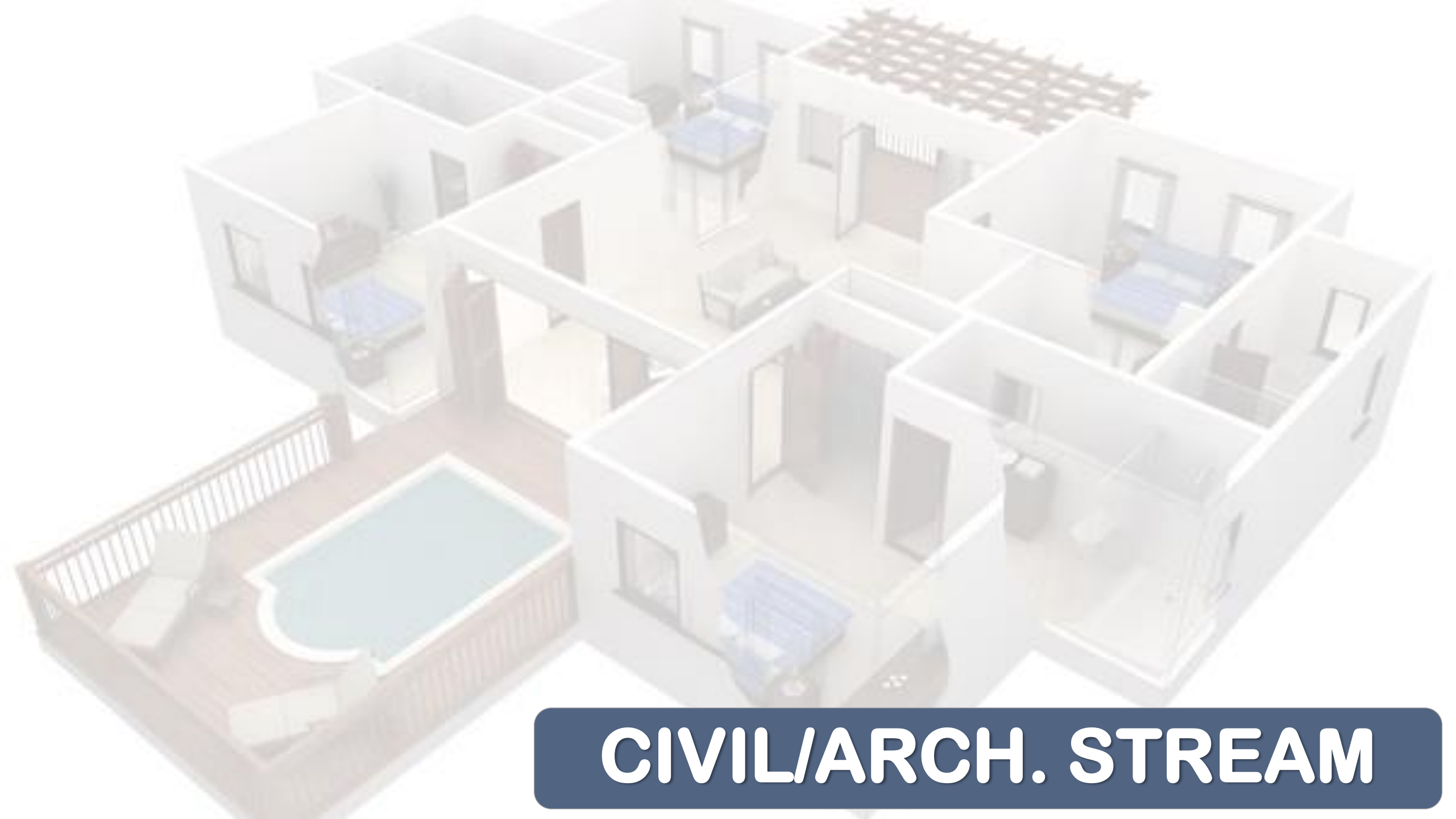
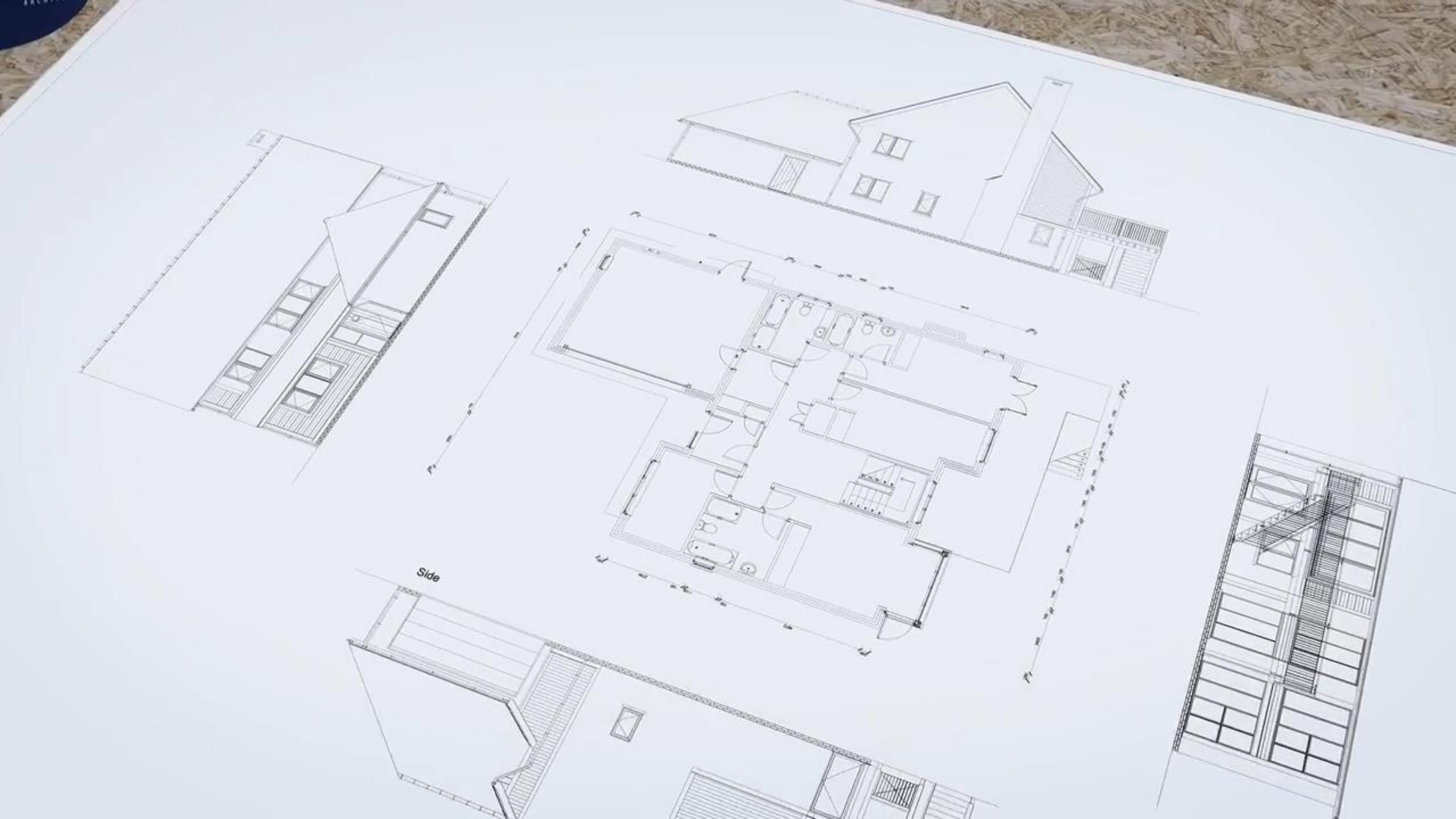
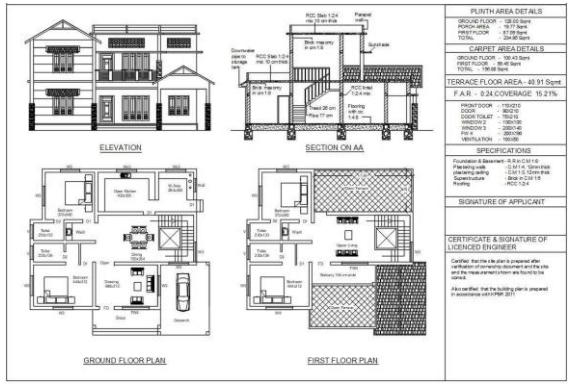


