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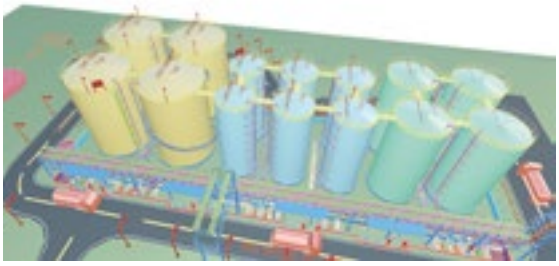

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Editor-in-chief: *Sami Koponen*
Editor: *Martin Brink*
Contributors: *Antti Leikas, Jiawen Zhang*
Layout: *Olli Tuomola*

CADMATIC Process & Industry eXperience 04
Linnankatu 52, 20100 Turku, Finland, tel. +358 2 412 4500, info@cadmatic.com, www.cadmatic.com.
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CADMATIC believes that all information provided in this publication is correct at the time of printing. CADMATIC is not responsible for any inadvertent errors. Cover picture: CADMATIC 3D model created with CADMATIC Primary.

Covid-19 – disruptions and solutions

The Corona pandemic has created great disruption to almost all businesses, and many of our customers' operations have been affected. During the European summer, we saw the reopening of economies, but since then, significant second waves have been felt in many countries. At CADMATIC, we took early proactive steps to mitigate the adverse effects on our customers' operations.

One cannot but wonder what changes we can make to prepare the global population better for similar shocks in the future. If we listen to epidemiologists, it is not a question of if, but rather when the next virus or bacteria will disrupt us. Of course, not all future disruptions will be as severe as Covid-19, but it makes sense to be better prepared next time.

Mitigating impacts on customers

At the start of the Covid-19 outbreak, we changed our licensing policy to allow our customers' employees to use CADMATIC directly from home. This was well received, and we noticed that many of our customers in several countries successfully transferred their activities from their offices to home working with CoDesigner.

I am happy to see that their projects are running smoothly. Our information management applications also allow them to enhance collaboration between engineers, customers, and construction sites. This is an area we have invested in much in recent years. In this edition of the eXperience magazine, we highlight how one of our customers, design and project management company Blue Projects, has broadened its service offering by implementing our information management tools eShare and eGo.

We also have an article about Helen Ltd, which uses CADMATIC solutions in wastewater treatment plant projects that are paving the way for carbon-neutral energy production.

Flexible licensing options with CADMATIC Primary

In a boost to design and engineering companies, we have introduced CADMATIC Primary. It provides access to CADMATIC's P&ID, 3D Plant Design, and Draw modules on cost-efficient subscription plans with network licensing. I am convinced that this flexible licensing offering will appeal to many companies.

In the magazine, we present how CAD software licensing affects the bottom line of companies and introduce the CADMATIC Primary solution more broadly. This is supported with a customer reference from Pau, France.

I hope that you enjoy reading the magazine and welcome your feedback.

Sami Koponen
Vice President, Process & Industry

Revamp projects pave way for carbon-neutral energy production

CADMATIC eShare implemented in Helen Ltd heat pump project

Katri Vala in Helsinki, Finland is the world's largest heating and cooling plant that produces district heating and cooling from treated wastewater. In July 2020, Helen Oy completed the extensive overhaul of the entire underground wastewater treatment system and is currently constructing a sixth heat pump at the facility. The upgrade will add 2,000 m^3/h to the current wastewater treatment capacity. CADMATIC eShare was implemented by Helen in June 2020 to facilitate the integration of laser-scanned point clouds with design models in order to ease installation and reduce clashes with existing processes.

The overhaul of the wastewater treatment system was a major undertaking. It included replacing all the system's reinforced plastic pipes, most of the steel piping, all the steel structures, and the acquisition of a new heat exchanger. The project was challenging not only due to its scale, but also due to equipment delivery difficulties associated with Covid-19.

Carbon-neutral heating in Helsinki during the summer months

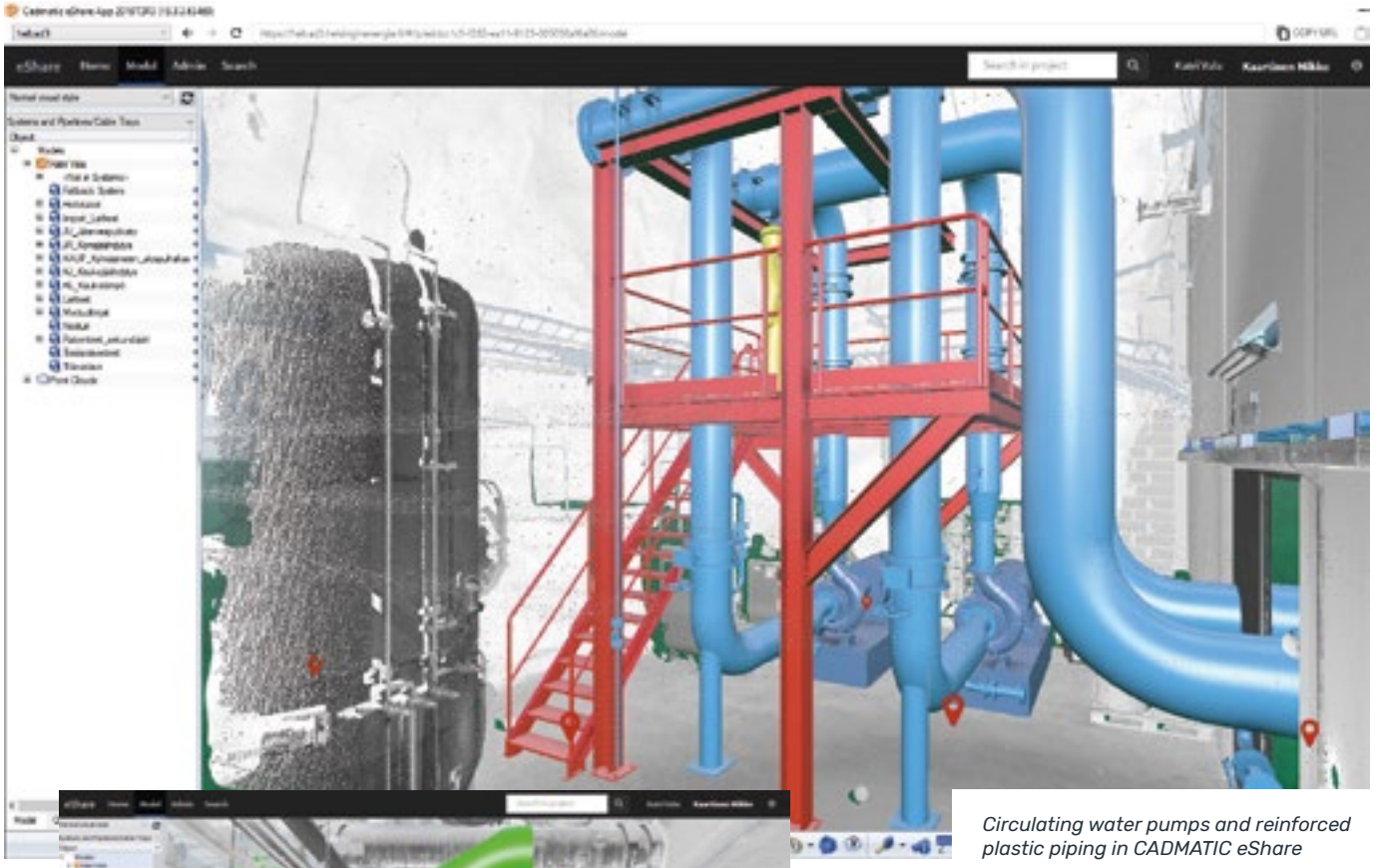
The new heat pump will bring the number of heat pumps at the facility to six and forms part of an ambitious series of five revamp projects that stretch to the spring of 2023. It includes the construction of a seventh heat pump that will be the largest of its kind in the world, an investment that will allow carbon-neutral heating in Helsinki during the summer months. Helen aims to achieve carbon-neutral energy production by 2035.

