

Lecture-1: Fundamentals of CAD

Introduction

Computer-aided design (CAD) is the use of computer systems (or workstations) to aid in the creation, modification, analysis, or optimization of a design.

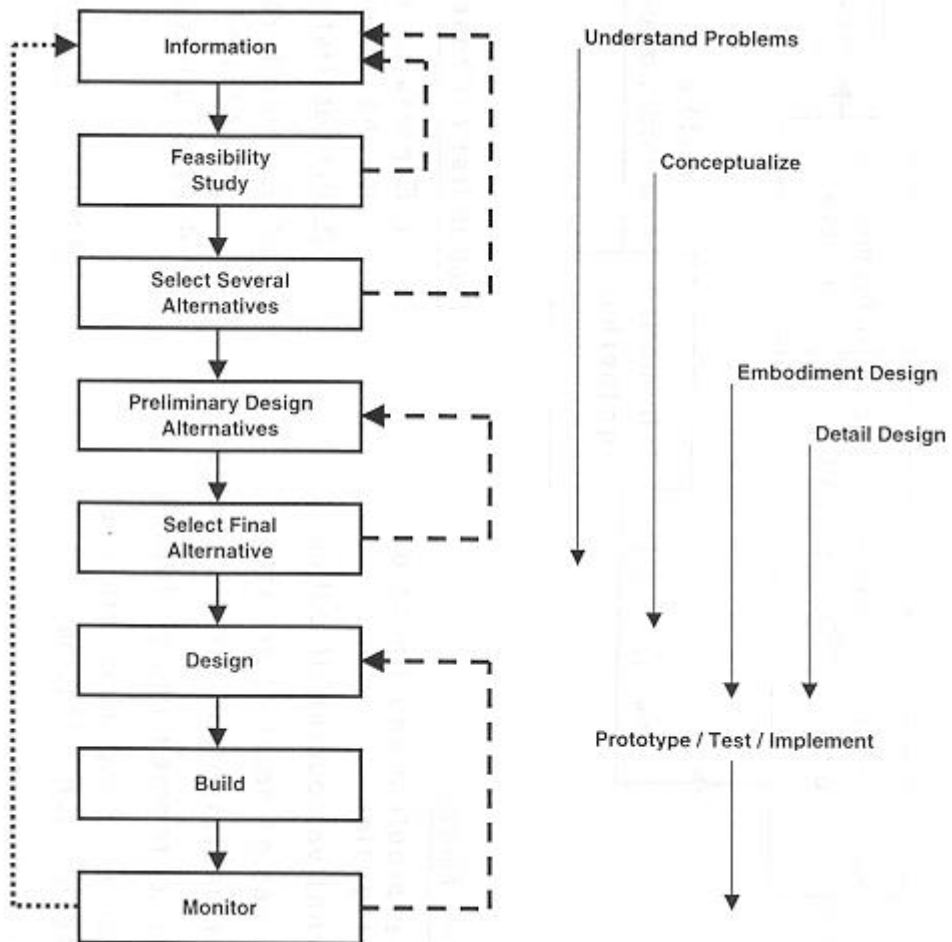
CAD softwares are used to increase the productivity of the designer, improve the quality of design, improve communications through documentation, and to create a database for manufacturing.

CAD output is often in the form of electronic files for print, machining, or other manufacturing operations.

The term CADD (for Computer Aided Design and Drafting) is also used

The Design Process

There are many ways how a design process can be explained. A general flow chart is given below:



The Design Process

- However, talking strictly from a designer's perspective, for a building design project, to be designed using computer aid, following simple steps can be described:
 1. Take the client's requirements
 2. Preparation of architectural layouts as per requirements
 3. Deciding the form of structure
 4. Model the structure in design software giving initial design values like beam depths etc
 5. Analyze the structure
 6. Check for stresses,
 - If ok, then values are taken
 - If not ok then repeat steps from 4 onwards with revised design values
 7. The output is then presented in the form of structural drawings using AutoCAD

AutoCAD

- Derived from a program which begun in 1977 and released in 1979 called **Interact CAD**, also referred to in early Autodesk documents as **MicroCAD**, which was written prior to Autodesk's formation by Autodesk cofounder Michael Riddle.
- The first version by Autodesk was released in **December 1982**. As Autodesk's flagship product, by March 1986 AutoCAD had become the most commonly used CAD program worldwide.

➤ Versions

AutoCAD Version 1.0	1982, December	AutoCAD 2007	2006, March
AutoCAD Version 1.2	1983, April	AutoCAD 2008	2007, March
AutoCAD Version 1.3	1983, August	AutoCAD 2009	2008, March
AutoCAD Version 1.4	1983, October	AutoCAD 2010	2009, March 24
AutoCAD Version 2.0	1984, October	AutoCAD 2011	2010, March 25
AutoCAD Version 2.1	1985, May	AutoCAD 2012	2011, March 22
AutoCAD Version 2.5	1986, June	AutoCAD 2013	2012, March 27
AutoCAD Version 2.6	1987, April	AutoCAD 2014	2013, March 26
AutoCAD Release 9	1987, September	AutoCAD 2015	2014, March 27
AutoCAD Release 10	1988, October	AutoCAD 2016	2015, March 23
AutoCAD Release 11	1990, October	AutoCAD 2017	2016, March 21
AutoCAD Release 12	1992, June	AutoCAD 2018	2017, March 21
AutoCAD Release 13	1994, November	AutoCAD 2019	2018, March 22
AutoCAD Release 14	1997, February		
AutoCAD 2000	1999, March		
AutoCAD 2000i	2000, July		
AutoCAD 2002	2001, June		
AutoCAD 2004	2003, March		
AutoCAD 2005	2004, March		
AutoCAD 2006	2005, March		