

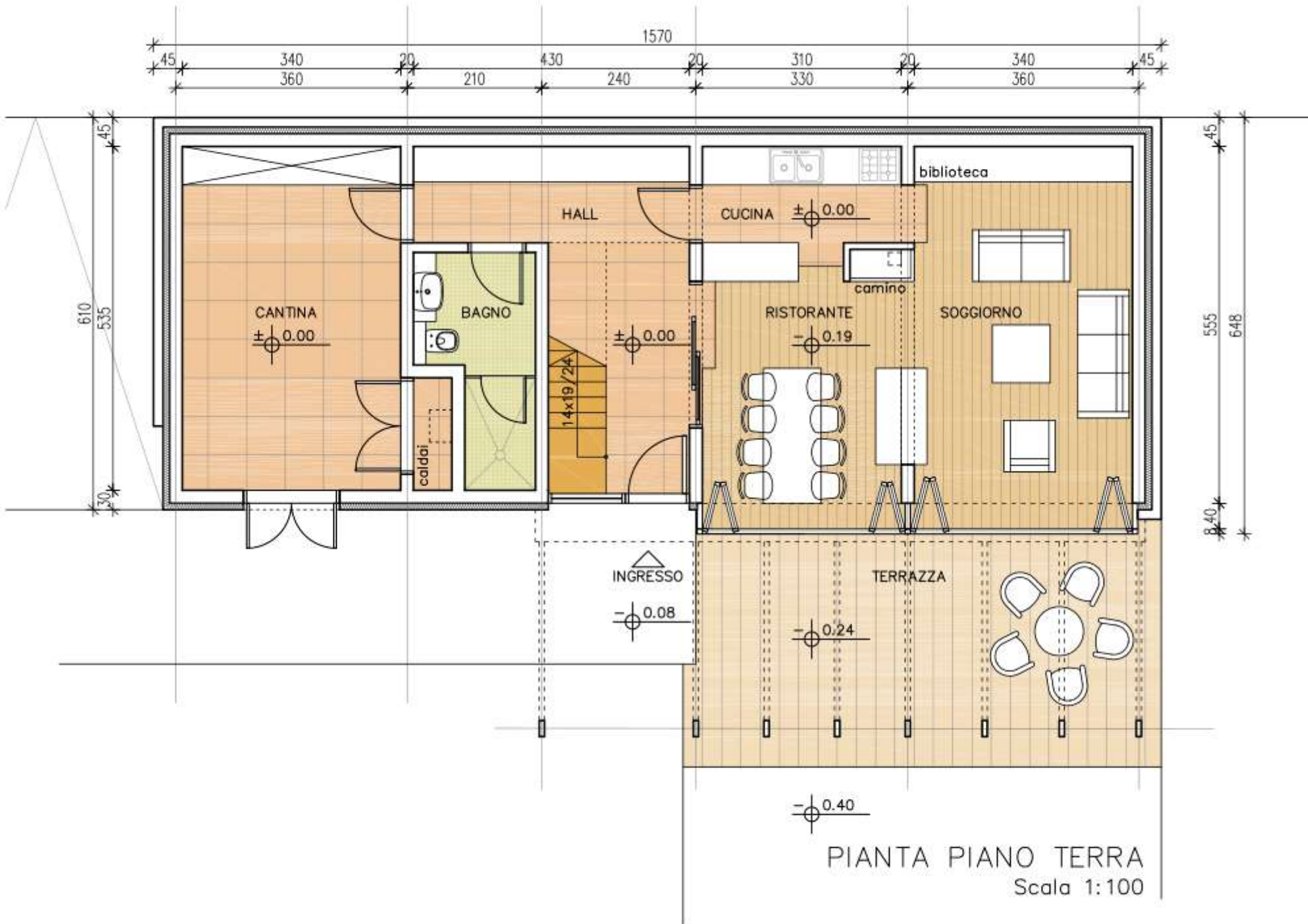
грађевинско-архитектонски факултет у нишу
примена рачунара у архитектури

03.