Heat from one pump for 24,500 apartments

According to Helen Ltd's Senior Project Manager, Mikko Kaartinen, the heat pump under construction will produce 18.5 MW of district heating, the equivalent of the requirements of 24,500 two-roomed apartments. The entire production of Katri Vala can heat about 120,000 two-roomed apartments.

Work on the heat pump has progressed to the installation of connecting pipes and steel structures around the heat pump. At the same time, Helen is building a treated sewage outlet returning from the heat pump. The length of the exhaust pipe is about 200 meters.

"In January 2021, we will start modification work on one of the existing heat pumps, with the aim of increasing energy output by replacing the electric motor and other components. Once we have completed the sixth pump, we will have a moment's rest before starting on the seventh, which will be up and running by the summer of 2023," Mikko outlines some of the projects in the pipeline.



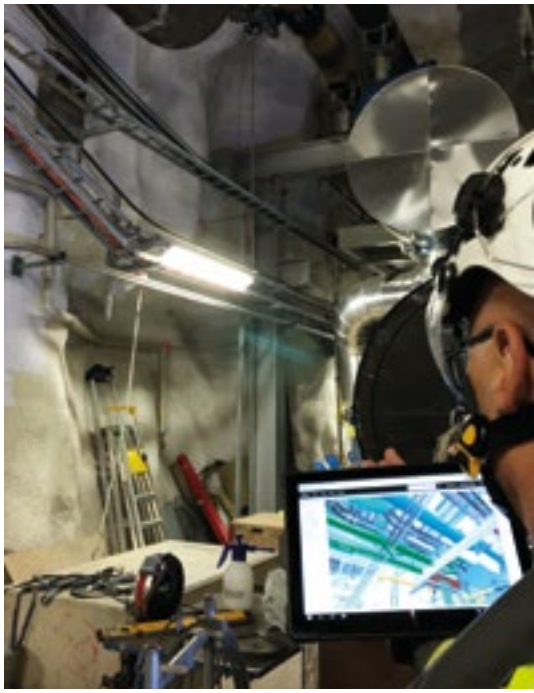
Circulating water pumps and reinforced plastic piping in CADMATIC eShare

Machine cooling circuit return pipe from heat exchangers in CADMATIC eShare.

The heat pump design model in an existing space in CADMATIC eShare

Helen Ltd in brief

- Founded in 1909
- Produces and sells electricity, district heating and district cooling
- Helsinki: 3 power plants, over 10 heating plants, 2 underground cooling centres and the largest heat pump plant in the world
- Awarded prize as producer of world's best city energy with electricity, heating and cooling produced in same process
- Carbon-neutral energy production by 2035



Different 3D models can also be combined in eShare and the distances between point clouds and 3D model objects can be accurately measured

> *eShare has helped in gaining an understanding of existing spaces and in preventing clashes*

eShare used to compare design models with laser-scanned point clouds

Katri Vala produces heating and cooling year-round and the idea was to keep the plant operational during the heat pump project. One of the greatest challenges is that the underground surfaces of the excavated cave are not flat as depicted in designs and can, in fact, differ significantly from the original excavation model and theoretical surfaces. For this reason, the entire heating and cooling plant was laser-scanned already in 2019.

The integration between the laser-scanned materials and design models was not available during the wastewater treatment upgrade project. According to Mikko, this was one of the main reasons eShare was taken into use for the subsequent heat pump project.

"Unfortunately, we did not have eShare in use at the start of the wastewater system revamp project, so we had some collisions between new piping and steel structure designs with underground surfaces and existing structures, which created extra work on site. During the installation of the new heat pump, eShare has helped us to avoid these unexpected collisions," says Mikko.

Helen employees and subcontractors have used eShare to support installation work. They can view the laser-scanned point clouds in photorealistic views alongside the piping and steel structure design models.

Different 3D models can also be combined in eShare and the distances between the point clouds and 3D model objects can be accurately measured.

"In eShare, you can see the exact location of a new pipe or steel beam. It has also eased the installation of wall and ceiling supports and getting an understanding of the space. eShare has been a particularly important tool to provide early warnings of any possible collisions between the designs and the existing process," Mikko sums up the benefits of eShare.

HELEN

Data-driven engineering and construction

CADMATIC Business Development Directors Jari Pynnönen and Tommy Norström share their views

Text: Antti Leikas

Process industries across the globe are currently undergoing a digital revolution that is creating and transforming business models. They are increasingly embracing the immense possibilities offered by advanced digitalization in the plant engineering and construction life cycle. But what is all the fuss about? I asked CADMATIC Development Managers Jari Pynnönen and Tommy Norström for their perspectives on data-driven engineering and construction.

Each design and construction phase begins with data collection. Data is also derived from the preliminary design process, specifications and customer's needs mapping, and nowadays also increasingly from various open data sources. Statistics, maps, photos, traffic statistics and practically any other relevant sources of information in the various phases of the design process provide useful information. All this data should be stored in an easily manageable format and in databases where the constantly increasing amount of updated data is easily available in all phases of the project without any delays.

This is quite a challenge and how can this be achieved? Is data-driven engineering and construction maybe something new? *"Not really,"* answers Jari Pynnönen, Business Development Director (EIA) at CADMATIC. *"Data-based engineering started already in the 1990's, meaning that the data content of various design documents has evolved hand in hand with technical development. The goals have remained unchanged all these years, and progress has been systematic. The aim is to make the design process more effective by utilising data from previous projects, enable better change management and share information between the various parties."*

Business Development Director (Process & Industry) Tommy Norström says that data fed into the prefabrication process helps to avoid problems between production and construction.

Jari stops to take a breath as the actual list is quite a bit longer. *"However, at the beginning of this century the prevailing term, at least for a moment, was BIM which stands for Building Information Modelling. But unfortunately, this caused even more confusion when data models, product models, modelling, product data models and all possible other terms got mixed up. This was true particularly when people assumed data models refer to a 3D image."* Jari Pynnönen shakes his head. *"And more data just kept coming in all the time."*

What is data used for?

Mixing up the terms 'data model' and '3D image' is understandable, since it is true that a modern 3D document is at the core of the data-driven approach. But this is not in any case a simple three-dimensional image, but instead a database that includes all necessary data for the project. *"A data model may also include 2D images, and basically almost anything"*, Jari Pynnönen explains. *"Also, the model becomes enriched and expanded during the project, as more data is received when the project is being carried out. In this way the model becomes a kind of digital twin, or a kind of data-based clone of the existing reality."*

Why go through so much trouble? What are the benefits? Tommy Norström, Business Development Director (Process & Industry) at CADMATIC, provides some examples. *"A data-driven data model enables feeding data in the prefabrication process which, in turn, helps to avoid problems between production and construction. Similarly, the model provides instructions for the correct installation sequence, and practically for the whole construction process"* Norström adds. *"And all the data acquired during the process is fed back to the data model, which again enables close monitoring of the project's progress."*

At the other end there is the beginning of the design process, which is always the starting point. *"Both the designers' skills and the properties of the tools they use should be on the level that enables operating a data-driven design process,"* Norström says. *"We have learned that it is possible to carry out even the most challenging projects efficiently when the required precise competence for every project is selected carefully in advance. In practise, members of the project organisation and teams may be located almost anywhere in the world. However, this means that both the designers and the project managers are able to meet the challenges related to this kind of organisation, and also see the benefits it provides"*.

When the all design takes place in a single centralised database, all teams have up-to-date information on the progress, and all necessary data at hand. When change

Business Development Director (EIA) Jari Pynnönen says that that data-driven engineering started in the 1990s.

management and documentation are added to this well-managed process, the duration of the project will be reduced significantly. *"One of our bigger clients told us that the duration of their projects has been reduced on average by 30 %,"* Jari Pynnönen adds. *"But we cannot reveal the name of this client because their previous operation model would look quite inefficient compared to these figures."*

Data is similar to oil – what happens to it when it is being processed?

