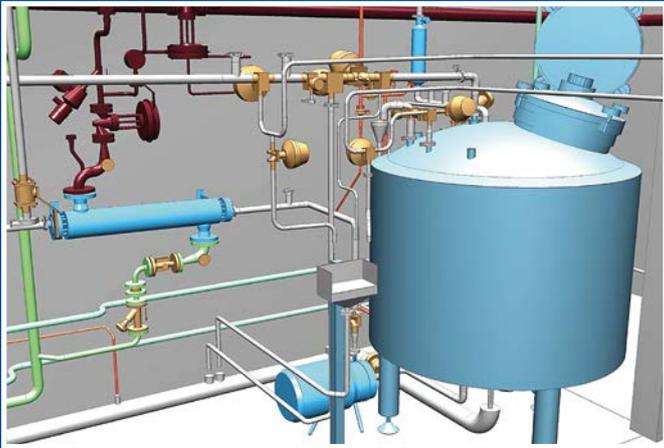


ELOMATIC

CONSULTING & ENGINEERING



Clean Utilities



The design of POUs (Points-Of-Use) can be difficult due to several constraints and regulations. As the materials and components used in clean utility systems are often very expensive, it is advisable to complete a thorough design before proceeding to building. 3D design of a POU/ sample point on a WFI system (above) and the completed POU (right).



Clean utilities are often required in hospitals and the pharmaceutical, foodstuffs and electronics industries. The regulations of the different fields define the required clean utility quality.

At Elomatic, the basis of design and implementation is thoroughly drawn up user requirement documentation. It can be created either by the customer, or by Elomatic in cooperation with the customer. The implementation of every phase in system design and implementation is always reconciled with user requirements. This ensures that the system produces the clean utility quality and quantity required by the user, while fulfilling the authorities' regulations.

Elomatic supports customers in trouble-shooting of existing systems, in defining new clean utility systems and in adhering to authorities' requirements, all the way up to producing user and maintenance instructions and operational qualification. We are familiar with different regulations and suppliers; of whom we are independent.

We can participate in the implementation of every project phase or take responsibility for a complete delivery in the form of a EPCM delivery or by delivering turnkey systems. The target can be e.g. a new investment, update, expansion or tasks to supporting maintenance.

System technology

Clean utility systems consist of a storage and distribution system, as well as pre-treatment and production devices. Raw material quality analyses ensure that the right pre-treatment and production devices are selected, which result in a clean utility of the desired cleanliness class. One of the most important goals of clean utility storage and distribution systems is ensuring that quality is not compromised in this stage.

For distribution systems the most important factor is positioning the user points optimally, as well as taking user-friendliness and maintenance into consideration. It is often challenging to optimise the temperature of clean

*(on the cover page)
A clean utility production and storage room designed in Cadmatic and the completed clean utility production and storage room.*

Regulations and standards from

FDA, EMA, FIMEA, ICH, ISPE, GAMP, ISO, CEN, TUKES, TTK, TTL

Most common Clean Utilities

- Water (WFI, PW, RO)
- Steam (PS)
- Gases (oxygen, nitrogen, pressurized air)
- EtOH and other solvents

Factors in clean utility system design

- Energy consumption
- Future maintenance

RO water system HMI panel view.

Contact



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utilities with regards to personnel safety and energy efficiency. GMP requirements place their own demands on usability. Cost savings can be achieved by optimally dimensioning and positioning user points and piping.

Many different chemicals and materials that generate dust are often handled in clean utility environments. The ATEX directive needs to be noted in system design and use when combining the high explosive dangers of these materials with process hygiene demands.

Prevention of contamination

With careful specification, design and supervision during the building phase one can ensure that the clean utility is not contaminated and that it, in turn, does not contaminate a valuable product or place end users at risk. Naturally this also requires that the everyday use and maintenance of the system is performed correctly.

The system's cleanability and hygiene level need to be considered for devices, tanks, heat

exchangers, vents, as well as different instruments and components.

The selection of materials in contact with clean utilities requires care to ensure that they do not directly contaminate the clean utility or are indirectly involved in its contamination. The stability of the materials must be ensured even after years of use.

During system implementation and installation, the cleanliness of the construction site as well as installation methods and tool selection should be taken care of. The integration of user points and equipment into cleanrooms can be optimised to ensure that there is as little technical equipment as possible inside the cleanroom, without compromising the quality of utilities.

At Elomatic we have designed and implemented clean utility systems for 30 years by combining our successful solutions with the possibilities created by changing demands and new technologies. The end result is clean utility systems that fulfil regulatory requirements.

We offer expert and reliable clean utility services backed up by extensive international experience.



Elomatic is a leading European consulting and engineering company. Our close to 900 professionals work in machinery and equipment manufacturing, pharmaceutical, process, energy, offshore and marine industry projects.

We offer consulting, engineering, product development and project management services as well as products and turnkey solutions to industrial and public sector customers.

The cornerstones of our success are customers that are leaders in their respective fields and professional, customer-oriented and motivated personnel.

- Technical Consulting
- Engineering
- Project Management
- Product and Service Development
- Products & Turnkey Solutions
- Software Development
- Design Software Solutions

Key customer segments

- Pharmaceuticals
- Process Industries
- Energy
- Foodstuffs industry
- Starch and Potato Processing
- Machinery and Equipment Manufacturing
- Marine & Offshore
- Oil & Gas

Contact information

We operate globally and have clients in over 80 countries. Our offices are located in Finland, China, India, Italy, the Netherlands, Poland, Serbia, Russia and the UAE.

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