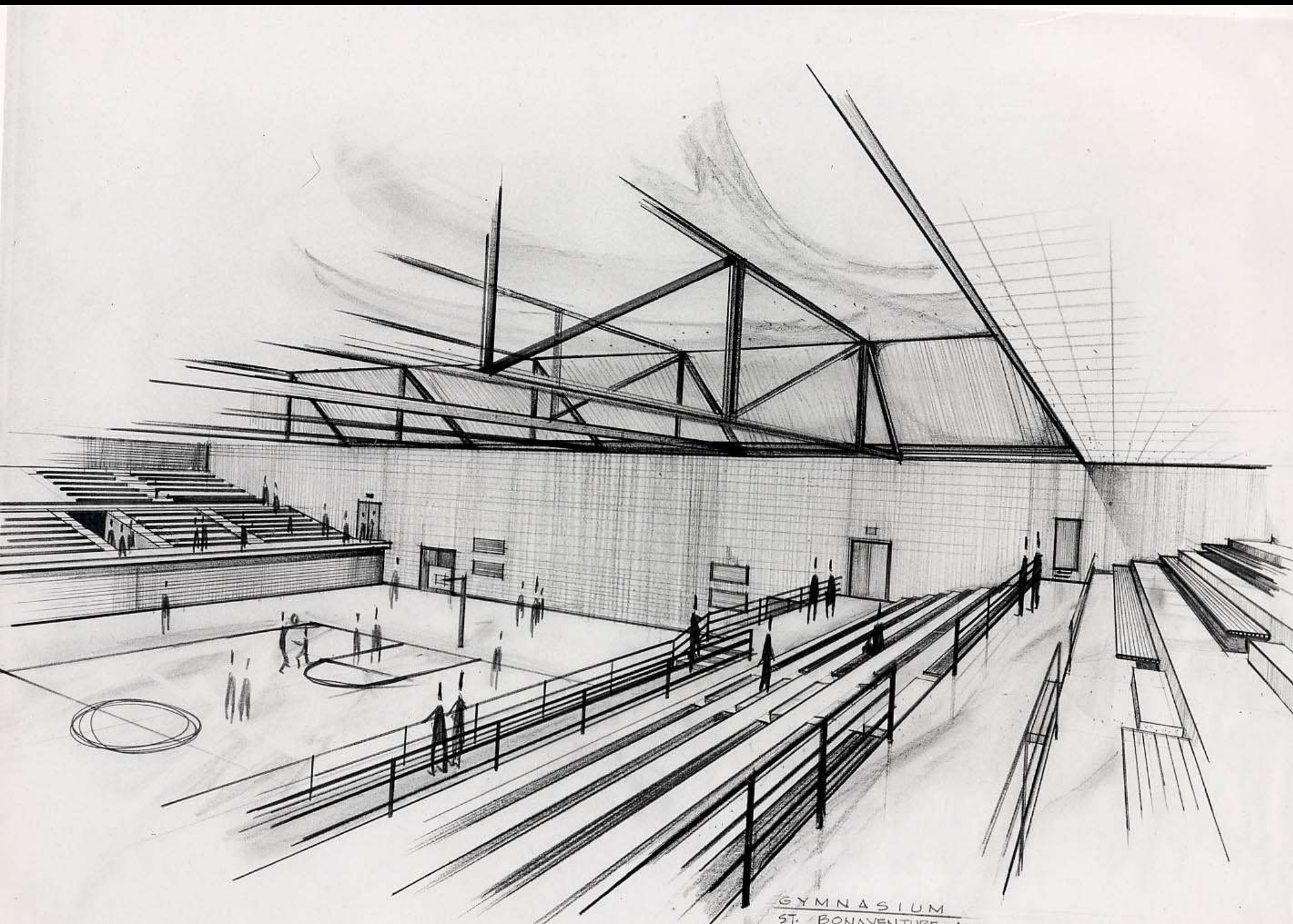
предавање

**Компјутерски
програми
у процесу архитектонског
пројектовања**

**Рачунарски програми
намењени примени
у архитектури...**



PIANTA PIANO TERRA
Scala 1:100



GYMNASIUM
ST. BONAVENTURE











CAD

Autodesk AutoCAD

Autodesk Inventor

Bricsys BricsCAD

Dassault CATIA

Dassault SolidWorks

Kubotek KeyCreator

Siemens NX

Siemens Solid Edge

PTC Pro/ENGINEER

TurboCAD

IronCAD

MEDUSA

ProgeCAD

SpaceClaim

PunchCAD

Rhinoceros 3D

VariCAD

VectorWorks

Cobalt

RoutCad

123D

LI123D

LibreCADD

BRL-CAD

OpenSCAD

QCad

NanoCAD

SketchUp

Parasolid by Siemens

ACIS by

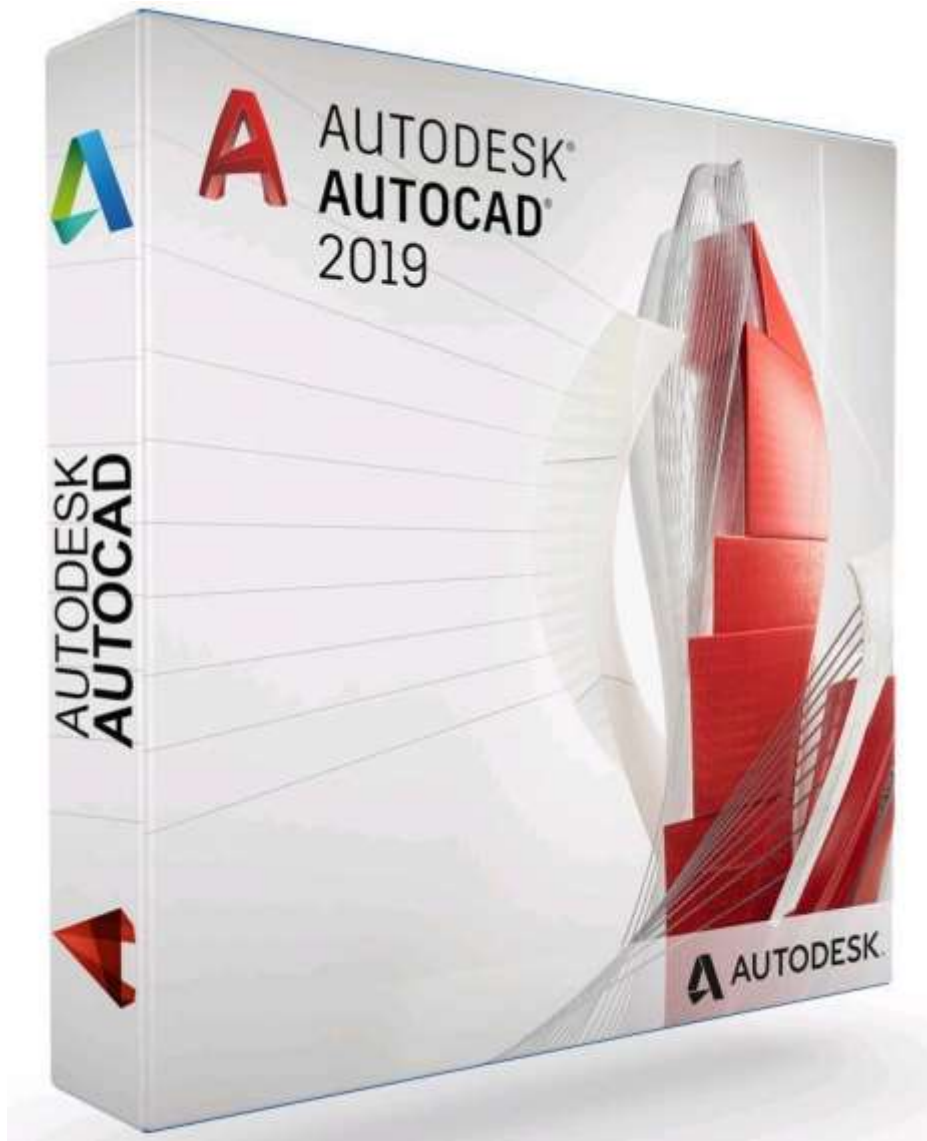
Spatial

Shapemanager by Autodesk

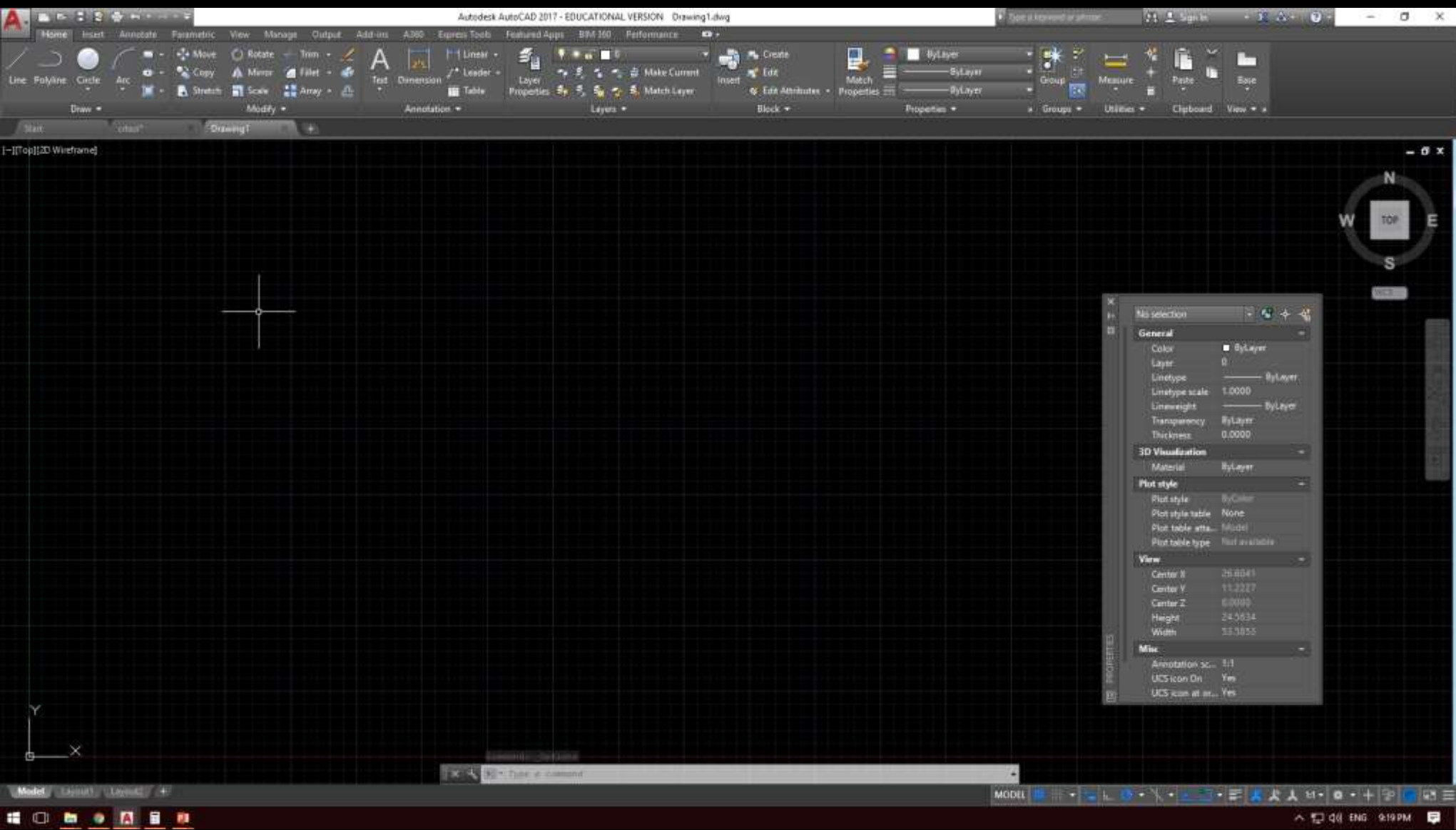
Open CASCADE

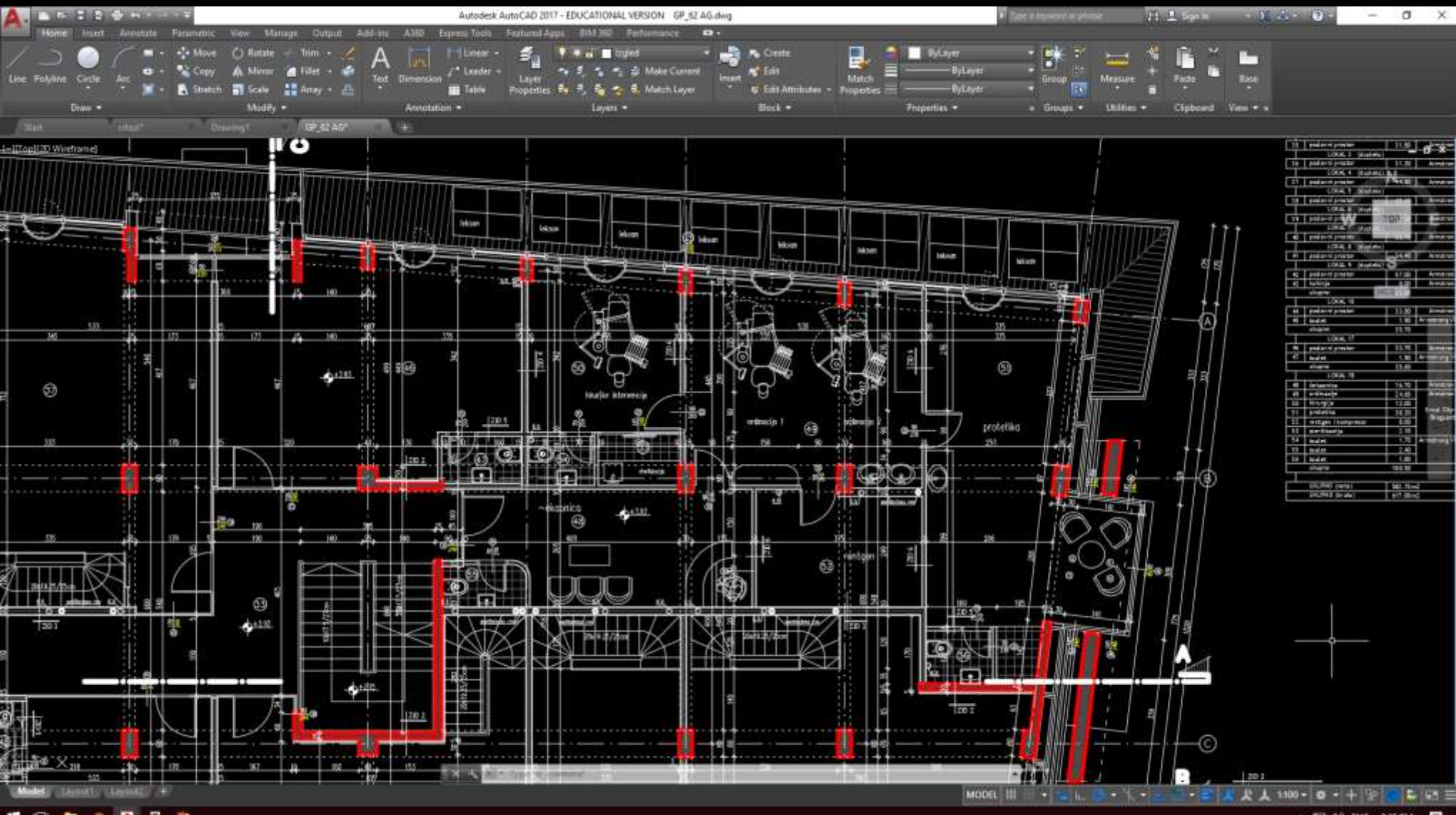
C3D by C3D Labs

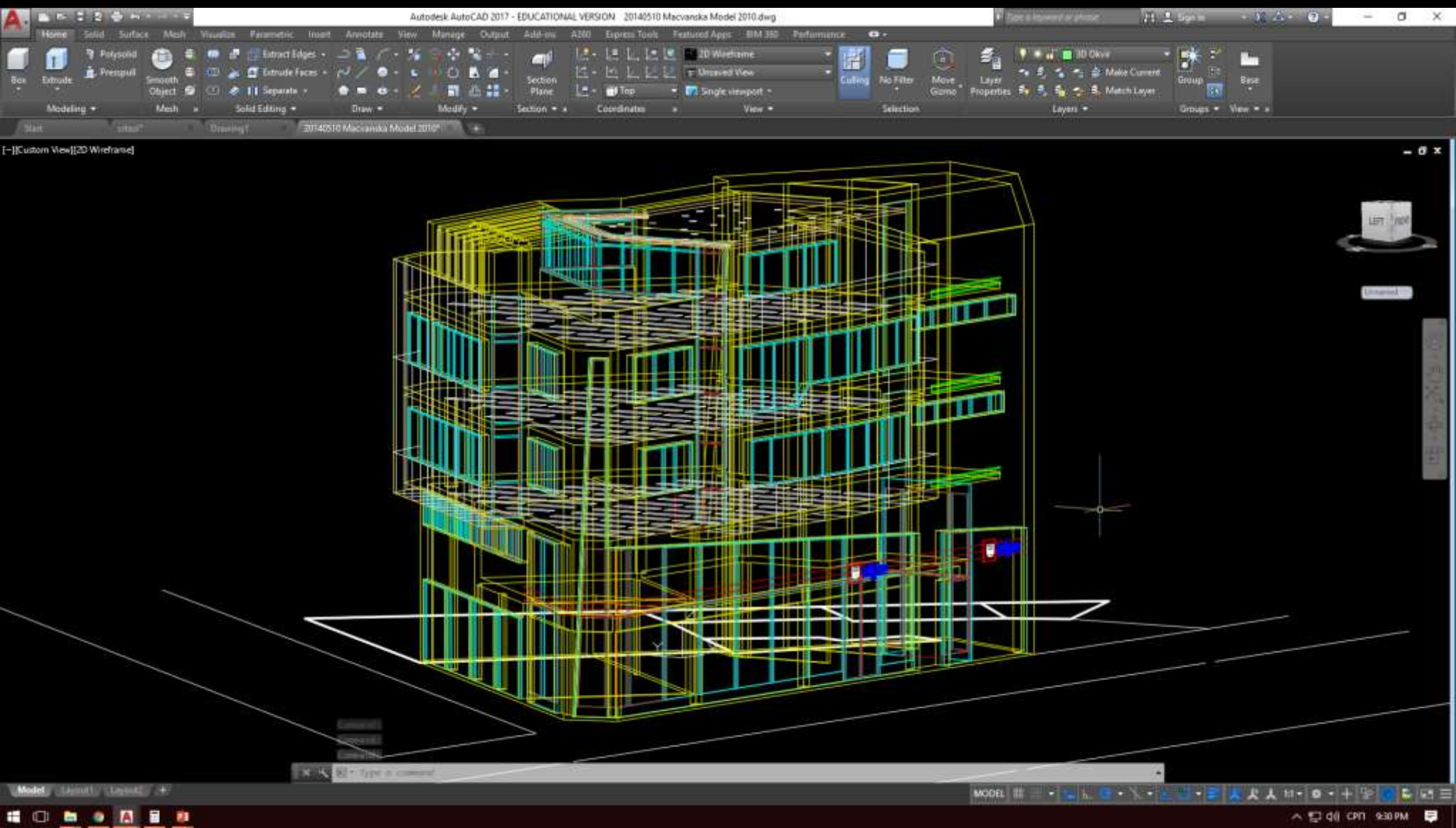
K3 by Center Geo5

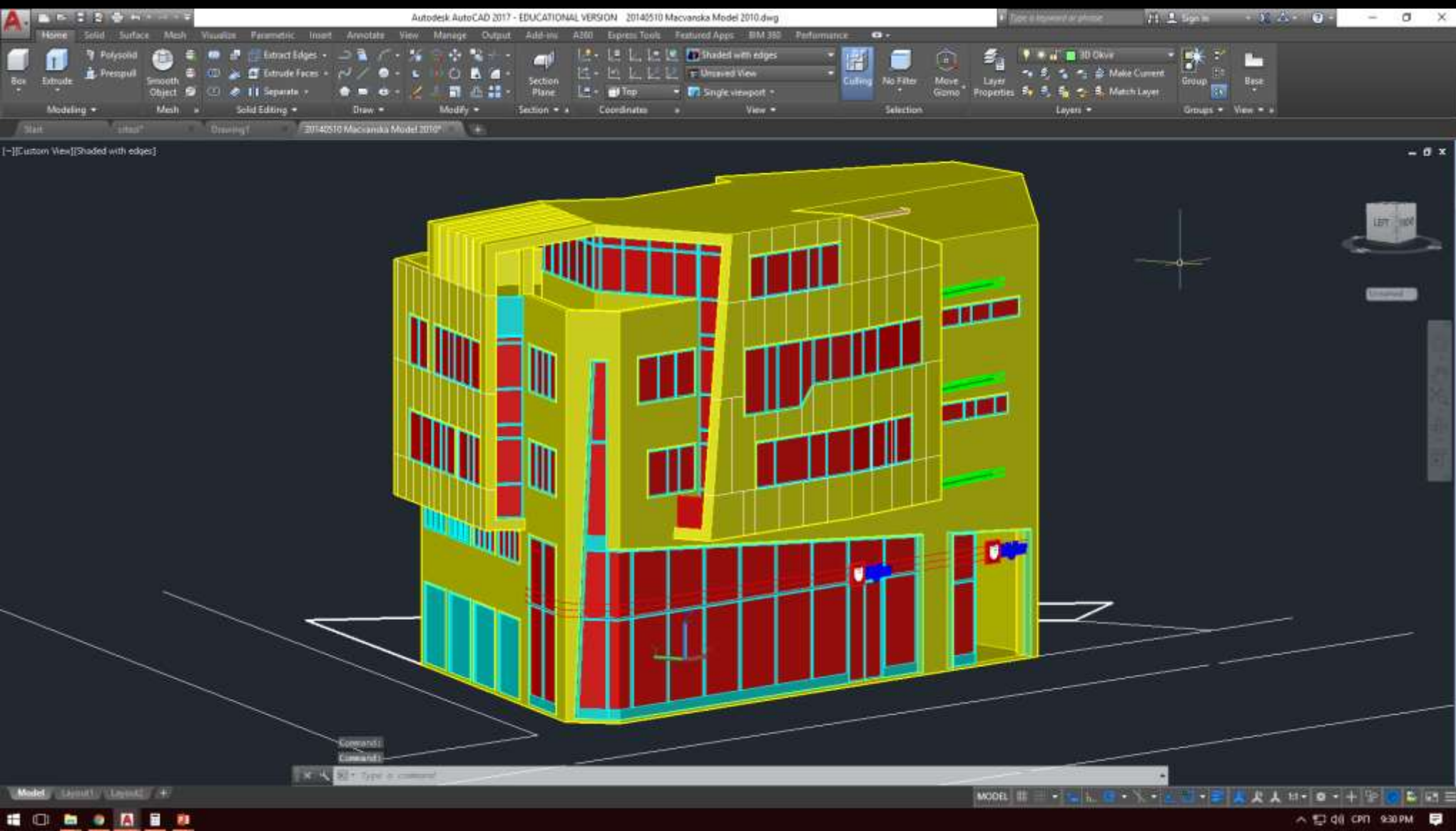


AutoCAD









Parametric Insert Annotate View Manage Output Add-ins A360 Express Tools SketchBook Designer Featured Apps BIM 360 Performance

Editing Draw Modify Section Coordinates View

Section Plane

Current
Unsaved View

World

Culling No Filter Move Gizmo Layer Properties

Selection Layers

Rocks Conceptual Design Render Chevy



CorelCAD



Classic Default

CorelCAD 2017™ - [NONAME_0.dwg*]

Файл Редактировать Вид Вставка Формат Размер Рисовать Изменить Ограничения Сервис Сплошные Окно Справка

ByLayer ByLayer Solid line ByLayer

NONAME_0.dwg*

Сведения о

CorelCAD™ 2017
powered by ARES®

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www.coreldraw.com

Серийный номер

Полная версия

Инфо версии: Версия 2017.0 (Build 17.0.0.1310) x64

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✖ Закрыть

Свойства

Нет выбора

Общая информация

ByLayer

0

ByLayer Solid line

1

ByLayer

ByLayer

Стиль печати

Нет

Нет

Вид

210

148.5

0

385.2

428.4

Прочее

Да

Да

Да

Модель Лист1 Лист2

Окно команд

Параметры: Фаска, Уровень, Скругление, Толщина, Ширина линии или **Укажите начальный угол**

Параметры: площадь, Размеры, Доворот или **Укажите противоположный угол**

:*_ABOUT

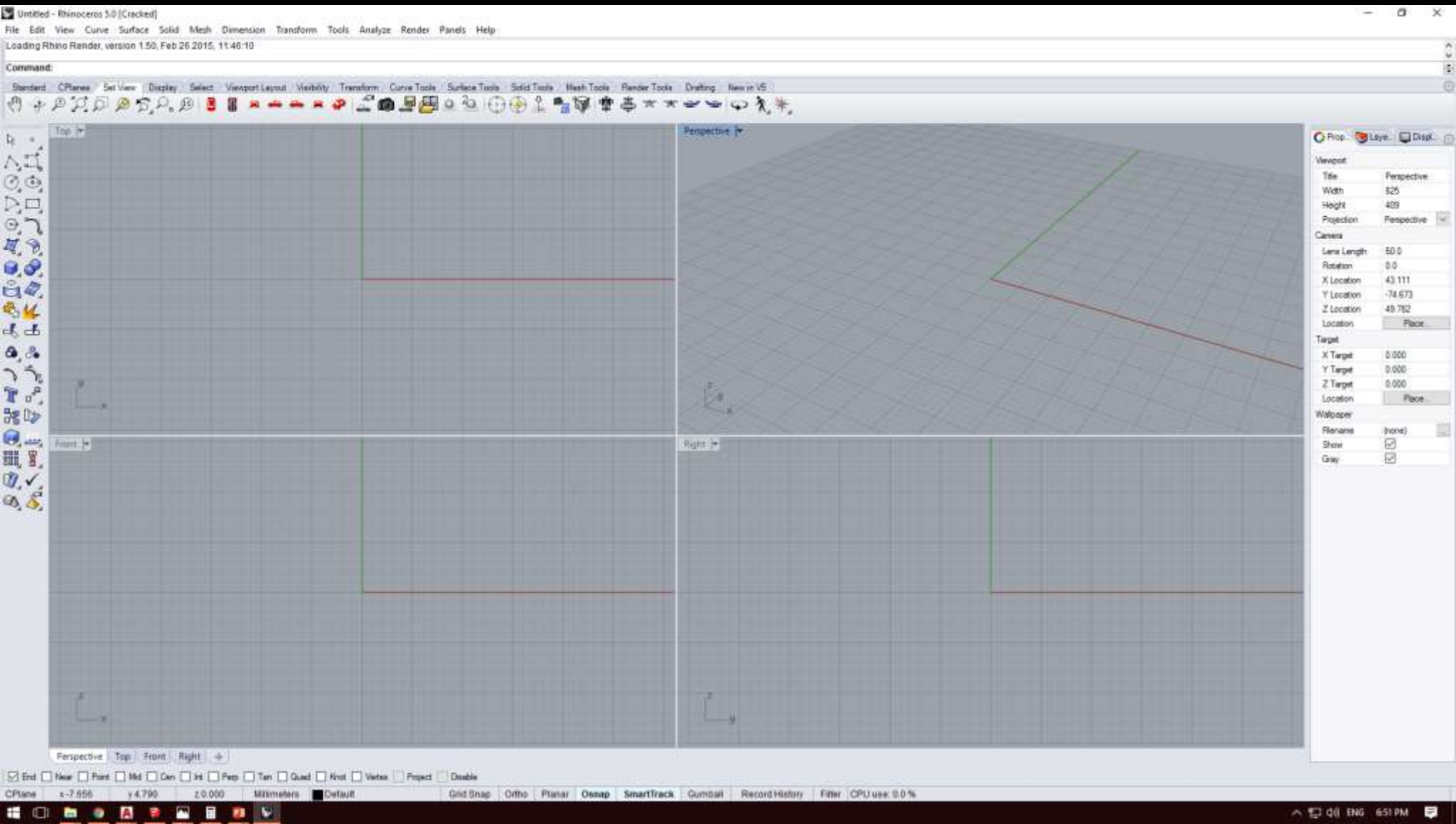
CorelCAD 2017™ x64

Привязка Сетка Орто Полярный ОПривязка ОСлед Б. ввод ТолщинаЛ МОДЕЛЬ Надпись (1:1) (89.16,359.378,0)

