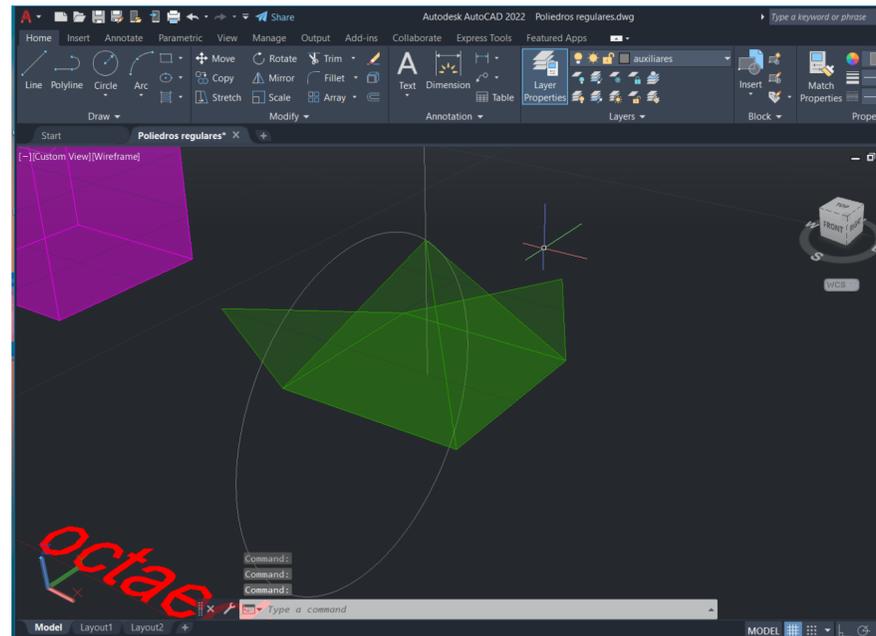
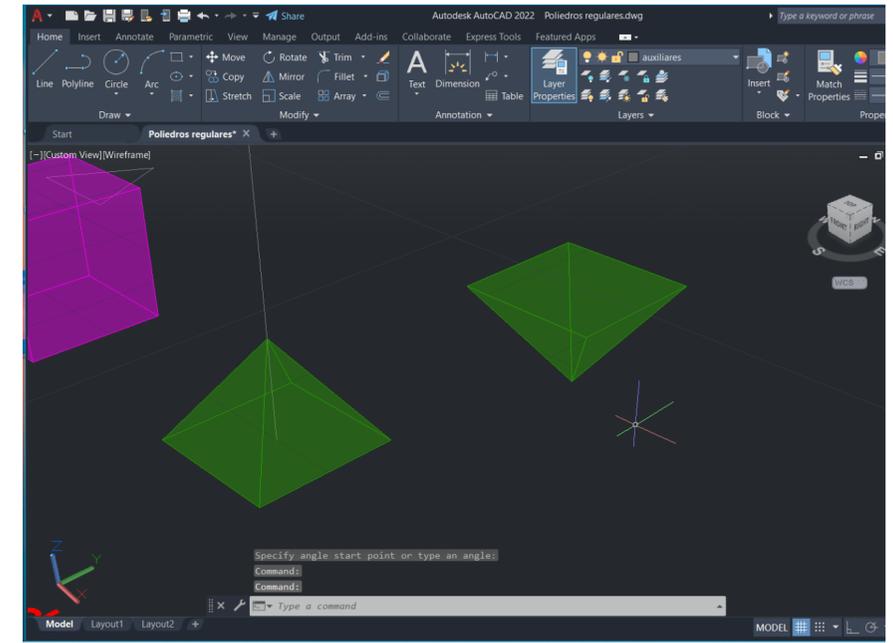
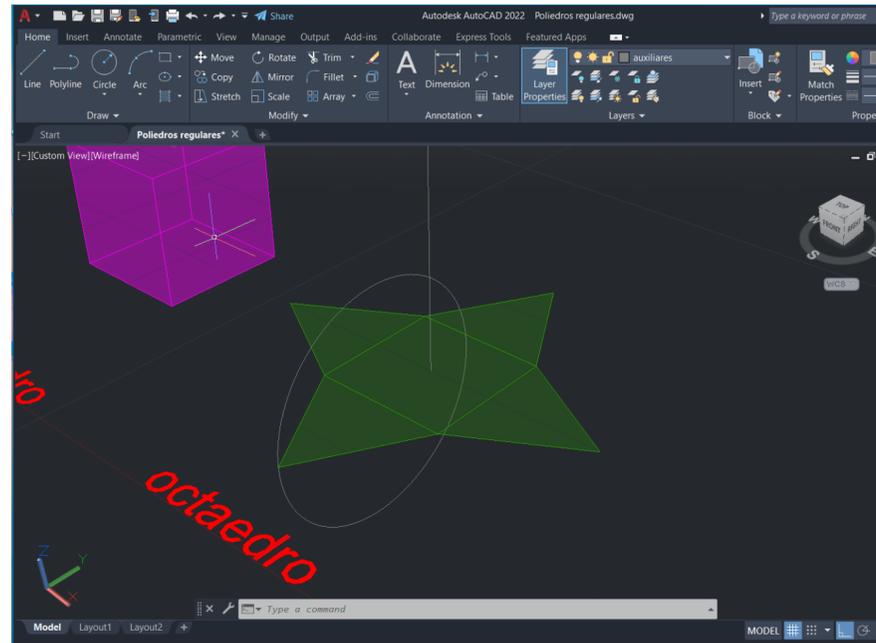
Hexaedro:

- Fazer um quadrado com 10 cm de lado, e adicionar mais 5 quadrados com a mesma dimensão.
- Utilizar o comando HATCH e GROUP.
- Selecionar o quadrado que queremos rodar, utilizar o comando 3DROTATE e selecionar o midpoint da aresta do quadrado e rodar a 90° .
- Fazer o mesmo processo até formar o poliedro pretendido.



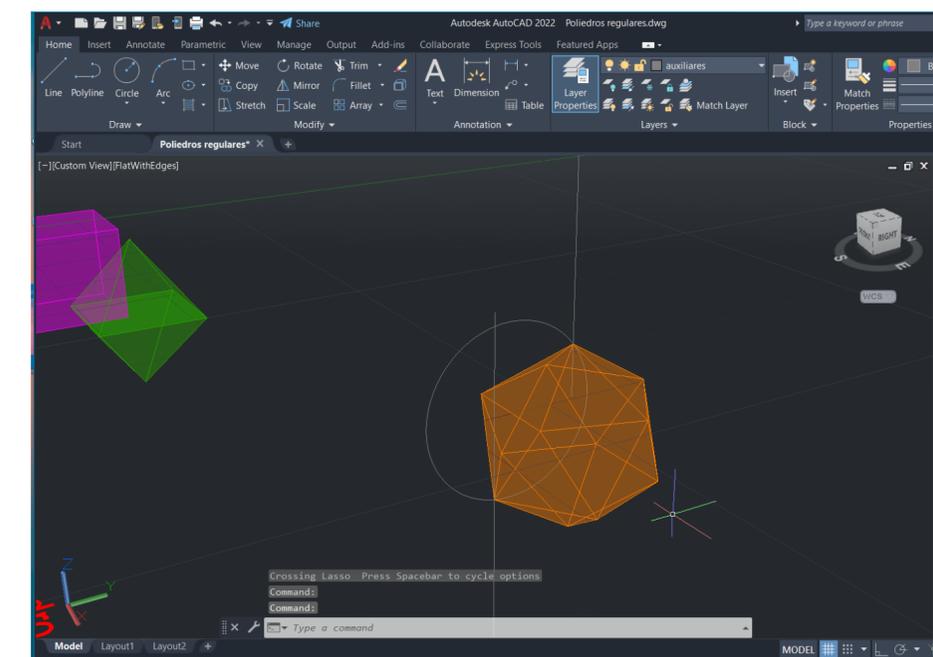
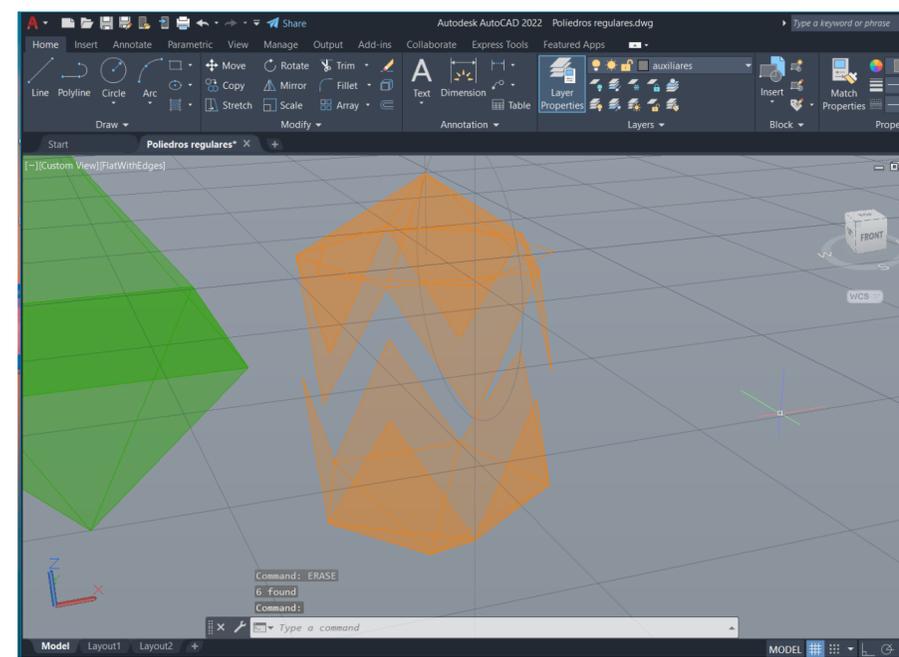
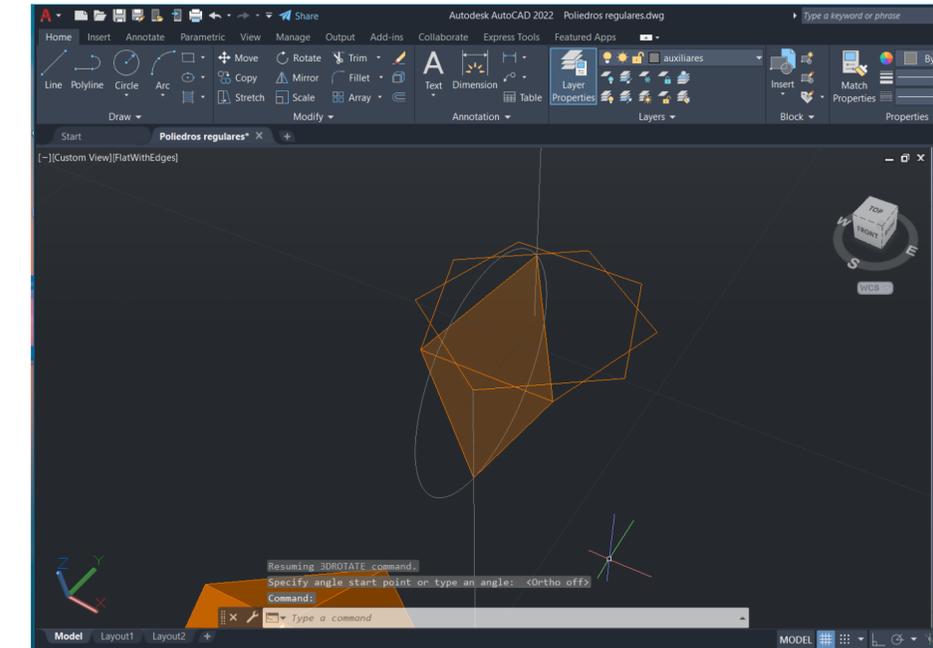
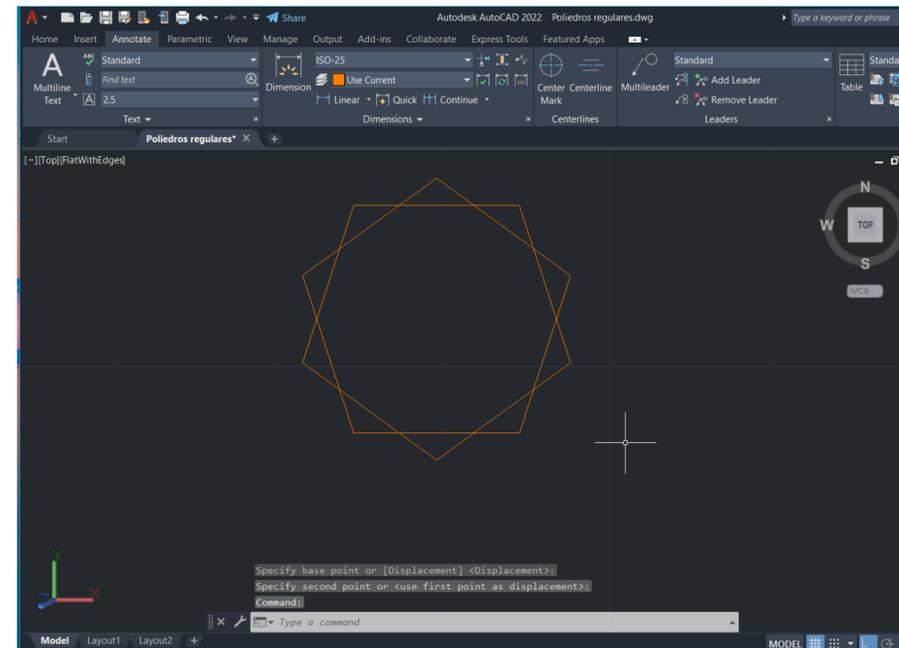
Octaedro:

- Criar um quadrado com 10 cm de lado e um triângulo com 10 cm de lado.
- Criar as outras fases à volta do quadrado como está na 1ª figura.
- Criar uma linha vertical auxiliar no centro do quadrado e uma circunferência.
- Selecionar a circunferência e usar o comando 3DROTATE – MidPoint – Resultado: circunferência vertical.
- Usar o comando 3DROTATE e unir o vértice do triângulo ao ponto de intersecção entre a linha vertical e a circunferência e fazer o mesmo procedimento com o resto das outras fases triangulares.
- Usar o comando COPY, copiar a figura e usar 3DROTATE e ALIGN.