CIVIL/ARCH. STREAM


Side

Basic Terminology in Civil/Arch. CAD



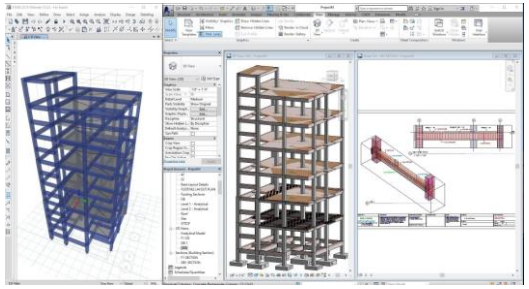
Plan & Elevations

3D Modelling & Rendering

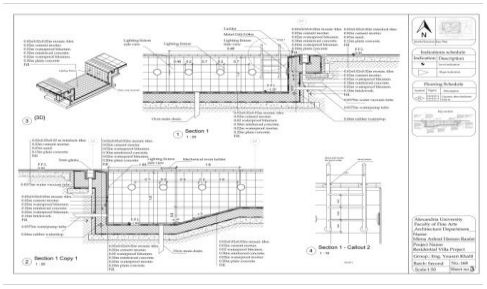
Exterior Design

Interior Design

Walk-through



Structure Design



Detailed/Working Drawing

Infrastructure Development

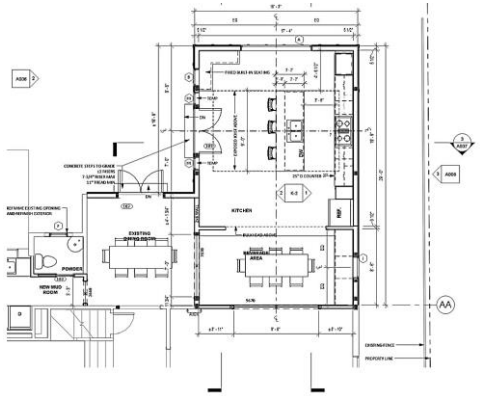
Popular Software Technologies for
Civil Engineers and Architects

Popular Software for Civil Engineers and Architects

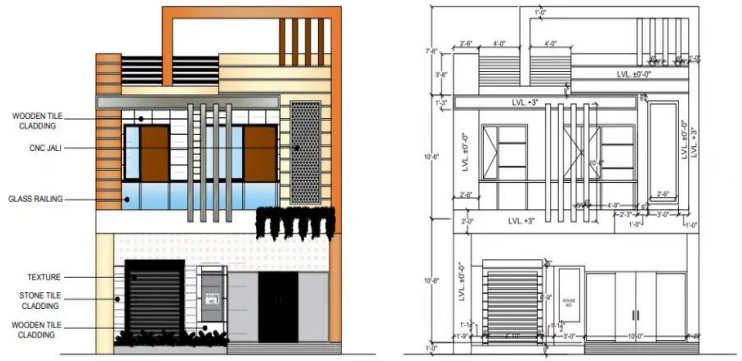
STAAD.Pro

AUTOCAD

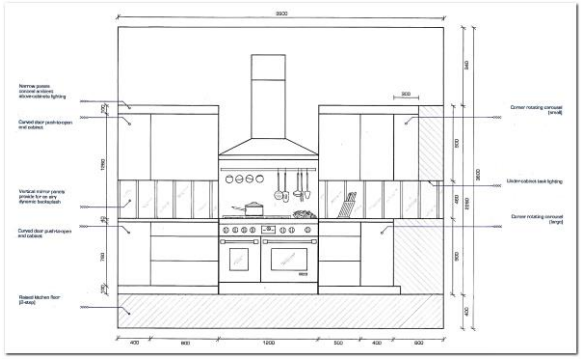
- ✓ AutoCAD is a powerful tool for Civil Engineers and Architects that can be used to create 2D drawings and 3D models.
- ✓ In 2D drawings it can create plans, elevations, sections, and details.