Rhinoceros 3D



Rhinoceros[®]
NURBS Modeling for Windows



Robie House 086.R5.3dm (33710 KB) - Rhinoceros (Beta Lab License) - [Perspective]

File Edit View Curve Surface Solid Mesh Dimension Transform Tools Analyze Render Window V-Ray VisualARQ Help

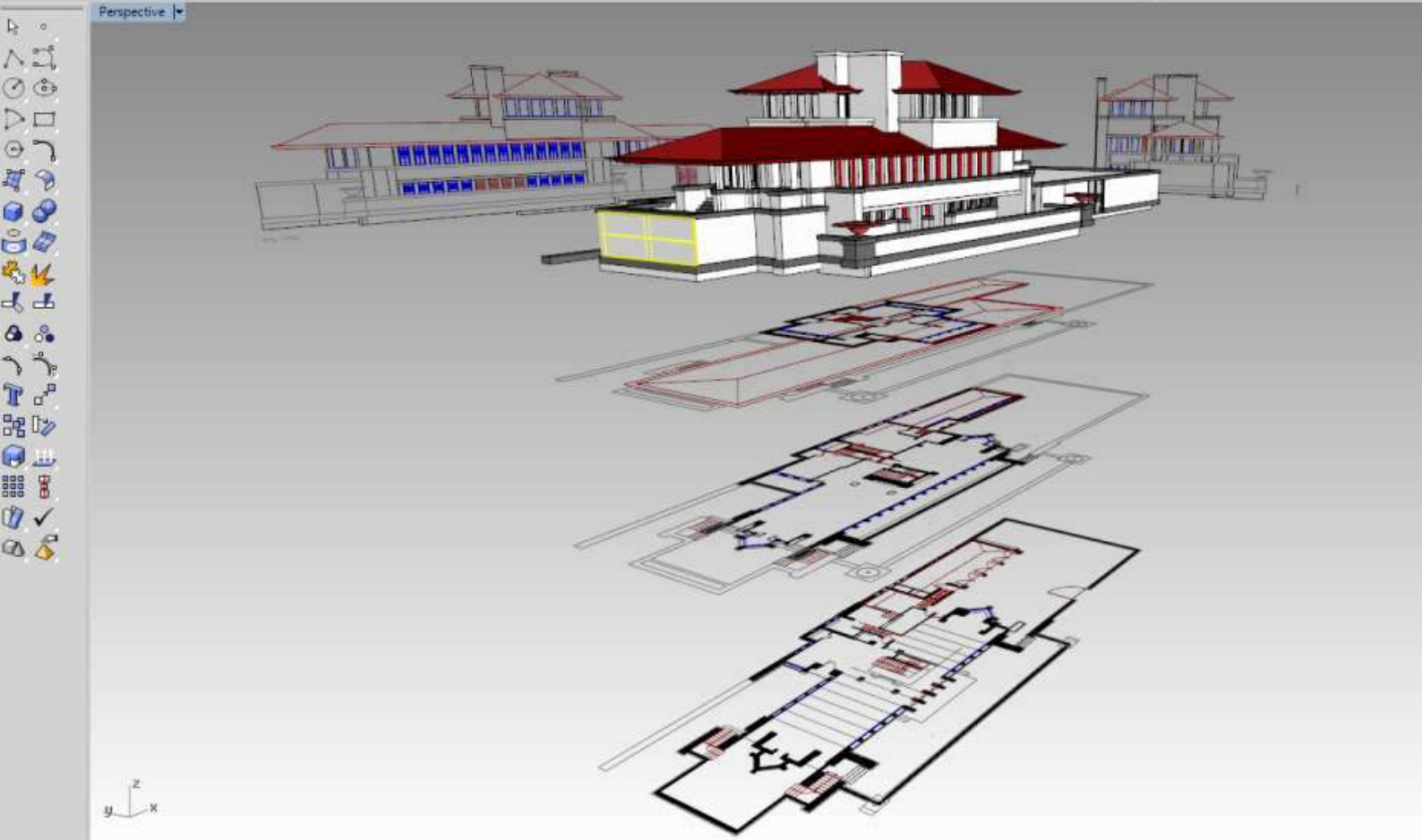
Drag objects, tap Alt to make a duplicate, press and hold Alt to temporarily toggle osnaps.
1 wall added to selection.

Command:

Standard CPlanes Set View Display Select Viewport Layout Visibility Curves Surfaces Solids Meshes Render Drafting

VisualARQ Objects VisualARQ Documentation VisualARQ Tools

Perspective



Rhinoceros

Properties Layers

General

Name
Description
Style: Genetic 300mm
Serial Number

Display

Geometry

Width: 0.300
Height: 2.010

Location

Elevation: 0.340
Path Curve: Line
Alignment: Right
Alignment Offset: 0.000

Intersections

Cleanup Radius: 0.000
Maximum Extension: 1.000

Reinforcements

Start Reinforcement: By Style (None)

Levels

Name	Elevation	Cut Plane
Building	0.000	
Roof	12.000	1.400
Level 02	5.830	1.000
Level 01	2.580	1.400
Floor 0	0.000	1.400
Boiler room	-0.600	1.400

Perspective Roof Front Right
 End Near Point Mid Cen Int Perp Tan Quad Knot Vertex Project Disable

CPlane x:-28.571 y:-34.783 z:0.000 Meters POLYSURFACES Grid Snap Ortho Planar Osnap SmartTrack Gumball Record History Filter Available physical memory: 1084 MB

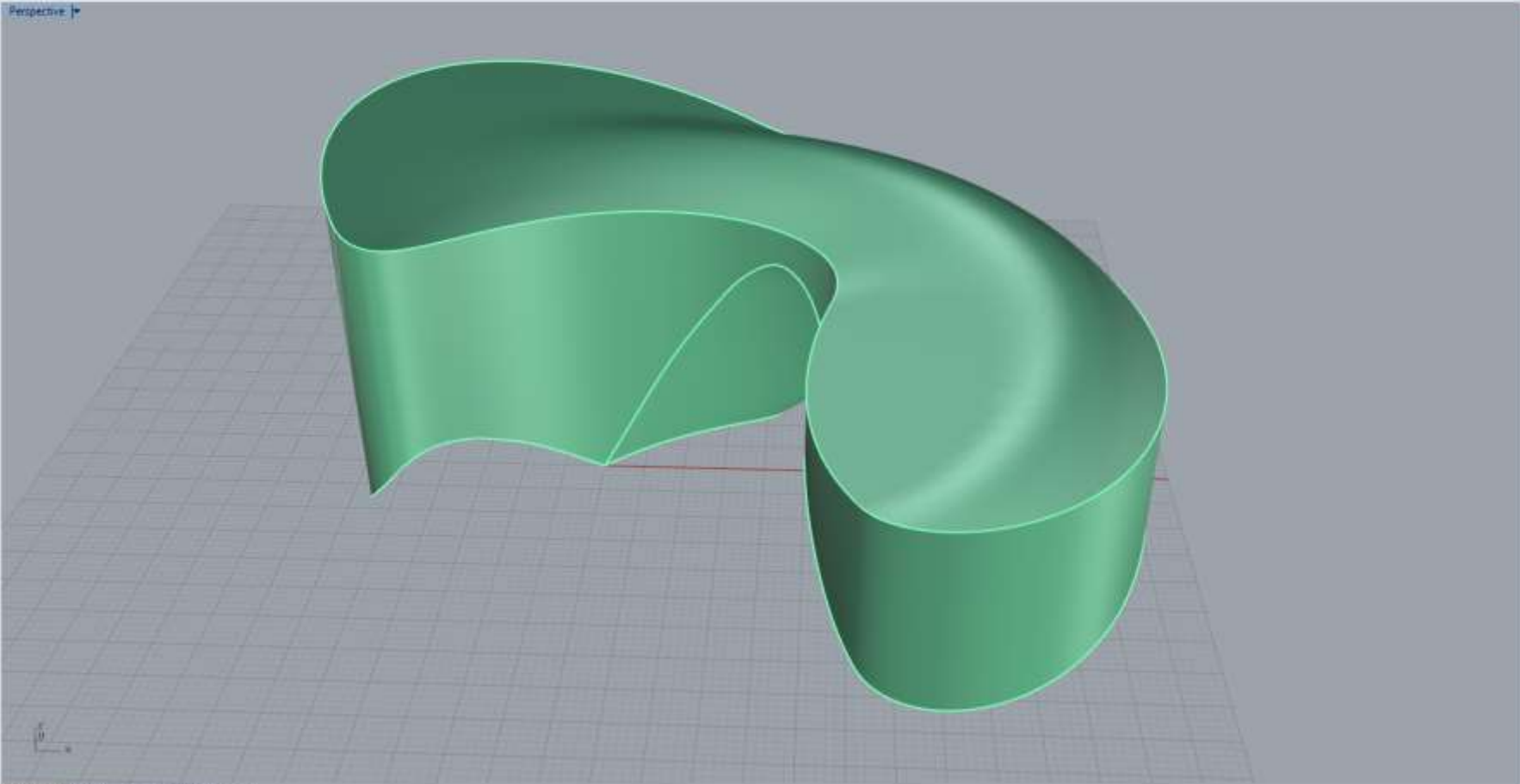
20140131 Maelstrom (10543 KB) - Rhinoceros 5.0 Evaluation (23 Days Remaining) - [Perspective]

File Edit View Curve Surface Solid Mesh Dimension Transform Tools Analyze Render Panels Help

Click and drag to pan (Down Left Right Up In Out)

Command:

Standard CPlane Set View Display Select Viewport Layout Visibility Transform Curve Tools Surface Tools Solid Tools Mesh Tools Render Tools Drafting New in VS



Viewport

Title	Perspective
Width	1054
Height	801
Projection	Perspective

Camera

Lens Length	50.0
Rotation	0.0
X Location	26.536
Y Location	-155.292
Z Location	118.742
Location	Place

Target

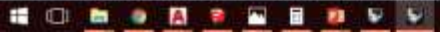
X Target	22.202
Y Target	-61.907
Z Target	61.545
Location	Place

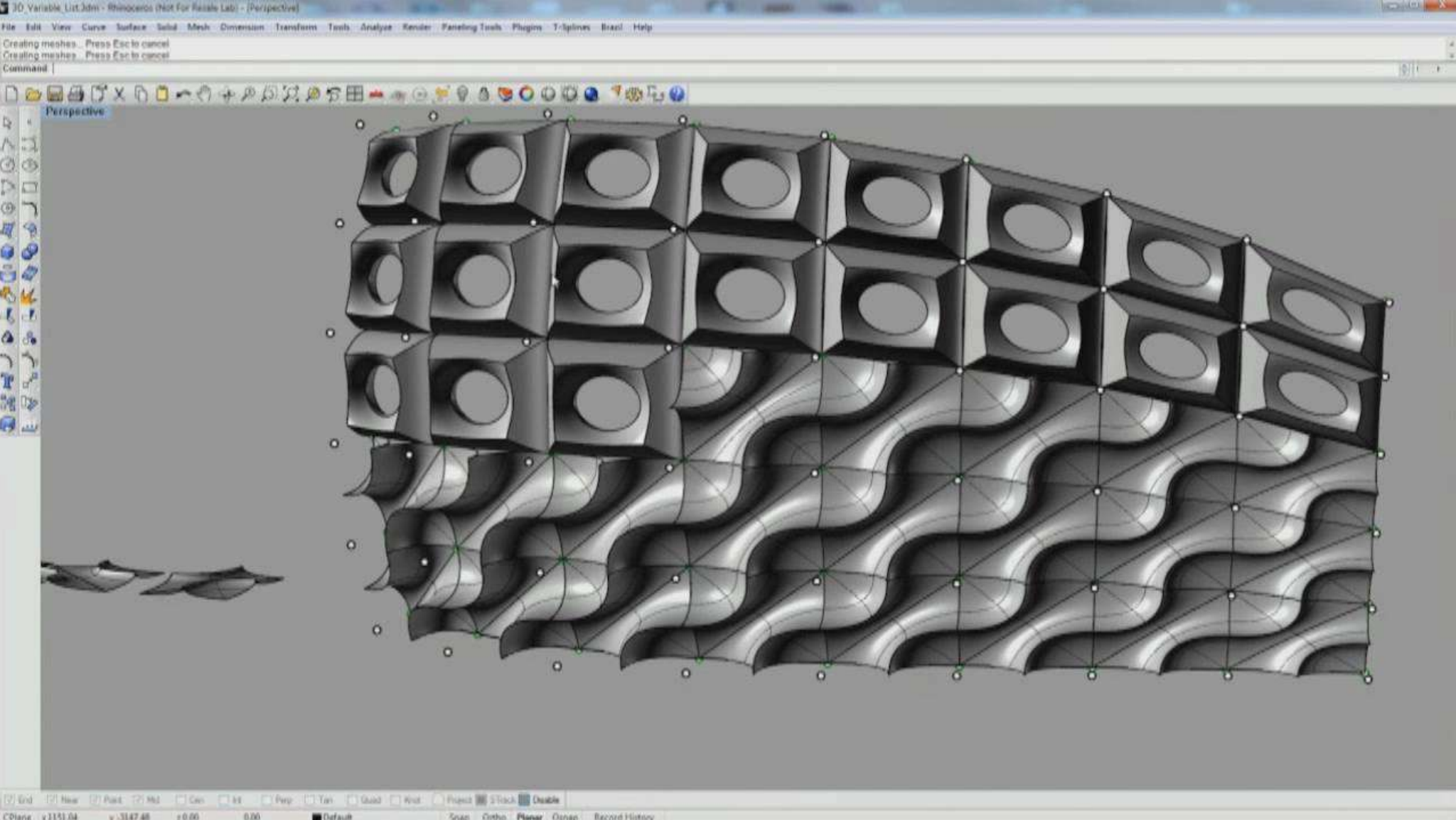
Wallpaper

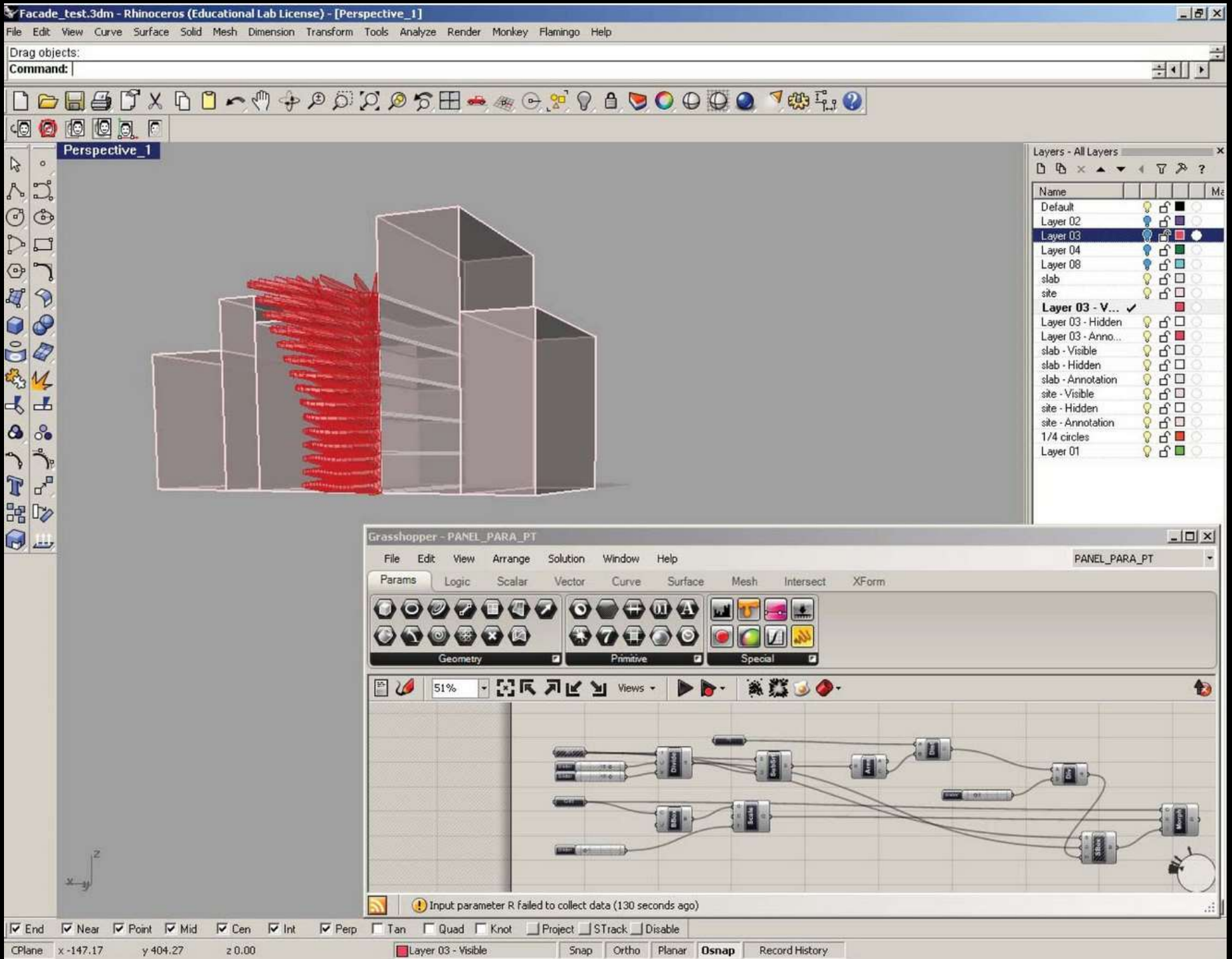
Rename	(none)
Show	<input checked="" type="checkbox"/>
Gray	<input checked="" type="checkbox"/>