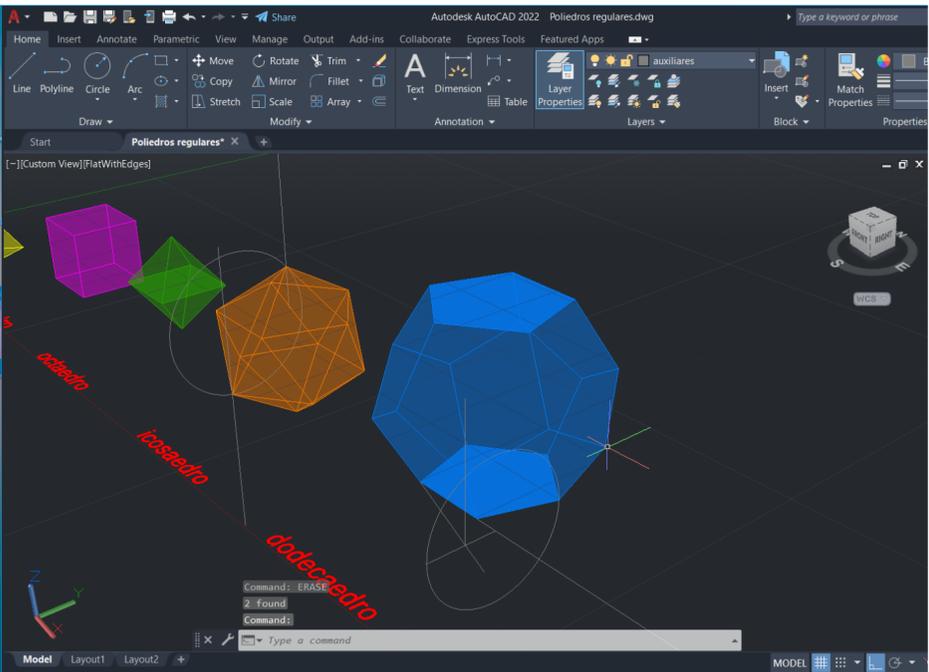
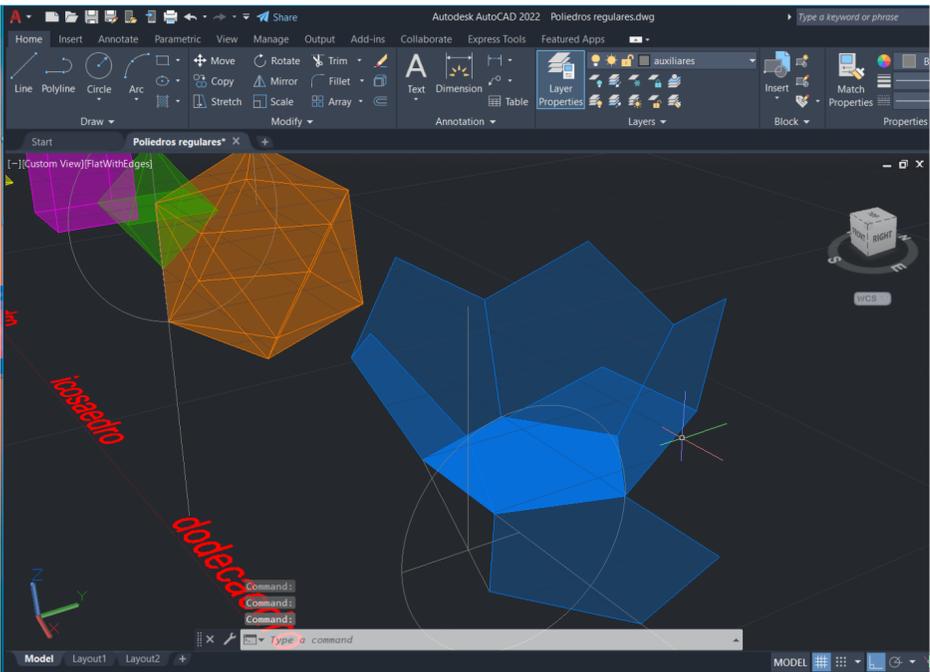
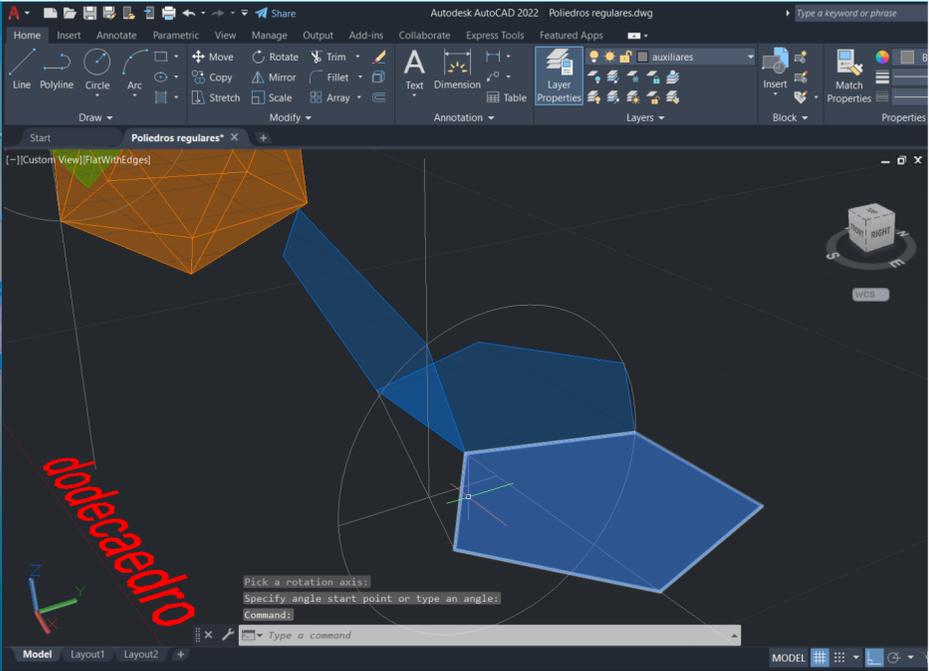
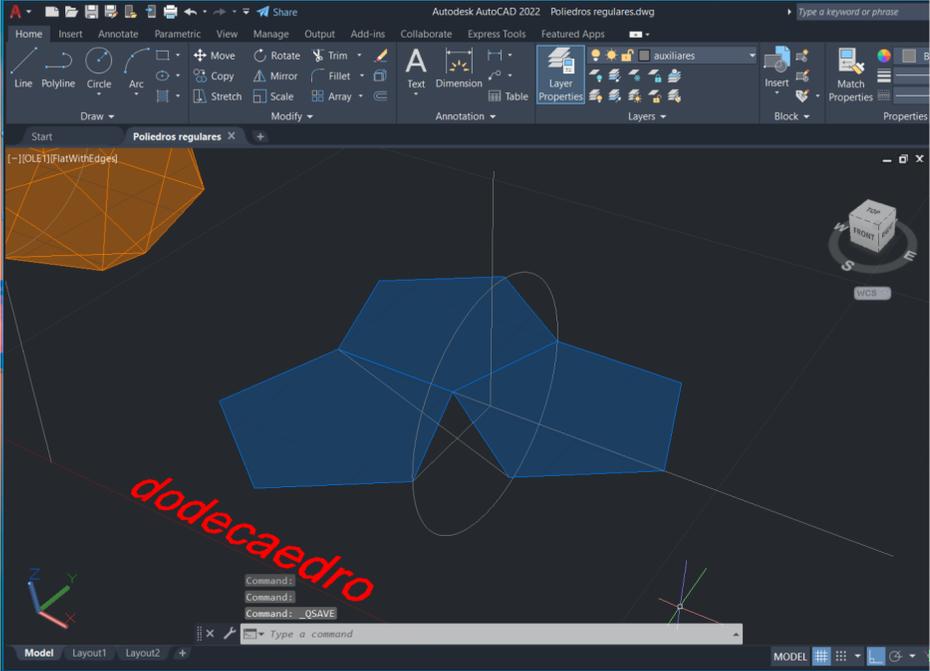
Icosaedro:

- Criar um pentágono com 10 cm (@10<72 - @10<144 - @10<216).
- Utilizar o comando 3DMIRROR e selecionar o pentágono novo e inseri-lo no midpoint do outro pentágono, como está na 1º figura.
- Criar um triângulo e usar GROUP e ALIGN com o lado do pentágono.
- Criar uma linha auxiliar vertical no centro do pentágono e um círculo com o centro no midpoint do triângulo até ao vértice – Fazer 3DROTATE nos triângulos.
- Fazer o comando 3DARRAY – POLAR – 5 – 360 – Yes e especificar um centro do pentágono e topo da linha vertical auxiliar.
- Fazer 3DMIRROR – ROTATE (36º) e unir à parte de cima.



