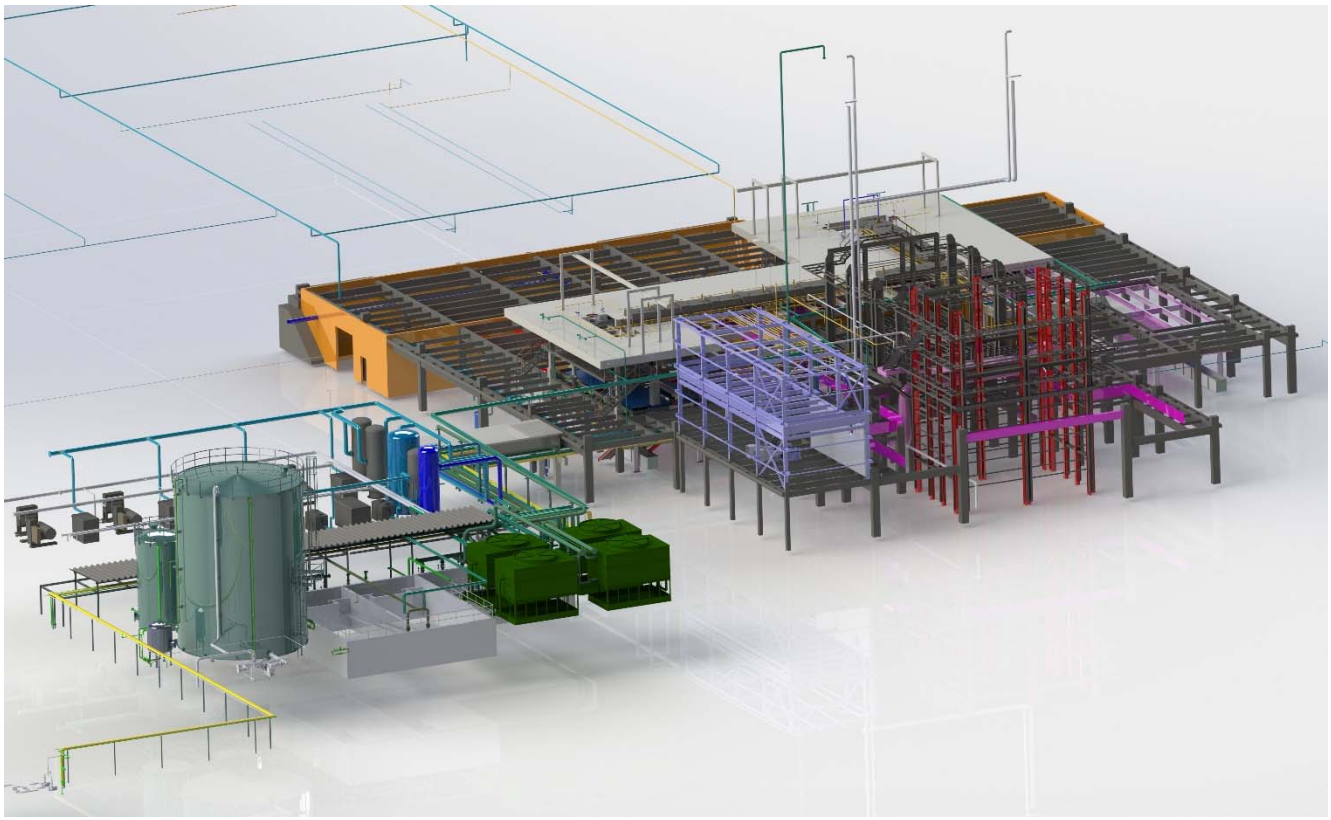
Plan-eta

Large assemblies: Create 500 pipelines on 10,000 m² with Smap3D Plant Design

CAD Products
Smap3D Plant Design
SOLIDWORKS

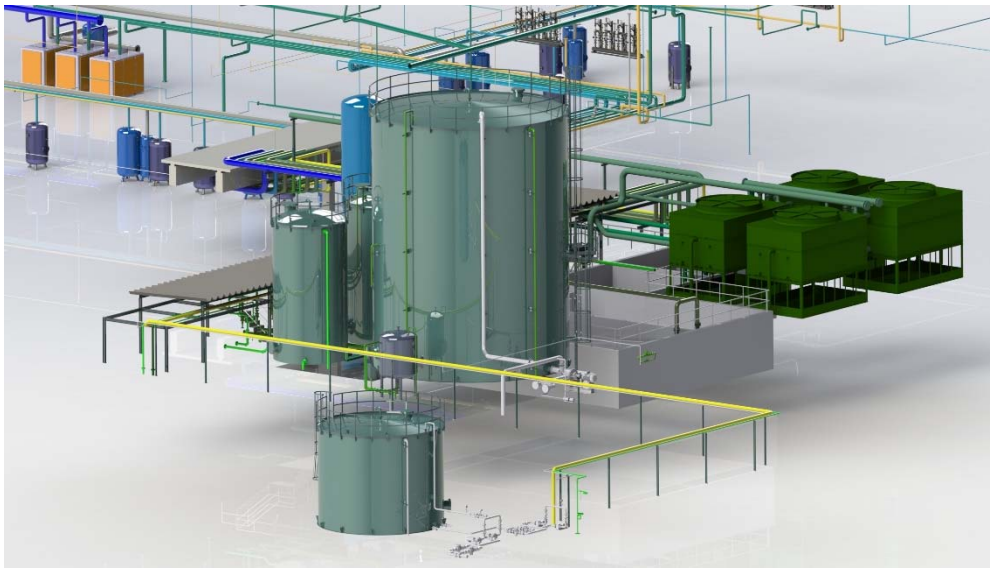
Plan-eta GmbH is a German-based project planning company working in the field of industrial media supply. PLANning and system efficiency (η = ETA) form the foun-dation for all of the company's activities. The focus is on the design of complex supply solutions for various media such as air (cooling air, combustion air, technical and medical pressurized air, etc.), water (drinking water and industrial water supply, filtration systems, etc.) and fuels (LPG, natural gas, diesel, etc.). The design team has an esteemed international reputation due to their precise, fast and reliable designs which can encompass extensive assemblies. Recently the designers successfully finalized a major project for a glass factory in Brazil for which they designed over 500 pipelines distributed over 10,000 m².



Glass factory in Brazil with over 500 pipelines

Prefabricated standard pipe specifications for international projects

Before taking over the project in Brazil, Plan-eta was looking for a plant design software that could be integrated in SOLIDWORKS and which its design engineers could use to create intelligent P&IDs and link the 3D pipeline construction with the detail engineering. One goal involved modeling the development pathway from the planned P&IDs to the 3D-Piping and creating isometric drawings. Client-specific, non- standardized components also had to be integrated in the active design. Since Plan-eta works on international projects, it was important to be able to meet standards that deviate from the German or international system, such as the American ASME system. Plan-eta decided to ultimately implement all three of the Smap3D Plant Design modules from Smap3D Plant Design GmbH, consisting of P&ID, 3D Piping and Isome-trics.



Smap3D Plant Design: To create intelligent P&IDs and link the 3D pipeline construction with the detail engineering

“By actively linking P&ID and 3D design in conjunction with the system's internal error correction, we were able to place our design focus even more on optimizing system efficiency and user friendliness.
The result was exemplary drawings, which the globally operating and highly experienced client said they had never seen at this level of precision.”

Jörg Müller, Managing Director Plan-eta

Faster entry into the productivity phase

As a Gold Partner product of SOLIDWORKS, Smap3D Plant Design impressed the planning company with its prefabricated standard pipe specifications. Extensive production and parameterization of standard components is not necessary when using Smap3D Plant Design, thus a fast entry into the productivity phase is ensured.

