

Basic CAD System Evaluation Priorities

The following are typical functionalities that should be evaluated before making any Enterprise CAD system investment.

How to use this document –

In the Priority Column place the weight of the item that you think is important in an Enterprise 3D CAD System or important to your company. For each software application you are evaluating, rate if the application can deliver the functionality and how well it delivers it. Compare your Priority Column with the Software Columns and in the last column determine which application best fits your organization.

Use the following scale: H – High, M – Medium, and L – Low.

Item	Priority How important is this functionality	StW Precast Functionality	Other Application How well is this functionality delivered	Cad System that best meets or exceeds functionality
Modeling				
Ability to create sketch driven dross sections of precast components or features		H		
Does the system use solids or surfaces for modeling, Solids are preferred and it is better if the system can model using both techniques		H		
Does the system provide interference detection between components: concrete to concrete or internal component to internal component		H		
Ability to easily create Draft, Reveals, Bull nose and final geometry of pieces using sketching		H		
Drag and Drop Features, Doors, Windows, Reveals, Joints		H		
Can modeling constraints – Up to surface, offset from be easily created and edited		H		
Can sketch constraints – Horizontal, Vertical,		H		

tangent be easily created and edited				
Can curved surfaces be modeled without segments or driven by mathematical equations		H		
Precast Specific Functionality				
Reinforcement				
Ability to generate a customizable Bend Schedule showing BMP's and segment lengths		H		
Generation of automated Rebar Mark Number based on shape codes, bends and cut lengths		H		
Final Rebar length based on either Segments, Centerline Length or Cheat Table		H		
Custom Rebar Shape library to match you companies standards		H		
Standard and Custom Rebar Templates for every type of product		H		
Standard and Custom Mesh Templates for every type of product		H		
Standard and Custom Strand Templates for every type of product that warp or unwarp for double tees		H		
Ability to add single rebar for final design and detailing either with a connection or individually		H		
Drawings				
User defined line weights, colors, dimension style, leader style, and layers		H		
Administrative control over line weights, colors, dimension style, leader style, and layers or drawing consistency		H		
Edit model and drawing simultaneously – single user / multiple users		H		
Windows file locking for read write access		H		
Automated Piece Drawing generation with control over dimension style, visible entities, unlimited sheets and views per sheet		H		
Erection Drawing Automation Tools for grid, sections and details, elevation ordinate dimensions		H		
Parametric Dimensions either automatically or if placed by user		H		

Parametric Annotations ability to construct an annotation containing dimension values that parametrically change when needed		H		
Custom user defined Smart Blocks – IE – Product Control Number, Length, Weight, Drafter, Checker, Width, Mark Number		H		
Custom drawing and file names		H		
Custom template based Piece drawings for views and dimension styles		H		
Ability to cut a Section Cuts from anywhere		H		
Ability to create a Detail Views from anywhere		H		
Sections Cuts of Sections, Details of Details, Sections of Details and Details of Sections		H		
Ability to unwarp products for piece drawings		H		
Custom Blocks shape and lines segments and add Smart Block data from the Database		H		
Does the system provide standard 3D CAD functionality for drawing annotations: Notes, Weld symbols, dimension		H		
AutoCAD clone application for legacy data support. 3 licenses for every single license		H		
Precast Products				
Fabricator specific form driven cross-sections		H		
Generic Product insertion – Cell Modules, etc		H		
Fabricator specific standard product insertions – DT, Beam, Column, Wall, Spandrel, Stairs		H		
Architectural Elevation Layout routine for walls, or other complex architectural products – spandrels, mullions, column covers		H		
Automated Hollow Core Layout routine with valid rip locations		H		
Automated Mark Numbers based on fabricator standards and custom number generation		H		
Mark Number Tolerances based on user options Length, Width, Plates, Strand etc		H		
True Product behavior, Warp, Un-warp, Batter and Skew		H		
Flexural Analysis application based on ACI		H		

318-02				
Insulated wall panel support for concrete and insulation		H		
Multiple concrete pour support – Face / Backup mix		H		
Embed Items				
Erection and Handling Standard and Custom Templates		H		
Single Plate insertion		H		
Simple Connection creation		H		
Simple Connection Insertion		H		
Single Rebar insertion		H		
Library Items				
Standard company specific connections		H		
Standard company specific plates and embed items		H		
Standard company specific drawing templates for erection drawings		H		
Standard company specific drawing templates for production drawings based on complete dimensional and view settings		H		
Standard reinforcement patterns for rebar, strand, and mesh		H		
Standard erection and handling templates for stripping and erection insert locations based on product type		H		
Drag and drop standard joints		H		
Smart parts – standard assemblies with job specific parameters – Stair cores, light wall elevations etc.		H		
Administrator Functions				
Native Windows behavior and Architecture		H		
Mature and Robust Application Programming Interface using VBA		H		
Create User Defined Macros in VBA		H		
Full Template Based system for Consultants to Download		H		
Database				
Open Source Database, industry standard architecture Microsoft SQL		H		



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User definable queries that maintain synchronization to model. Notes – this is not an export utility		H		
Parametric links to Excel®, Word®, and Access®		H		
Custom tables in the database to track user defined columns for extensibility		H		
Direct integration into existing MRP and ERP systems without additional software		H		
In order to access information from the model or database, does the cad system be installed on the same computer that the reports are created on		H		
Collaboration Tools				
Import and Export DWG, DXF		H		
Free File viewer, eDrawings		H		
Portable license structure for work sand home		H		
Redline collaboration capability		H		
Parametric Photo Realistic Rendering capability within native system		H		
Parametric Movie Quality Animation capability within native system		H		