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The transition stage from tedious time consuming 2D traditional drafting to high level of detailed 3D models along with the addition of 4th and 5th dimensional special features to it can be called as Advanced CAD Services. Earlier Computer Aided Design just includes simple basic 2D traditional drawings which were also called electronic drawings and where created by the drafters on software called AutoCAD. These traditional 2D drawings contain insufficient detailing and clashes between the services which created no. of issues and disputes at the time of actual installation and construction. Thus day by day with the advancement in the technology and understanding the needs of industry there was a tremendous improvement in the field of designing, drafting and modeling world which is still on its way to progress.

Advancement in CAD services started with the advancement and invention of newer technologies in software world as well as up gradation of higher versions of softwareâ€™s. For e.g. Nowadays to create high level of detailed models, AutoCAD is being replaced by revit. There are advancements in CAD based services in all the streams like mechanical, electrical, architectural, structural, plumbing etc. Another main reason for advancement of CAD services also includes clashes between the services for eg HVAC duct clashing with electrical lighting fixture at the time of installation and construction. Such types of clashes are resolved at the time of creation of 3D models by generating electronic clash reports using revit. Addition 4th and 5th dimensional feature to 3D based models are the most unique advancements in CAD based services. 4th dimension means addition of timeframes to the 3D models which actually gives the time of completion of the project. 5th dimension is further addition of overall cost analysis of the complete project cycle to 4D models.

Advanced CAD services provided in the different domains like electrical, mechanical, structural and architectural nowadays are as follows:

1. Electrical CAD services:

a. Lighting fixture layouts and models

b. Fire Alarm Layouts

c. Panel Scheduling

d. Public Address layouts

e. Cable routing layouts

f. Single line diagrams and control circuits

2. Mechanical CAD services:

a. New product designing

b. Reverse Engineering

c. FEA Analysis and Stimulation

d. Assembly or part drawings

e. Jigs and Fixture detailed drafting

3. CAD services â€“ Structural and Architectural

a. Detailed Construction Drawings (Plan, sectional as well as elevation views)

b. Rebar Detailing

c. Fabrication Drawings-steel

d. Shop drawings

e. Construction Documents

f. Architectural services include architectural 3D modeling, rendering, and animations, fly and walk through.

In this way the need of detailing in the design field had resulted into newer innovations in the CAD based services.

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Macjohn - About Author:
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