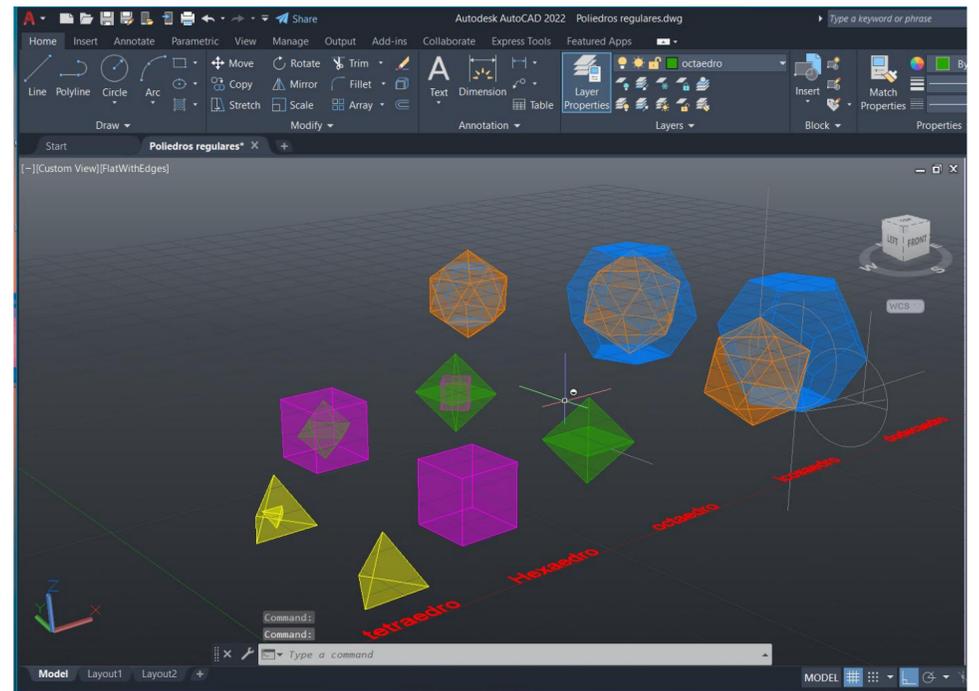
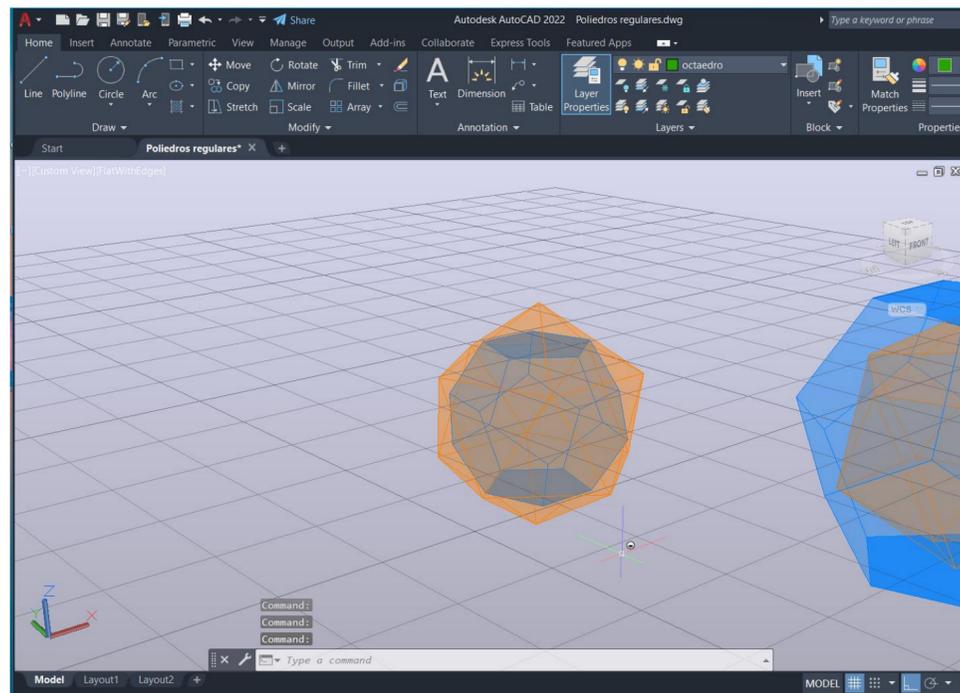
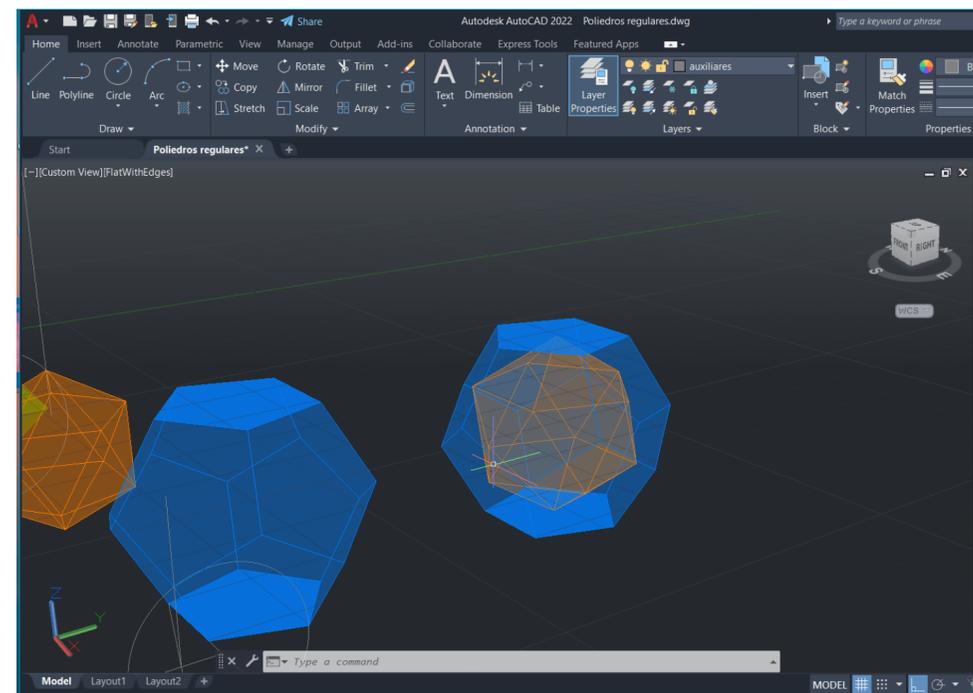
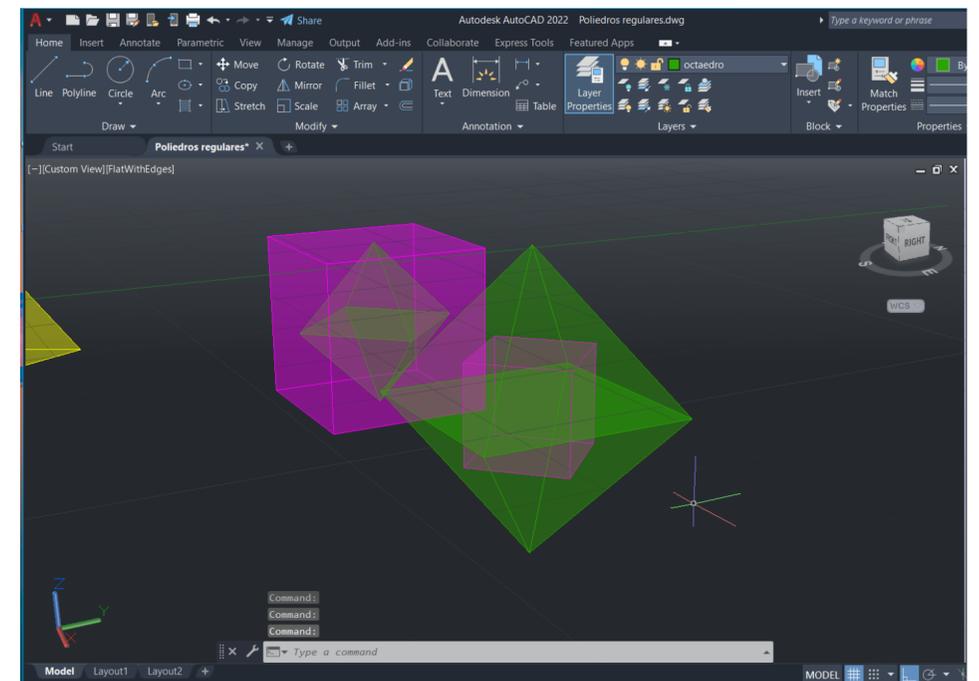
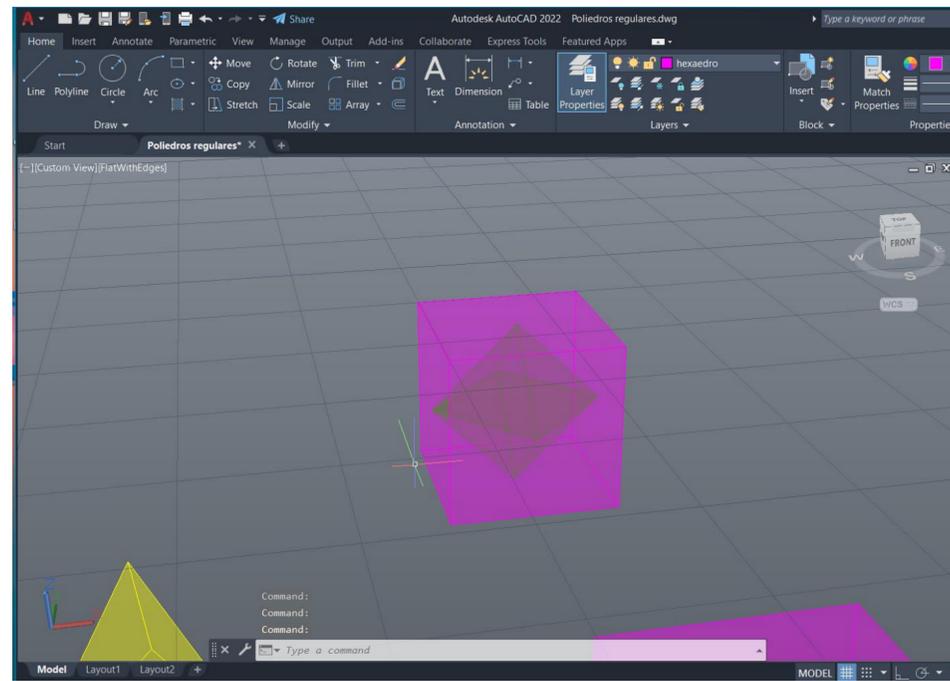
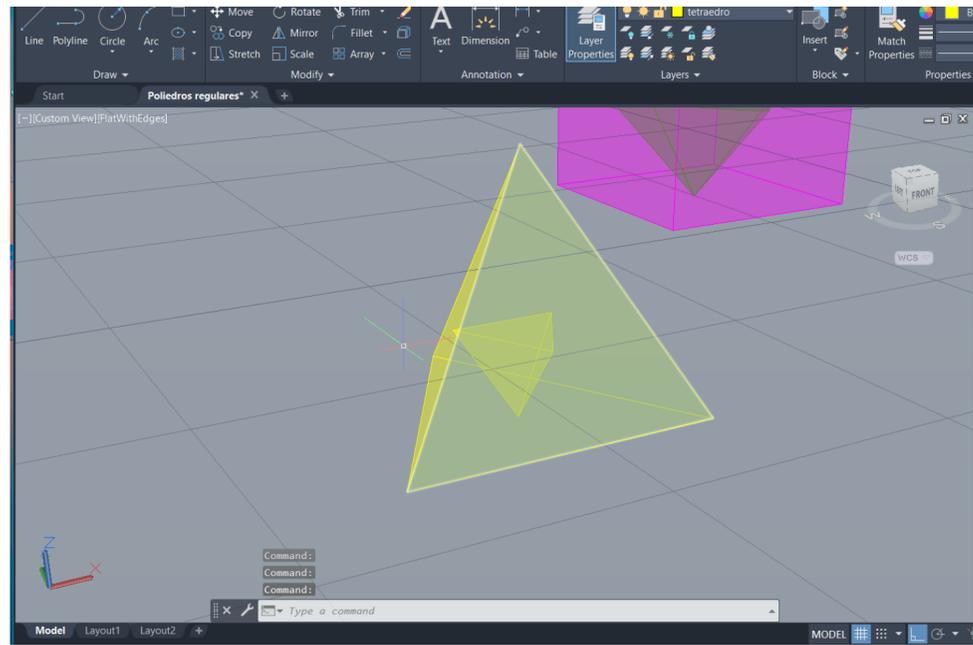
Dodecaedro:

- Criar 3 pentágonos – ALIGN.
- Criar 3 linhas auxiliares e um círculo (fazer 3DROTATE da circunferência – posição vertical).
- 3DROTATE até à intersecção.
- 3DARRAY – POLAR – 5 – 360 – Yes – centro geométrico para cima.
- 3DMIRROR – ROTATE – 36° (metade de 72° para encaixar).