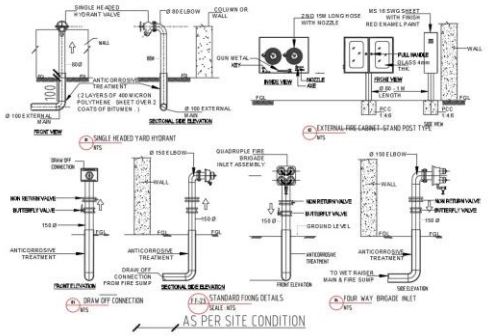
Plans



Front Elevations



Sectional Elevations



Detailed Drawings

AUTODESK® 3DS MAX®

- ✓ Creating 3D models and animations of buildings, landscapes, and interior spaces.
- ✓ Allows architects to create high-quality renderings and animations of their designs.

SketchUp

- ✓ User-friendly interface makes it a popular choice among designers.
- ✓ Used for quick prototyping and visualization.
- ✓ 3D warehouse facility to insert component.
- ✓ Create sections and details drawings.

AUTODESK® REVIT® ARCHITECTURE

- ✓ Revit Architecture is a comprehensive BIM software that can be used by architects for 3D modeling, intelligent objects, design exploration, documentation, collaboration.
- ✓ These models can be used for visualization, clash detection, and coordination with other professionals on a project.
- ✓ It can generate detailed documentation such as construction drawings, schedules, and material lists.

- ✓ V-Ray is a popular 3D rendering software developed by Chaos Group. You can render anything & everything using it.
- ✓ It allows users to create highly realistic and detailed renderings with accurate lighting, shadows, reflections, and refractions.
- ✓ It also includes a wide range of features and tools, including a material editor, texture mapping tools, global illumination, and a variety of rendering.
- ✓ V-Ray supports a wide range of 3D modeling software, including Autodesk 3ds Max, Autodesk Maya, Cinema 4D, SketchUp, Rhino, and Revit.
- ✓ It is widely used by professionals in the architecture, interior design, product design, and visual effects industries to create photorealistic renderings of their 3D models.

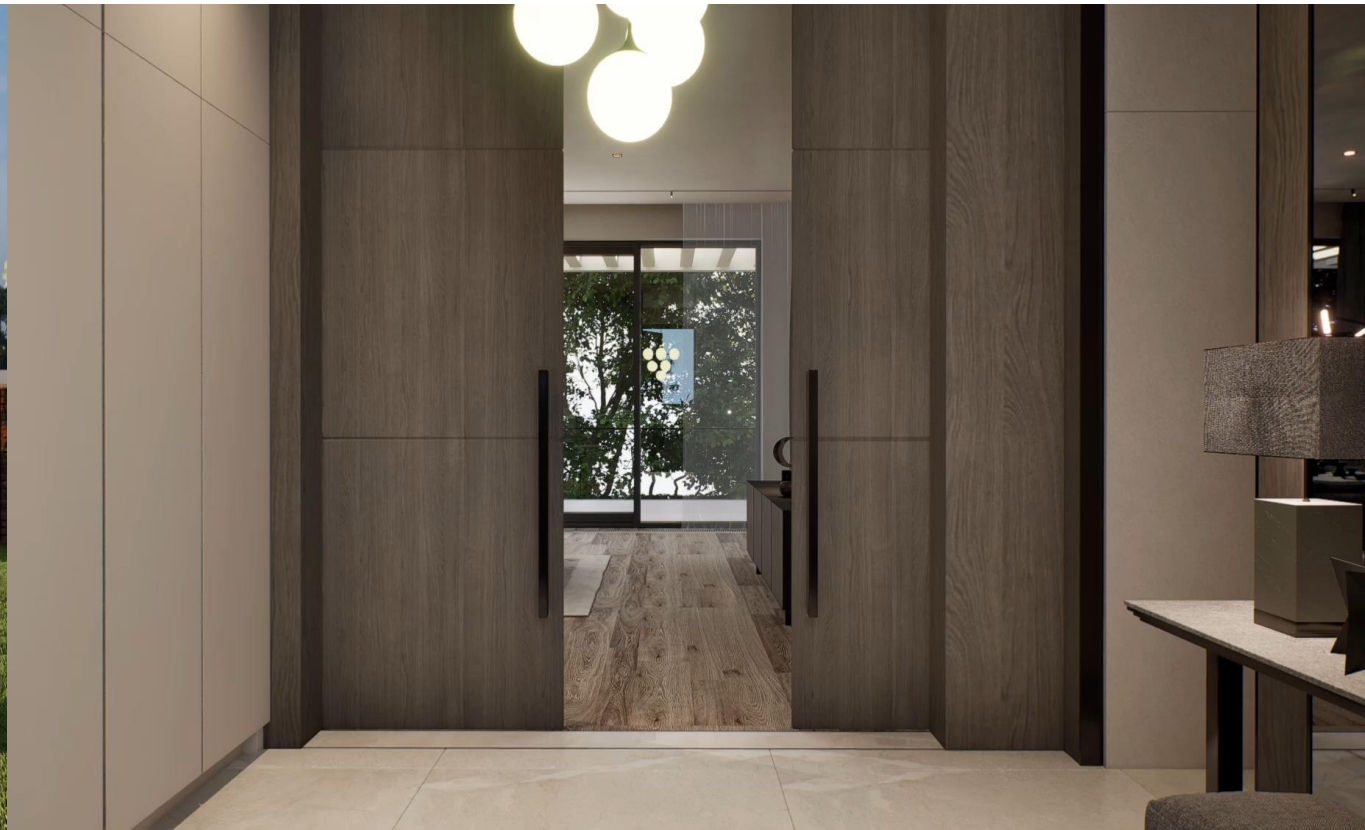


Adobe Photoshop

Photoshop is a versatile tool that can be used by architects for a variety of tasks, such as creating visualizations, retouching images, making design presentations, and to communicate their design ideas effectively.

