



## FACTS AT A GLANCE

**Company:** Ludan Engineering

**Website:** [www.ludan.co.il](http://www.ludan.co.il)

**Description:** Ludan Engineering is a multidisciplinary engineering organization based in Israel. It contracts EPC (turnkey) projects and provides EPCM services (engineering, procurement, construction supervision, and project management) for industrial projects worldwide, including technological solutions, engineering, scientific regulatory and strategic consultancy, for the private and public sectors.

**Employees:** 350

**Industry:** Process

**Country:** Israel

## PRODUCTS USED:

- CADWorx® P&ID Professional

## KEY BENEFITS:

- Easy customization.
- Quick start-up.
- High usability.
- High flexibility.
- Comprehensive tool set.

## LUDAN ENGINEERING ACHIEVES RECORD TIME SAVINGS WITH CADWORX® P&ID PROFESSIONAL

The engineering contractor successfully creates process deliverables in very tight time schedule



## IDENTIFYING GOALS

Ludan Engineering was involved in a basic engineering project of a new waste water treatment plant in Russia. Ludan Engineering, one of the most diversified providers of integrated solutions for industrial development and plant optimization in Europe, was in charge of the engineering project. Multiple advisory and design teams from around the world participated in the project, while Ludan Engineering was responsible for integrity of the final deliverables to the client.

The project had a very tight schedule, and the time between receiving the information from partners to the delivery of final documents to the client was extremely short. This required the use of very powerful design tools with high customization flexibility to incorporate the client format requirements. Ludan Engineering decided to use CADWorx P&ID Professional tools set. Before this project, Ludan Engineering used AutoCAD® as its standard tool.

## OVERCOMING CHALLENGES

The client sent extensive procedures for document numbering, as well as for tagging of equipment, lines, valves, fittings, instruments, etc., plus the required drawing symbols and line patterns –all of which are available in PDF form. Thanks to extremely easy customization, all of these symbols and line patterns were defined in CADWorx P&ID Professional with little effort from the drafters' side. CADWorx P&ID Professional allows users to incorporate any tagging rules for equipment, lines, valves, fittings, instruments, etc. All deliverables in this project were bilingual in Russian and English. The flexibility of CADWorx P&ID Professional enabled the project to have equipment descriptions in both languages that were shared in Process Flow Diagrams (PFD) / Piping & Instrumentation Diagrams (P&ID) / Equipment and Instrument Datasheets / Equipment List.

To shorten the design time, each participating advisory team worked in its own document and drawing formats. The extremely simple and transparent database system provided by CADWorx P&ID Professional allowed easy incorporation of the incoming materials directly into the CADWorx P&ID Professional database with further simultaneous update of all relevant documentation.

## REALIZING RESULTS

CADWorx P&ID Professional allowed Ludan to work “smart” at any design stage. The interface made it possible to define equipment items in block diagram and then use these definitions later during the PFD and P&ID design stages. It’s also possible to define the equipment in the database before the drawing creation and then later during drawing creation process using this available database data.

The drawing creation process automatically generates the project database behind the drawing elements. However, the flexibility of the CADWorx P&ID allows users to repeatedly un-link and link-back the drawing elements to/from the database with a simple click of the mouse. In other words, it’s possible to use CADWorx P&ID as ordinary AutoCAD as well as the universal drawing creation tool. Many experienced AutoCAD users will like the lisp and macros provided by CADWorx P&ID. For novice users, CADWorx P&ID is easy. CADWorx P&ID Professional works with the following three external database formats: Microsoft Access®, SQL, and Oracle. CADWorx P&ID Professional allows users to add custom created database Tables at any project design stage and repeatedly link/un-link any drawing element to these tables. This database customization is extremely easy to perform, and doesn’t require the user to possess any previous special database knowledge or programming skills.

Thanks to live bi-directional links to a database, the company can easily integrate Mass & Heat balance tables presented in Block-Diagram/PFD with the calculated results from Aspen, HYSYS, CHEMCAD, or PIPENET. And with the ability to store the coordinates of each drawn element in the database, it’s possible to generate the PIPENET input file based on the AutoCAD drawing.

“The benefits of the tool were very apparent from the beginning and included easy customization –no programming skills are required; high flexibility– it’s possible to work “smart” from the Block Diagram project stage; and a very full tools set:

Datasheet module, Internet Publisher, data inheritance, piping specifications. control, etc.,” explains Boris M. Solovyev, Ph.D. ChE., senior process engineer at Ludan Engineering. “Time savings can also be significant, depending on the type of project. For instance, if the project has multiple instruments and control loops, the Instrument Index is generated automatically with the P&ID progress, as well as equipment and instruments data-sheets. This case corresponds to 90 percent time savings, in comparison to the conventional instrument and equipment data filling. If the project is drawing creation itself, for an AutoCAD novice user, CADWorx P&ID can save 50 percent of time”.

CADWorx P&ID Professional also proved itself as a great conversion tool of ordinary AutoCAD drawings to intelligent ones, incorporating all available project documentation: datasheets, equipment and lines lists, etc.

## MOVING FORWARD

Ludan Engineering is broadening its project portfolio and has used CADWorx P&ID in nine projects and plan to further standardize the use of the tool in its increasing portfolio. In the near future, the company plans to train 15 staff members in the use of the tool. Thanks to its CADWorx P&ID success, the CADWorx Plant Professional suite has passed the trial period and will be validated on the real project.



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