More and more companies are now employing data analysts who participate in the design process alongside designers, programmers and project managers. Their task is to filter the necessary and useful data for the project from enormous amounts of data.

Unlike oil, data is a renewable natural resource, which does not run out. The data created during the design process needs to be processed to avoid a huge mess that might be called hazardous waste. Employees and tools with the necessary data management characteristics for processing, storing and rotating massive amounts of data as efficiently as possible are of key importance in this process.

The impact of software licensing on organizations

How can they remain competitive?

Text: Sami Koponen

Typically, CAD software licencing costs represent some of the largest software costs to engineering and design companies. The current tough business environment has highlighted the importance of flexible CAD software licencing options to better meet diverse needs and manage the associated costs.

While some CAD software providers are, for example, doing away with network licencing, at CADMATIC we believe that this option and other flexible licensing options are crucial for many companies to operate efficiently and remain competitive.

Engineering and design companies appreciate the ability to have many different users in the organization that can use software as the need arises, as opposed to licenses that are assigned only to named users. Many users may only need the design software for a limited number of hours per month, or to quickly adjust a diagram or implement a change. Shifting licenses between users in such cases can become an unnecessary administrative headache.

Being forced to change from network licensing to named user licensing also often does not come at favourable terms. The annual cost per user can even double! There is a perception out there that CAD software suppliers are adjusting licensing policies just to increase revenue without adding tangible benefits.

5 network licenses and 25 users become 10 named users

On network licensing, a company with 5 network licences can, for instance, have about 25 different users that use the licenses flexibly when needed. Imagine now that the company is informed by their CAD software provider that their network licences will be replaced with named user licenses at a ratio of 1:2, a typical offer out there in the market.

This means that they would only receive 10 named user licenses, which is clearly not enough to meet their needs! They will have to purchase more licences or reduce the number of designers, which is not a practical option if they want to retain their profitability levels or capacity to perform projects.

Constantly shifting licenses between designers not practical

But can't these named user licenses be shifted to other users? It seems they can, but this comes with additional management tasks. The ICT department needs to know which designers do not need licences at a particular time and to whom they can be shifted and for how long etc. For many organizations, these additional management tasks are not very practical. Every minute spent on these management tasks also represents an unwanted extra cost.

From the designer's point of view, user licenses can be limiting. Sometimes you just want to make a small modification to a design. Without network licensing, and if a license is not currently assigned, the designer would have to shift this work to another designer that has a license or request a license.

Gorodenkoff Productions OU

All of this takes time and eats into efficiency and the bottom line.

> *"It is important to understand the cost of changing your CAD software, what the ROI is and when it will be realized."*

So, what is the alternative?

If the inflexibility of your CAD software provider is hurting the bottom line, one alternative is to identify a CAD software provider that matches your company's needs. This will obviously incur costs and it is important to understand what that cost is, what the return on investment (ROI) is, and how fast ROI is generated.

CAD software is typically a long-term investment and an essential part of company operations, which is why the cost/quality ratio is so important. A key issue here is how easy it is to implement and learn the new CAD software. The goal is to get de-signers up and running with as fast as possible.

CADMATIC Primary is powerful, yet affordable and flexible

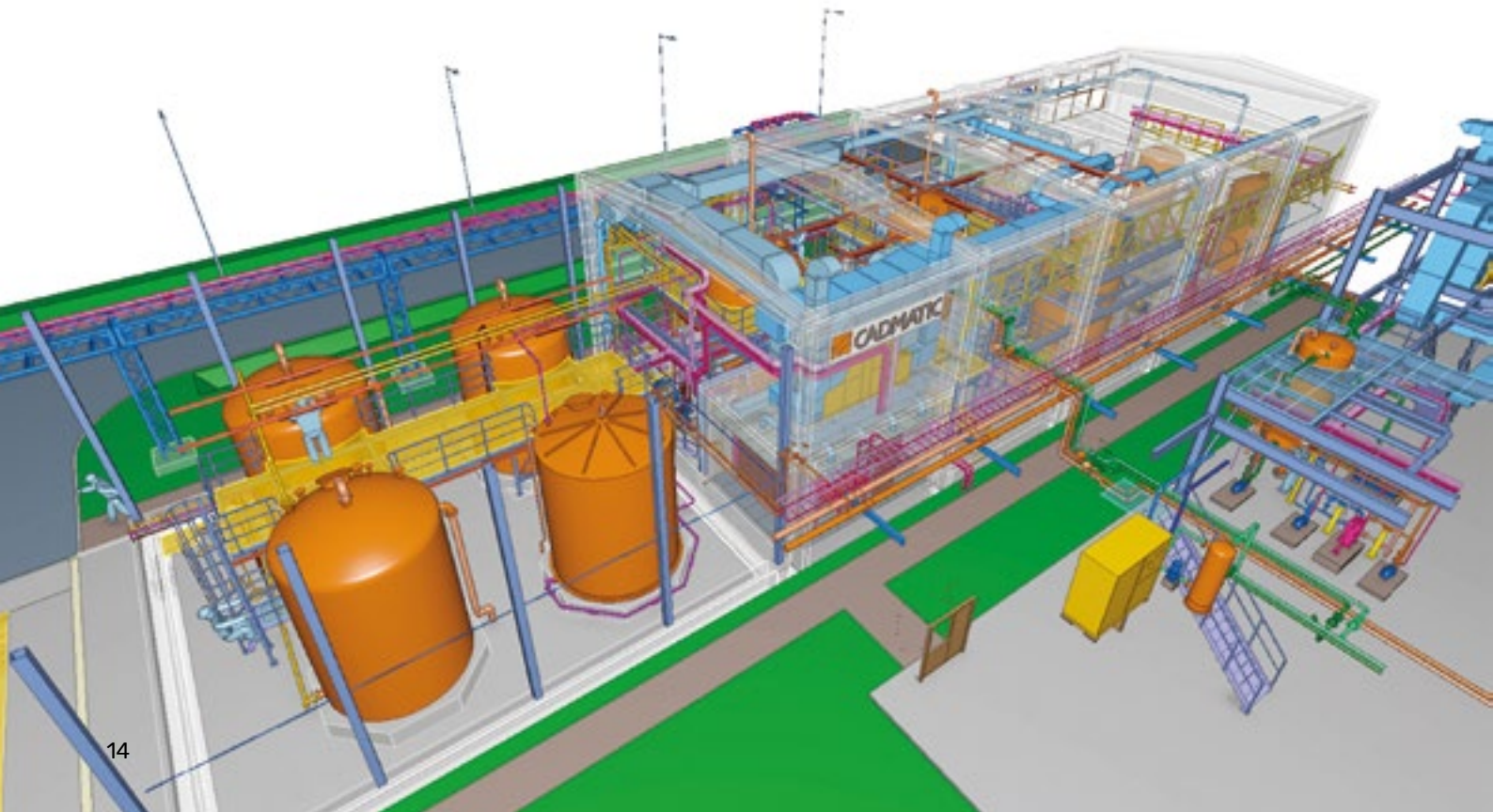
For small and medium-sized companies that are faced with the challenges highlighted in this article, CADMATIC Primary is a gamechanger. In Primary, CADMATIC's powerful 3D plant design features can be accessed via a competitive yearly subscription fee with network licensing. The primary package includes the 2D drafting, 3D Plant design and P&ID modules.