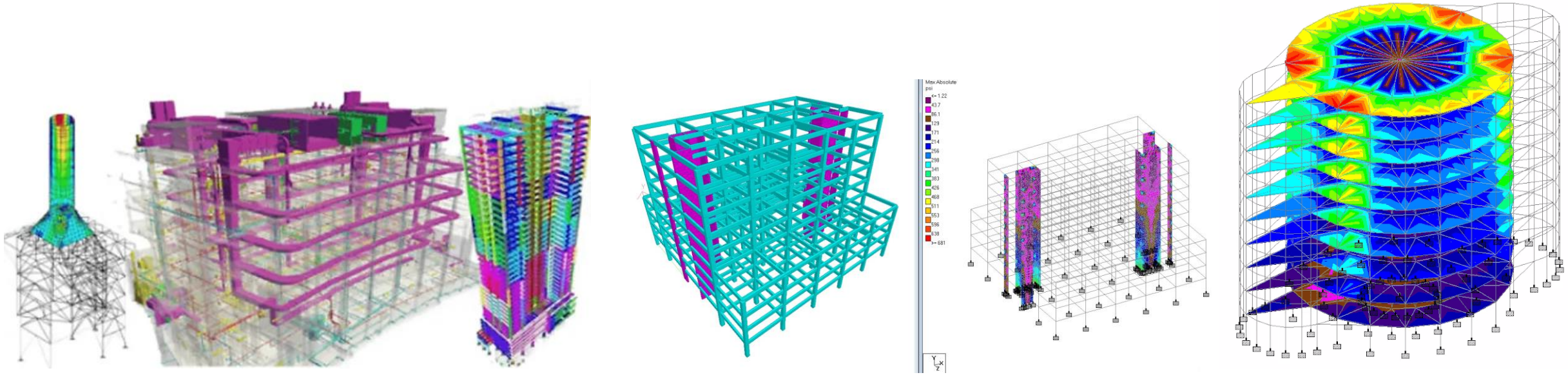
LUMION

- ✓ Lumion is a powerful 3D rendering software that can help architects and designers to create stunning visualizations of their designs quickly and easily.
- ✓ It includes a library of 3D models and materials, which users can easily drag and drop into their scenes, as well as advanced lighting and shadowing tools, which help to create realistic lighting effects.
- ✓ Lumion is its real-time rendering capabilities, which allow users to see the results of changes to their scene immediately.
- ✓ Users can import 3D models from a variety of 3D modeling software, including SketchUp, Revit, ArchiCAD, and Rhino, and then create realistic renderings and animations in real-time.



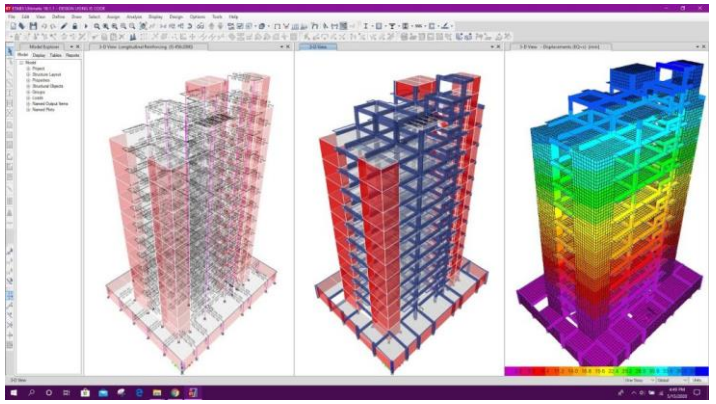
STAAD.Pro

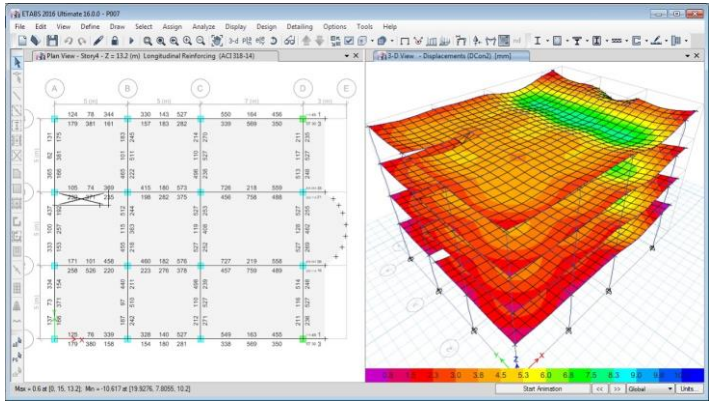
- ✓ STAAD Pro is a software program used in the analysis and design of structures, such as buildings, bridges, towers, and other types of structures.
- ✓ It is a powerful tool that can help engineers to analyze and design complex structures quickly and accurately.
- ✓ It can handle different types of loads, including gravity loads, wind loads, seismic loads, and more.
- ✓ The software supports different types of materials, including steel, concrete, timber, and more.
- ✓ It is also used to design commercial buildings, bridges and highway structures, industrial structures, dams, turbine foundations, culverts, etc.
- ✓ It can integrate with other design software such as Revit, AutoCAD, and Tekla.

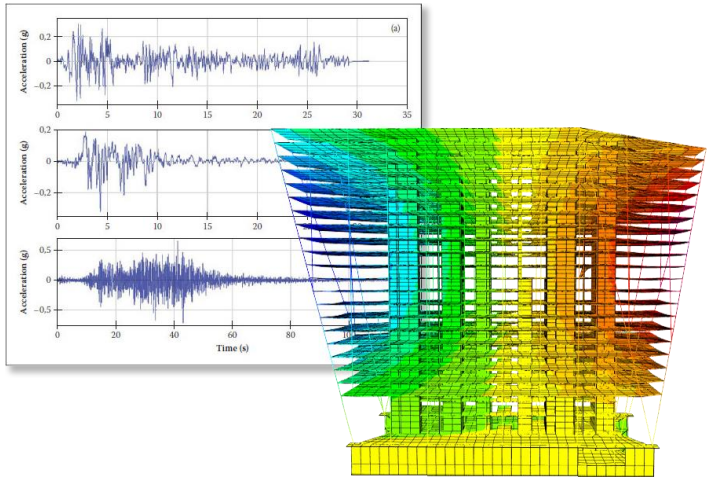


ETABS®

- ✓ ETABS is a powerful and versatile tool for structural analysis and design, used by engineers and architects.
- ✓ It is widely used in the engineering and construction industry to analyze and design high-rise buildings, and other complex structures.
- ✓ It uses finite element analysis methods to simulate the behavior of a structure under various loading conditions, including gravity loads, wind loads, seismic loads, and more.
- ✓ It can do dynamic analysis, time-history analysis, and nonlinear analysis.
- ✓ It supports different types of materials, including steel, concrete, and composite structures.
- ✓ ETABS provides detailed output reports, including member forces, deflections, stress diagrams, and more, which allows engineers to review and optimize their designs.
- ✓ It also allows for the creation of detailed construction drawings, including detailed reinforcement drawings for reinforced concrete structures