Poliedros Sobrepostos:

(usar ROTATE – 45° para encaixar)



ReDig

Exerc. 1.2 – ACAD 3D

Quad-quadant

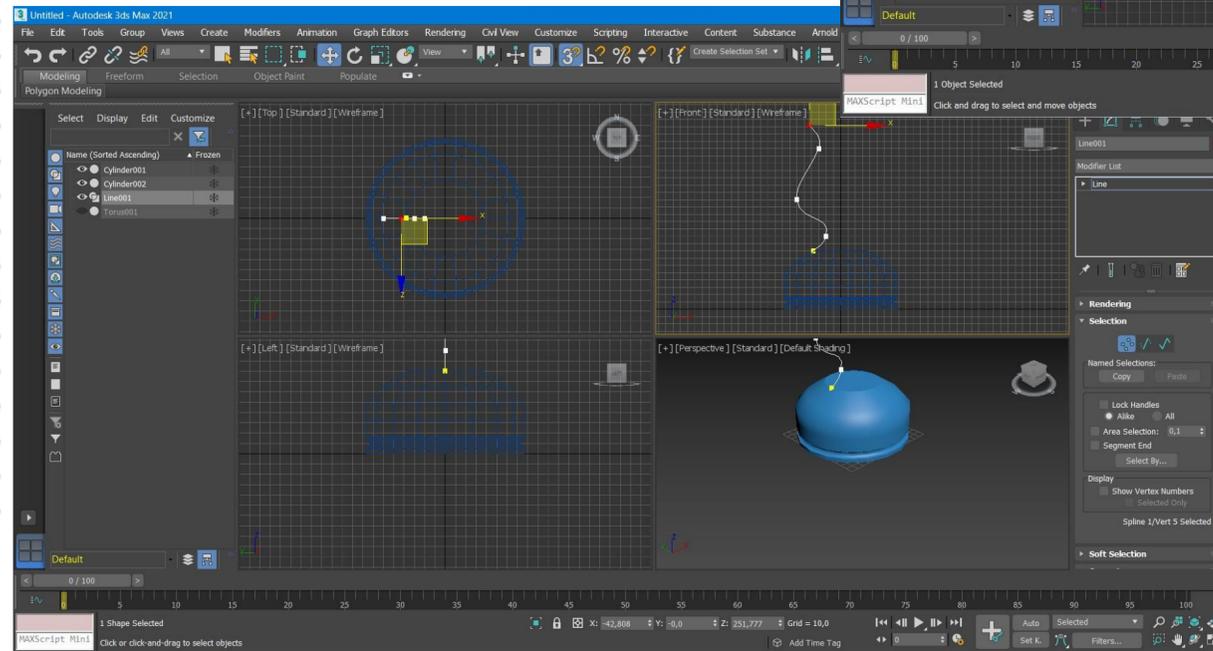
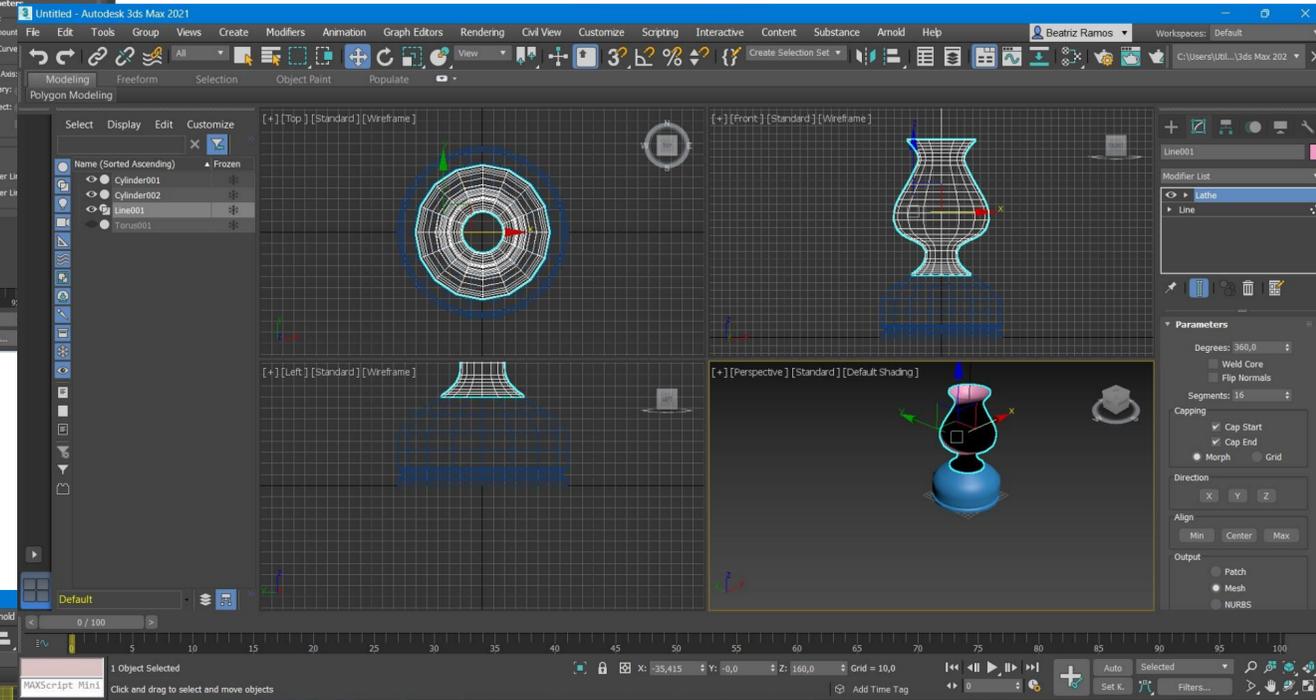
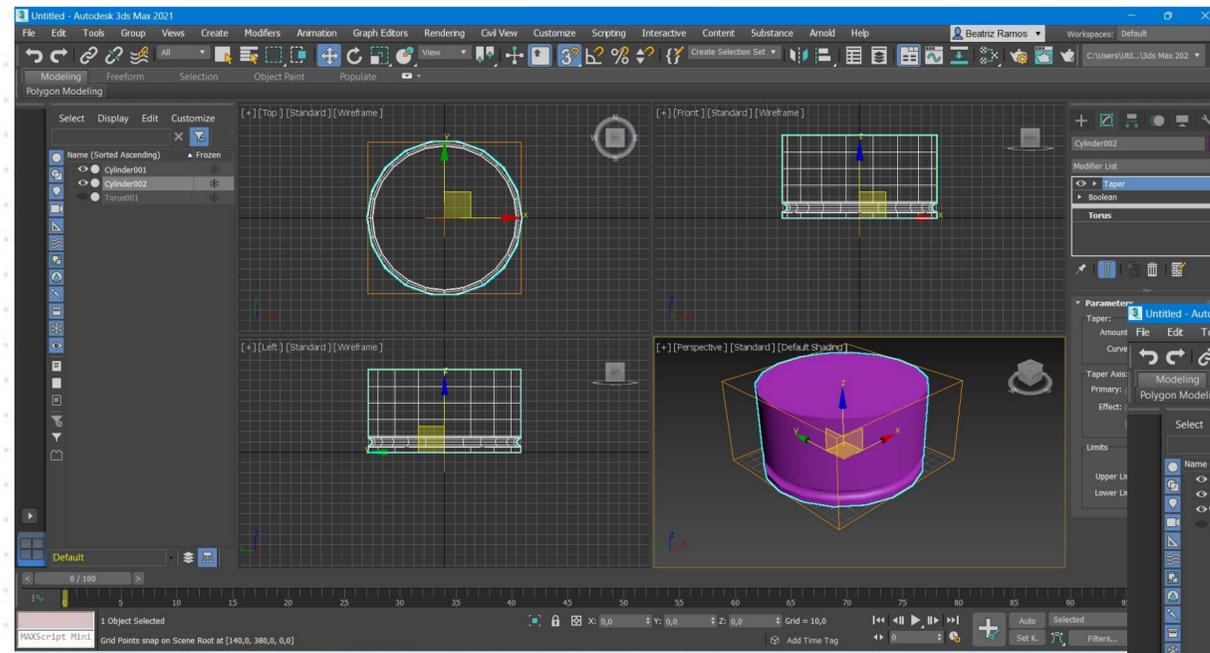
Elipsóide Parabolóide Hiperbolóide cone

Doughnut Donut Apague linhas de dentes

Nome de ficheiro: Cone e seções

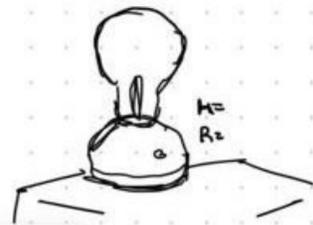
Comando **LOFT** **THICKEN** Thickness

coloca 3 círculos - **move** → **loft** → **shade** → **explode** → **move** círculo



Aula 30/11

Introdução 3DS MAX

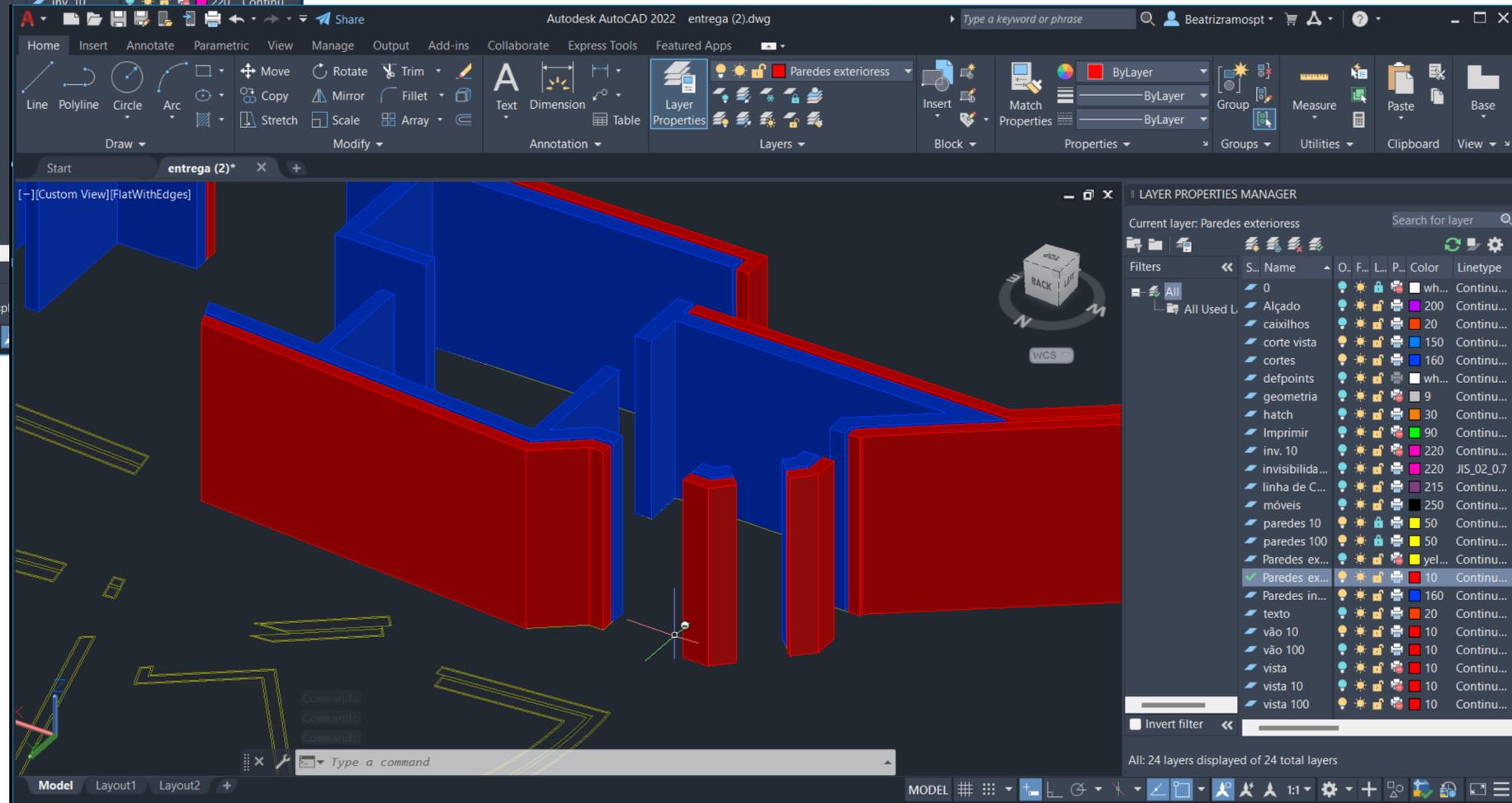
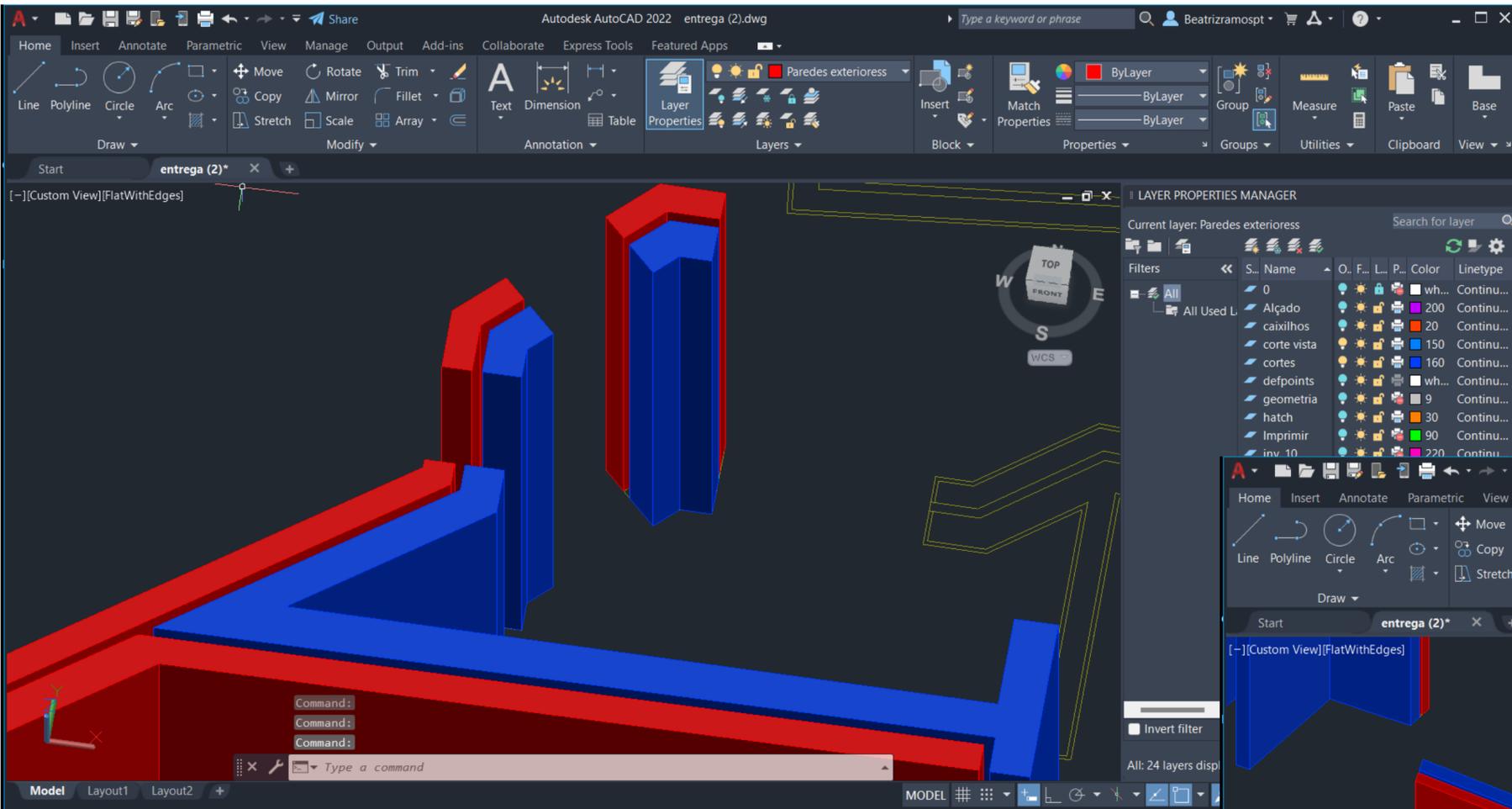


