

CLEANTECH SOLUTIONS for building industry



*Cleantech Solutions.
Anywhere.*

Vacuum collection
Wastewater treatment
Bvac® systems
Fresh water generation



Evac Complete Cleantech Solution

Evac is the world's leading provider of integrated water and wastewater management systems for the building industry. Our wide range of solutions, products and technologies offer a comprehensive one-stop offering to meet all your needs.

Benefits of choosing us as your single provider

- Cost-effective remodeling, conversion, extension and renovation.
- Solutions to gravity constraints in underground and suspended slab construction.
- Preservation of historical and architectural features.
- Water saving and green building certification.
- Reduced construction time and cost.
- One-stop-shop for after-sales service.
- Wide range of spare parts.



Evac has received the ISO 9001:2015 Quality System Certificate, ISO 14001:2015 Environmental Management System Certificate and the OHSAS 18001:2007 Occupational Health & Safety Management Systems certification.

We know your industry

By partnering with Evac, you benefit from working with a company that has a 40-year history of serving the building industry. We have an extensive list of references, many reflecting long-term partnerships with buildings that have been remodeled many times using Evac products.

Every day, more than one new building is equipped with Evac solutions around the world - Evac specialists support your needs.

We are the original supplier for vacuum drainage systems and an efficient partner with the largest product and patent portfolio on the market, fine-tuned over forty years of experience. We pride ourselves on meeting or exceeding customer expectations and keeping maintenance as well as energy and water consumption to a minimum.

Building requirements vary widely depending on the type of construction, the type of businesses present on the site, and the surrounding environment. Evac technology specialists design and manufacture systems to fit your needs and comply with specifications and standards such as BBA, CE, UL, IPC, IAPMO, SA, UPC, NSF, WaterMark, IMO, and EN12109.



Become familiar with our references available on our website www.evac.com.mx

Solutions for various building types

Evac systems are suitable for various building types including supermarkets and healthcare, accommodation and hospitality facilities, and high traffic areas such as train and metro stations, stadiums and airports. In addition to buildings, our solutions are suitable also for transportable facilities such as mobile toilets used, for instance, in events and temporary constructions.



Accommodation and hospitality

The less diluted black water produced by Evac vacuum toilets (1.2L-0.3 gal/flush) can be combined with a Bvac® food waste collection system in a hygienic and effective way. It is then transported for co-digestion and biogas production in Eco districts, students' accommodation, resorts and other facilities.

In addition, the toilets save water and minimize the impact of water shortages on campus life in water stressed areas. The indoor system can easily be connected to an outdoor vacuum sewer when covering large districts or encountering soil constraints.

Evac systems help you demonstrate your commitment to sustainable travel and green hotel practices, and can assist in beach and island preservation. Vacuum systems make it easier to convert even historical buildings into hotels, preserving building features and increasing layout options.



Healthcare facilities and laboratories

Because Evac vacuum toilets have an extremely efficient flush mechanism, they reduce the volume of radioactive waste generated, allowing for fewer and smaller disposal tanks. Hygiene and patient comfort in hospital bathrooms are also improved due to efficient flushing of mists and odors. The reduced risk of pipe leakage improves iatrogenic disease and radioactive contamination control.

Evac technologies offer significant water savings and a fast return on investment for hospital construction, extension, and renovation projects, as well as in integration projects in mixed-use buildings. They also open up a broad range of locations for medical facilities closer to patient populations.



Supermarkets

Evac vacuum drainage for condensate offers a cost-effective, simple, and flexible alternative for supermarket and warehouse remodeling, building conversion, or relocation, even underground. Remodel your store more frequently, with no restrictions on freezer or chiller cabinet placement – leaving behind a drain or marks in the flooring. Remodeling is quick, safe and clean, and because there is no need to close individual departments or the entire store, there is minimal impact on profitability.

With vacuum drainage you'll have more location options for new stores, with no liability risk for other tenants that may be beneath you, such as in underground car parks.

Evac is recognized by well-known brands for its high quality program management. Evac offers customized support and logistics, at your pace, with high reliability products for supermarket geographical expansions and remodeling programs.



High traffic areas

Evac toilets for public toilet applications and vacuum drainage solutions are ideal for high-traffic areas. They offer a short payback time, thanks to their low water consumption. Evac vacuum drainage offers layout flexibility, allows for easy extension and conversion, opening up completely new space-planning options. Vacuum systems increase the net rentable area and provide green building certification credits through water saving, increasing the property value.