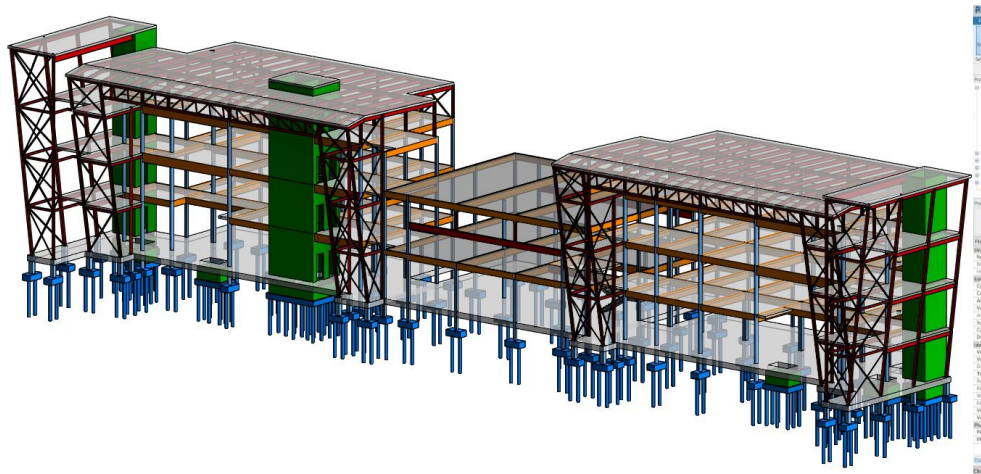


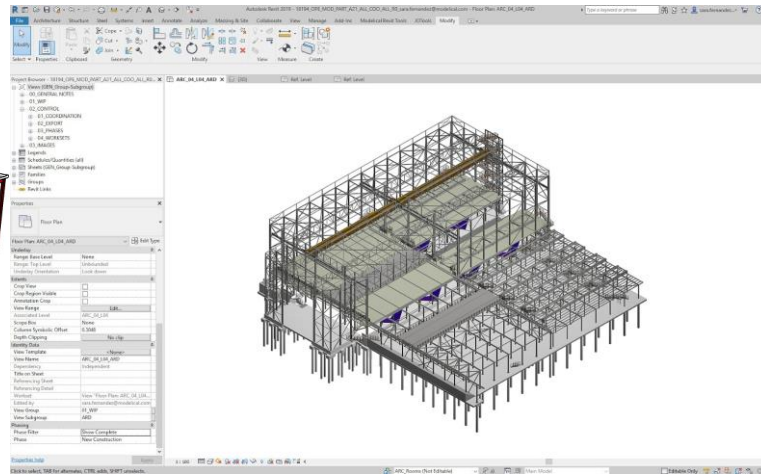


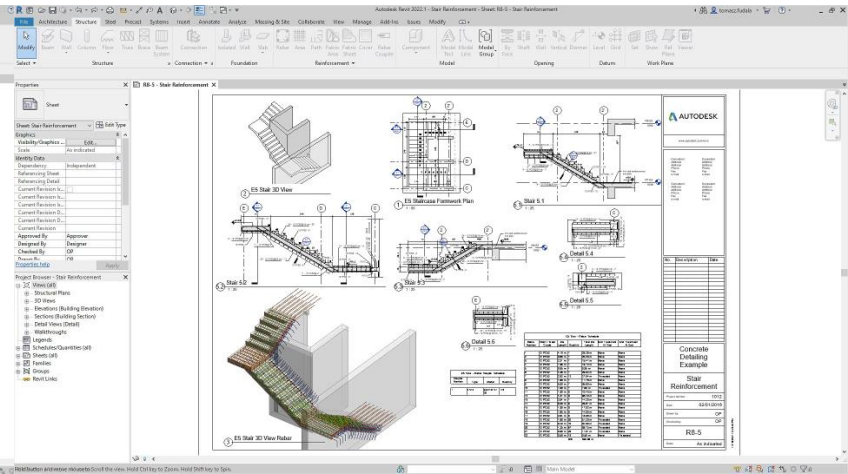


AUTODESK®
REVIT® STRUCTURE

- ✓ Revit Structure is a software program used in the design and analysis of building structures. It is widely used in the engineering and construction industry to create and model building structures, such as beams, columns, slabs, walls, and foundations.
- ✓ It also includes advanced features such as building information modeling (BIM), which allows engineers to store and manage all relevant project information in a single database.
- ✓ It supports different types of materials, including steel, concrete, and timber, and provides detailed output reports, including member forces, deflections, and stress diagrams.
- ✓ Revit Structure also allows for the creation of detailed construction drawings, including reinforcement drawings for reinforced concrete structures.





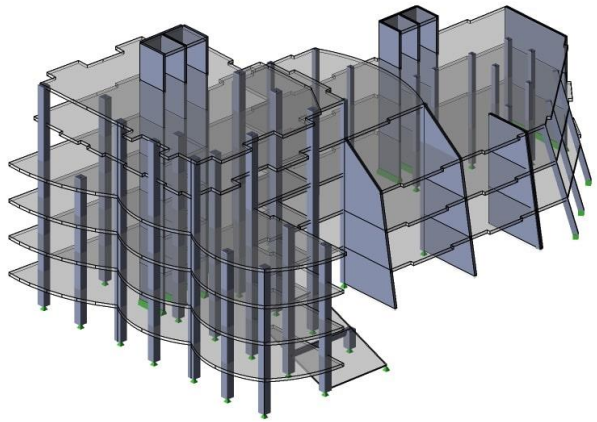


Tekla

Tekla Structures and Tekla Structural Designer are two different software programs developed by Tekla Corporation for the structural engineering and construction industry.