Perspective Perspective Front Right

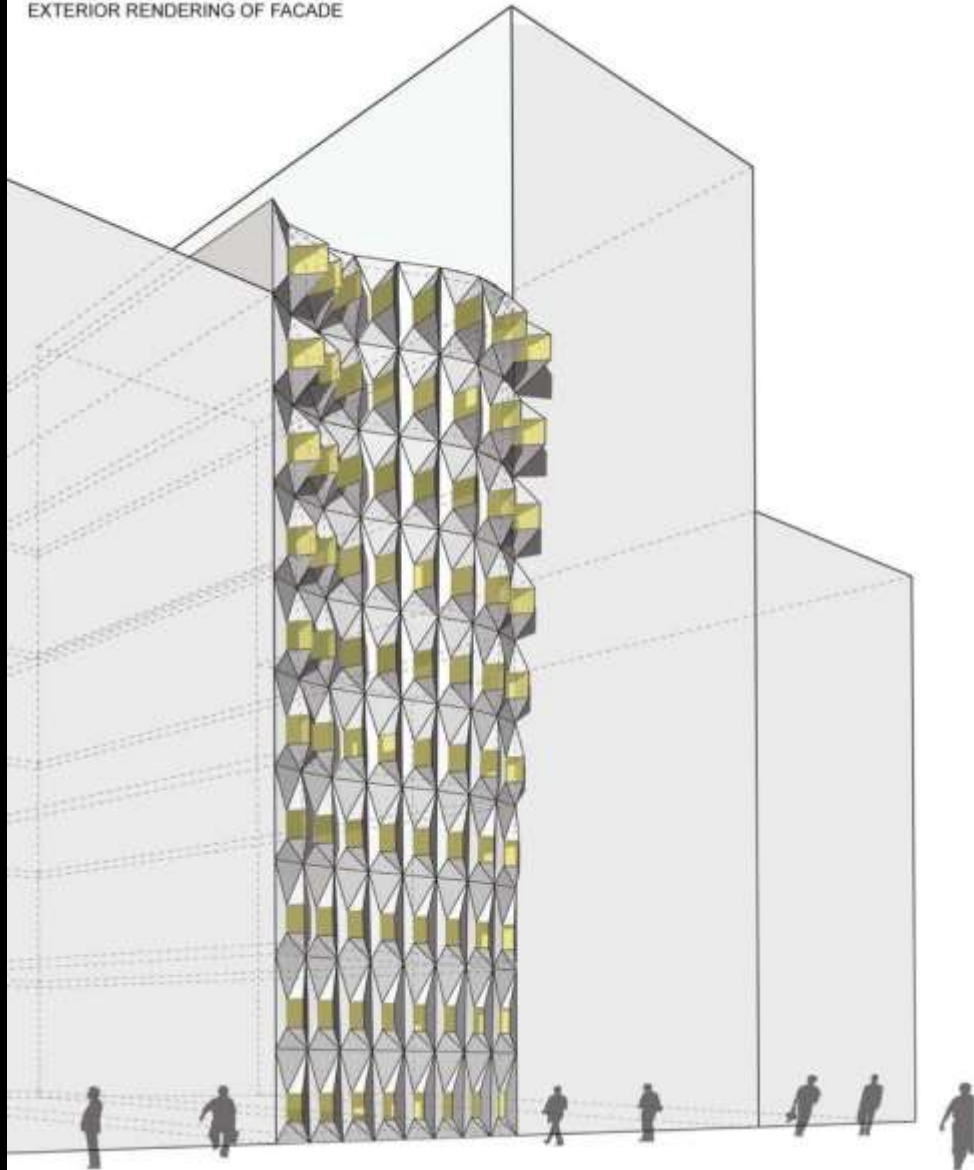
CPlane x 146.362 y 127.054 z 0.000 Millimeters Default Grid Snap Ortho Planar Onsnap SmartTrack Gumball Record History Filter CPU use: 4.2%



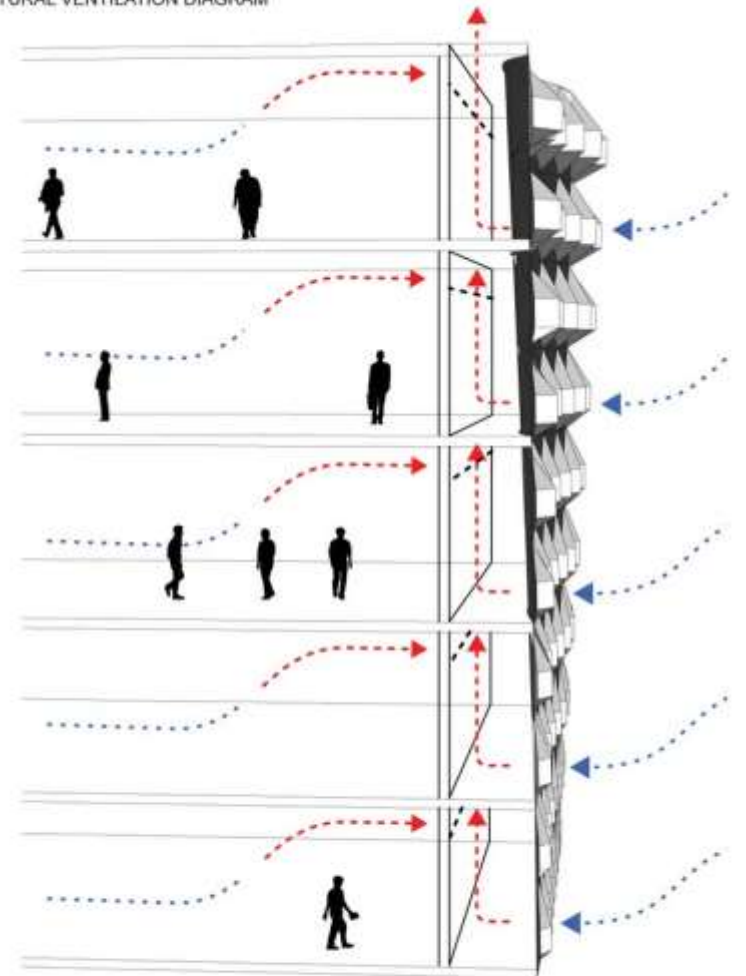




EXTERIOR RENDERING OF FACADE



NATURAL VENTILATION DIAGRAM



This panel system could be calibrated to the building's local atmosphere. The larger pores function as part of the building's overall climate control - the facade harnesses wind for natural ventilation as part of intelligent economy of energy. The warm air would then rise, and be released at the opening at the top of the building, between the building facade and the second skin.



ПАВИЉОН У ПАРКУ

PARK PAVILION

Alias

Alias Design

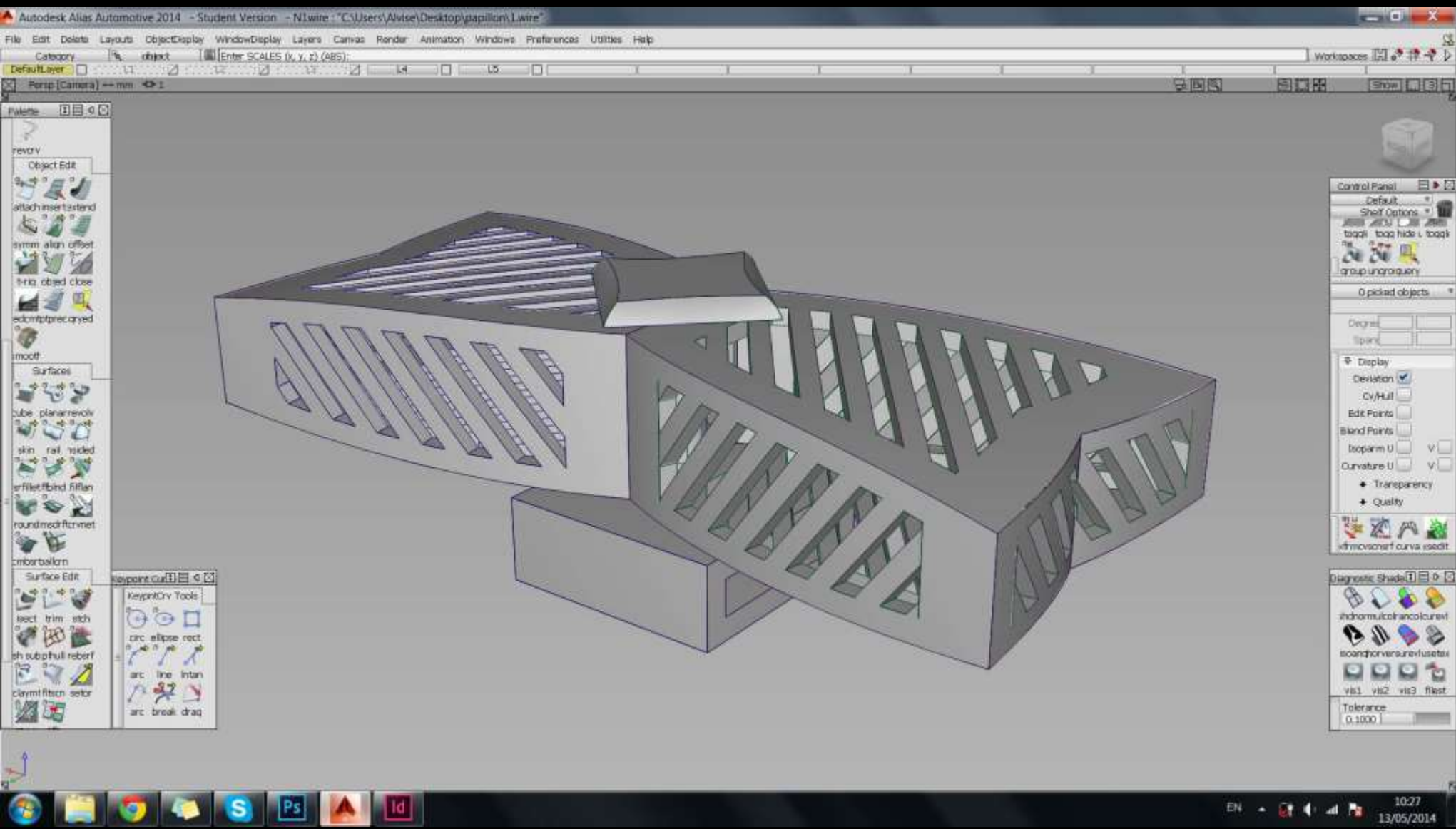
Alias SpeedForm

Alias AutoStudio

Alias Concept

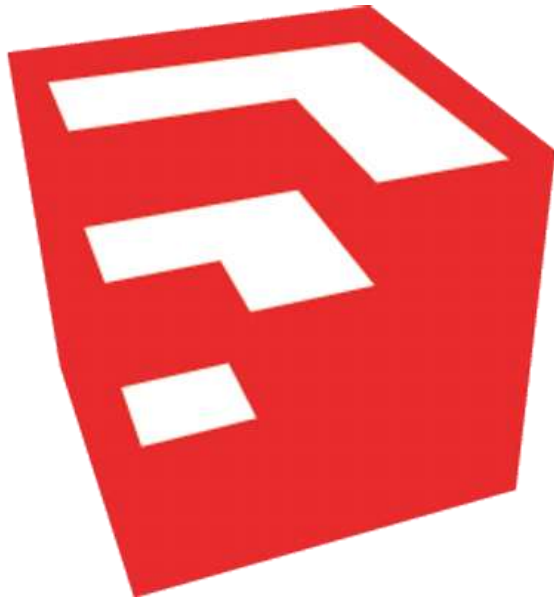
Alias Surface

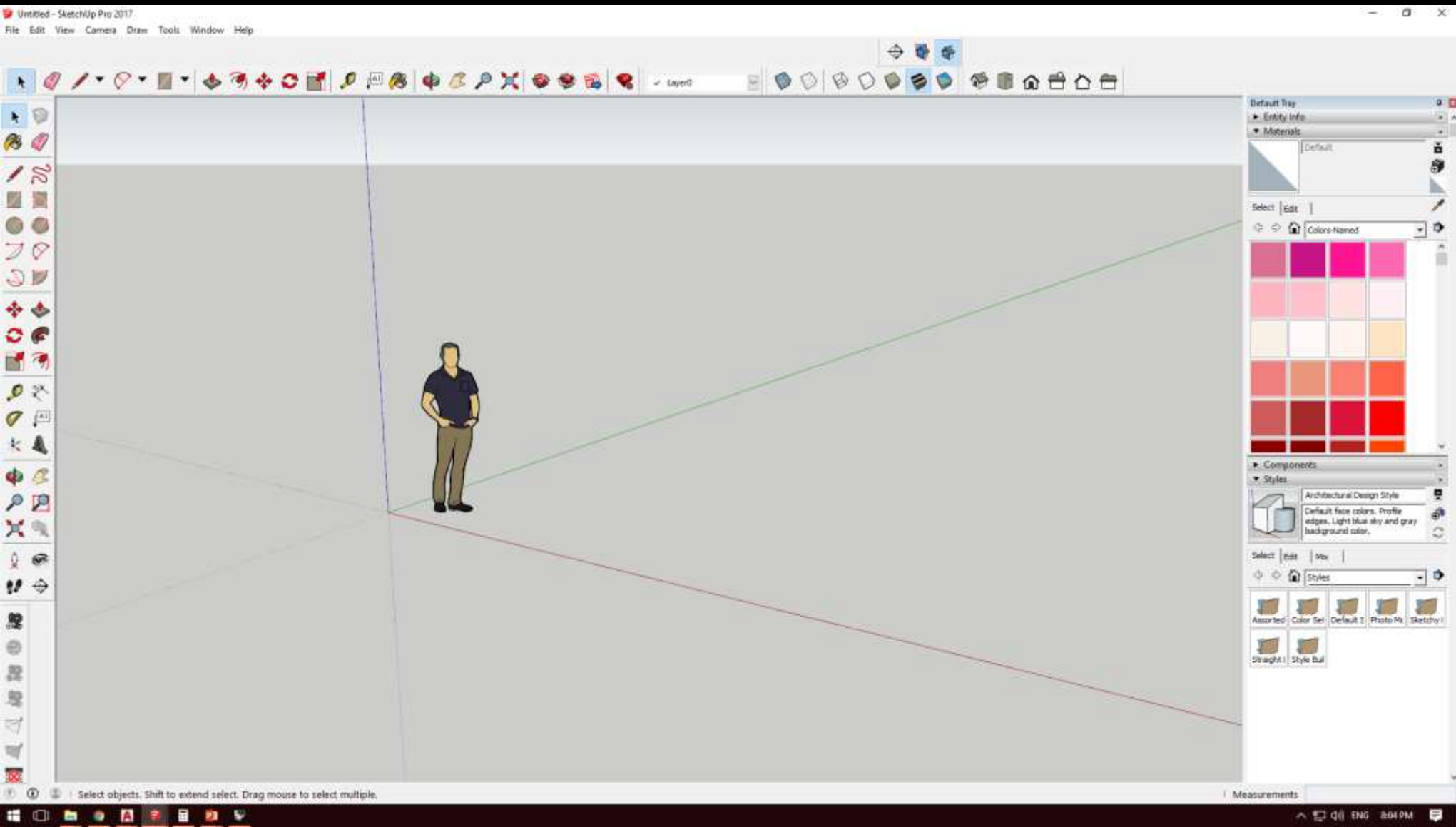






SketchUp







Default Tray

- Entity Info
- Materials
 - Color_#10

Select Edit

Colors-Named

Components

- Styles
 - Earth Modeling I
 - Simple earthy colors. Sky Disabled. No edge effects.