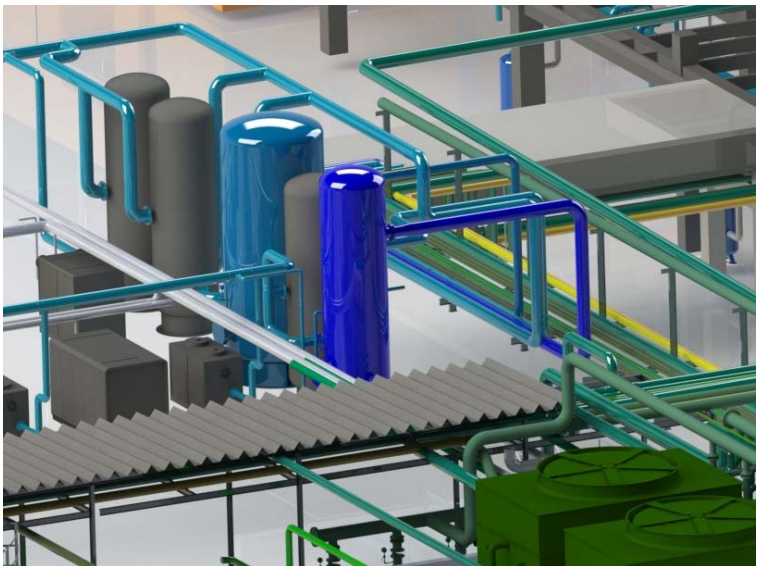
Component lists and BoMs can be generated with Smap3D P&ID at every point during the course of the project. This enables fast and error-free creation of valuable component BoMs for purchasing. Data from P&ID are automatically transferred into Smap3D Piping. This way, Plan-eta can also automatically check whether the process engineering and pipeline design match or deviate from one another. If there are changes in the P&ID, for example when replacing a pump or valve, this is automatically color-highlighted in the To-Do list of the implementation plan. The 3D model can be updated directly with this information.

„The time we required in the Russia project – without Smap3D Plant Design – for standards research as well as parts production and parameterization was drastically reduced."
Jörg Müller, Managing Director Plan-eta

A need to introduce new software

One of Plan-eta's last major projects before the introduction of Smap3D Plant Design was designing plans for constructing a complex industrial water filtration plant in Russia. The client there demanded compliance with the Gossudarstwenny Standard (GOST) customary in Russia at the time, as well as simultaneous planning in accordance with the "German standard."

Due to the difficult material procurement conditions in Russia at the time, it required a very high level of detail very early on in the project and each part to be used - down to the last nut and bolt - had to be recorded in the respective BoMs. Over the course of the project, Plan-eta realized that the client cultivated a more "flexible" approach to the design interpretation in the development phase which was implemented by them (in part without feedback).



For example, in multiple places the client independently changed the combination logic which was based on the P&ID. These changes resulted in a significant time expenditure for the planning company. At the same time, the complex design of the master model required a great deal of time and mouse clicks. In addition, there was the highly complicated as-built acceptance in Russia with the simultaneous actualization of the master model, which was essential for the system documentation. The search for a software that indicates changes became the immediate top priority.

Brazilian project with Smap3D Plant Design: Relief on all levels

After successful completion of the Russian project, Plan-eta took on a much more extensive assignment in Brazil. The focal point was the design of an almost comprehensive media supply system (air, water, combustion gas) with standard piping elements as well as cooled air pipelines with complicated special manufacturing for a newly constructed glass factory. In order to reduce the problems they had faced in Russia, the planning firm decided to expand the existing CAD system, SOLIDWORKS, with the use of Smap3D Plant Design. What followed was an entirely new way of working, according to Jörg Müller, Managing Director of Plan-eta: “By actively linking P&ID and 3D design in conjunction with the system's internal error correction, we were able to place our design focus even more on optimizing system efficiency and user friendliness. The result was exemplary drawings, which the globally operating and highly experienced client said they had never seen at this level of precision.”

500 pipelines for a 10,000 m2 glass factory

The ASME system required in Brazil was able to be taken over in its entirety from the Smap3D Plant Design standard parts library. The project comprised 4733 components, consisting of 2668 individual parts and an additional 3971 components generated by Smap3D Plant Design: “The time we required in the Russia project – without Smap3D Plant Design – for standards research as well as parts production and parameterization was drastically reduced,” says a delighted Müller. Smap3D Plant Design was used to design over 500 pipelines for the 10,000 m2 glass factory. From this experience, Plan-eta has become a highly satisfied user of Smap3D Plant Design and does not want to do without this software solution from Smap3D Plant Design GmbH.

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