Compound object

LATHE

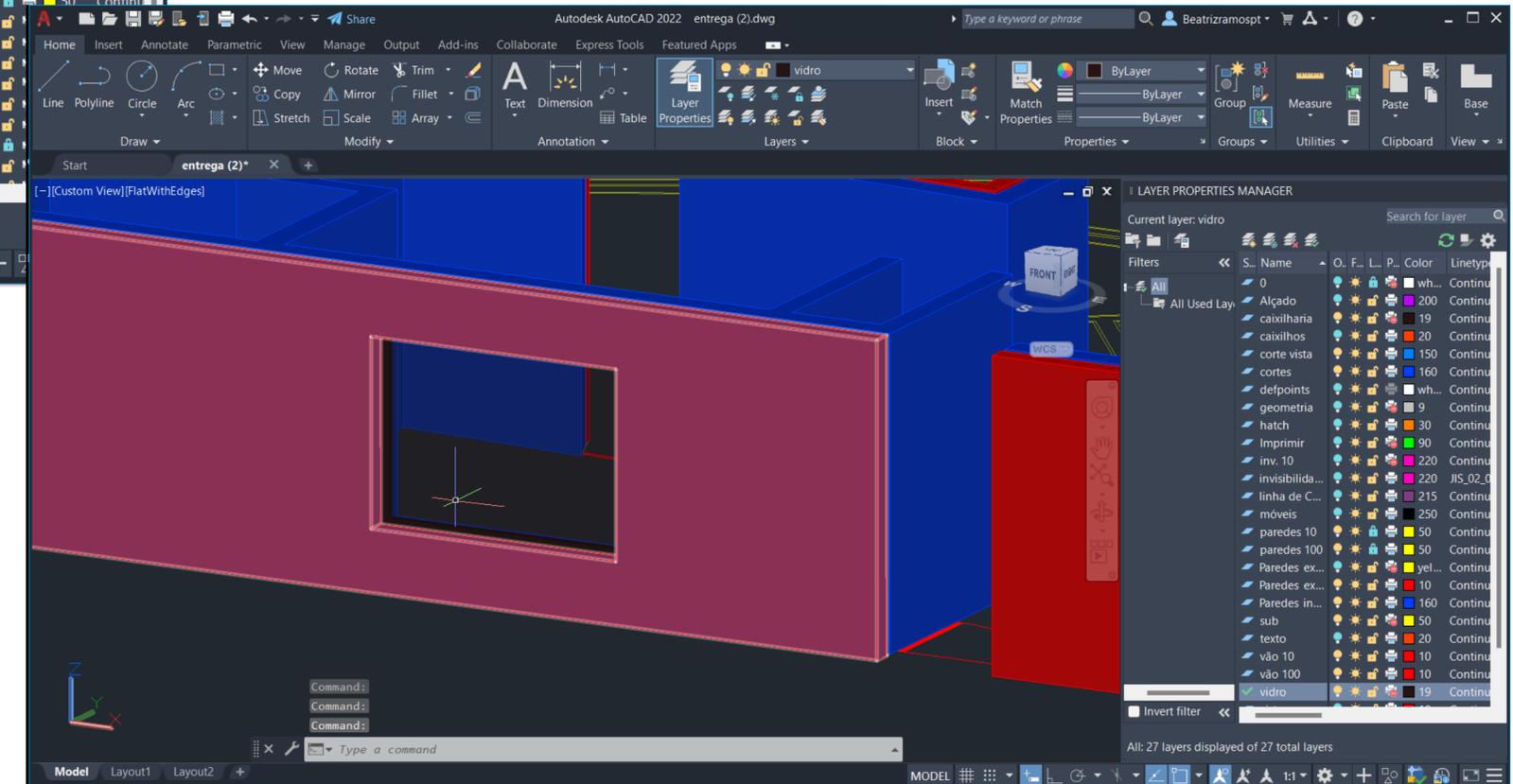
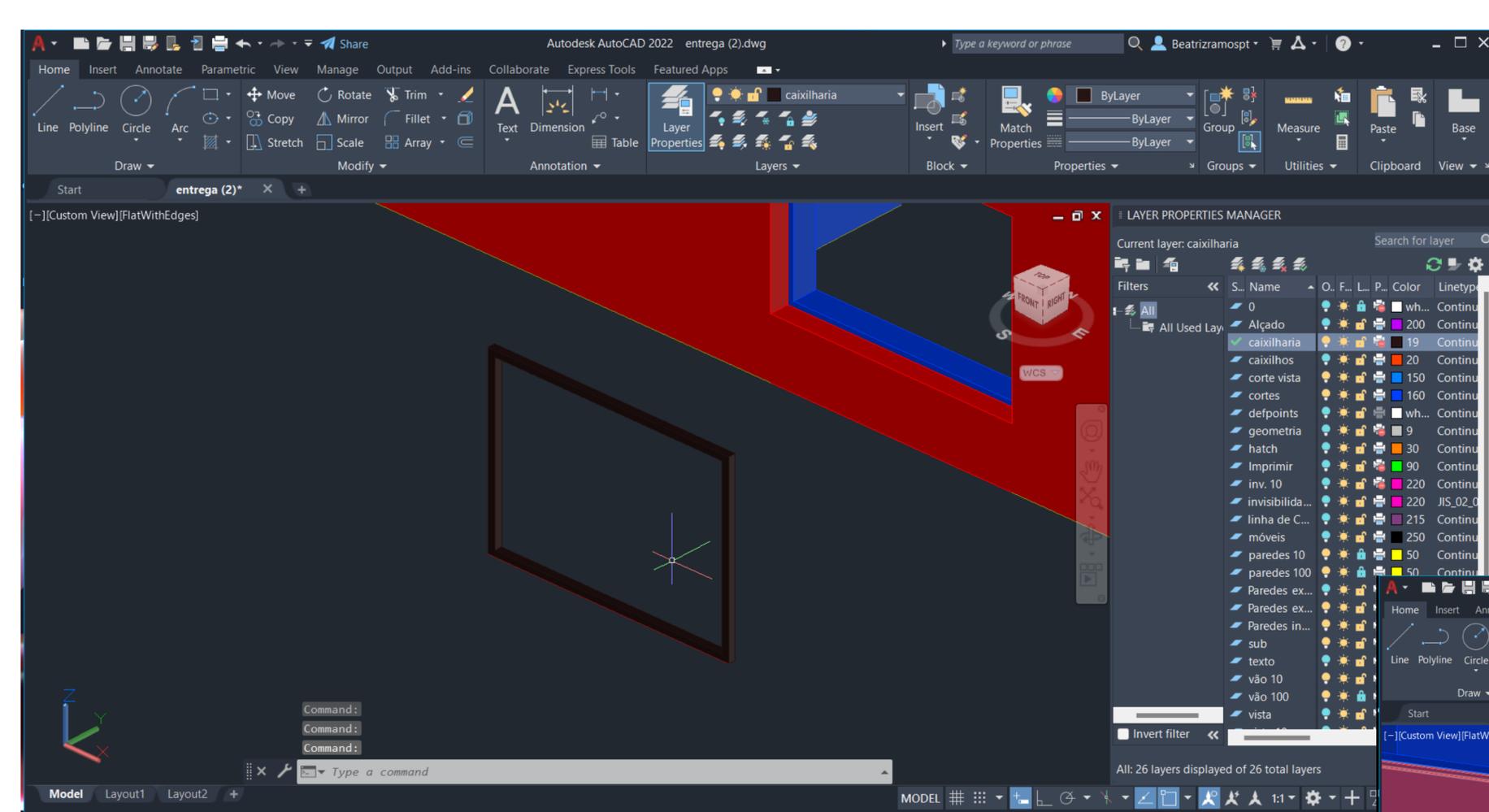
ReDig