Select Edit Mix

Styles

- Assorted
- Color Set
- Default S
- Photo M
- Sketchy I
- Straight I
- Style Bul



Downloads	23,547
Likes	121
.skp File Size	11.4 MB
Polygons	66,938
Materials	12
Uploaded	9/17/14
Last Modified	9/17/14

Share < Embed

g+ f t p

Steelcase	185 models
------------------	------------

Tags
Reply, Furniture, Steelcase, Chair, Chairs

Reply offers a complete, global family of seating including both task and guest chairs.

Work happens in many places. Choices for seating are abundant with Reply – a complete family of comfortable value-friendly chairs that are as nice to look at as they are to sit in.

Features

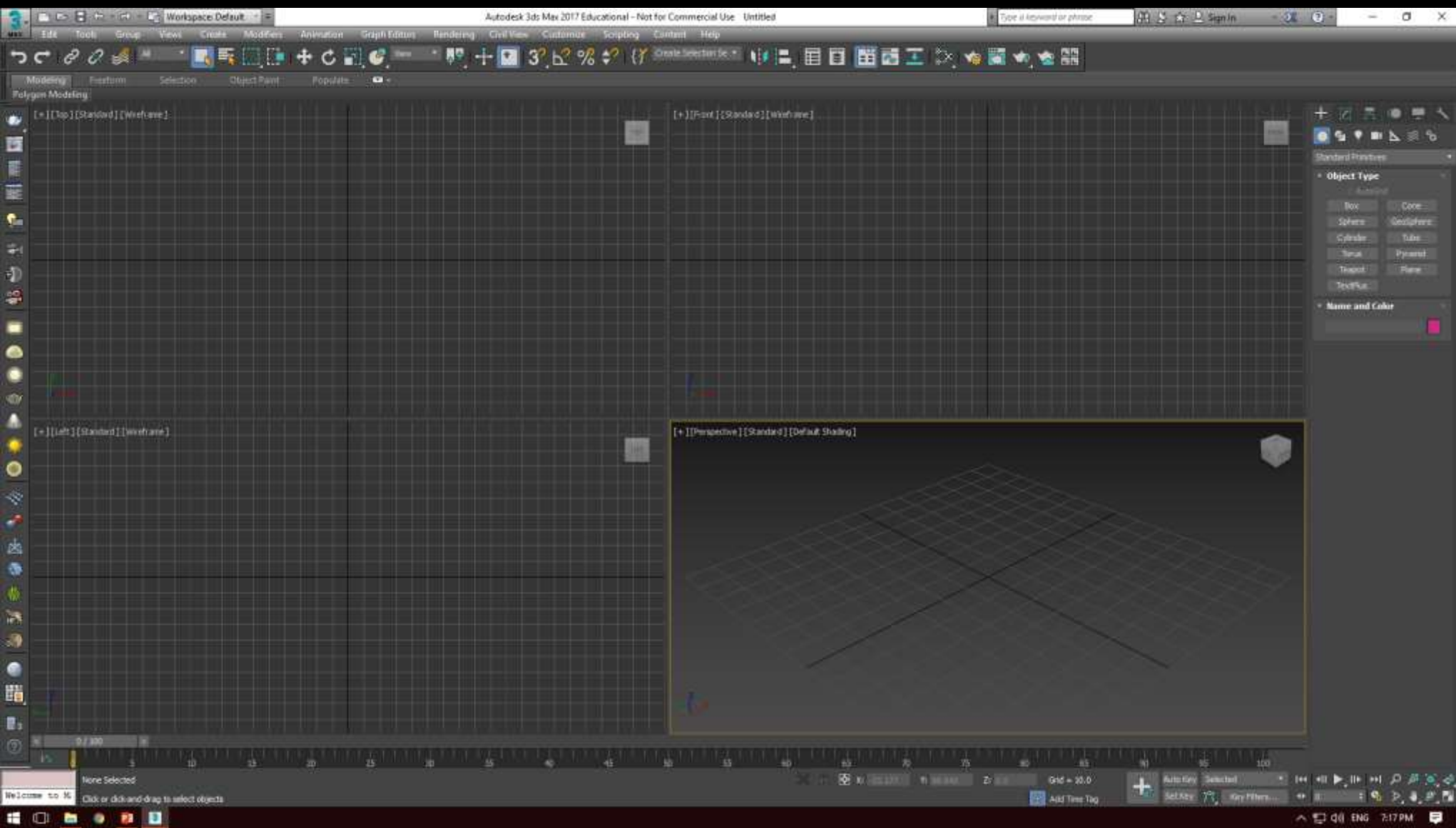
Mesh Back: Choose from nine mesh colors: Black, Grey, White, Red, Royal Blue, A Bright Purple, and Sable.

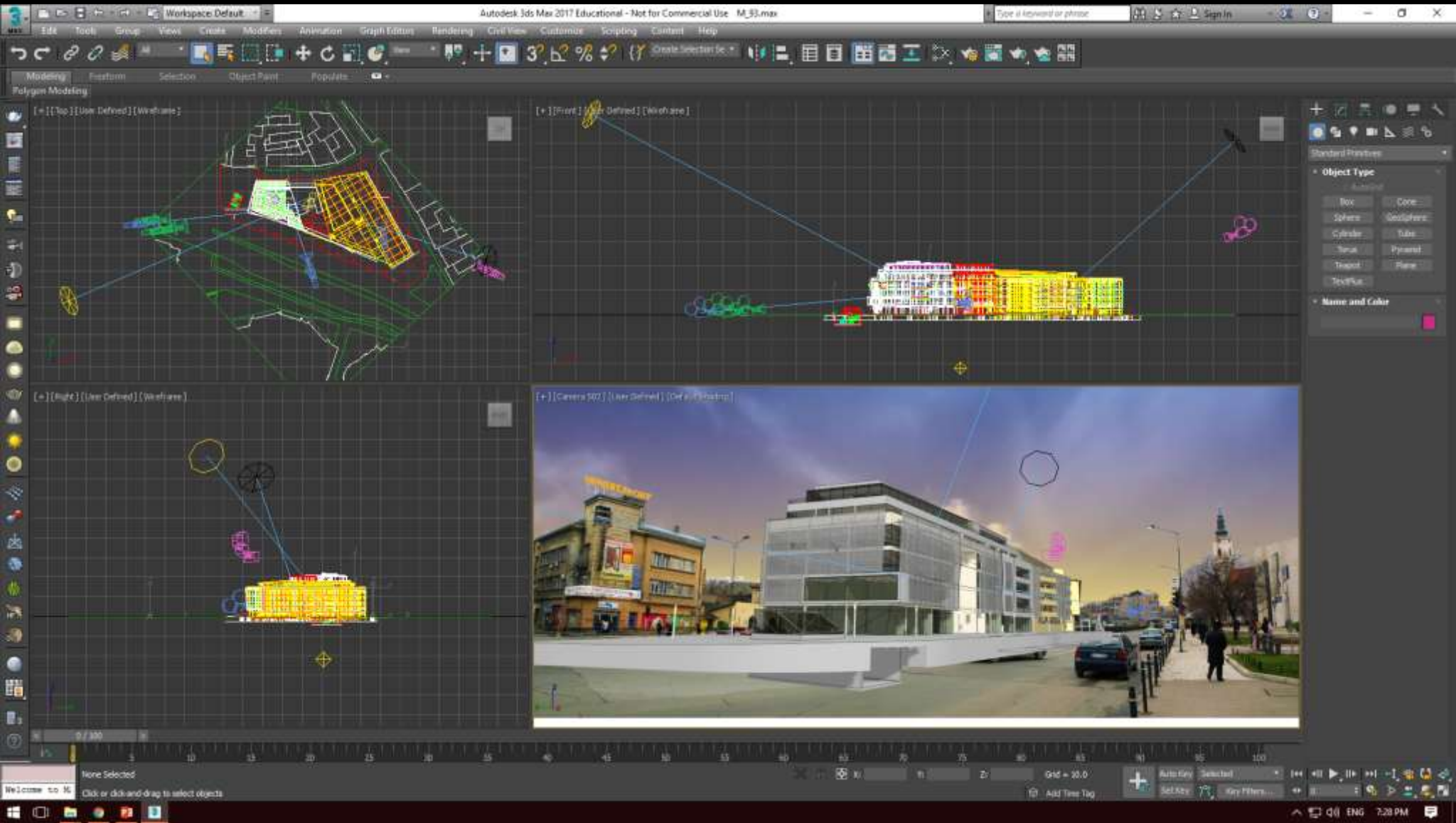
Arm Options: Available in fully adjustable (height, pivot and depth) arms, height adjustable arms, and

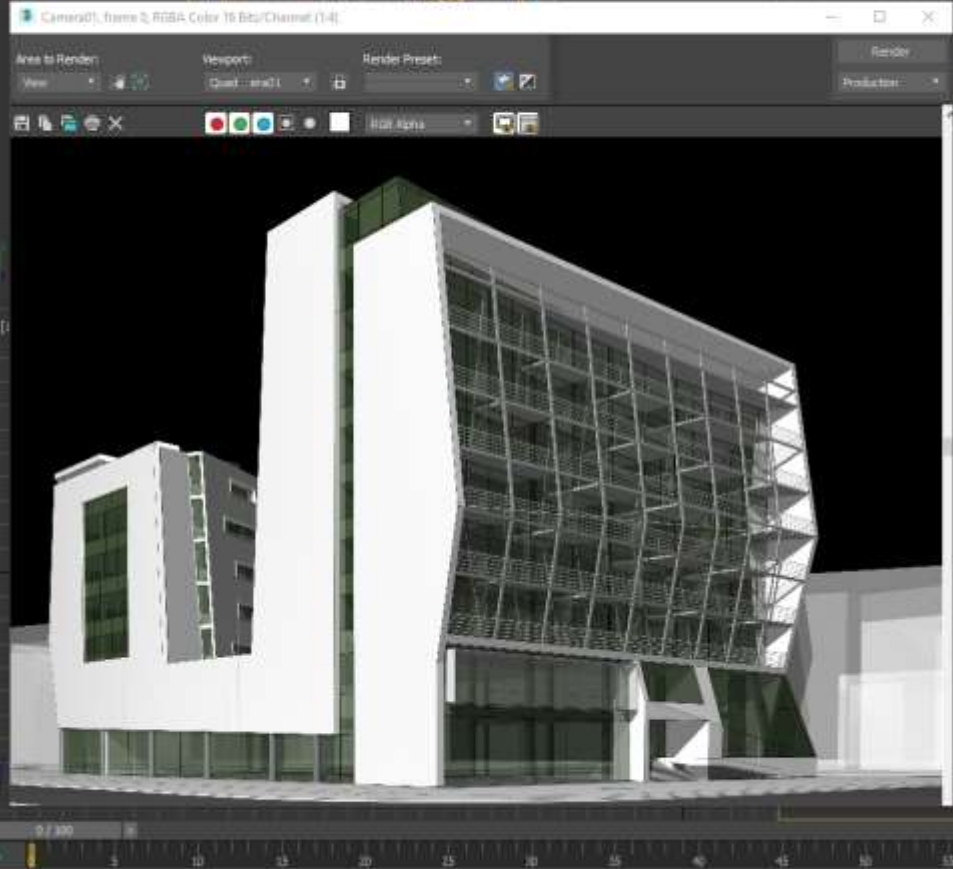
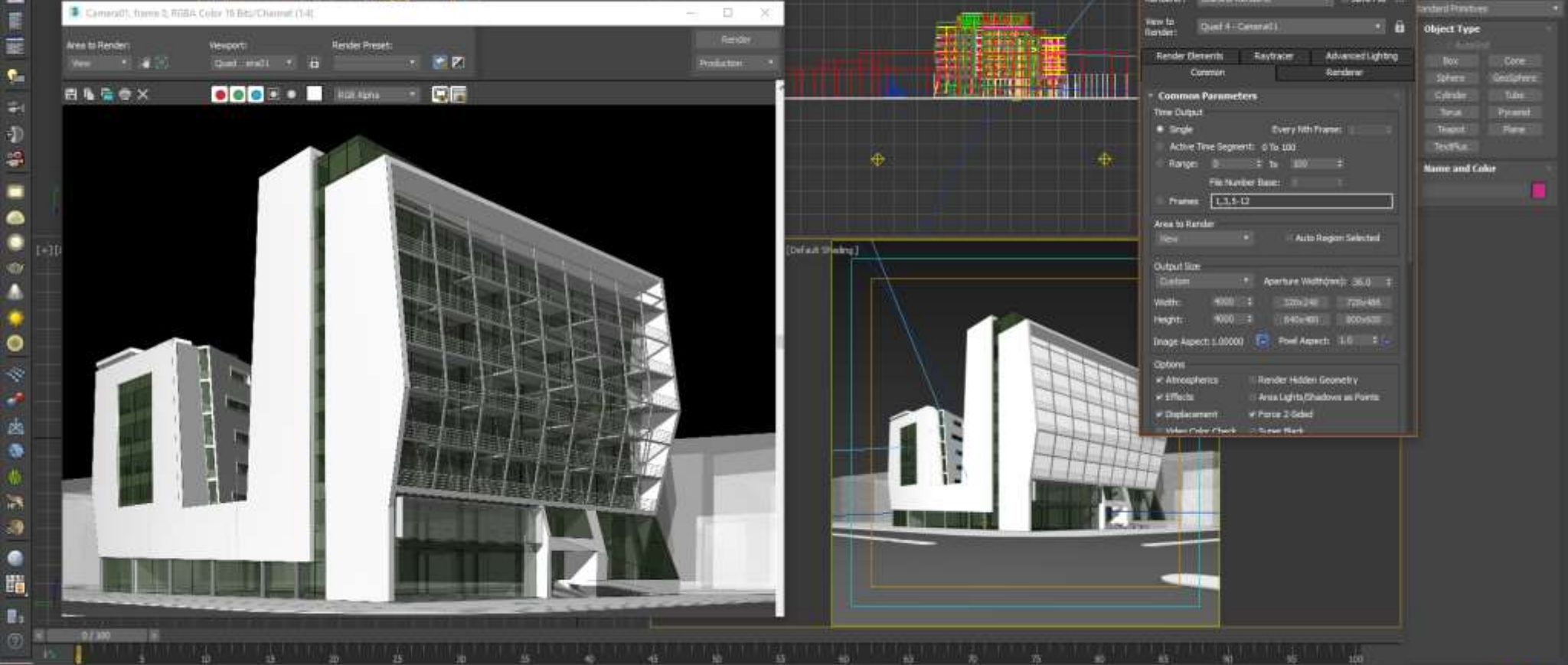
Our Terms of Use have been updated. Check 'em out.