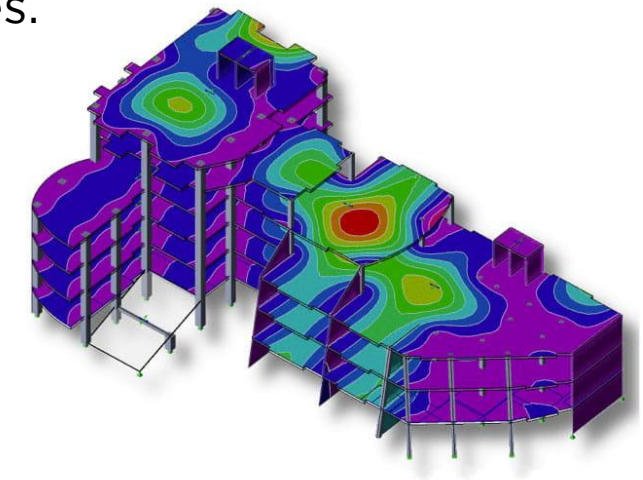
Tekla Structures

Tekla Structures is a 3D modeling software program used for the design and detailing of steel and concrete structures, as well as for precast and timber structures. It provides a comprehensive solution for structural engineering, detailing, fabrication, and construction, including tools for modeling, analysis, and documentation.



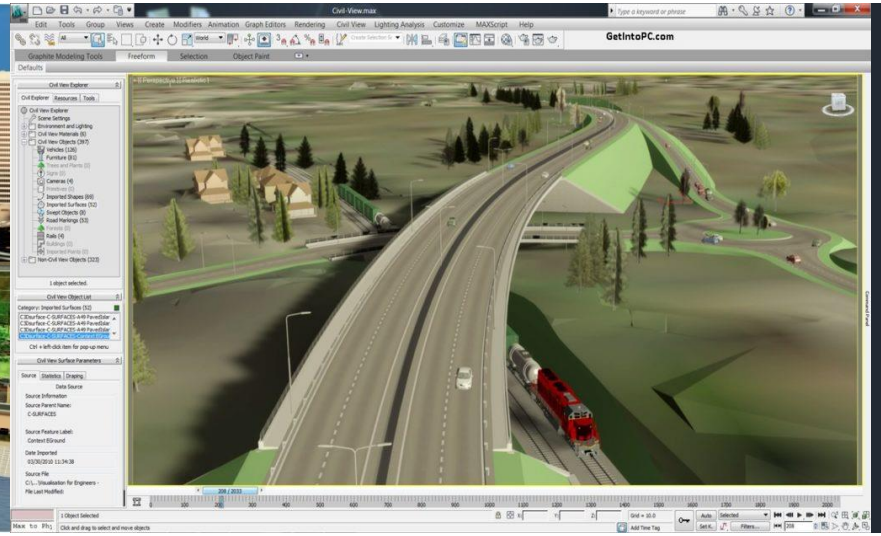
Tekla Structural Designer

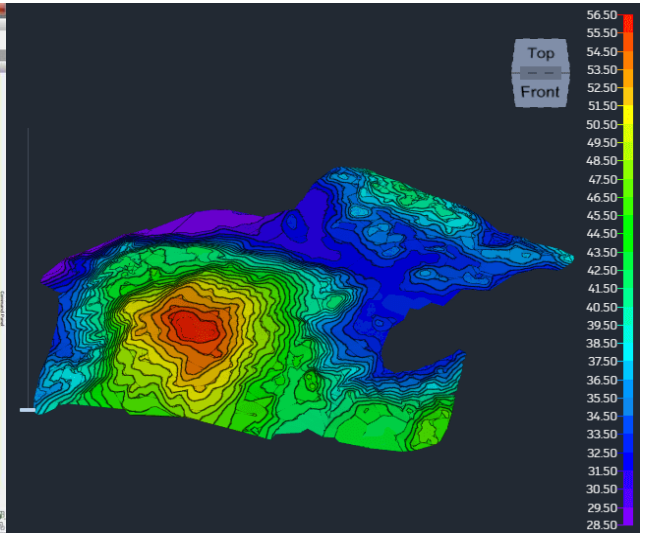
Tekla Structural Designer, on the other hand, is a software program focused on the design and analysis of concrete and steel structures. It provides advanced analysis and design capabilities for gravity and lateral loads, including wind and seismic loads. It is commonly used for the design of multi-story buildings, bridges, and other complex structures.