3DSMax



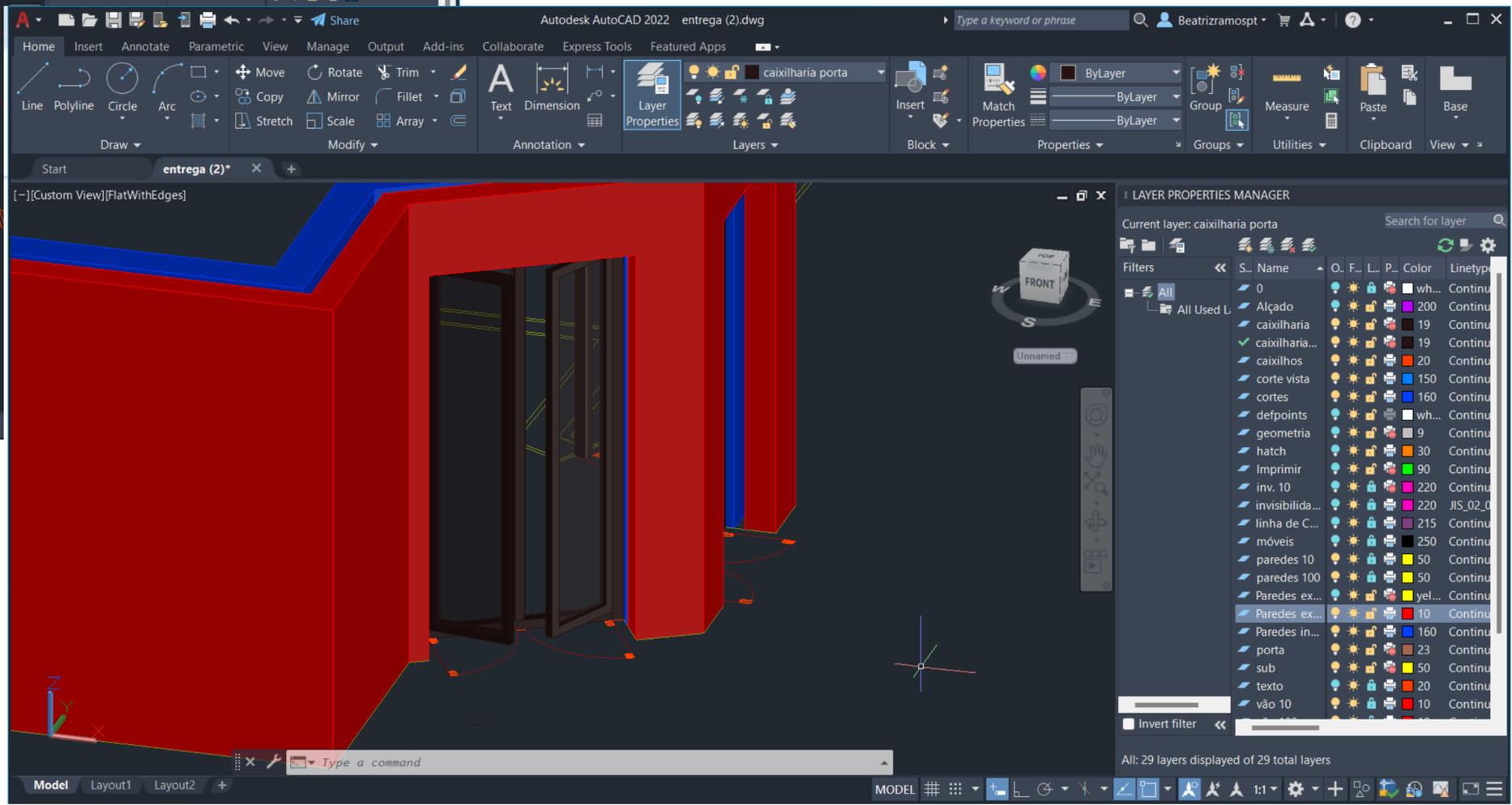
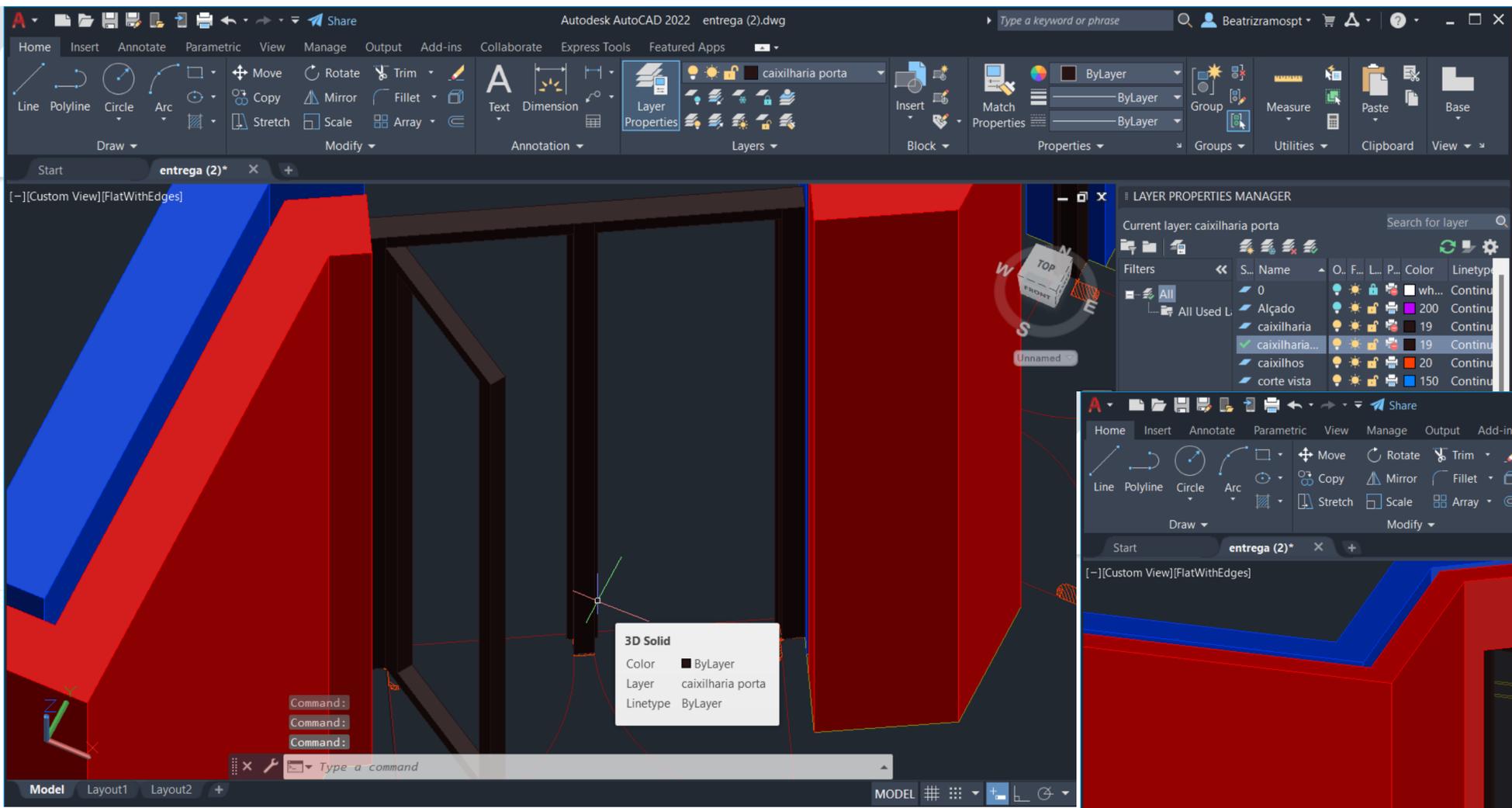
ReDig

Exerc. 2 – ACAD 3D



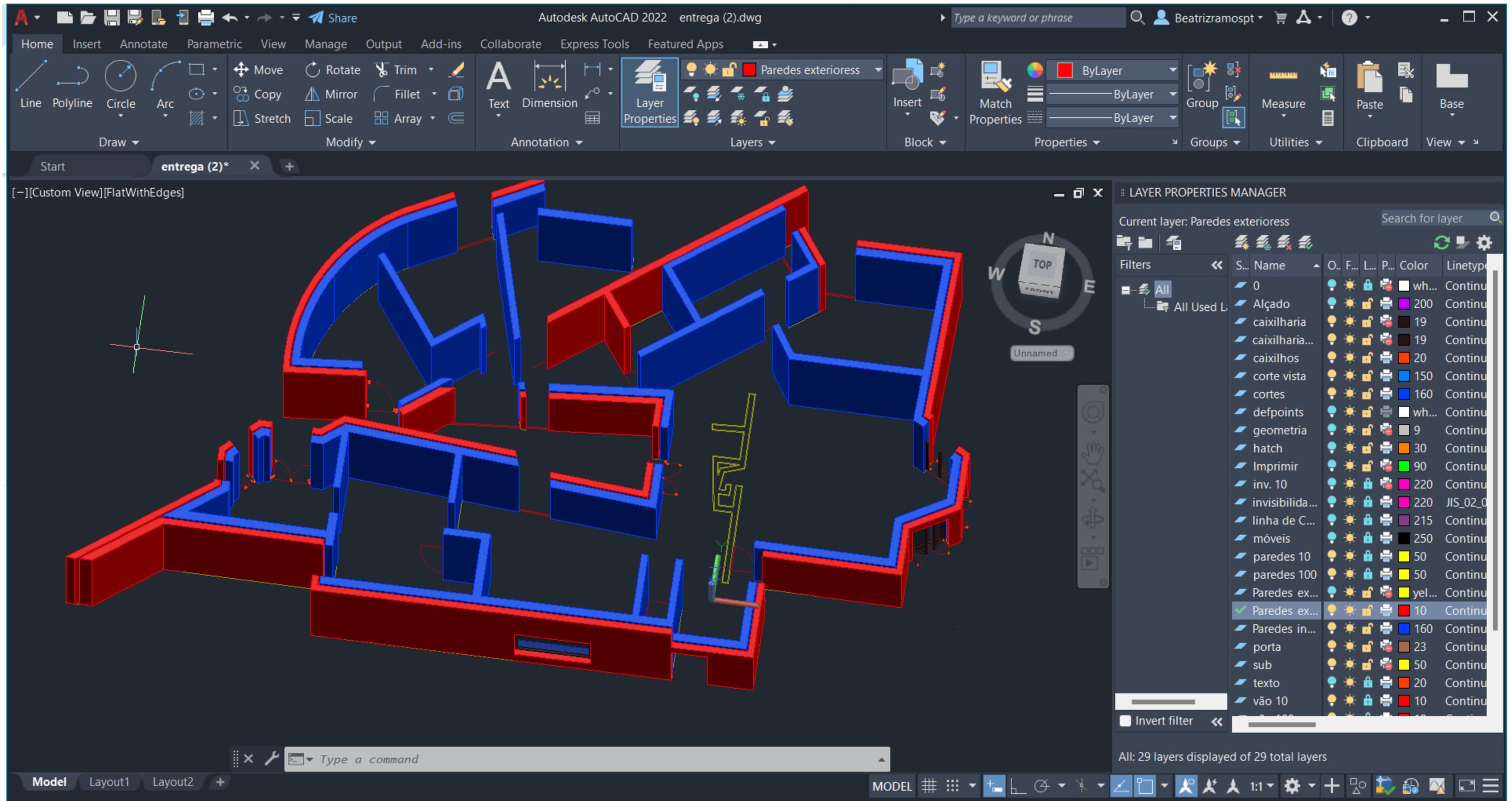
ReDig

Exerc. 2 – ACAD 3D



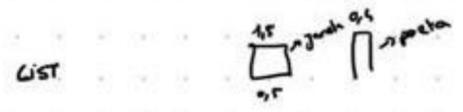
ReDig

Exerc. 2 – ACAD 3D



ReDig

Exerc. 2 – ACAD 3D



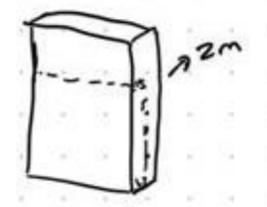
3DMAX → FILE → OPEN → Abrir ficheros tipo → all files → Abrir ficheros de casa → aceptar todo open.

1ª cosa a hacer → ir a materiales e seleccionar.

plane → 4 m → rotate → 90° x

Autocad → separar material → BOX → copy do conjunto → crear varias boxes → subtract dos paredes interiores exteriores

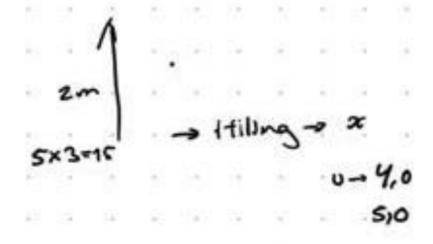
polyline → point → extrude → copy → subtract → move