Because there is no need for a lifting pump station, installation in subway and metro stations is more viable. Choosing vacuum toilets for correctional facilities enables flexible cell design and increases security, while reducing maintenance and in-cell intervention. Water and sewage costs are reduced. In a 1,000-bed correctional facility, this can add up to 30 million liters (8 million gallons) of water savings a year.

Vacuum mobile toilets provide high water savings.



Transportable facilities

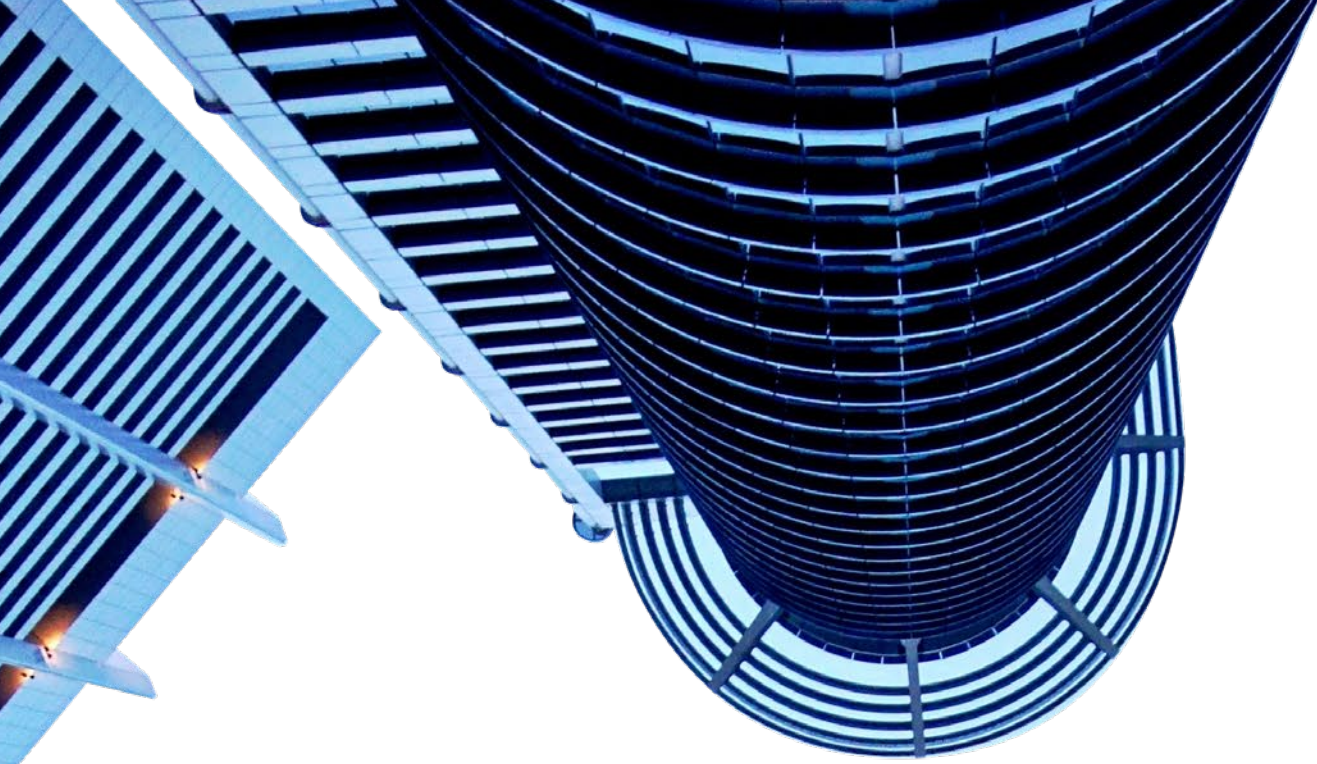
Vacuum mobile toilets provide high water savings, leading to a reduction in wastewater storage tank volume as well as water consumption. This way there is no need for a trade-off between user comfort and off grid situations.

They also offer a more pleasant user experience with less residual odor, cleaner flushing and no chemical use or recirculation.

The flexibility in temporary or definitive piping layout makes them ideal for above ground and modular installations such as events, worker camps or containerized hotels and offices. In sensitive areas such as Alaska or preserved islands, the installation, remodeling and dismantling of living prefab modules is quick and has no impact on the environment.