3DS Max









Render Setup: Scanline Renderer

Target: Production Rendering Mode
 Preset: No preset selected
 Renderer: Scanline Renderer
 View to Render: Quad #1 - Camera01

Render Elements | Raytrace | Advanced Lighting

Common Parameters

Time Output
 Single | Every nth Frame: 1
 Active Time Segment: 0 to 100
 Range: 0 to 100
 File Number Base: 1
 Frames: 1,3,5-12

Area to Render
 None | Auto Region Selected

Output Size
 Custom | Aperture Width: 36.0
 Width: 400 | 320x240 | 720x480
 Height: 400 | 640x480 | 900x600
 Image Aspect: 1.00000 | Pixel Aspect: 1.0

Options
 Atmospherics | Render Hidden Geometry
 Effects | Area Lights/Shadow as Points
 Displacement | Force 2-Sided
 V-Ray Color Check | Show Mark

Standard Primitives

Box | Core
 Sphere | Spherocylinder
 Cylinder | Tube
 Torus | Pyramid
 Teapot | Plane
 TextPlane

Name and Color

Color selection area

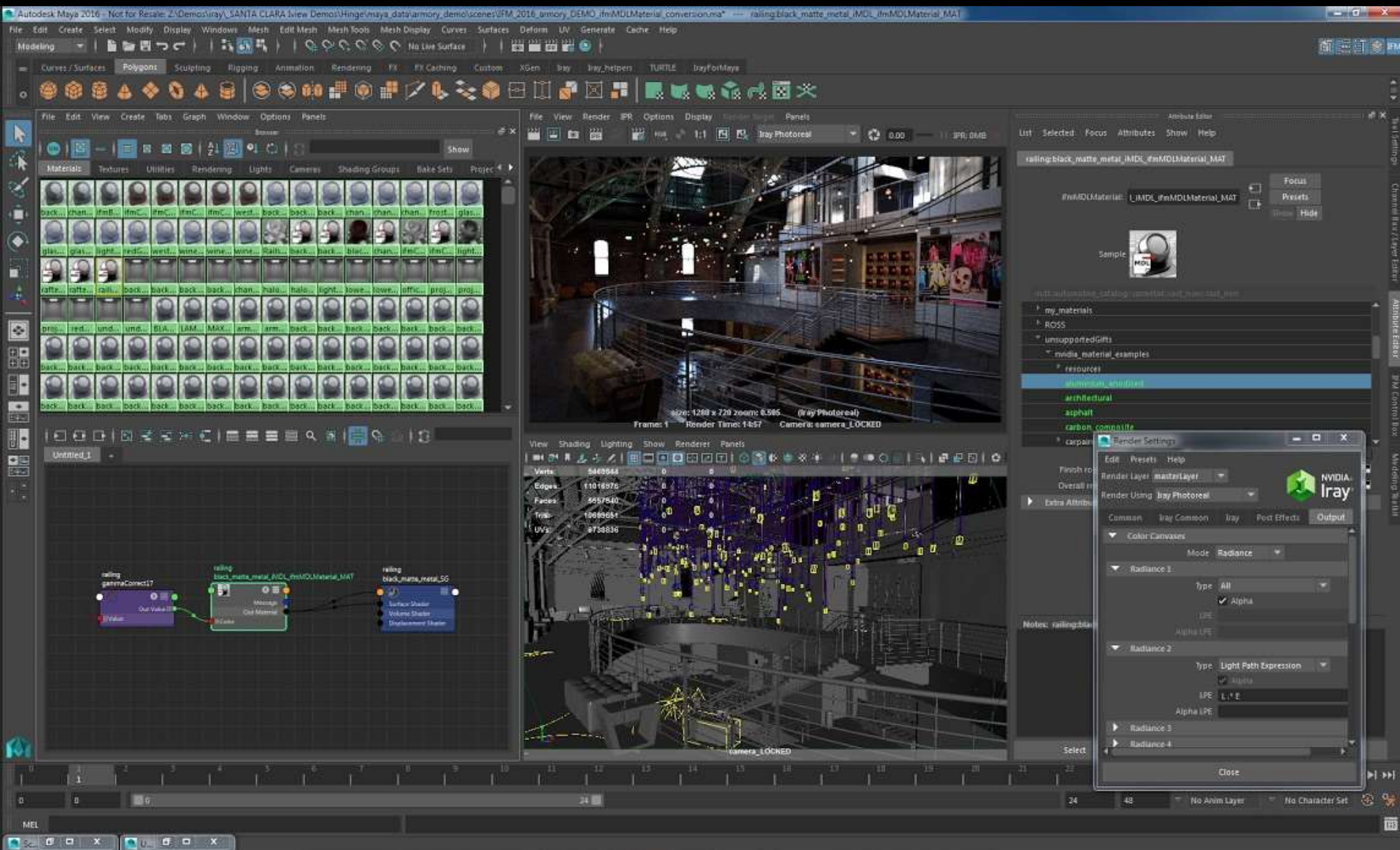


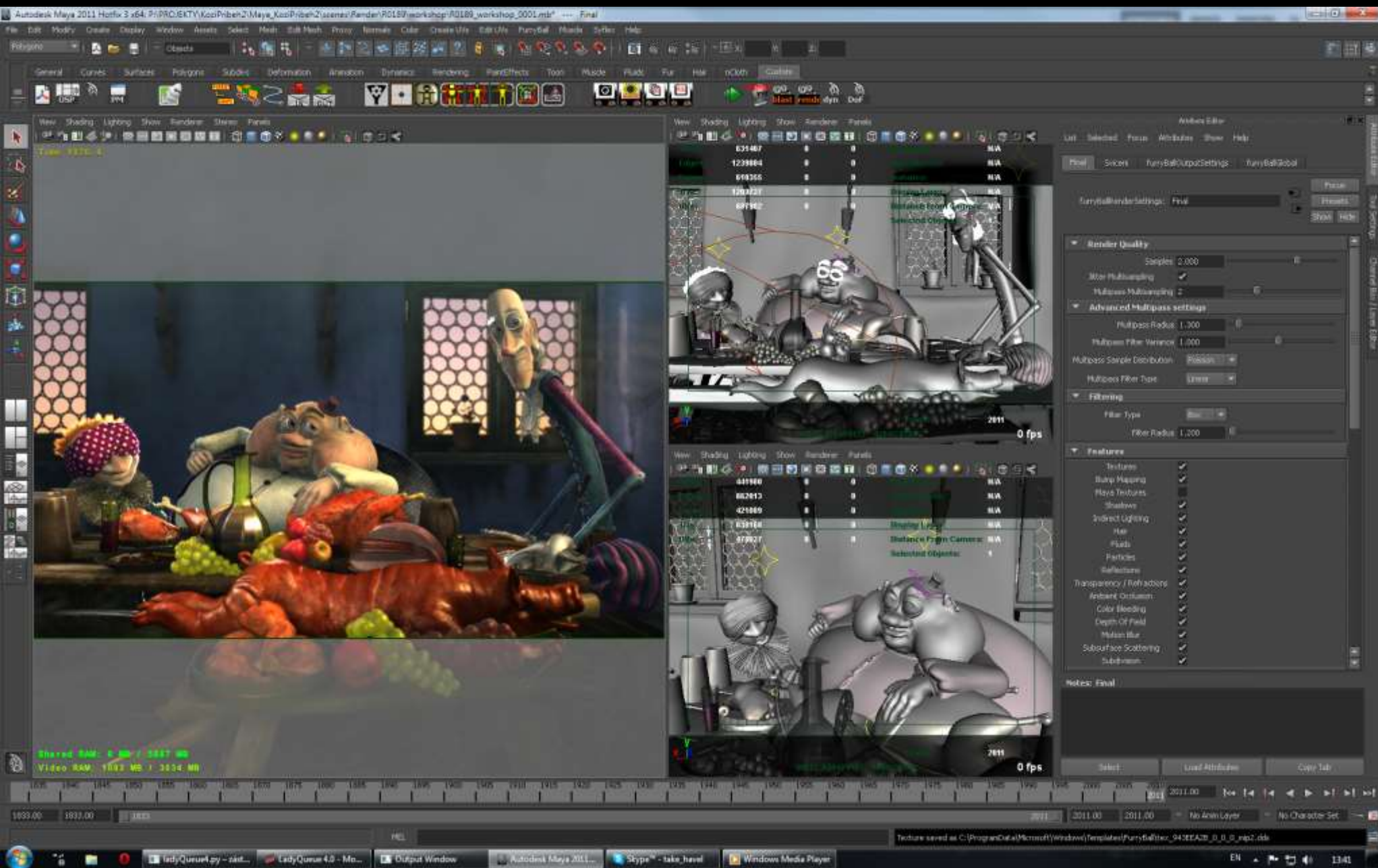




Maya









Cinema 4D




Fichier Edition Créer Sélectionner Outils Maillage Magnétisme Animer Simuler Rendu Sculpture MoGraph Personnage Modules externes Carbon Scatter 2 Octane Script Fenêtre Aide Interfac: Interface de démarrage

Vue Live Viewer Octane Render Beta 0.7.11 SOK 1.2

File Create Objects Create Materials Updates Help

50 Chr: Color

[RENDERING] Update image




Rendering: %22.18 sps/3.335 Time:00 : 02 : 26.00 : 10 : 58sec. spp/maxspp/1109/5000 Mem:163/3779/4096Mb Tris:496362 Meshes:2 clevel:93

Mode Edition Données utilisateur

OctaneMaterial [boisson_up]

Base	Roughness	Reflection	Film Width	Film Index	Fake shadows	Bump
Normal	Opacity	Dispersion	Index	Transmission	Medium	Editor

Affectations



Roughness

- Color: 0
- Float: 0
- Texture: FloatTexture
- Echantillonnage: 1
- Décalage du flou: 0%
- Echelle du flou: 0%
- Mix: 1

