

FactoryCAD

3D factory layout software to design better factories faster

fact sheet

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► Summary

FactoryCAD is a factory layout application that gives you everything you need to create detailed, intelligent factory models. Instead of having to drawing lines, arcs, and circles, FactoryCAD allows you to work with “smart objects” that represent virtually all the resources used in a factory, from floor and overhead conveyors, mezzanines and cranes to material handling containers and operators. With these objects, you can “snap” together a layout model without wasting time drawing the equipment.

Features

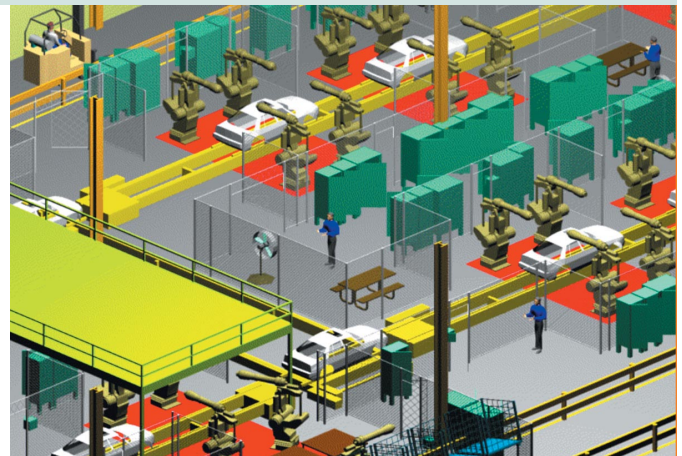
- Object Builder toolkit
- Smart objects have built-in rules
- Generic tool to add intelligence
- Symbol library manager
- Object enabler for non-factory CAD users
- Cost information extraction
- Automatic floor space reporting
- SDX for connection to discrete event simulation
- Read/write lightweight visualization (.it) files

Benefits

- 90 percent faster than traditional 3D modeling
- Able to create 2D/3D models in less time and effort
- Layout design problems discovered very early in the process
- Expensive re-design problems avoided
- Data re-use makes the layout information more valuable
- Reduced interpretation errors
- Usable with other analysis packages
- Up to 95 percent reduction in file sizes

FactoryCAD's business value

Because FactoryCAD makes layout creation, modification and visualization easier and faster, design flaws and issues can be identified and eliminated earlier in the design process, prior to physically building or modifying the factory. Re-using the layout data in other related applications saves time, allows more design iterations to be assessed, and makes the layout information more valuable. Overall, getting factories into production sooner with fewer last minute modifications provides significant financial benefits.



The FactoryCAD advantage

With FactoryCAD, 3D models can be created faster than 2D drawings using conventional CAD. With smart object technology, stored file sizes are smaller than 2D drawing files, thus avoiding the data size and performance problems normally associated with modeling complete factories. FactoryCAD enables engineers to create full 3D models that provide much more information than 2D drawings, helping them discover potential layout problems early in the design process. Since these layout models can be leveraged directly in visualization, material flow, and discrete event simulation programs, they offer considerable time savings.

Using FactoryCAD

FactoryCAD enhances AutoCAD and the AutoDesk Architectural Desktop product to deliver a complete factory design solution by providing a library of smart objects that represent factory equipment and resources. Each object has both 2D and 3D views and incorporates key performance factors. This data, with the layout parameters, can then be extracted from the FactoryCAD layout for input to production simulation tools through FactoryCAD's simulation data exchange (SDX) format. Similarly, cost factors can be extracted from the FactoryCAD layout for estimating purposes. For equipment that is not already represented in FactoryCAD's library, the object builder enables users to create their own lightweight parametric object models. FactoryCAD requires AutoCAD or AutoDesk Architectural Desktop.

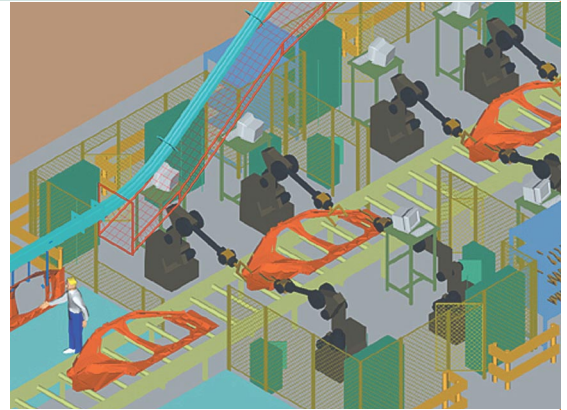
What are the major benefits of FactoryCAD?

FactoryCAD gives you an unmatched tool for quickly creating a wide range of accurate factory layout models with built-in intelligence. It enables you to drag, drop and snap models together without having to draw lines and create blocks.

FactoryCAD provides an effective solution to the common and difficult problem of communicating the full factory design. It allows people to view 3D factory designs and promotes design collaboration, which helps uncover layout design problems early in the factory design process. You can obtain more value from the factory model by being able to easily present 3D layouts, output data to simulation, use models as the basis of material flow analysis and create cost and other reports.

Major capabilities

- **View 3D models with non-CAD viewers** – Technology has been embedded into the smart objects allowing simple viewers such as Teamcenter Visualization Mockup; Volo View, Viz 4 (3D StudioVis) and many others to view the factory models.
- **Conveyor objects** – All kinds of conveyors are available for use from package conveyors like belt conveyors, v-belt driven live roller conveyors, gravity roller conveyors, structure track conveyors, palletized assembly conveyors to highly sophisticated conveyors like automotive floor conveyors, cross transfers, lift systems, chain-on-edge and power and free conveyors.
- **Robot objects** – Many highly detailed models of popular robots such as ABB, Fanuc, Kuka and Kawasaki are available as objects. With built-in forward kinematics, you can articulate these robots in any position desired.
- **Additional material handling objects** – You will find a comprehensive list of material handling devices ranging from bridge cranes and jib cranes to lift tables and turn tables for containers.
- **Create objects with object builder** – With the object builder toolkit, you can build custom 3D factory equipment objects of your own. These objects then can be modified on the fly similar to the smart factory objects found in FactoryCAD.
- **Share objects with object enabler** – The object enabler toolkit, which can be passed to and shared with non-factory CAD users, enables FactoryCAD models and drawings to be viewed in other AutoDesk programs.
- **Simulation data exchange (SDX) enabled** – All objects within FactoryCAD have SDX parameters (e.g., cycle time, scrap rate, load time, unload time, breakdowns, setups, etc.) built into objects. FactoryCAD also has the ability to read an SDX file to update its objects. A number of major discrete event simulation tools can read SDX data.
- **Block and symbol management tools** – In addition to smart factory objects, FactoryCAD includes hundreds of traditional symbols and blocks. FactoryCAD enables you to move freely in the libraries to select, add, copy, move and delete blocks.
- **Clearance detection** – As the factory is being designed, you can constantly use FactoryCAD's clearance detection features to prove your designs early in the design process.
- **BOM generation** – You can also generate intelligent BOM (bill of materials) reports of equipment in your plant. This is especially important for complex, multiple-segmented equipment like cable trays and fences.
- **CAD data import** – Tooling and product CAD data from NX, Parasolid®, VRML or jt formats can be imported as a smart factory object.



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