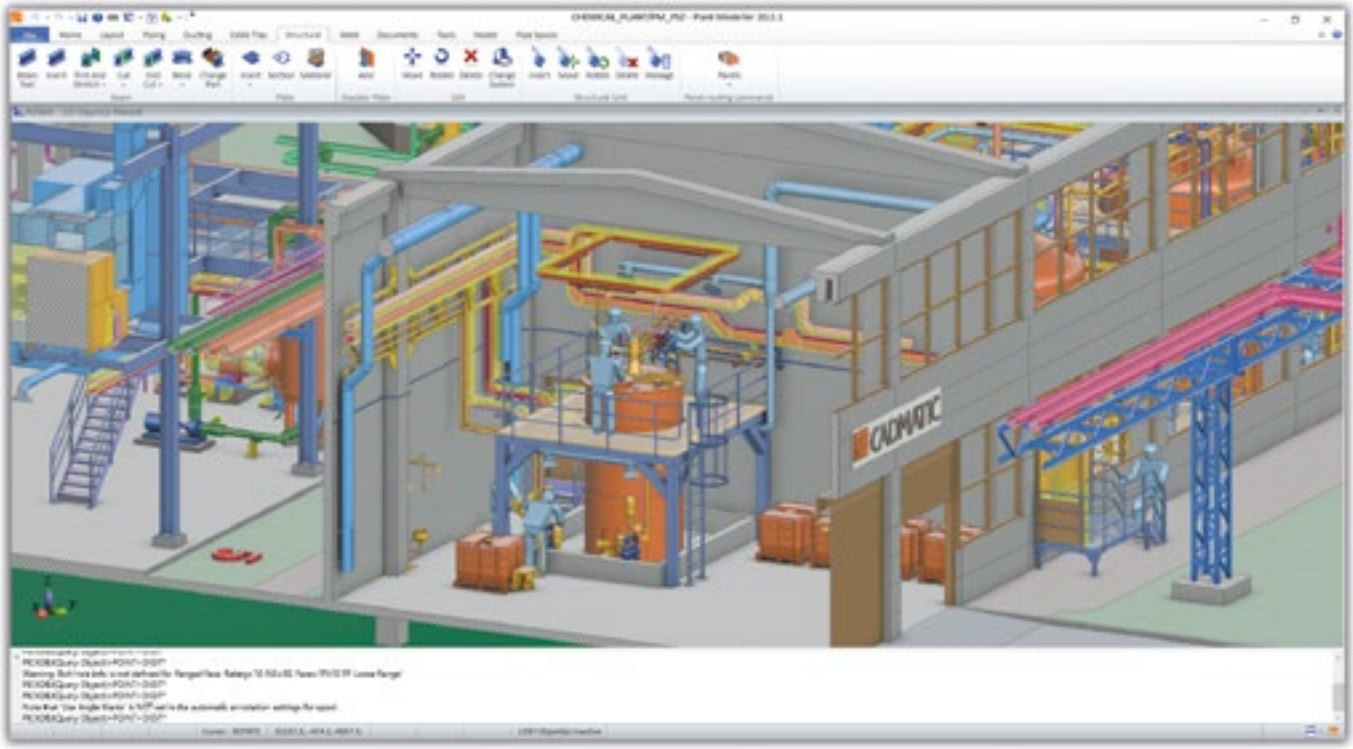
Read more about CADMATIC Primary overleaf and the ValoSys reference article on page 17.

CADMATIC Primary

A cost effective, scalable solution for industrial 3D plant design projects

CADMATIC Primary is a cost-effective way to get started with 3D plant design projects. It requires only a limited investment and provides complete functionality and powerful design tools for the most important design disciplines.





CADMATIC Primary is a cost-effective way to get started with 3D plant design projects.

The disciplines covered by the packages include: P&IDs, 3D layout, piping, HVAC and ducting, structural items, and highly automated extraction of construction documentation, such as layout drawings, detailed drawings, isometric drawings and BOM.

The Primary package gives the user access to CADMATIC's robust and user-friendly modules: P&ID, 3D Plant Design, and Draw, and can be complimented with modules for electrical design, Laser Scan Modeller, project review, and information management.

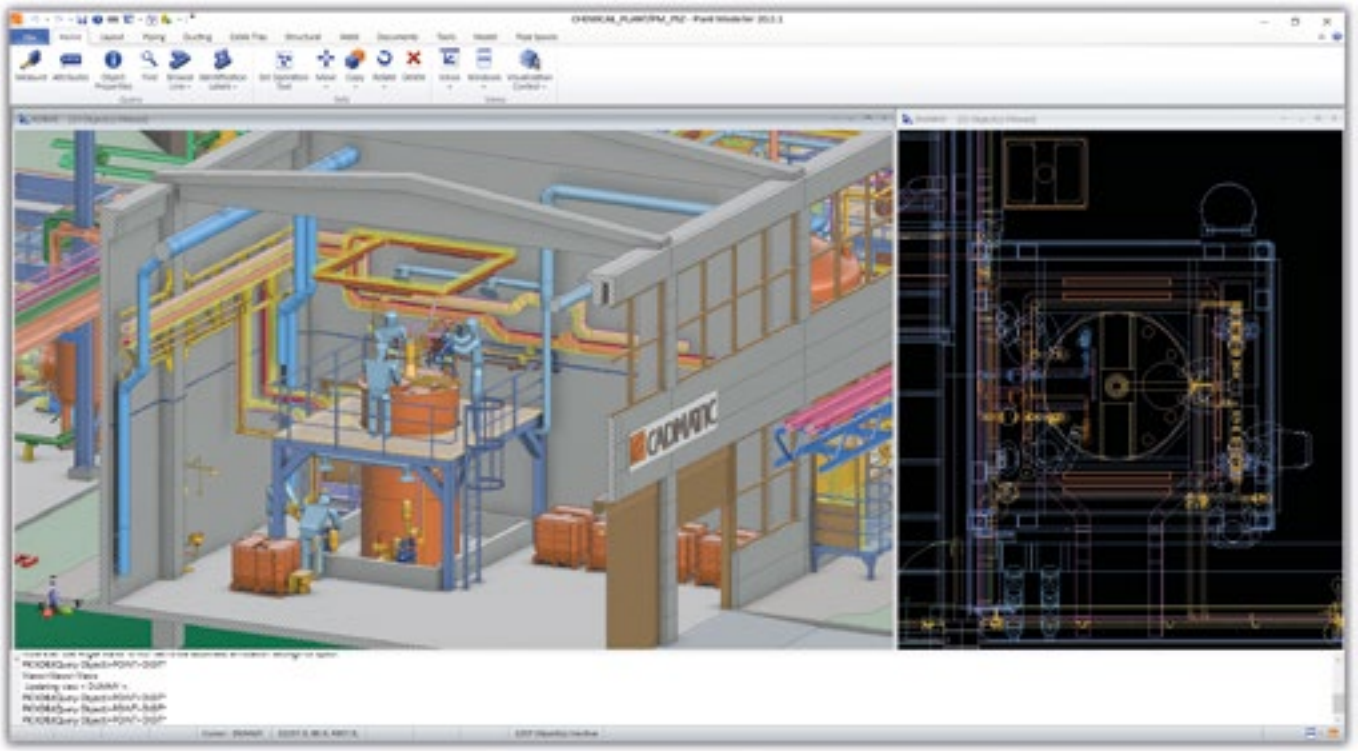
Primary is suitable for small and medium-sized plants or subsets of bigger projects. With the Primary package, three designers can work simultaneously: in CADMATIC Draw, 3D Plant Design and P&ID modules. Network licensing offers the flexibility of using the licenses on any needed workstation.

Robust system – lets you focus on design quality

3D Plant design is a robust and efficient software that covers all design needs in a 3D environment. Resource friendly, flexible and modern – the application provides work in 3D without loading delays.

Primary is easy to set up and to start working with for new users or on a new project. The software is user friendly and interactive and includes extensive preset libraries of components and specifications. The CADMATIC's eLearning environment speeds up implementation and daily use with instructive videos and dedicated support.

The extensive interoperability with other design systems and technology suppliers makes it possible to align design work with other project participants.



CADMATIC Primary offers extensive preset libraries to speed up the design process

Read more about CADMATIC Primary and watch webinar.

CADMATIC Primary – Key benefits

- Built-in mechanisms to use standards, specifications and component libraries speed up the design work and ensure error-free and consistent designs.
- Highly scalable multiuser system for globally distributed design teams.
- Possibility to use CADMATIC P&ID solution for creation of process and flow diagram's simultaneously with 3D Plant Design and take advantage of integrations between disciplines.
- 2D drafting tools for simultaneous use with 3D Plant Design and P&ID.