Reflection

- Color: 0
- Float: 0.9
- Texture: RgbSpectrum

Position Taille Rotation

X: 387.039 cm X: 18105.211 cm H: 0°

Y: 0 cm Y: 30175.352 cm P: 90°

Z: 496.391 cm Z: 15113.819 cm E: -127.832°

Objet (Refl) Taille Appliquer

Créer Edition Fonction Texture

lunettes_in lunettes_re Nappe_vert Octane Ma boisson_up boisson_in verre

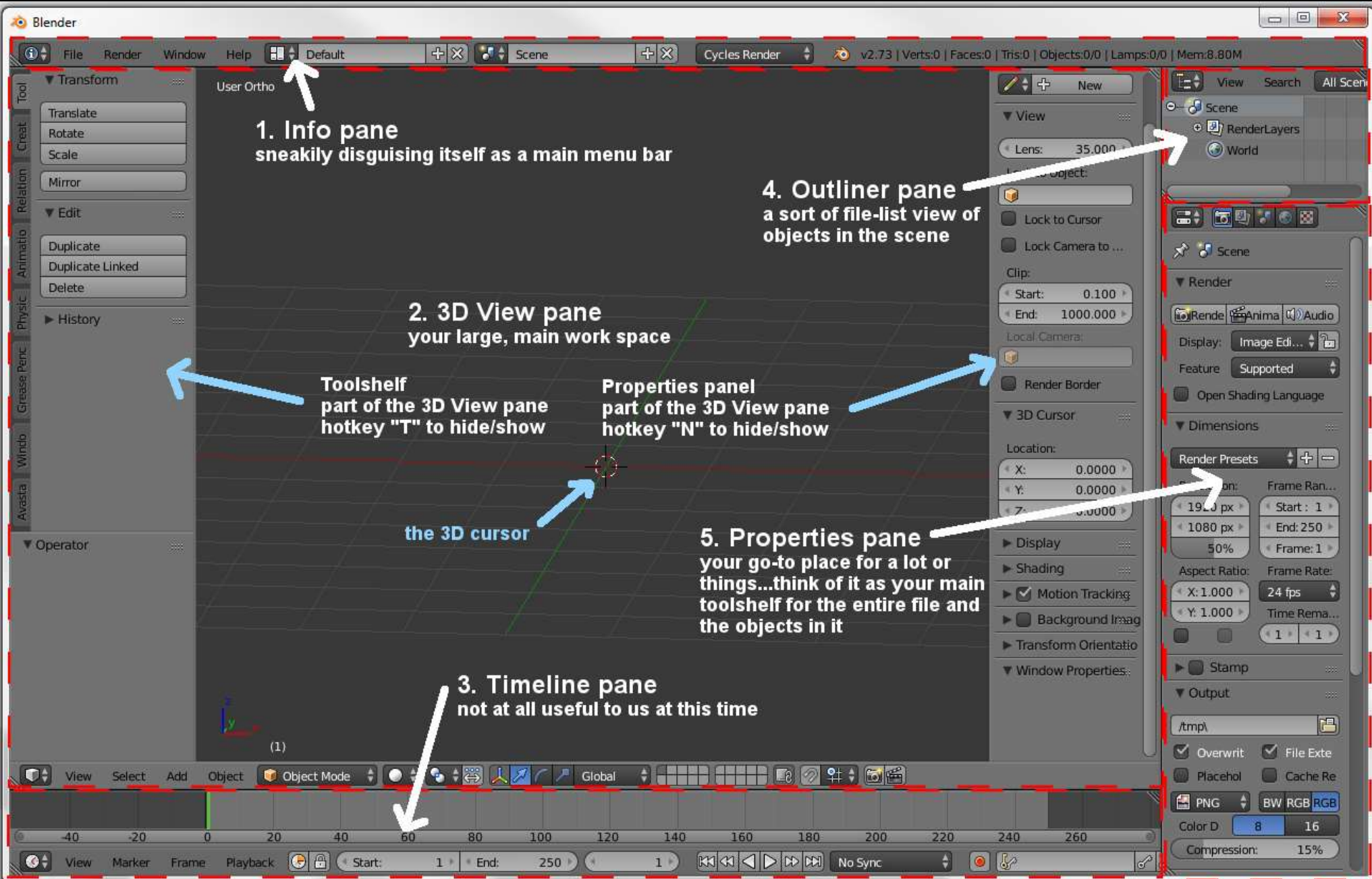
MAVOM CINEMA 4D



Blender *



*opensource



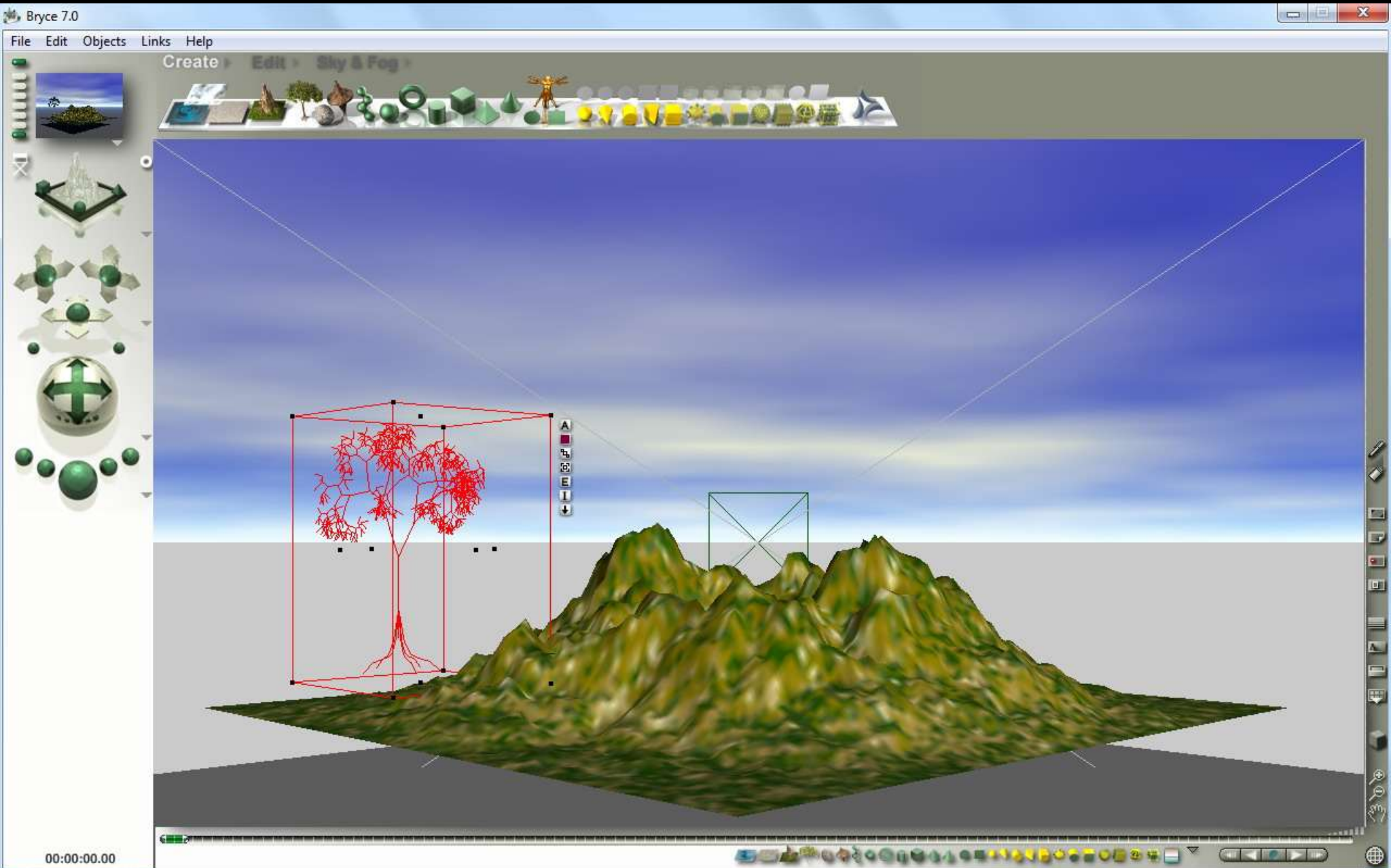






Bryce

BRYCE 7











BIM



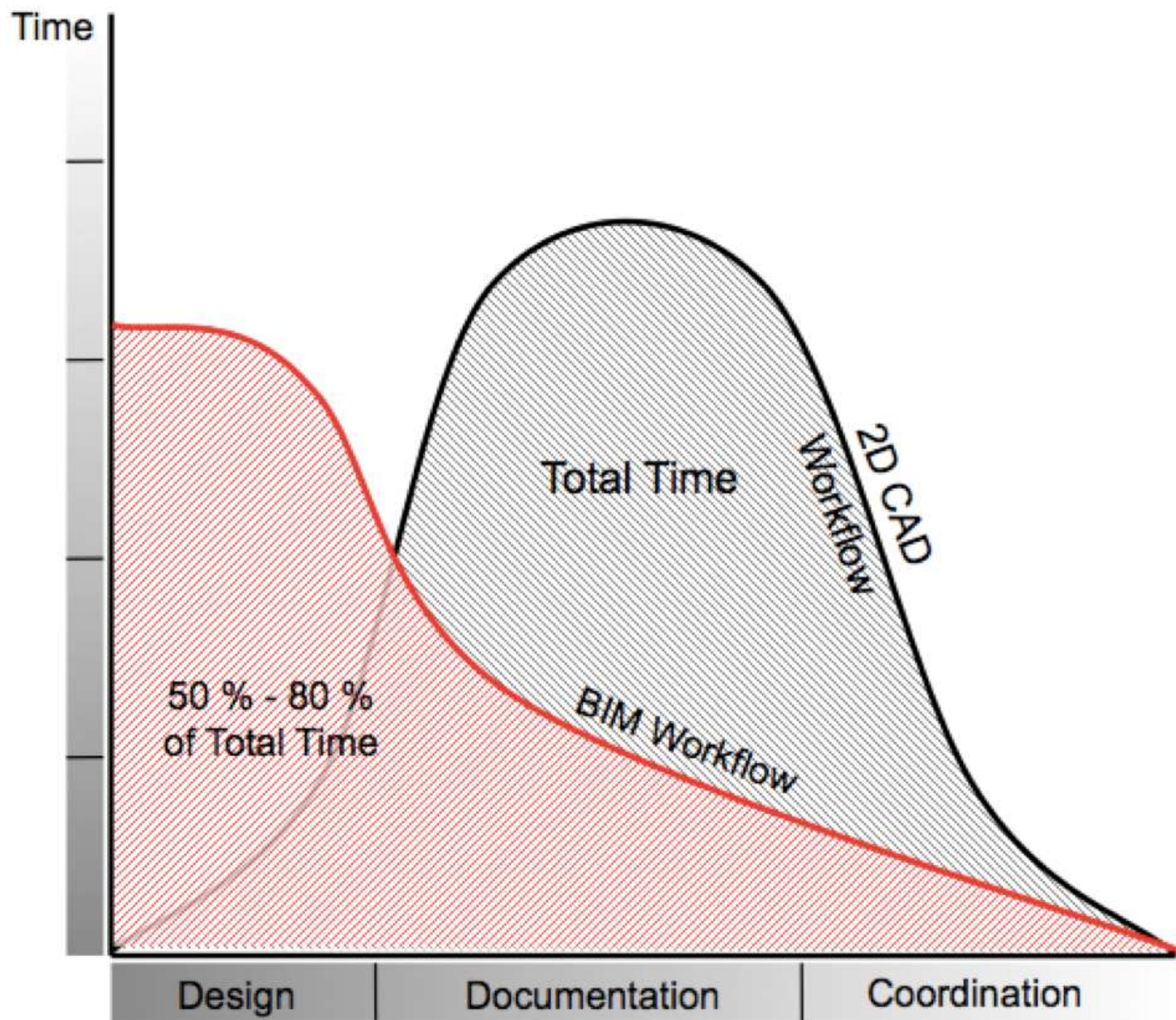
Building Information Modeling (BIM) је систем за дигитално представљање физичких и функционалних карактеристика архитектонских објеката.

BIM обухвата генерисање дигиталног модела и управљање тим моделом, за подршку пројектовању, грађењу и одржавању архитектонских објеката кроз комплетан животно циклус.

Класично техничко цртање је данас потпуно заменио CAD, јер су трошкови опреме и рачунарских програма надмашени бенефитима које пружа CAD.

Прелазак са CAD на BIM представља сличан изазов као што је била транзиција са цртања руком на CAD.

Предности су уштеда времена, симулације и оптимизација, визуализација, мање грешака итд.



1D

SCRATCH POINT



RESEARCH

- EXISTING CONDITIONS
- REGULATIONS
- WEATHER SIMULATIONS
- SUN ORIENTATION
- FUNCTIONAL PROGRAM

IMPLEMENTATION

- CONSULTING
- BIM EXECUTION PLAN
- SERVER REPOSITORY
- SOFTWARE

CONCEPT DESIGN

- STRATEGIES
- AREA ESTIMATION
- COST ESTIMATION
- GENERAL VOLUMETRY
- ACCESSIBILITY
- VIABILITY

2D

VECTOR



PRODUCTION

- 2D DRAWINGS
- DOCUMENTATION
- VIEWS AND PLANS

IMPLEMENTATION

- PROGRAMMING
- PARAMETERIZATION
- FILE MANAGEMENT
- COMMUNICATIONS

DS DEVELOPMENT

- ROOM DATA SHEETS
- LIST OF DELIVERABLES
- SCOPE DEFINITION
- MATERIALS
- STRUCTURAL LOADS
- ENERGY LOADS

SUSTAINABILITY

- LIFE CYCLE ESTIMATION
- CONSTRUCTION SOLUTIONS
- PRIMARY MEP SYSTEMS
- ENERGY PRODUCTION
- CERTIFICATION STRATEGIES

3D

SHAPE



REPRESENTATION

- RENDERINGS
- WALKTHROUGHS
- LASER SCANNING

IMPLEMENTATION

- BIM OBJECT CREATION
- VISUAL PROGRAMMING
- CLASH DETECTION
- MODEL CHECKER

FINAL DOCS

- DETAILED DESIGN
- ASSEMBLIES
- STRUCTURAL DESIGN
- MEP DESIGN
- SPECIFICATIONS

SUSTAINABILITY

- INSULATION VALUES
- SUN PROTECTION
- DAYLIGHT REQUIREMENTS

4D

TIME



PRODUCTION

- MODEL FEDERATION
- VIRTUAL CONSTRUCTION
- SCHEDULING
- PROJECT PHASING
- TIME LINING
- CONSTRUCTION PLANNING
- EQUIPMENT DELIVERIES
- VISUAL VALIDATION

SYSTEMS

- PREFABRICATION
- STRUCTURAL CONSTRUCTION
- MEP CONSTRUCTION

SIMULATIONS

- LIFE CYCLE SIMULATION
- SUN SIMULATIONS
- WIND SIMULATIONS
- ENERGY SIMULATIONS
- CERTIFICATION CHECK

5D

COST



PRODUCTION

- QUANTITY EXTRACTIONS
- DETAILED BILL OF QUANTITIES
- FABRICATION MODELS

CONTRACTS

- FEES COMPARISON
- TRADE SELECTION
- LOGISTICS

SUSTAINABILITY

- CERTIFICATION EVALUATION
- LIFE CYCLE COST
- COMPARATIVE STUDY

6D

PERFORMANCE



RESULTS

- KNOWN ALTERNATIVES
- CERTIFICATION
- AUDITED BIM MODEL
- PERFORMANCE REPORT

VALUE

ENGINEERING

- SIMULATIONS
- ENERGY PERFORMANCE
- SYSTEMS PERFORMANCE
- ARCHITECTURAL PERFORMANCE
- CONSTRUCTION PERFORMANCE

SAVE ESTIMATION

- COMPARATIVE COST
- CONSTRUCTION BENEFITS
- RETURN ON INVESTMENT
- TIMING RISK
- SELECTED ITEMS TO BE OPTIMIZED

RE-DESIGN

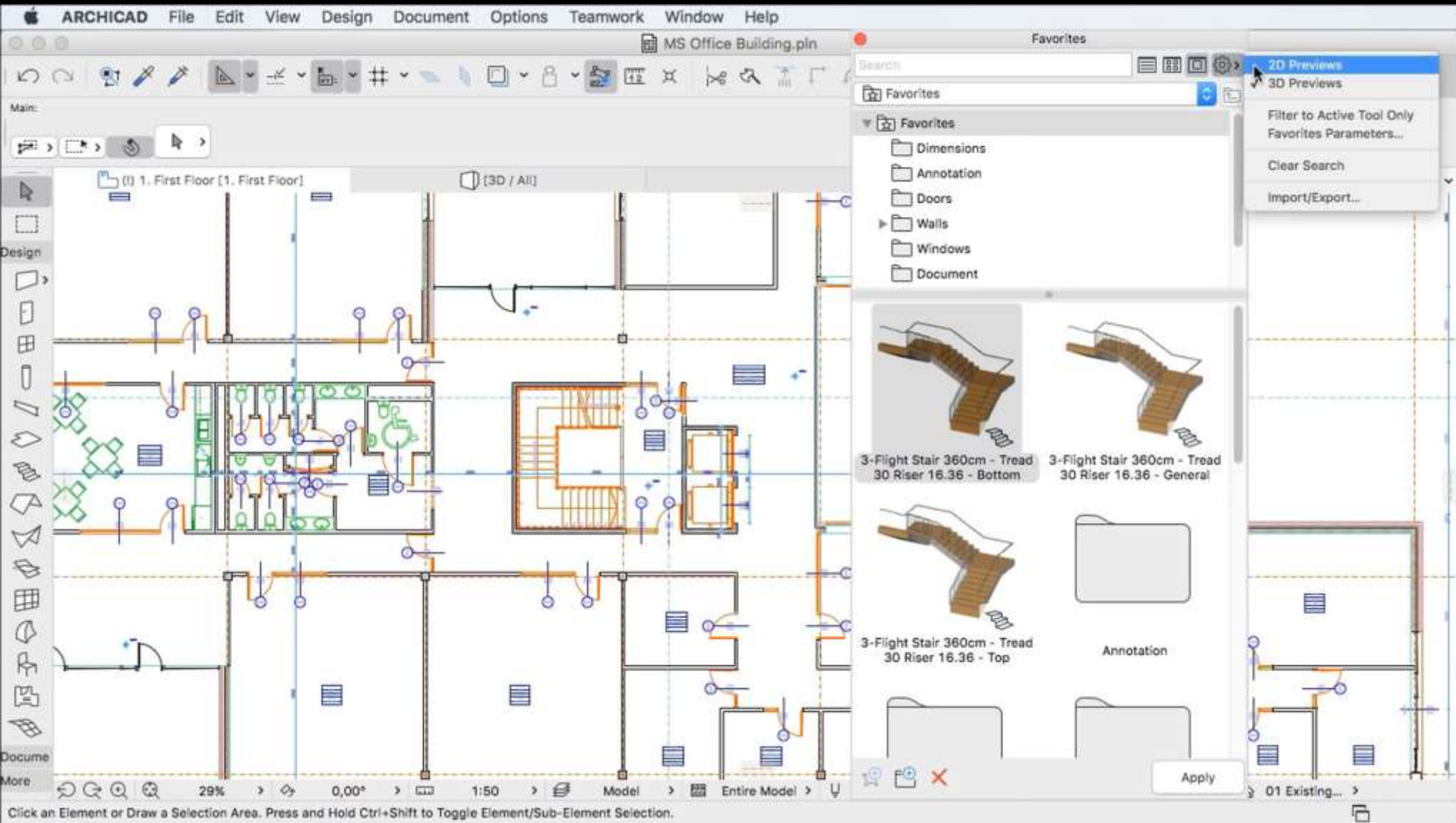
- CERTIFIED BIM MODEL



ASU Walter Cronkite School of Journalism and Mass Communication, Финикс, САД

ArchiCAD

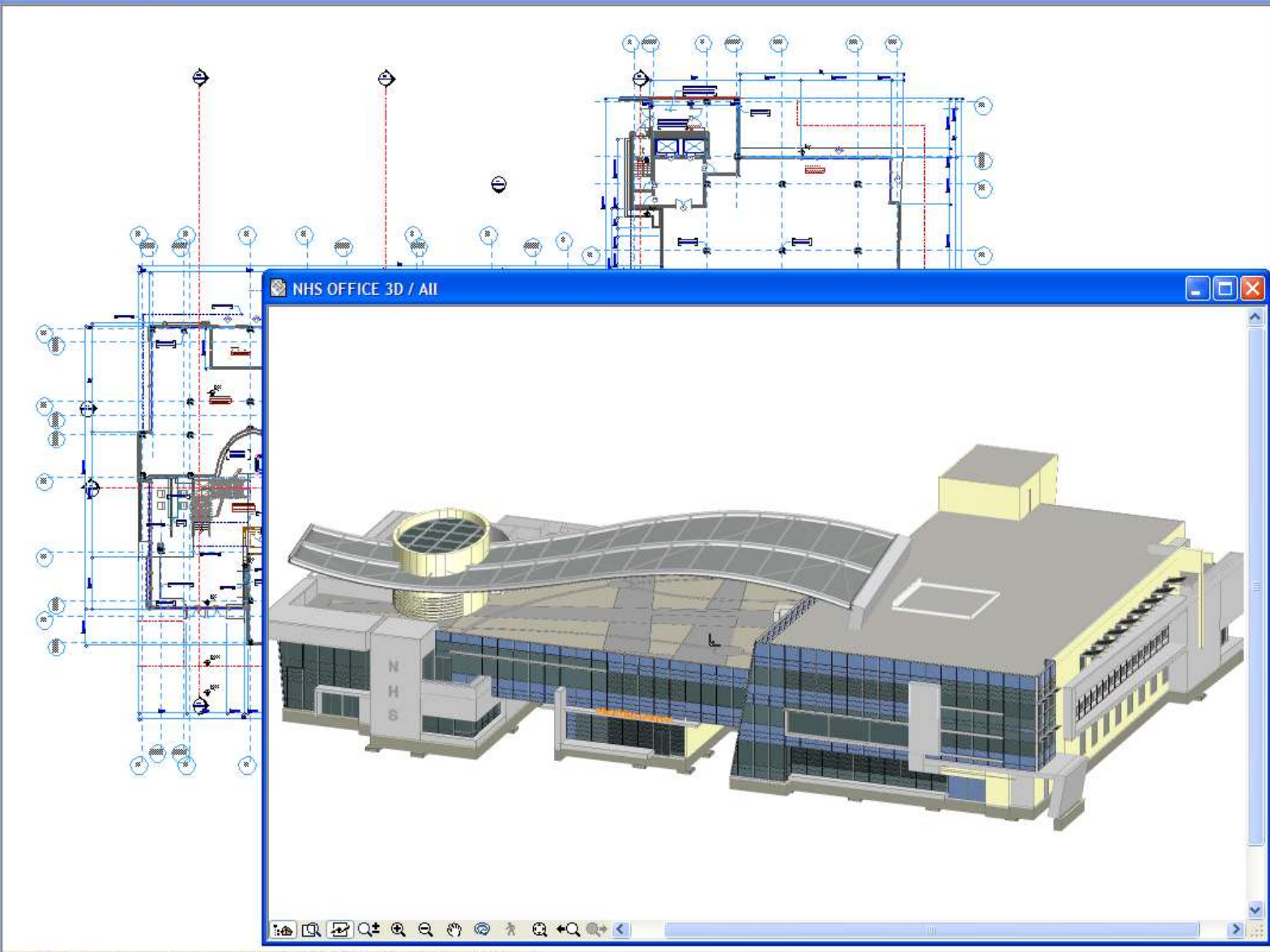






- ToolBox**
- Selection**
 - Arrow
 - Marquee
- Design**
 - Wall
 - Wall End
 - Door
 - Window
 - Corner...
 - Skylight
 - Roof
 - Beam
 - Column
 - Slab
 - Stair
 - Mesh
 - Zone
 - Object
 - Lamp
- Document**
 - Dimension
 - Angle D...
 - Level Di...
 - Radial ...
 - Text
 - Label
 - Fill
 - Line
 - Arc/Cirde
 - Polyline
 - Spline
 - Hotspot
 - Figure
 - Drawing
 - Section...
 - Detail
 - Camera