- panel azulejo 1, 2, 3...
- ZPAZUL1,2,3
- ZPARED
- ZPAREDINT
- ZVIDRO
- ZCAIX

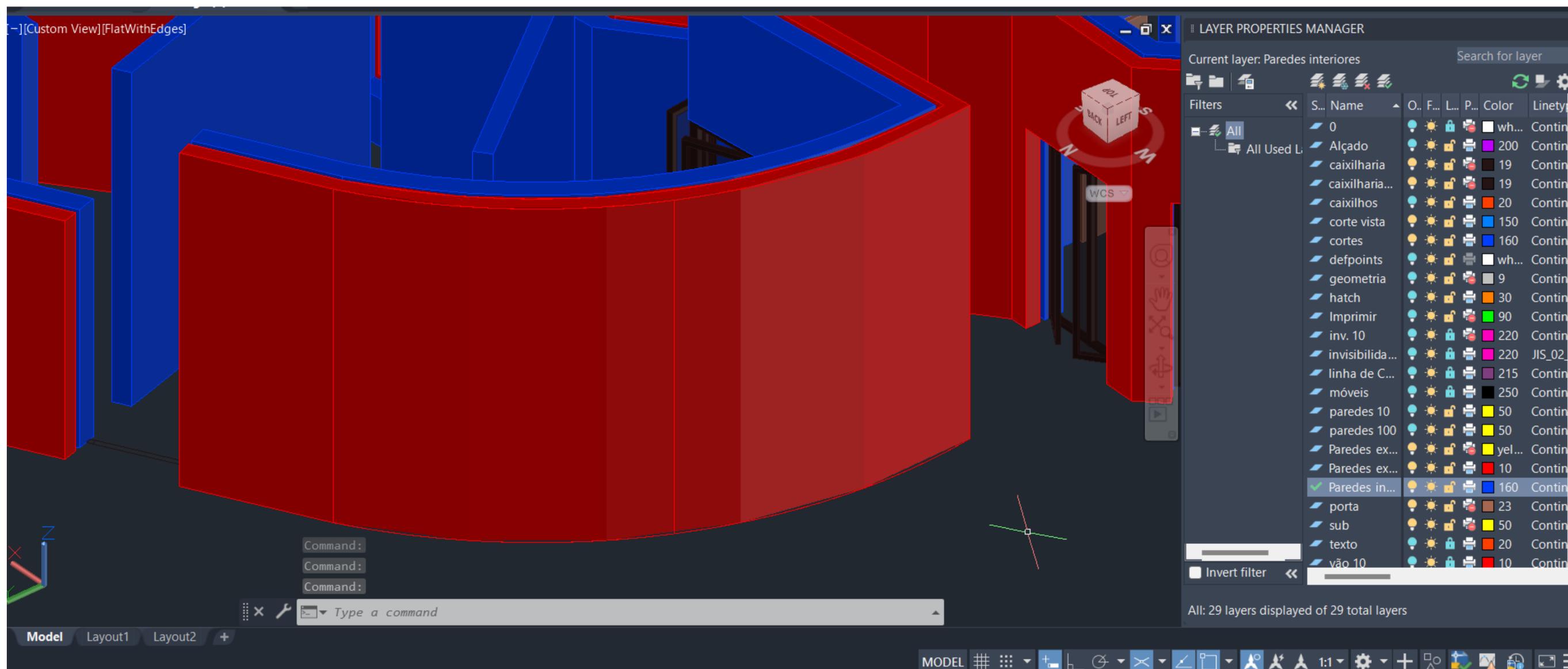
UNGROUP

Branco - Abr. interiores



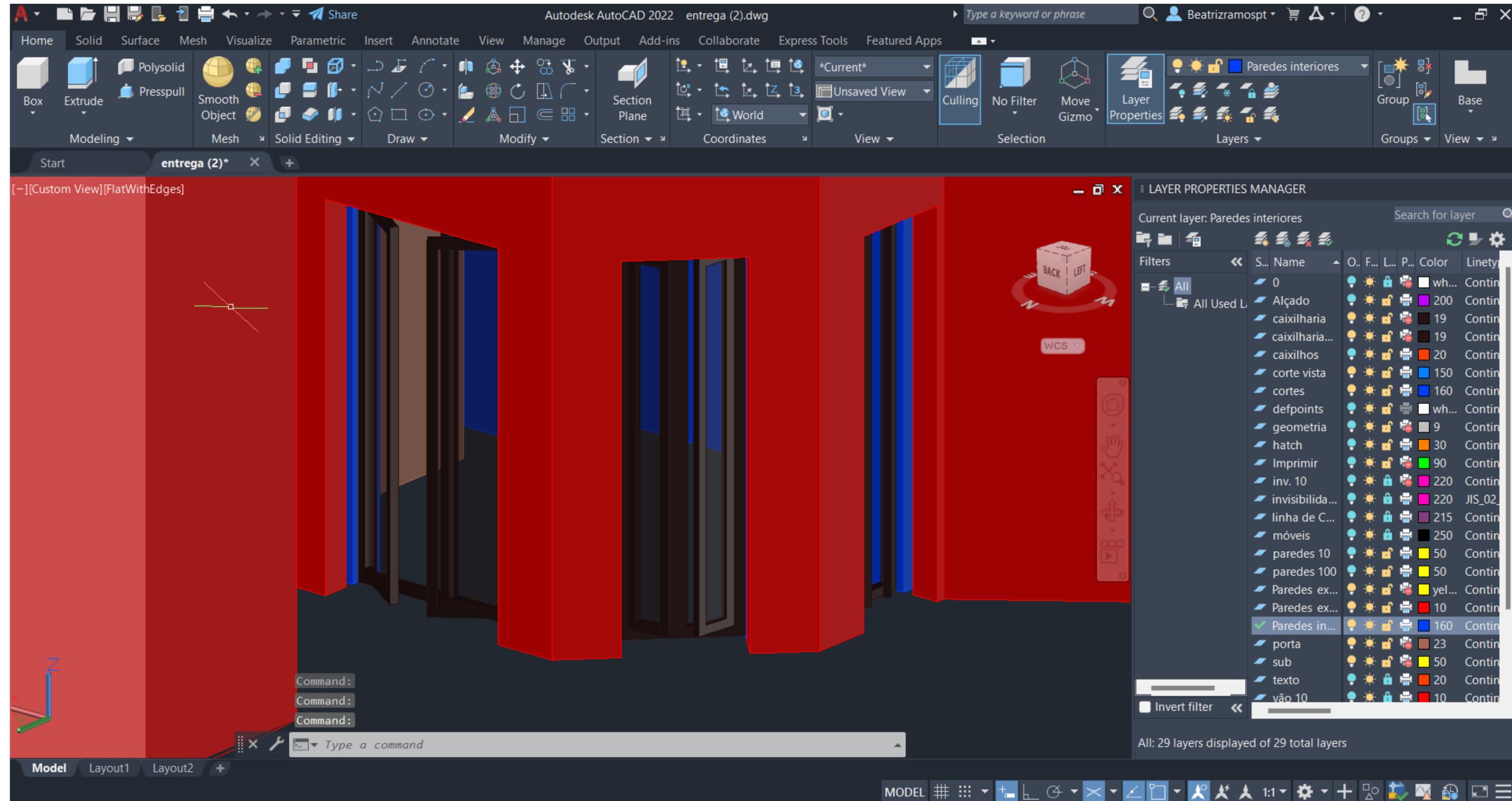
use real... scale
movimento lateral → offset → 0,5

base color → filling → u → 3,0
s → 0



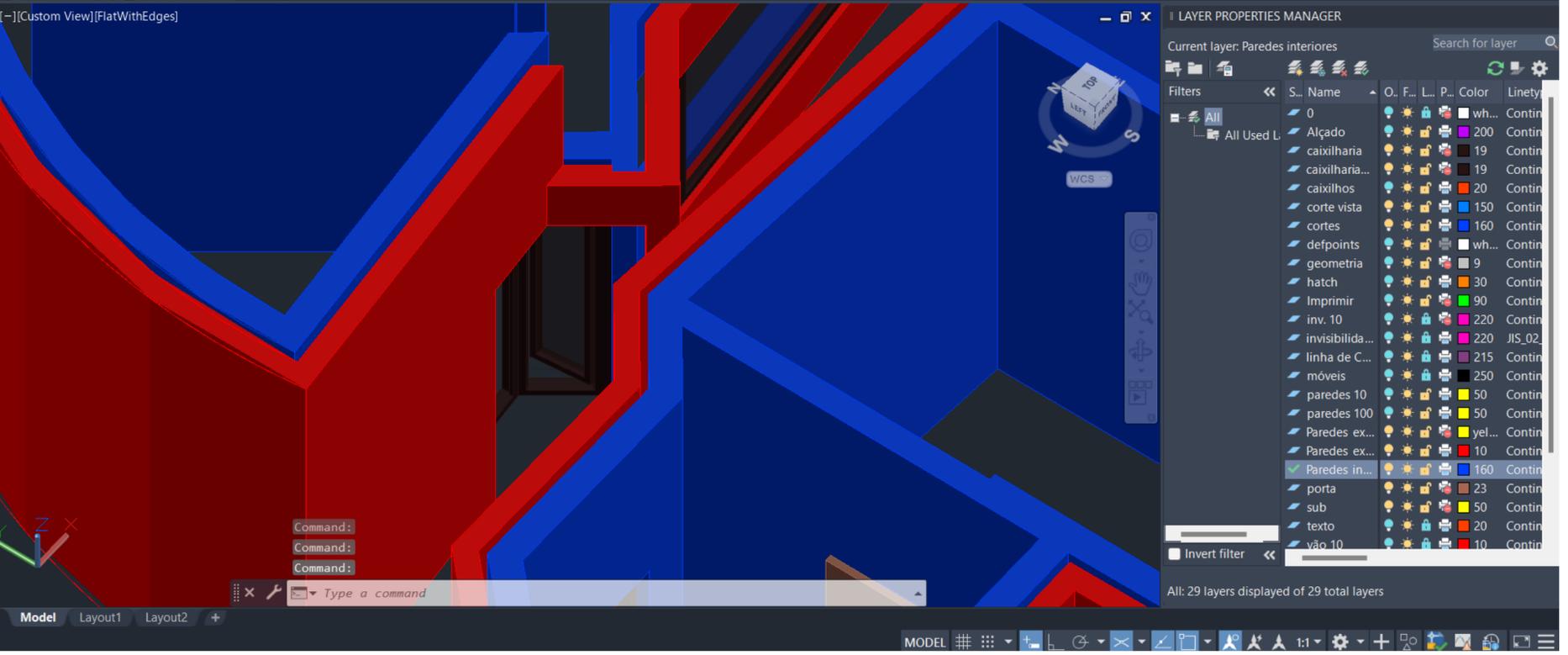
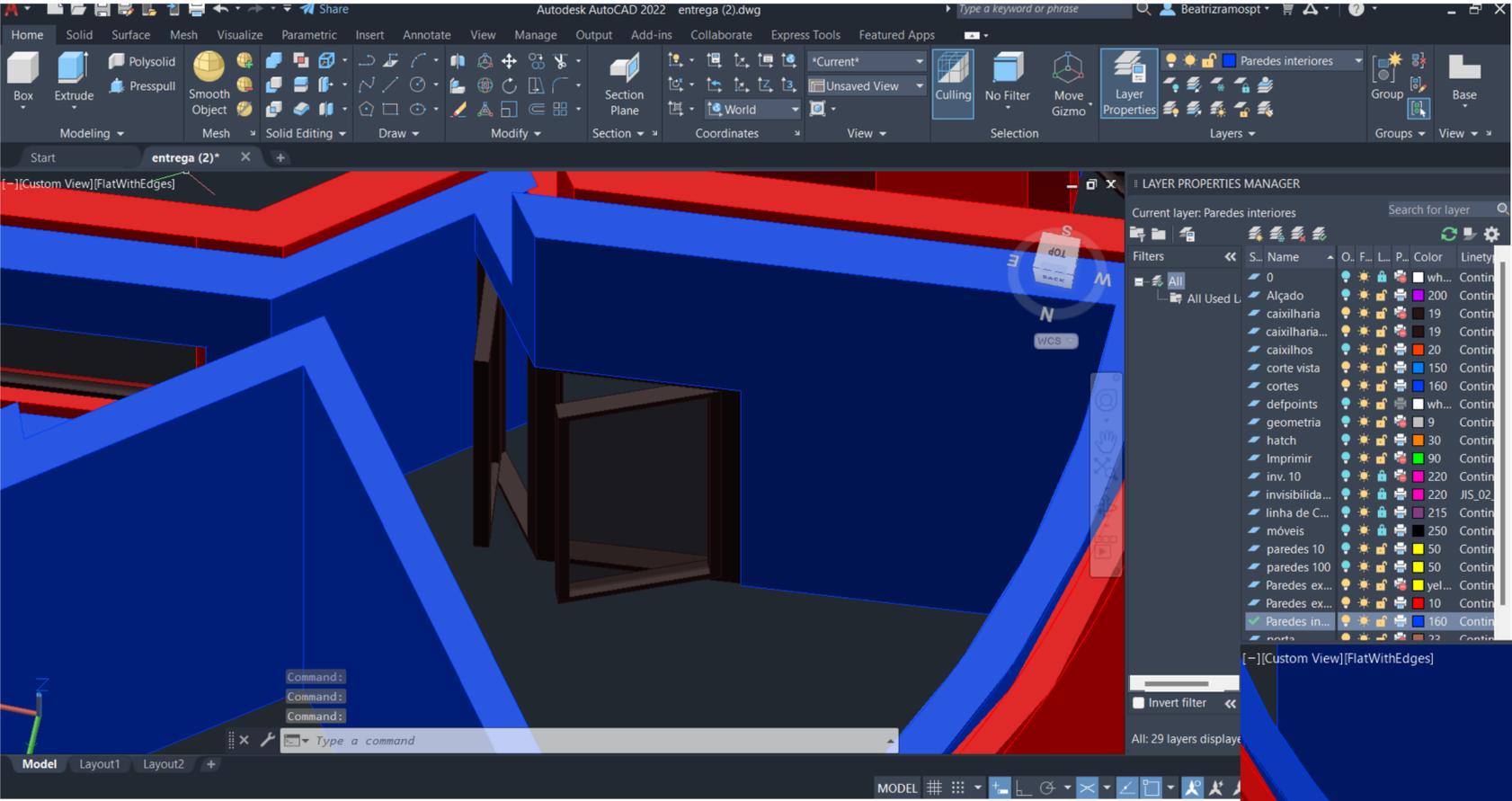
ReDig