Evac offers full support from design to technology and innovation to suit your containerized facility needs.





Solutions for bold architectural design and cost-effective construction

Simplify construction challenges and reduce costs

For design, construction or modernization, Evac vacuum drainage offers flexibility and a short payback time thanks to lower water and sewage costs.

Freedom of design and implementation

Vacuum drainage makes single-fixture additions simpler and more viable. It allows for more convenient, cost-effective, and frequent remodels and extensions. Lower tenants space does not need to be accessed, reducing liability and cost. In addition, finish slab integrity and appearance can be improved. Vacuum drainage systems also have a smaller pipe diameter than traditional systems, making installation simpler and more flexible. The risk of cutting in-slab electrical, refrigeration and sewer lines can be eliminated entirely and the need for floor X-rays can be eliminated or reduced.

In addition, with lower levels of dust and groundwork and higher levels of site safety, any disturbance to current tenants is significantly reduced. Likewise, when remodeling stores that will remain open during the work, sales floor safety hazards can be reduced, making it safer for everyone.

Versatility in underground and suspended slab construction

With vacuum drainage you can:

- Eliminate or reduce core drills and slab penetrations
- Install kitchens and toilets more easily underground, keeping the above-ground level for customers
- Eliminate or reduce roof penetrations, floor drains and clean outs
- Have a single collecting point, with no multiple lifting pump stations needed
- Remove the need for soil dewatering and remediation processes
- Reduce or eliminate the need for floor X-rays and asbestos abatement
- Easily route pipes around obstacles
- Reduce engineering costs
- Reduce heavy work at depth with an above-ground wastewater collection point
- Keep your wastewater collection point on the same level as bathrooms, kitchens and any drainage collection points

Evac vacuum drainage offers flexibility and a short payback time thanks to lower water and sewage costs.



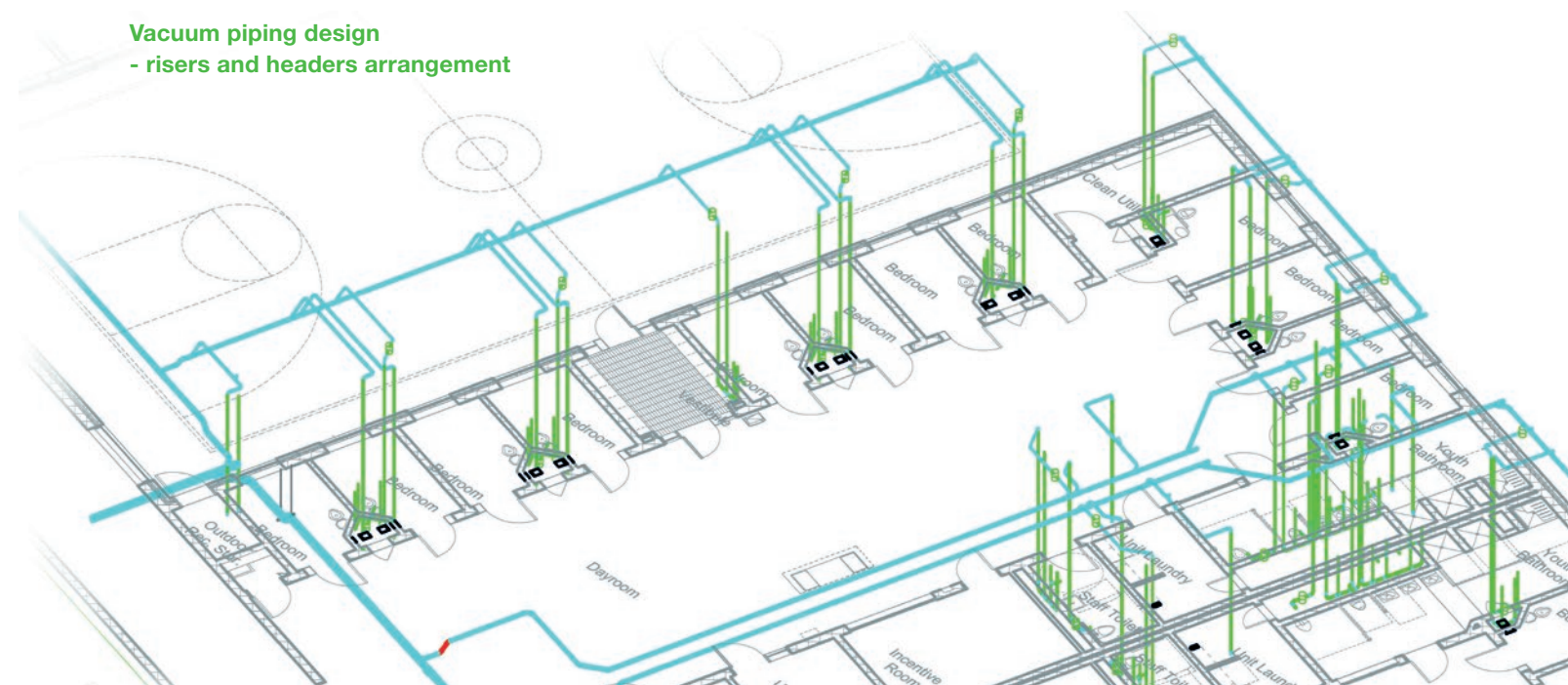
Preserve historical and architectural features