NHS OFFICE / 0. 1 floor



NHS OFFICE 3D / All



- Navigator - View Map**
- NHS OFFICE COMPLEX
 - Floor Plans
 - Foundation Plan
 - 1st Floor Plan
 - 2nd Floor Plan
 - 3rd Floor Plan
 - Roof Plan
 - Sections
 - 01 A_A Section
 - 02 B_B Section
 - 03 C_C Section
 - 04 D_D Section
 - Elevations
 - 05 South Elevation
 - 06 East Elevation
 - 07 North Elevation
 - 08 West Elevation
 - Details
 - 3D Views
 - Generic Axonometry
 - Schedules

Properties

1st Floor Plan

Detailed Floor Plans

1/8" = 1'-0"

Custom

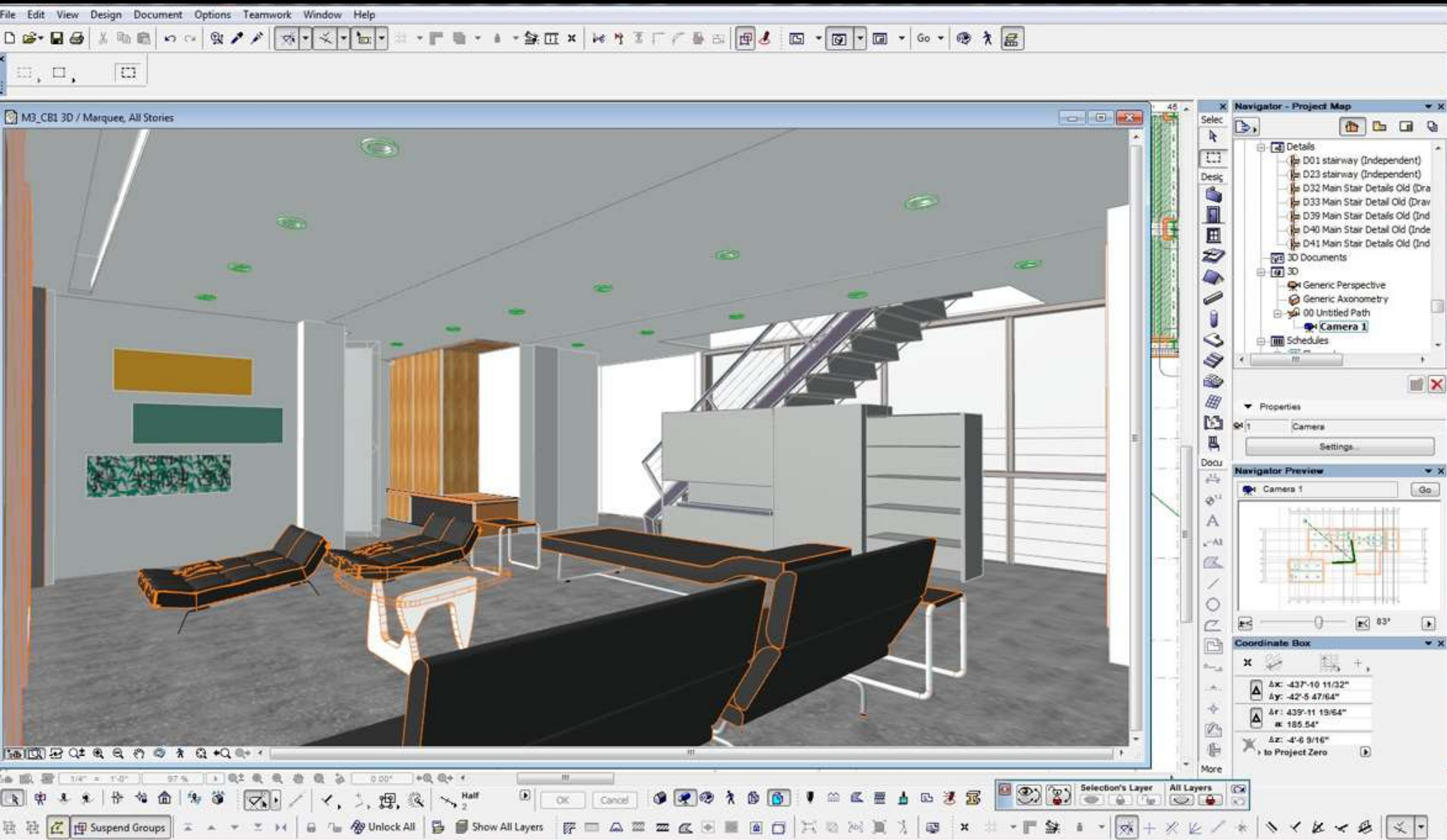
Settings...

Quick Options

Detailed Floor Plans

1/4" = 1'-0"

Custom

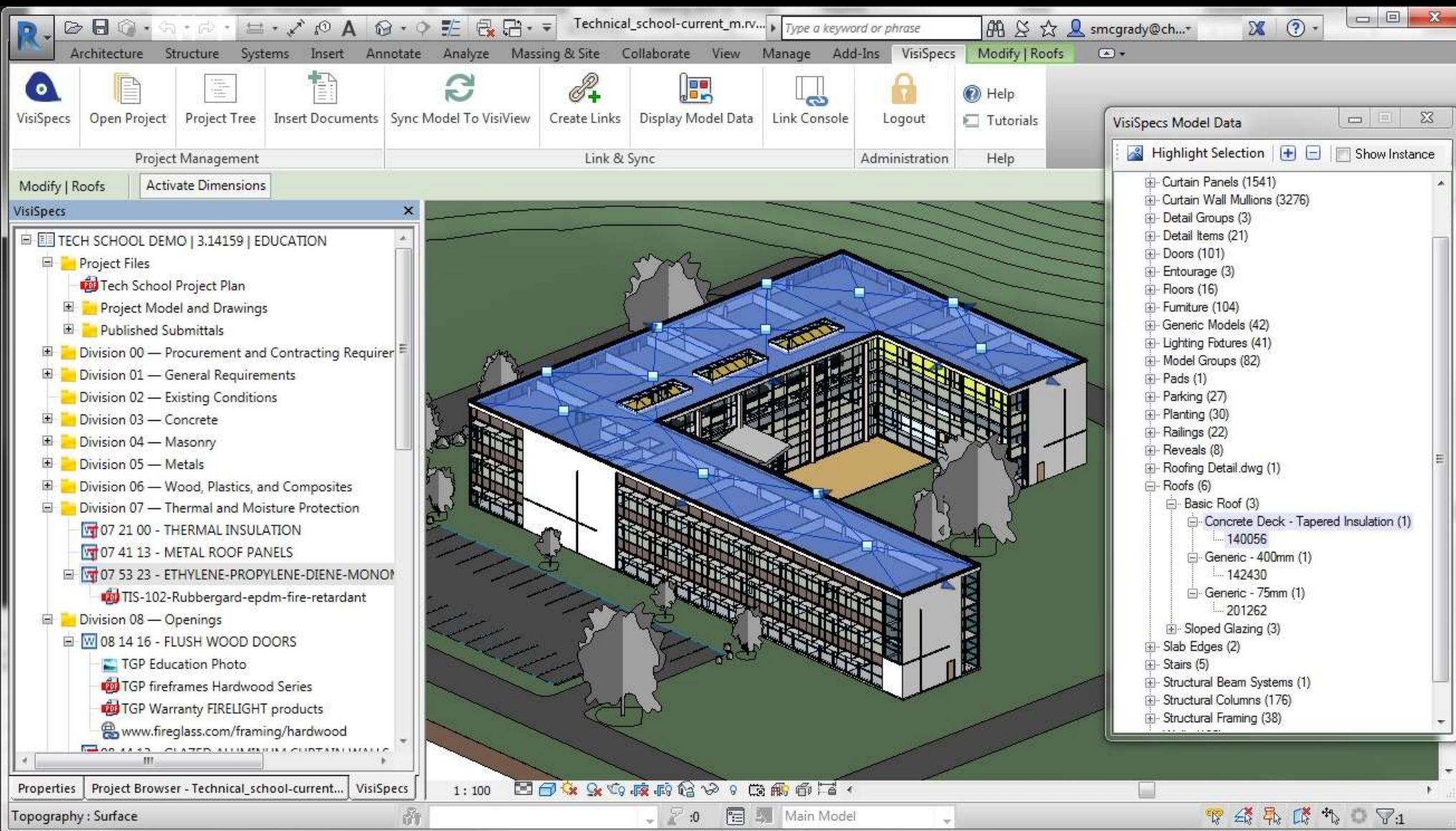






AUTODESK®
REVIT® 2018







ALLPLAN

ALLPLAN

ARCHITECTURE 2017



Task Board

Tools Library Layers Properties Objects Task Board

Task Board

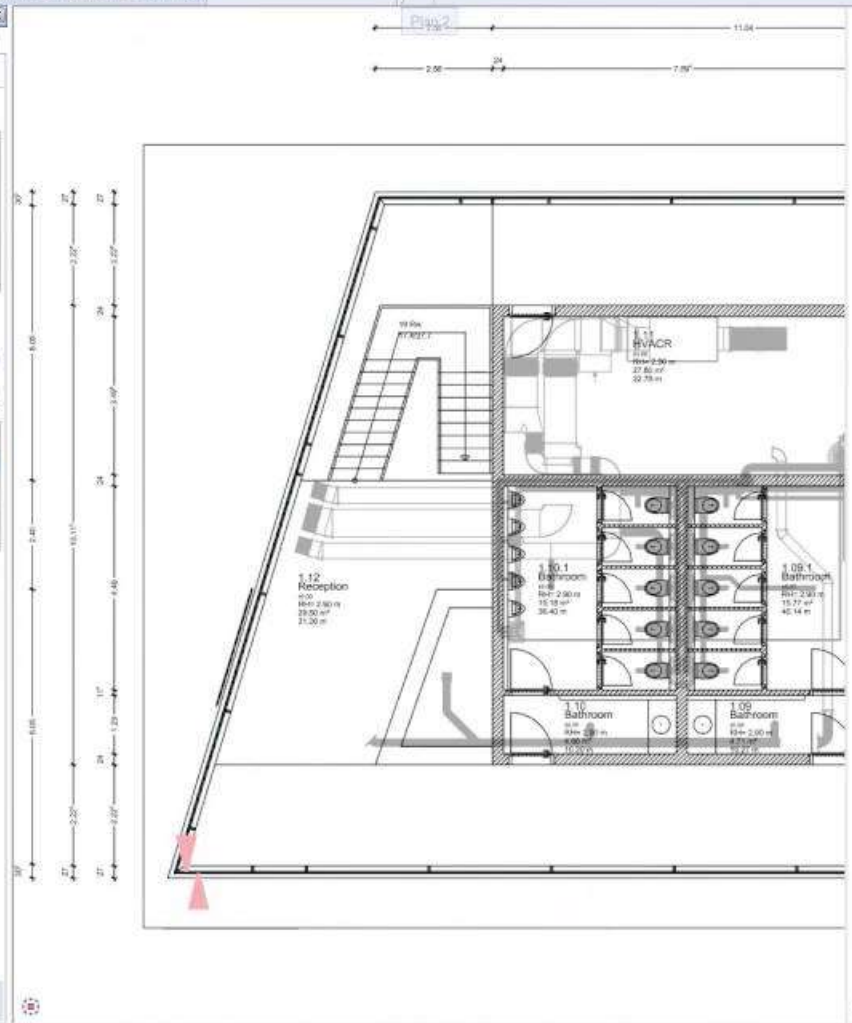
Preview



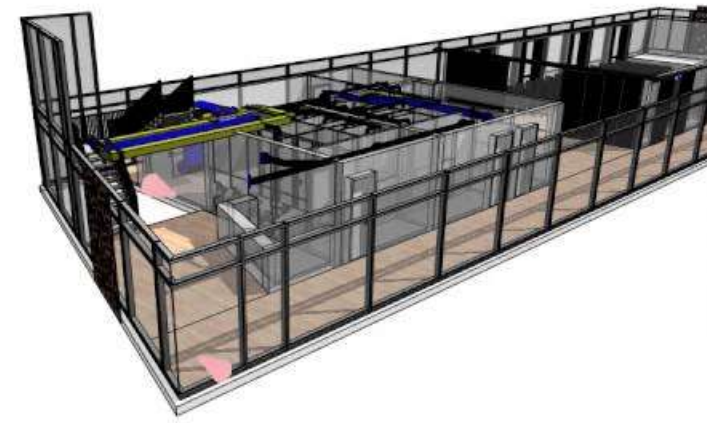
Tasks



Created	Title	Prior...
05/03/20...	Complete planning	...
06/03/20...	complete planning here	...
06/03/20...	overhead lights	...
05/18/20...	Columns required	...
05/18/20...	Material request	...



Central perspective:1



Click left to select, Ctrl+click to add, Shift+click to select entity group

Press F1 to get Help.

Визуелизација

(plugins)



v-ray



**V-Ray је додатак (plugin)
намењен визуелизацији 3Д модела**

V-Ray for Revit

V-Ray for MODO

V-Ray for SketchUp

V-Ray for 3ds Max

V-Ray for Maya

V-Ray for Rhino

V-Ray for Cinema 4D

V-Ray for NUKE

V-Ray for Blender

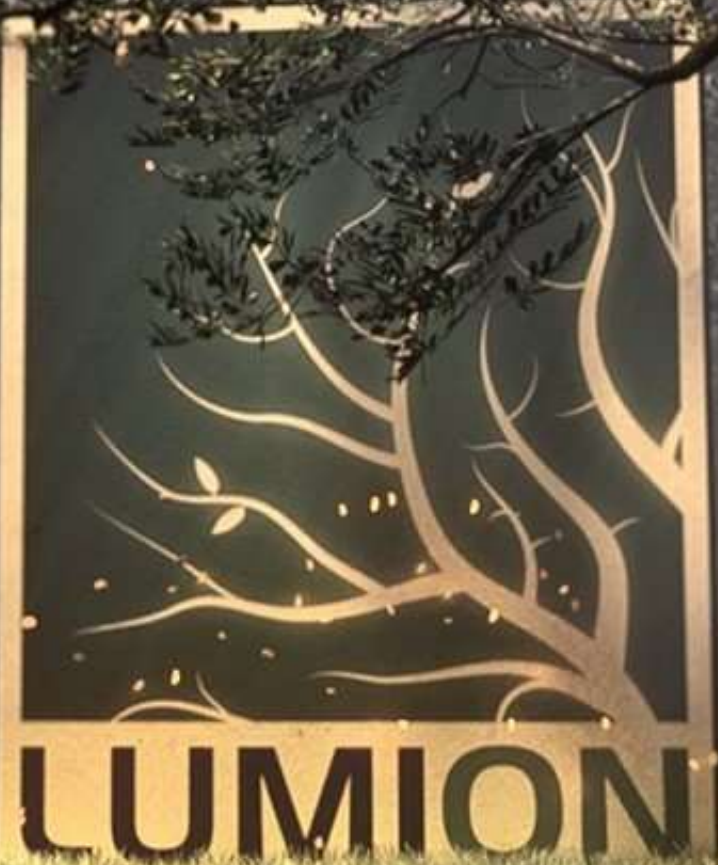


Software: Autodesk 3DS Max
Render: V-ray
Post production: Photoshop



Software: Autodesk Maya
Render: V-ray
Post production: Photoshop

Визуелизација



LUMION









Постпродукција