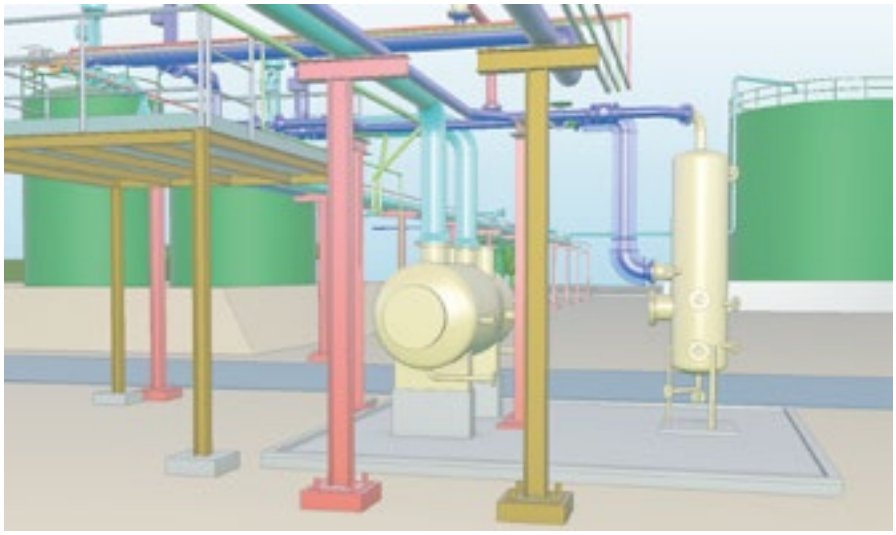
The ValoSys management team from left to right: Technical & Innovation Director Vincent Doucet, Development Director Laurent Debû, and Technical and Commercial Director Hédi Bessibes.

Gaining efficiencies with CADMATIC Primary

Case: ValoSys – French engineering and design company

Engineering and design company ValoSys from Pau, France implemented CADMATIC Primary in the second quarter of 2019. The company's Technical & Innovation Director Vincent Doucet reports that the software features and cost-efficient Primary package match their needs well. ValoSys engages mainly in projects for the chemical industry and gas treatment in oil and gas and biogas sectors.

The ValoSys search for a consistent CAD solution from P&ID to isometrics and through to plot plans started in early 2019. After evaluating different solutions, they decided on CADMATIC Primary. The software is used for process flow diagrams and P&IDs from which various lists are extracted: equipment, valves, instruments, pipes. They also do the general installation of equipment, steel structures layout and pipe routing between equipment with CADMATIC.



Project designed by ValoSys with CADMATIC Primary.

Vincent Doucet indicates that the cost-efficiency of the CADMATIC Primary package was a big drawcard when ValoSys selected the software to support the company's development.

"The pricing of CADMATIC Primary makes it very competitive and was a significant driver for us. The only limitation is on the number of model objects, so in the end it is related to the project size. So far it fits our needs perfectly," says Vincent.

Efficiency gains

Vincent has also been impressed with the efficiency gains that ValoSys has achieved with CADMATIC Primary. In this regard, he highlights the ability to copy piping specifications from already-defined projects to other projects.

"After you have copied the specifications you only need to make some modifications to them in the new project, which saves a lot of time. Using parametric equipment is an investment on the first project, but is a real gain after that," Vincent explains.

He also mentions the ability to review models online with clients and partners in CADMATIC eBrowser. It is convenient for ValoSys that meeting participants can navigate through the model before meetings in order to ask relevant questions or provide new options that can be quickly integrated.

Vincent adds consistency as another key benefit.

> *"The pricing of CADMATIC Primary makes it very competitive and was a significant driver for us."*

"It is very beneficial to know that your isometrics and associated bills of materials will be consistent with the P&ID requirements and with the piping specifications. Basically, you just have to check the visual appearance of the isometric drawing."

Best software features

When asked about what the best software features of CADMATIC Primary are, Vincent points to the full set of equipment and instruments that are included in the P&ID application

"This makes it easy to start and you can add as many objects as you want to your own library."

The consistency check between P&ID and the 3D model is another appreciated feature.

"The consistency check is not too invasive. It is flexible enough to allow you to model differently from what has been defined in the P&ID and to check/correct the most relevant parts. Sometimes you stick to the P&ID and sometimes a smarter arrangement is found in 3D."

Vincent also indicates that piping layout is easy in CADMATIC Primary.

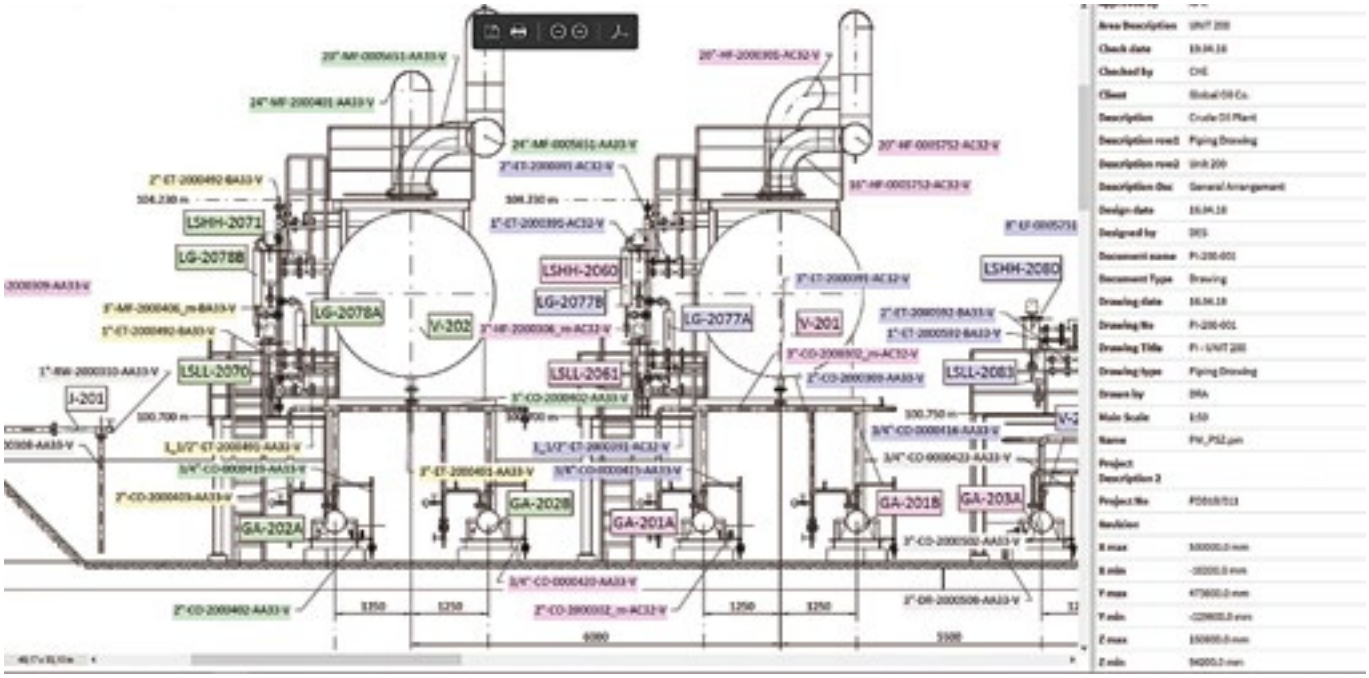
"The connections to equipment are consistent which avoids mistakes. Once this is done, isometric production is really fast and very little, or no touch-up work needs to be done afterwards."

To conclude, Vincent says that ValoSys has also appreciated the support that CADMATIC provides, not only during the initial installation and training, but also in day-to-day trouble shooting.