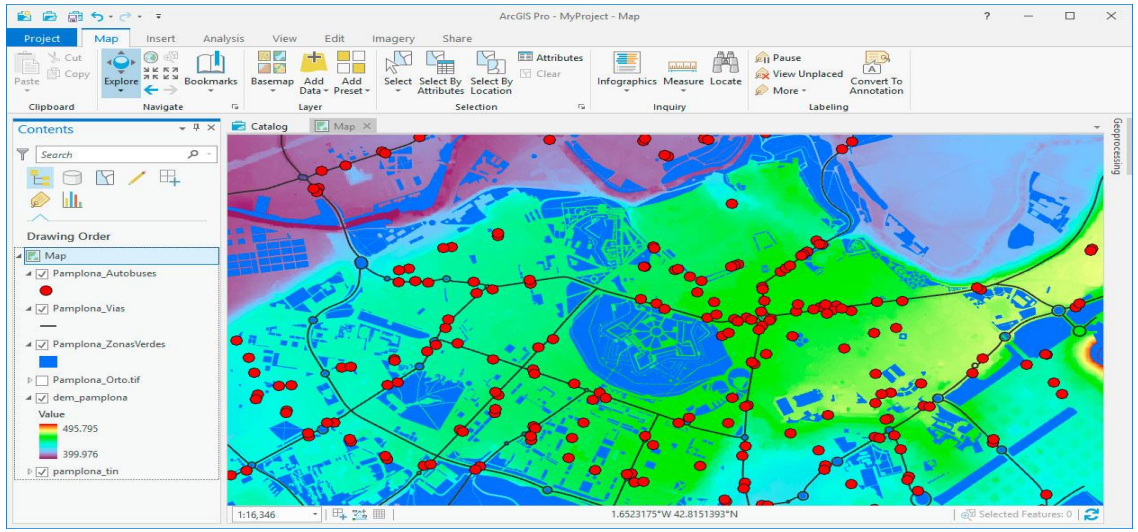
AUTODESK® CIVIL 3D®

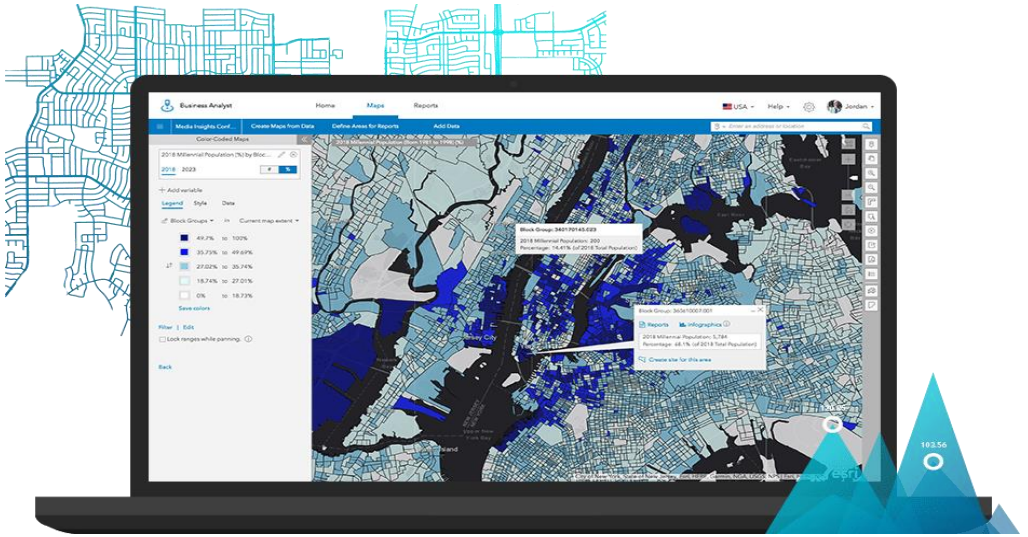
- ✓ Autodesk Civil 3D is a software program used in the design and analysis of civil infrastructure projects, such as roads, highways, bridges, and other transportation systems.
- ✓ It provides a comprehensive solution for civil engineering, surveying, and mapping, including tools for modeling, analysis, and documentation.
- ✓ It also includes advanced features such as geospatial analysis, which allows engineers to incorporate data from geographic information systems (GIS) to enhance their designs.
- ✓ The software also includes tools for surveying and mapping, such as coordinate geometry (COGO) and digital terrain modeling (DTM), which allow engineers to incorporate survey data into their designs.





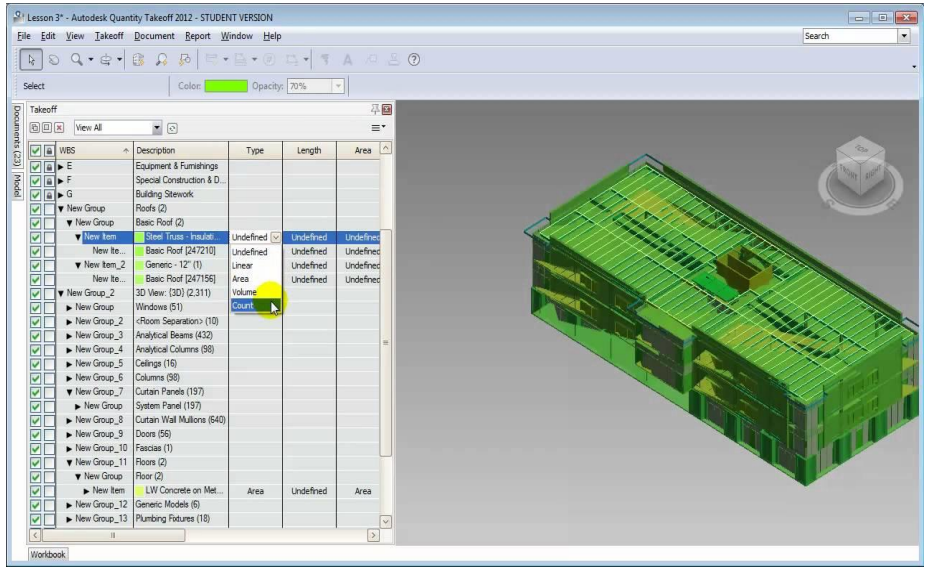
- ✓ ArcGIS is a geographic information system (GIS) software platform developed by Esri, which stands for Environmental Systems Research Institute. It is widely used by organizations, governments, and individuals for mapping, analyzing, and sharing geospatial data.
- ✓ ArcGIS provides a comprehensive solution for GIS analysis, including tools for data management, visualization, analysis, and sharing.
- ✓ The software provides a 2D and 3D mapping environment that allows users to create, edit, and analyze maps and geographic information. It includes a vast library of data, including aerial imagery, terrain data, and demographic information, which can be used to enhance GIS analysis.

