

# ALLEGRO CL<sup>®</sup> @Work!

A Franz Inc. Customer Success Story

## Design Power, Inc.: Knowledge Based Systems

Design Power, Inc. is a leading vendor of knowledge-based systems for equipment design, plant design, factory layout, and building design in the A/E/C and manufacturing industries. The company uses Allegro CL's Dynamic Objects technology in its Design++ product, an object model-based engineering system; and its AutoRouter product, an automatic pipe routing software system built on top of Design++.

Design++ Enables Dynamic Design Modeling  
Design++ enables engineers involved with plant, building and equipment design to create intelligent object models that automatically generate complex 3D designs, materials and cost reports, and fully annotated design drawings.

"Without Common Lisp," says Design Power's Vice-President R&D, Tapio Karras, "we would never have been able to develop such a complex and sophisticated system as Design++."

"Our Design++ product," says Karras, "essentially enables engineers to design models and dynamically modify the design rules to see how these modifications reflect in the final design. With Design++ and its Dynamic Object technology,

engineers can see the result of design changes immediately, making the design process much faster and easier."

Design++ customers include major players in the A/E/C and manufacturing industries working on projects in automatic process equipment design, automatic building systems design, automatic electric motor configuration, and automatic pipe routing systems for process plants.

Modules that work with Design++ include

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*Tapio Karras, Vice President ,R&D*

the GUI Builder/DataBroker, a graphic user interface construction module including an information brokering module that facilitates a common interface for integrated third-party tools; the AutoDrafter, an automatic drawing creation facility; and the CAD Integration Manager (CIM) that provides a seamless two-way link to AutoCAD, MicroStation and other CAD systems.

## AutoRouter Empowers End-Users

Built on top of the Design++ system, Design Power's AutoRouter product is a knowledge-based application for plant concept design. AutoRouter produces routed pipes, flexible reports, and exportable data files to any external plant design system. The system offers speed of routing, user changeable piping logic, and high level GUIs that greatly increase productivity.

This productivity advantage is facilitated by the task-specific languages that AutoRouter provides. Engineers can use the keywords and expressions familiar to them to express the logic they want to use.

"This empowers our users to configure the logic themselves," says Dr. Craig Howard, Director of AutoRouter Products. "It's essentially the features of Allegro CL that have enabled us to do this. Allegro CL makes it very easy for us to build simple knowledge representations such as these higher level languages."

Craig is a long-time Lisp user who understands the value that Allegro CL's technology offers to software developers.

"The dynamic qualities of Allegro CL and Common Lisp have certainly enabled us to develop and debug our systems quickly and easily," says Craig. "It allows us to send our customers small patches of few kilobytes whenever they need changes, instead of sending huge files to replace their entire systems. That's because Lisp allows us to dynamically add in pieces on-the-fly. This has made a significant difference in our responsiveness to customer requests."

*For more information on these powerful knowledge-based systems, please visit Design Power, Inc. on the web at <http://www.dp.com>.*

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