ValoSys in brief

The ValoSys team has extensive experience in chemicals, energy, and the environment. It supports its customers on industrial projects related to energy, processes and atmospheric emissions, from feasibility studies all the way to commissioning. ValoSys services include:

- Energy process studies
- Industrial project management
- Layout / general installation studies
- Commissioning assistance
- R&D support
- Optimization of environmental performance



Boosting information management

Blue Projects implements CADMATIC eShare and eGo

Blue Projects is a fast-growing design and project management company with extensive cross-industry experience. The Bucharest-based firm has been an active CADMATIC user since 2014. It delivers wide range of projects from manufacturing facilities to real estate and commercial developments. In 2019, Blue Projects implemented CADMATIC eShare and eGo to expand its service offering.

The implementation of CADMATIC information management solutions eShare and eGo was started in January of 2019. The primary goal of the implementation was to broaden the Blue Projects service offering.

6D BIM models

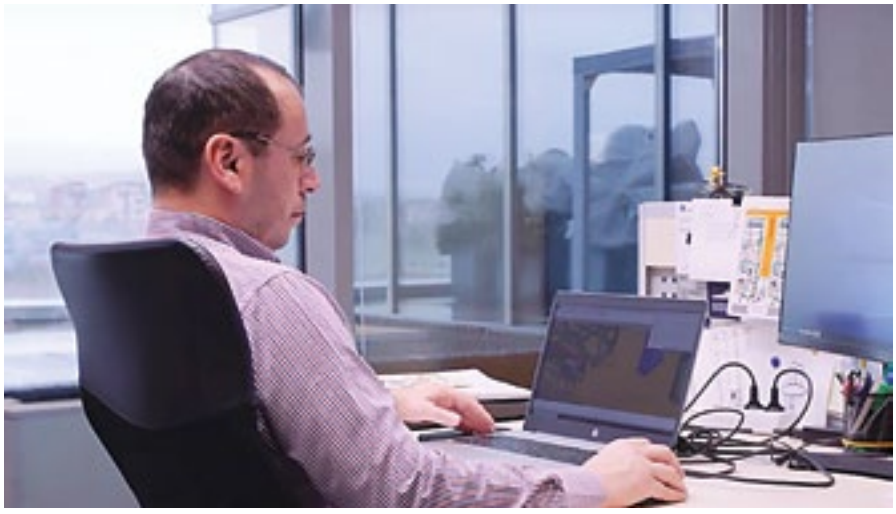
The company's ambitious plans include providing 6D BIM models to their clients.

"In future, the 3D model we create in CADMATIC will be expanded to 6D BIM for all the projects we undertake. We will implement both eShare and eGo this year on our greenfield projects," says Ioan Iuga, Lead Design Engineer at Blue Projects.

According to Ioan, the implementation of eShare and eGo was smooth and simple.

"The CADMATIC team assisted us in the

Ioan Iuga, Lead Design Engineer at Blue Projects has been closely involved in the eShare implementation project.



implementation and the users found the software intuitive and easy to work with," says Ioan.

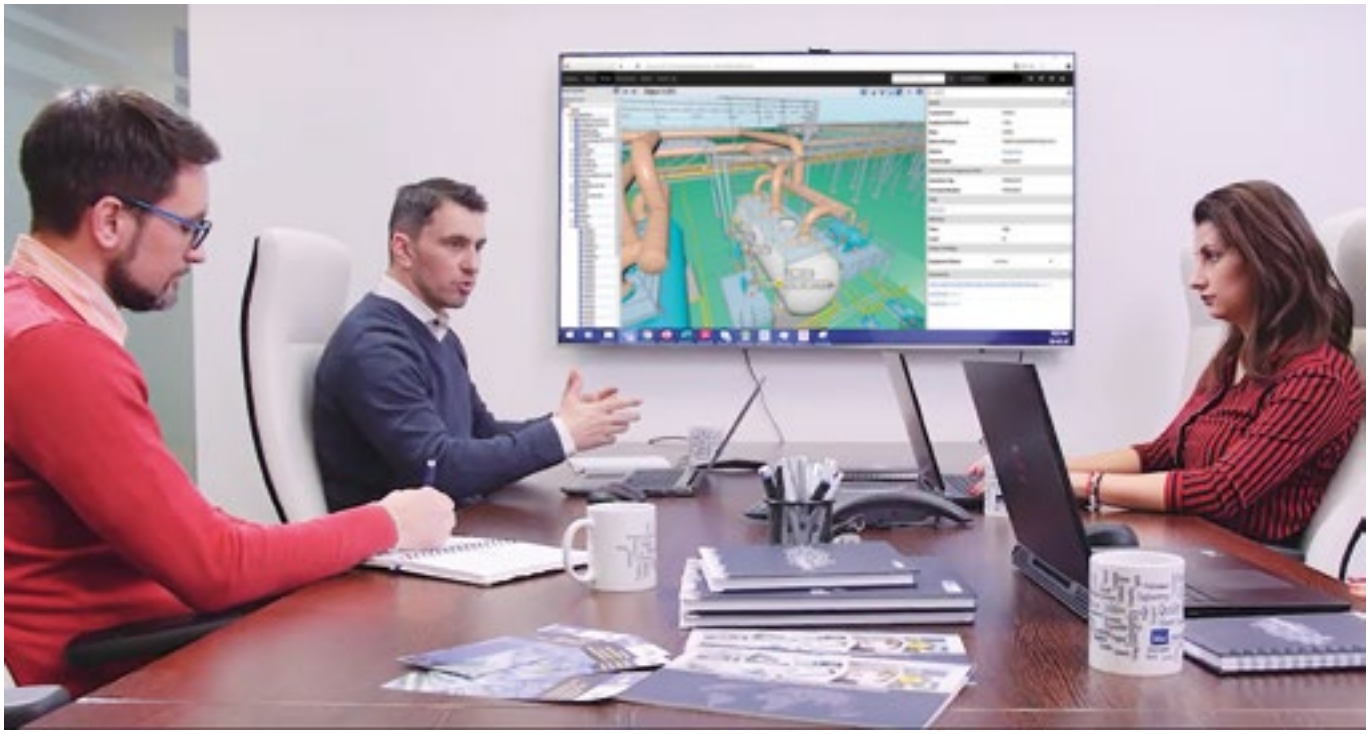
In 2020, Blue Projects also implemented virtual desktop infrastructure (VDI) for remote users to ease work collaboration.

Connecting documentation with the 3D model

Before the implementation of CADMATIC information management solutions at Blue Projects, 3D models and documents were not connected. Models and documents were kept in separate registers and

Blue Projects in a nutshell

- Established: 2007
- Turnover: 24 million EUR (2019)
- Presence: Romania, Poland, Belgium, Netherlands, UK, Russia, Germany, South Africa, Republic of Moldova, France, Canada and US.
- Services: Project Management, Design & Engineering, Construction Management, Health & Safety Management, Relocation of Production Lines
- Clients: Hundreds of projects for blue-chip clients in 27 countries.



The integration of documentation with the 3D model in eShare is highly appreciated by the Blue Projects team members.

all documents were in folders on servers.

"We had to make it work with the help of registers. Now, the documentation is integrated with the 3D model in eShare. When you click on equipment or a piece of machinery it shows the documentation connected to the object such as data sheets and existing drawings," Ioan explains a core benefit of eShare.

Adding value in greenfield projects

Ioan indicates that eShare and eGo will be used in greenfield projects where they hope to add value for their clients with easier access to documentation.

"In future, we hope to use eShare to help our clients to integrate their 3D models in eShare with SCADA systems and maintenance plans. This will allow them to receive real time factory measurements such as conveyor speeds or temperatures," Ioan adds.