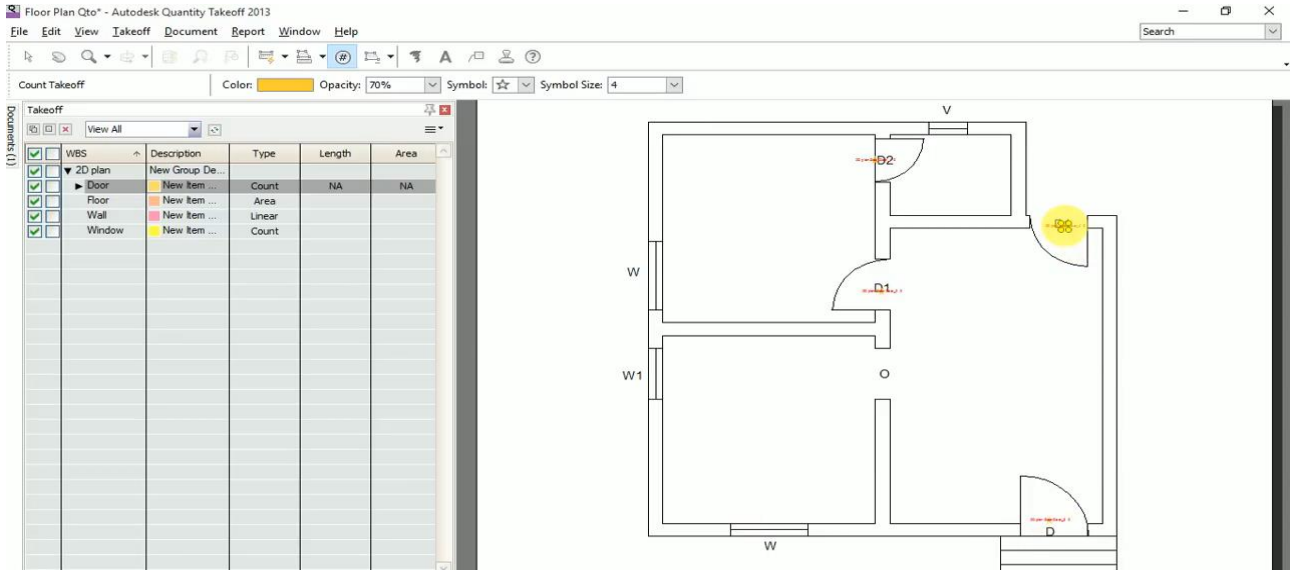




AUTODESK® TAKEOFF

- ✓ This software is used to estimate the cost according to the given 2D or 3D drawings. And has capability to arrange them in excel sheet. Perform a takeoff on an entire building information model (BIM) in just minutes.
- ✓ Helps in making material costing faster, easier, and more accurate.
- ✓ Simple, quick, precise and easy for takeoff.



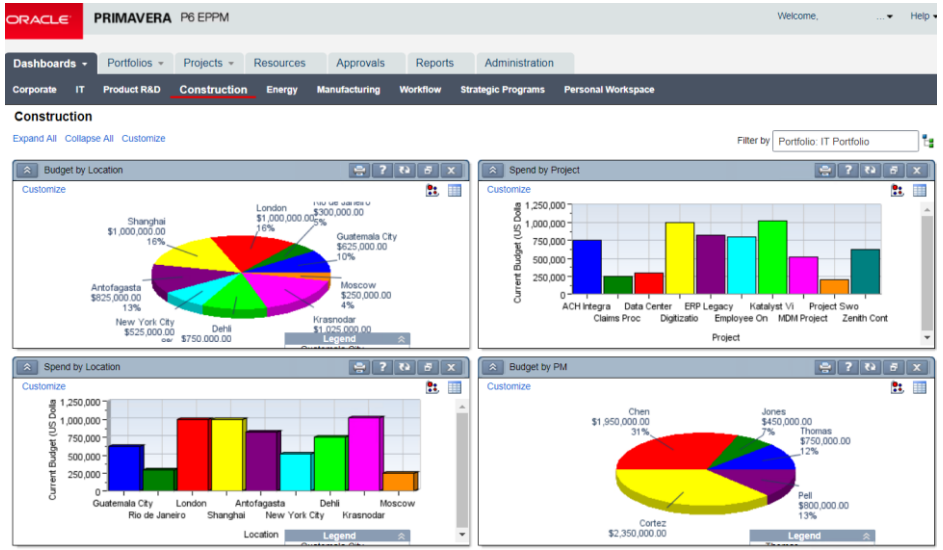


Popular Software for Project Planning & Management

ORACLE®

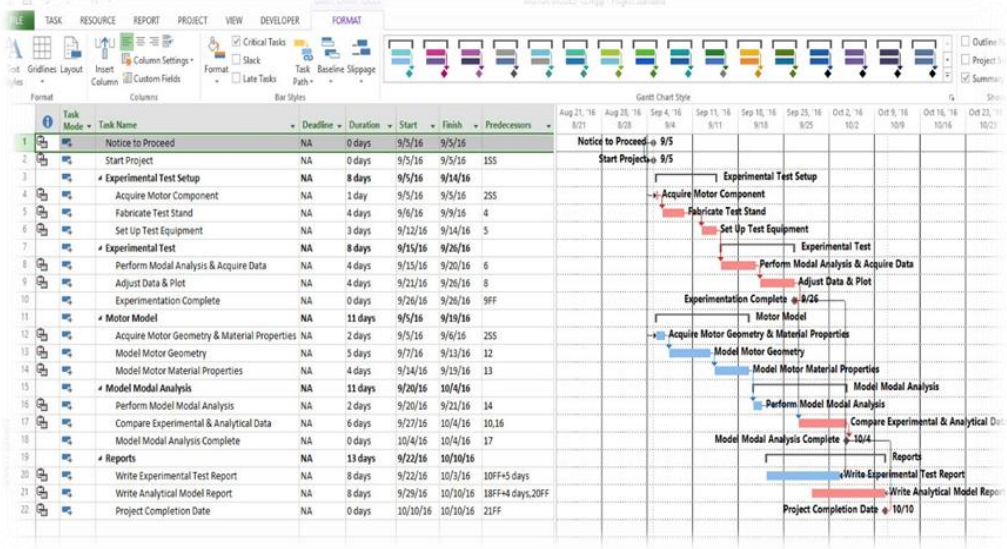
PRIMAVERA

- ✓ Primavera is a powerful planning tool use in all over the world to plan projects mainly in terms of time, resources and cost.
- ✓ Efficient and effective resource management.
- ✓ Plan, schedule and manage complex projects.
- ✓ Used in a variety of industries including construction, manufacturing, pharmaceuticals, government, retail, financial services.



Project

- ✓ Microsoft Project enables businesses to get started, manage project portfolio investments, and deliver successfully with the intended business value.
- ✓ Full visibility, great integration, Communicate in real time
- ✓ Used in a variety of industries including construction, manufacturing, pharmaceuticals, government, retail, financial services and health care.



Thank you