Exerc. 2 – ACAD 3D



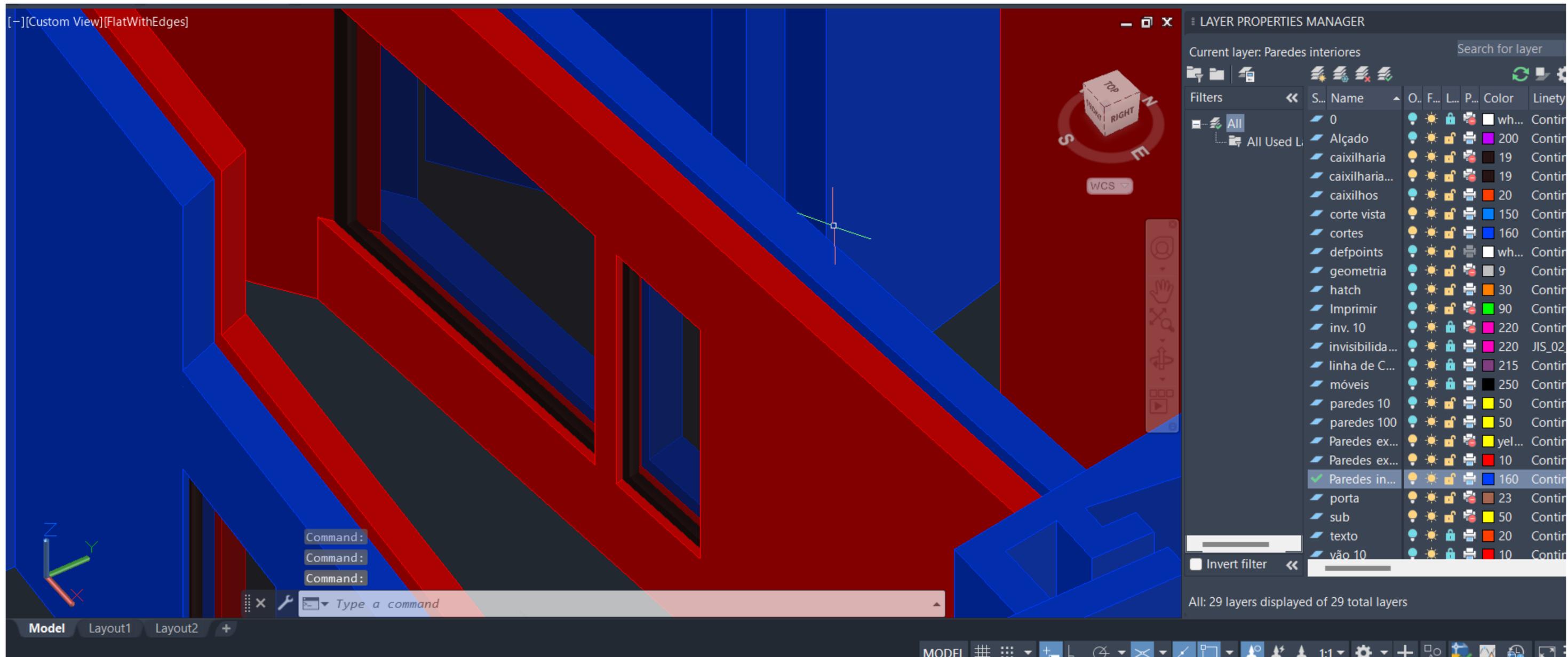
ReDig

Exerc. 2 – ACAD 3D



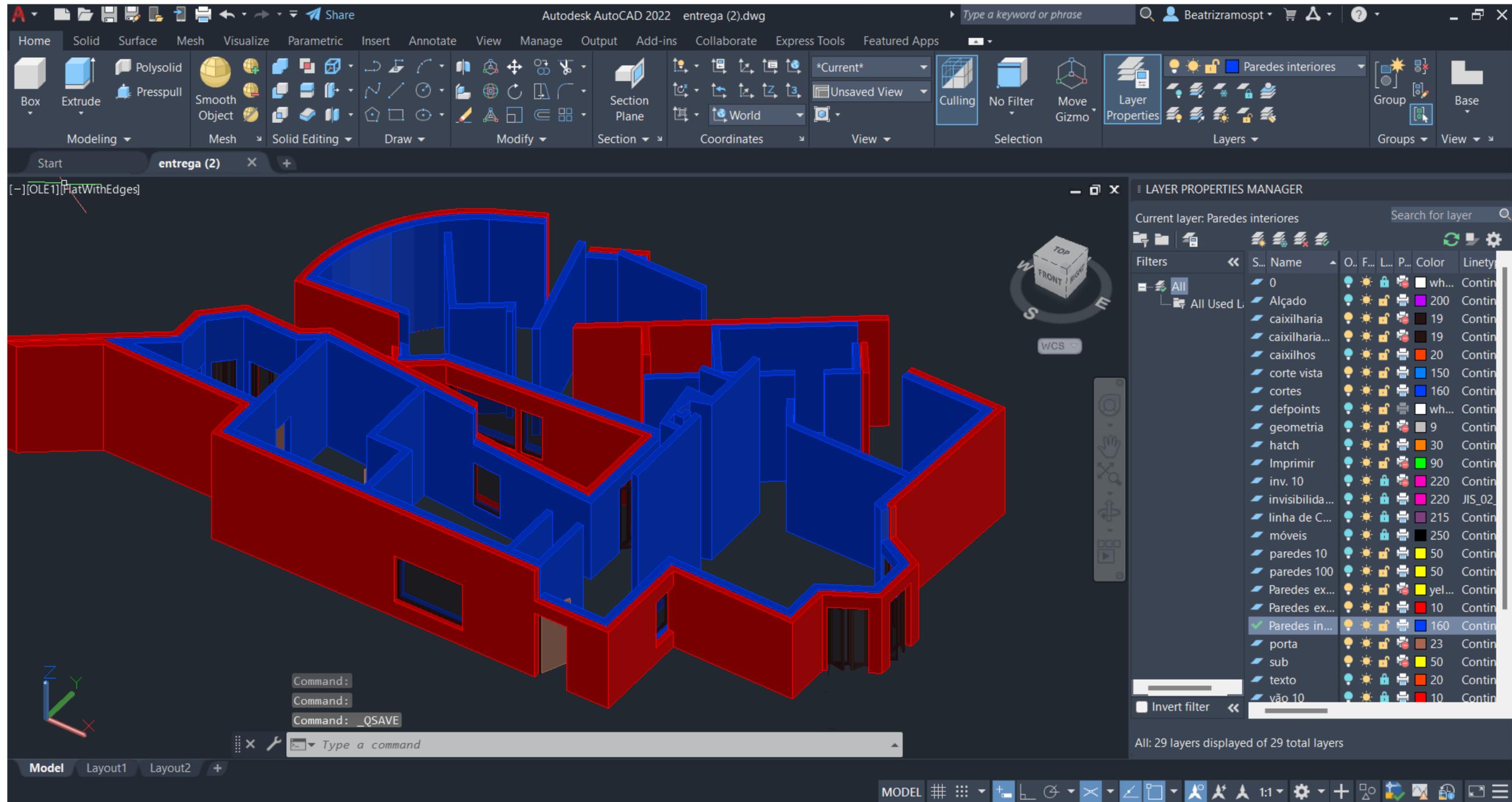
ReDig

Exerc. 2 – ACAD 3D



ReDig

Exerc. 2 – ACAD 3D

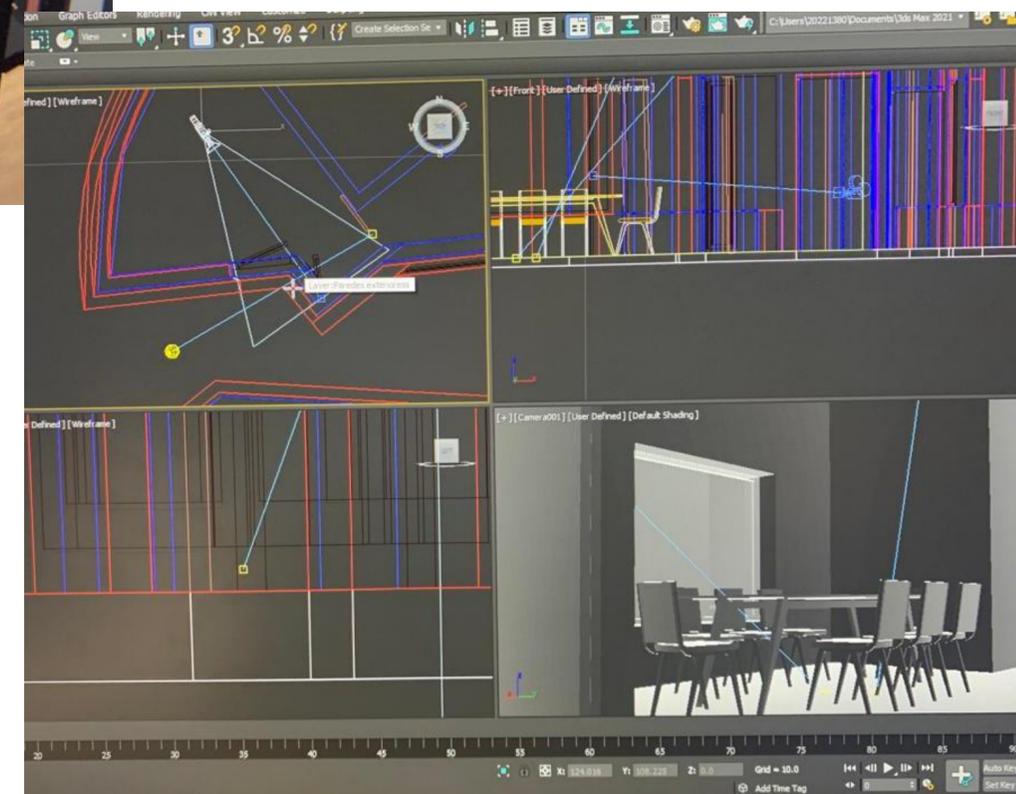
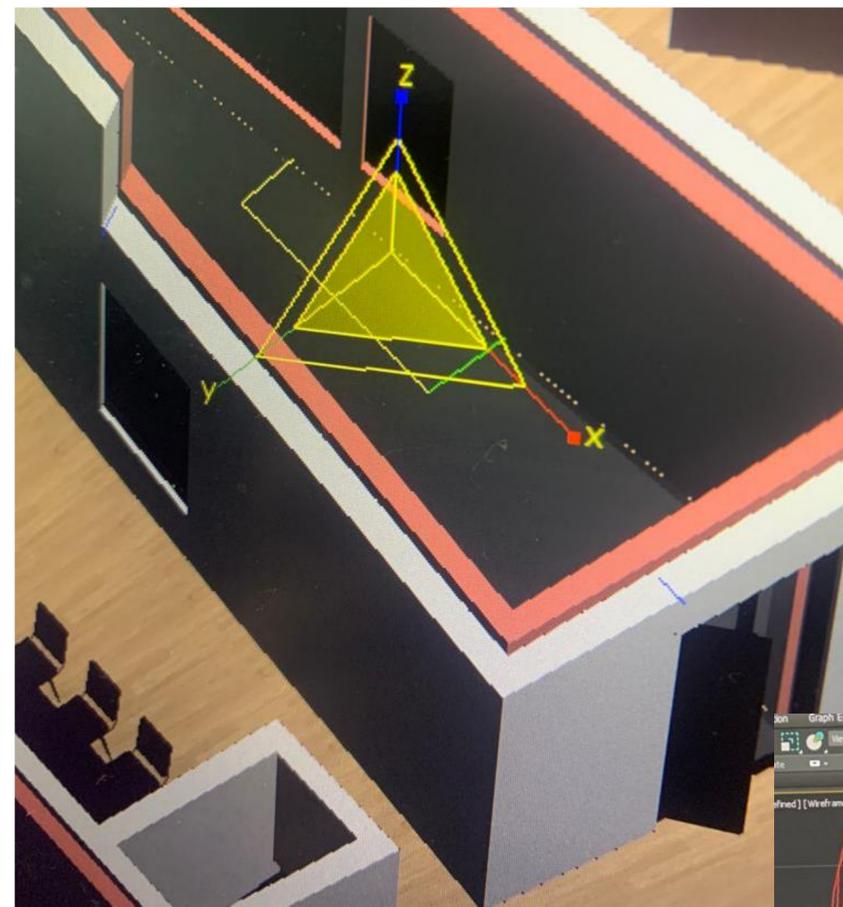


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Exerc. 2 – ACAD 3D

Materialização da Casa António Carlos Siza

- Open – all files – Importar o documento da casa em AutoCAD para 3DSMax;
- Procurar imagens na internet com a materialidade desejada e guardar;
- Ir aos materiais e escolher um material default – Base color – Bitmap – colocar o material guardado – ajustar o material – Inserir no local desejado;
- Inserir luz (Target light) – Warm light – e escolher a densidade da luz;
- Colocar camaras e renderizar.



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3DSMax