> *"CADMATIC eShare is easy and intuitive to use."*

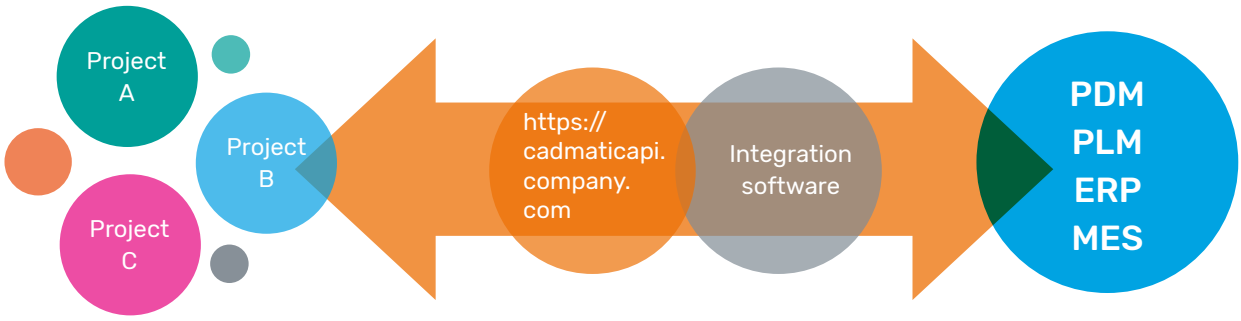
CADMATIC supports integrated management and engineering

The Blue Projects design team uses an integrated management and engineering approach to ensure that projects contribute to clients' overall performance. The approach focuses on 3D engineering and is supported by CADMATIC's powerful database-structured design.

"We create a complete design of the technological line before launching the system into manufacturing, thereby eliminating layout related issues, piping clashes, and civil interface risks," says Ioan.

The seamless integration of each engineering discipline is a key aspect in Blue Projects' success. It avoids potential clashes during the design phases and results in a smooth and detailed execution strategy during delivery, thus avoiding equipment and construction team clashes, as well as elevated health and safety risks during construction.

blue PROJECTS



CADMATIC Web API

The CADMATIC Web API enables the transfer of project data between CADMATIC applications and Product Lifecycle Management (PLM) or Product Data Management (PDM) systems. It eliminates the gap in information flows between these systems, makes project data more coherent, and reduces repetitive work.

CADMATIC Web API brings all project related data (PDM/PLM/ERP) closer to CADMATIC designers and thus ensures the highest possible design quality and that data is easy to find. In some cases, it may also make it easier to estimate the costs of changes.

CADMATIC Web API supports reading, creating and updating documents, part attribute data, objects with position IDs and attributes, and document metadata, and fetching document publication files.

CADMATIC Web API is a REST API that enables users to create interfaces from third party systems, for example, ERP or PLM/PDM, to and from CADMATIC products, such as CADMATIC Outfitting and 3D Plant Design. CADMATIC Web API is used by a project-specific integration software client that can make simple HTTP requests over the network.

Examples of use cases for the integration

- Linking equipment, valve or instrument purchasing and modelling process with CADMATIC 3D model library
- Management of product breakdown structure
- Documents and 3D model revision management
- Status control and progress follow-up
- 3D model export and imports from different CAD systems

Benefits of CADMATIC Web API

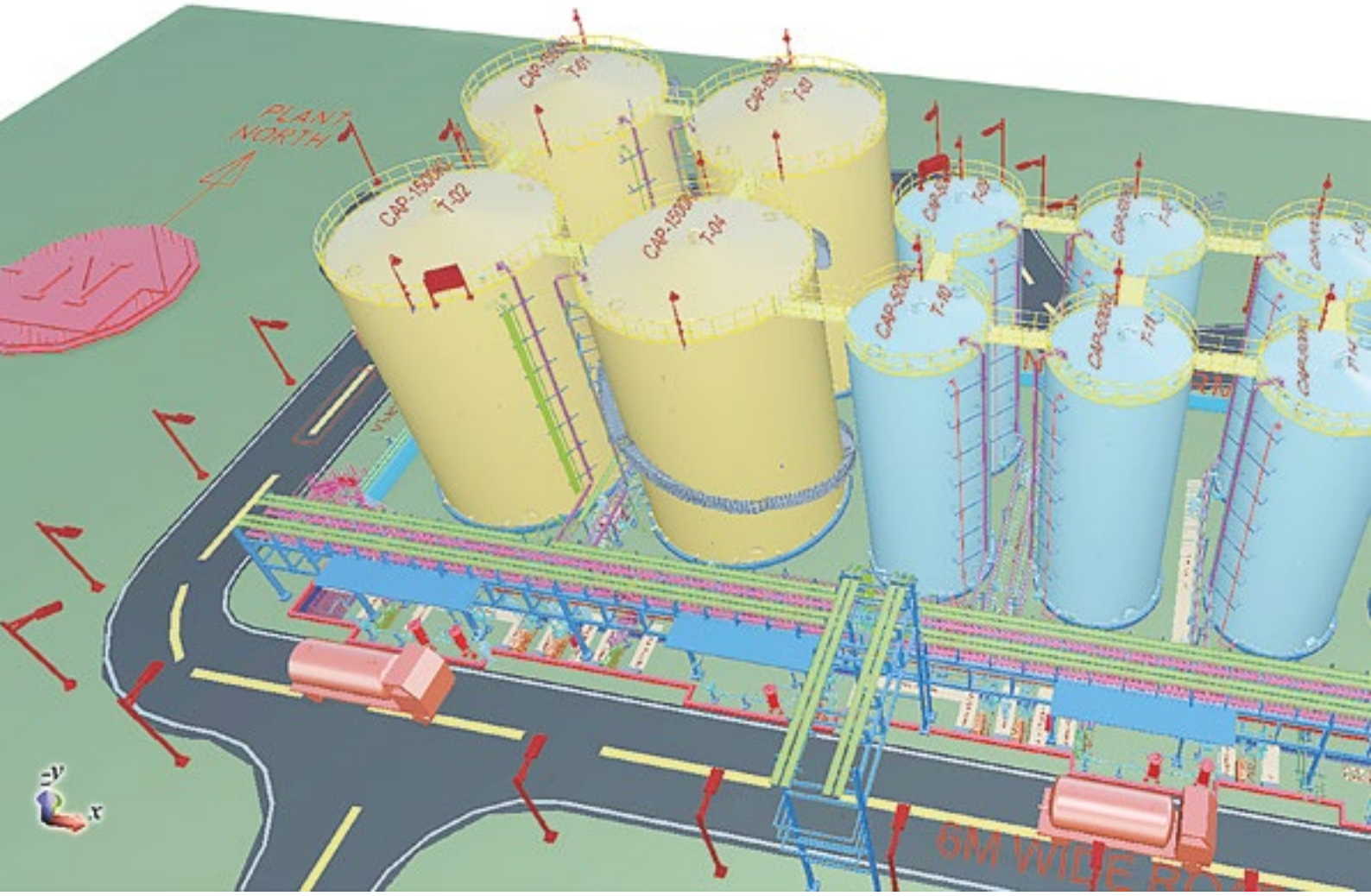
- CADMATIC Web API enables querying objects and their attributes from a third party system to CADMATIC design tools. This can be useful for example when a PLM system is used to generate position IDs and manage the attribute data, or the work breakdown structure.
- If the product lifecycle management system contains the document name, metadata, and other attributes, they can be used directly in CADMATIC design tools. Documents with correct attributes can be created with CADMATIC Web API.
- CADMATIC Web API allows linking the purchasing or modelling process to the CADMATIC 3D model library.