As it has a smaller pipe diameter than traditional systems, vacuum drainage allows architectural and historical features to be preserved. There is no need for a continuous slope – effluent can be transported around obstacles and routed through the ceiling – reducing floor, slab and wall penetration. There is also no need for soil excavation.

Achieve green building certification

Evac vacuum toilets use only 1.2 liters/0.3 gallons per flush – a huge water saving when compared to traditional systems. They can help your building achieve LEED, BREEAM, AQUA, DGNB, and other green building certifications, as can our advanced wastewater treatment systems for water recycling.

Vacuum piping design - risers and headers arrangement



AIA
Continuing
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Provider

CASPE CEU
PROVIDER
American Society of
Hunting Engineers

What is a vacuum drainage system?

Vacuum drainage system overview

There's more to vacuum drainage systems than an airplane or marine toilet – it is a complete plumbing system that follows more simple rules than a conventional gravity drainage system. Vacuum pumps create the vacuum in the system, and wastewater is transported as air is withdrawn rather than by water and its own weight.

Design flexibility

- Enables maximum flexibility in the design and construction
- Wastewater can be transported around obstacles, overhead or horizontally without a continuous slope (lifted up to 3-6 m (10-20 ft), depending on specifications)
- Pipes are smaller DN25-65/NPS1 - 2 1/2 diameter for vacuum piping compares to DN32-100/NPS1 1/4-4
- No more lift pump stations with multiple collection points underground

Reliable operation

- Blockages and sedimentation are non-existent because of the very high water velocity in the vacuum pipe, typically 7-8 m/s/23-26 ft/s after the interface valve
- A breach in the pipe will lead to air leaking in the pipe, not wastewater leaking in the room
- Appliances and interfaces do not need vent stacks anymore

Ease of remodeling and reduced installation time

- Vacuum drainage systems make building conversion, underground installation, store remodeling or historical building renovation much easier and cost effective

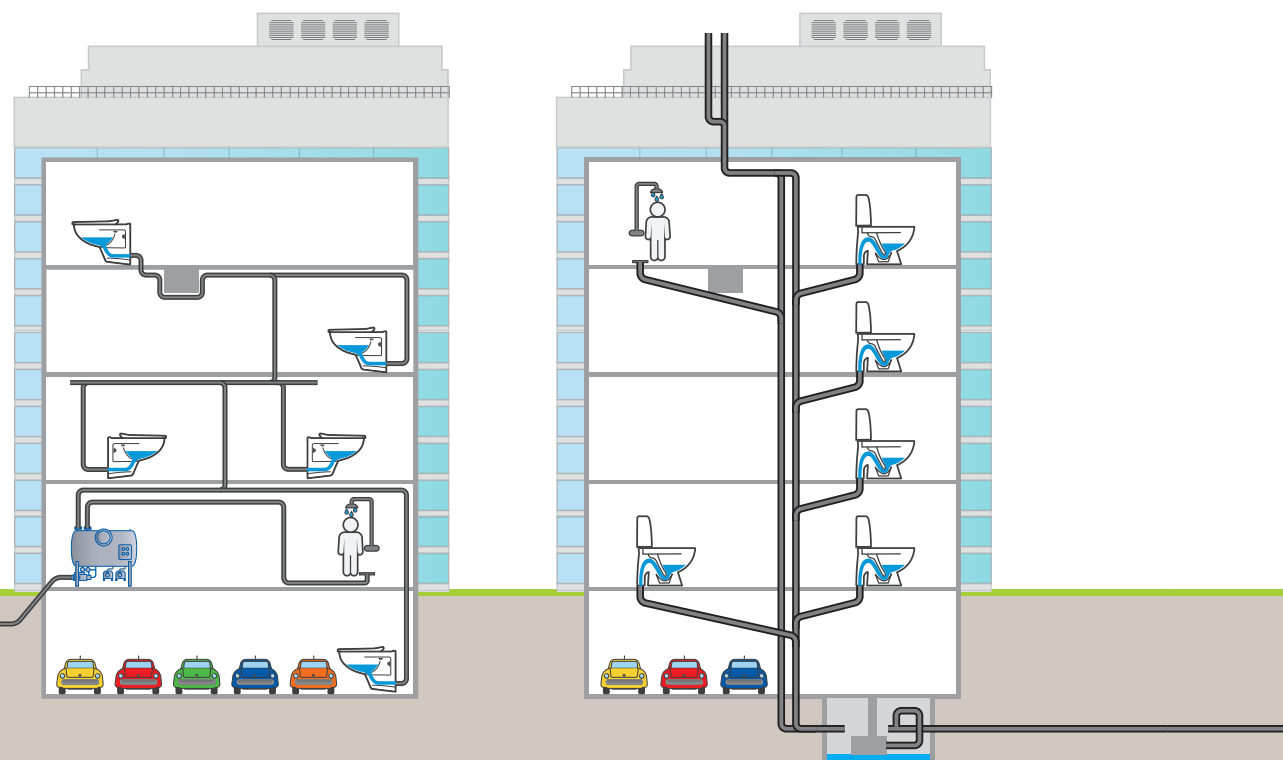


- 1 Vacuum collecting unit vent
- 2 Vertical riser
- 3 Vacuum shower drain
- 4 Horizontal header
- 5 Vacuum urinal
- 6 Vacuum toilet
- 7 Gray water vacuum interface unit
- 8 Vacuum collecting unit
- 9 Water slug reform pocket
- 10 To sewer or treatment plant

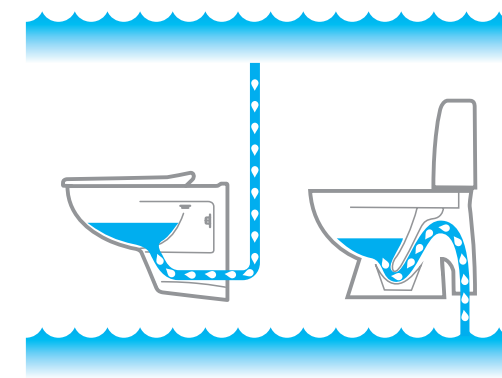
Vacuum drainage benefits compared to gravity solution

Evac Solution

Gravity system



4 380 megalitres/year
1 157 megagallons/year



17 520 megalitres/year
4 628 megagallons/year

Calculated with data of 2016

High water saving

- The Evac vacuum toilet offers up to 90% saving on flushing water compared to a standard toilet
- Our vacuum toilets use only 1.2 liters/0.3 gal per flush, and our vacuum urinals only 0.6 liters/0.2 gal per flush. In comparison, a dual-flush toilet uses 4-9 liters/1-2.4 gal per flush

Improved hygiene

- Evac vacuum toilets suck 60 liters/2.1 cft of air per flush, making them more hygienic than traditional toilets

Evac Complete Cleantech Solution

Examples of provided systems:



Evac vacuum collection units

Evac offers the largest range of vacuum collecting units, mastering all vacuum technologies from tank to online systems.

We offer a complete range of systems for supermarkets, including low-height pneumatic buffers, high-pipe-rise capacity, and reliable vacuum collecting units for all store sizes.



Evac Optima 5 vacuum toilets

The Evac Optima 5 vacuum toilet, the quietest vacuum toilet on the market, is highly economical, consuming 75 to 90 percent less water per flush than a traditional gravity toilet. The Evac Optima 5 is also more hygienic as it effectively removes contaminants, mist and odors from the bowl rather than allowing them to escape into the surrounding atmosphere.

Evac vacuum interface units

Evac vacuum interface units allow standard bathroom fittings to be connected to the vacuum drainage system in new-build projects, while eliminating the need to replace existing fittings in refurbishment projects.