Arya Engineers

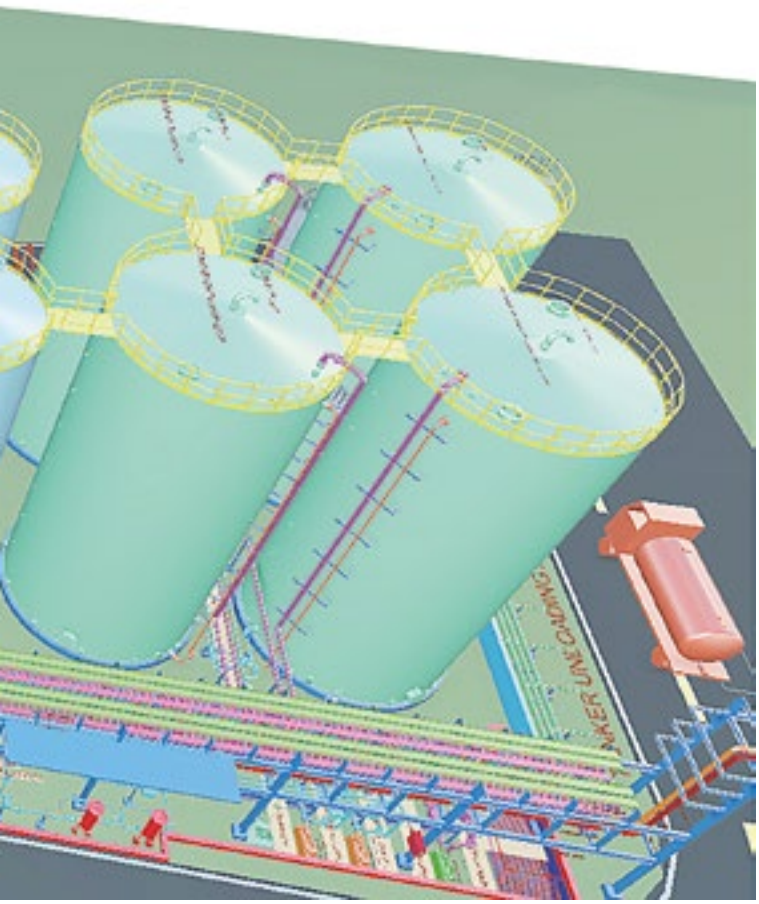
Indian CAD pioneers switch to CADMATIC

Arya Engineers from Pune, India have been pioneers in the use of CAD software in India. The company has worked in 3D environments for over 20 years. In 2018, Arya took a leap of faith and implemented CADMATIC software.

Area Engineers was established in 1997 as a piping design engineering company. It soon branched out to other services such as process, civil/structural, instrumentation, and mechanical engineering. Today, Arya offers services in EPCM & EPC work for companies in the chemical, food, petrochemical, pharma, oil & gas and power plant, paint, and paper industries.

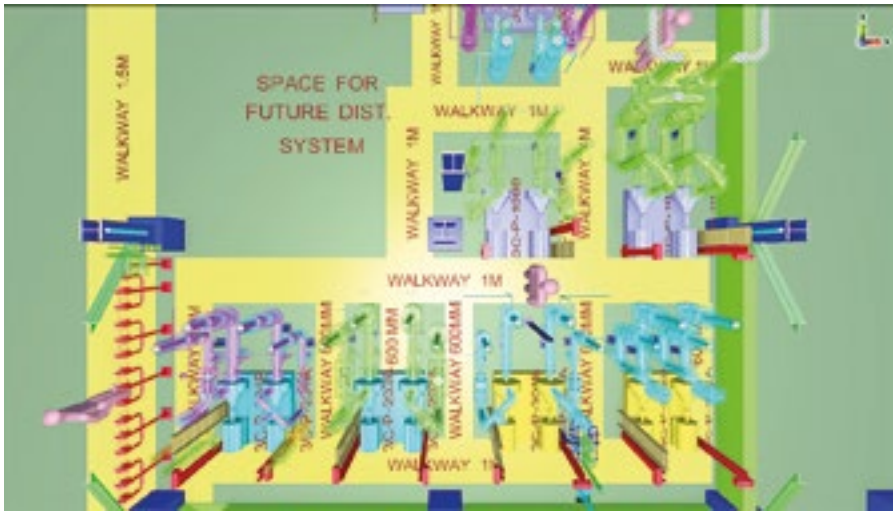


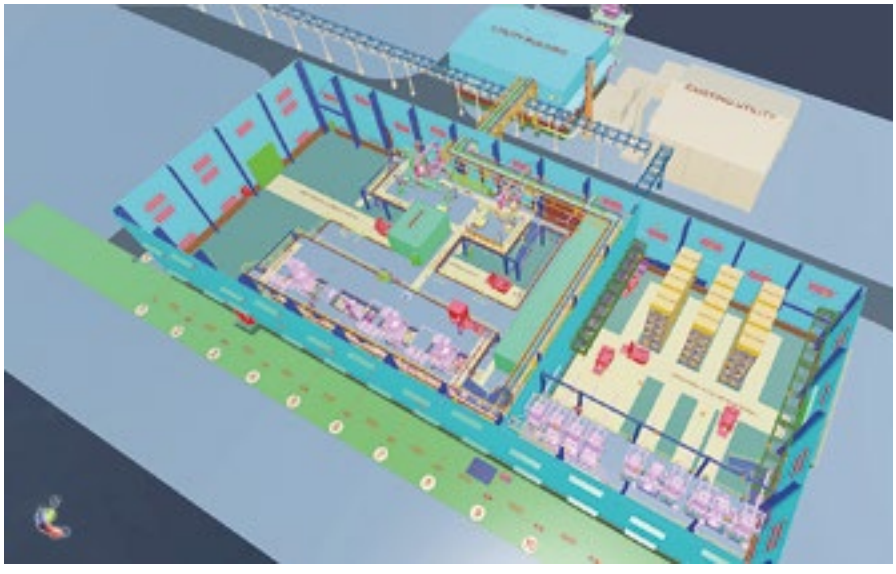
Arya Engineers team members in design review meeting.



Arya Engineers services

- 3D scanning and reverse engineering
- FEED/Basic Engineering Package
- EPCM
- EPC/LSTK
- Detailed engineering
- Procurement management
- Construction management
- Project management
- Inspection
- Site assistance
- Fabrication & material supply





3D models created by Arya Engineers in CADMATIC.

Bharat Khutale, Head of Piping Design at Arya Engineers, is satisfied that Arya Engineers have been able to reduce design errors with the use of CADMATIC.

Smaller file sizes key in selecting CADMATIC

According to Mr. Bharat Khutale, Head of Piping Design at Arya Engineers, the company had worked with other 3D design programs over the years. One of the challenges encountered was the large file sizes produced.

"All our earlier software packages worked with CAD engines that produced large file sizes. A project with 300 to 500 pipelines could easily result in a file size that was more than 4 GB. In CADMATIC, a similar project produces in a file size that is less than 1 GB. This was one of the key reasons we decided to change to CADMATIC software," says Bharat.

Currently Arya Engineers use CADMATIC for 3D modelling, piping, cable trays, and plant layout as well as the detailing of EPC projects.

According to Bharat, they have been able to reduce design errors with the use of CADMATIC. Arya is also happy with cable router and CADMATIC 3D viewing capabilities. The CADMATIC CoDesigner is used by Arya to distribute design work to two different locations and they report that it is performing *"excellently"*.

> *"We have been able to reduce design errors with CADMATIC."*

Faster 2D extraction improving efficiency

Arya Engineers are always looking at ways at improving the efficiency of their design services. In this regard, they have been particularly pleased with how CADMATIC generates 2D documentation from the 3D model even with large files.

"With our previous CAD software programs, we sometimes ran into the problem that they would crash when the file sizes increased. It would also take two to four hours to do the 2D extraction. With CADMATIC the same procedure takes less than 5 minutes," says Bharat.

An additional advantage of faster extraction is that check prints can be produced at more regular intervals and used for quality checks more regularly.

ARYA ENGINEERS & CONTRACTORS PVT. LTD.
www.aryaengineers.com

CADMATIC is a leading 3D design and information management software developer and supplier for the marine, process, energy and construction industries.

- CADMATIC'S headquarters are located in Turku, Finland.
- We have staff in Australia, China, Estonia, Hungary, India, Italy, the Netherlands, Poland, Russia, Singapore, South Africa, South Korea, Spain, Sweden, and the UAE.
- We have certified resellers and support partners in 15 countries in Europe, Asia, America and Africa. Our growing customer base includes over 6000 customer organizations in 60 countries.

CADMATIC
Linnankatu 52
20100 Turku, **Finland**
Tel. +358 2 412 4500
sales@cadmatic.com
www.cadmatic.com

For CADMATIC worldwide offices see
www.cadmatic.com/contactus

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