Evac VacuConvert

The Evac VacuConvert wall-mounting frame enables gravity toilets to be connected to an Evac vacuum collection system. The Evac VacuConvert, an Evac exclusive, is not only an adapter, it conserves most of the benefits of a vacuum toilet such as low water consumption, hygienic air removal around the bowl, small pipe size (DN40) and flexible pipework layout.

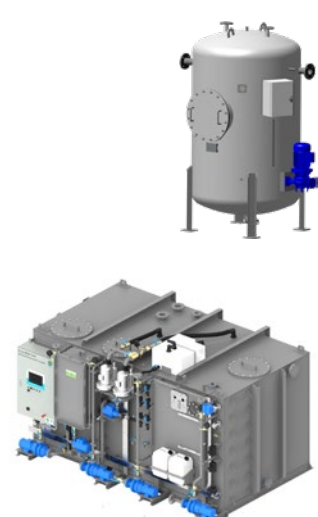


Grease separators

Vacuum systems require less maintenance than traditional systems, while vacuum grease separators reduce odor in the kitchen and surrounding areas. It is also easier to install kitchens and toilets underground, meaning the above-ground level can be kept for customers.

Advanced membrane bioreactor (MBR)

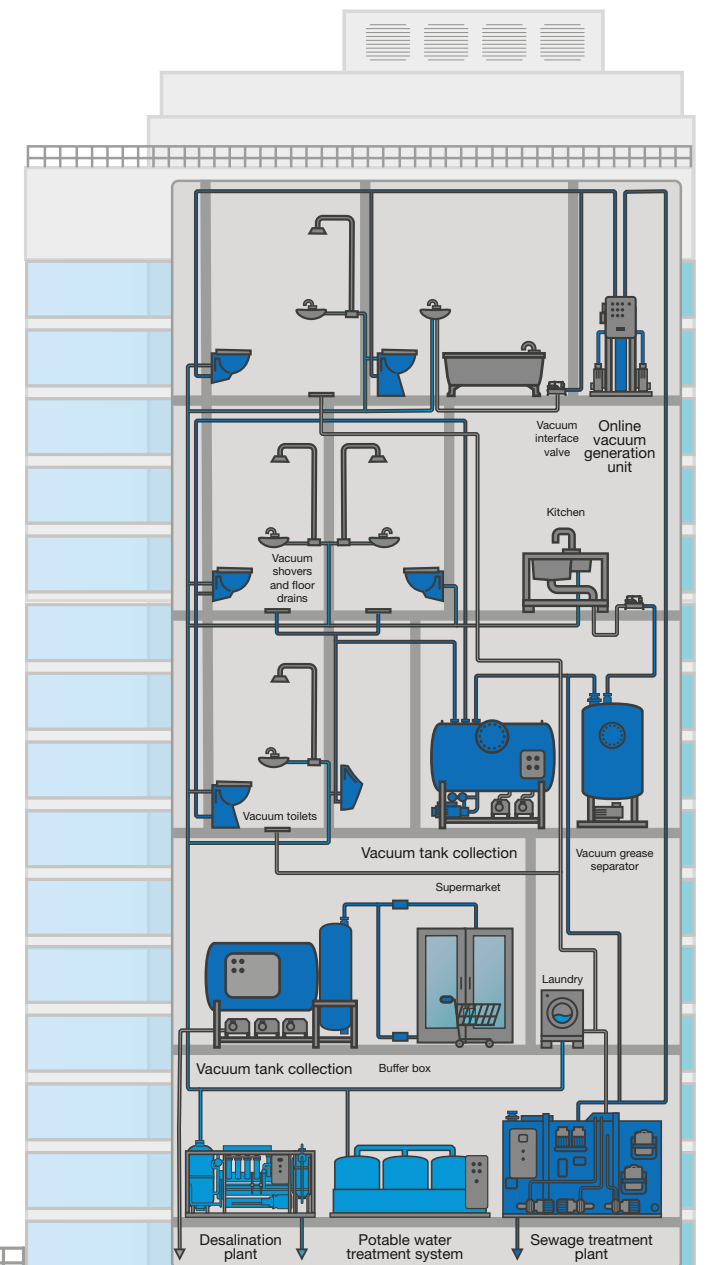
Evac MBRs allow treated effluents to meet strict discharge standards but also numerous reuse standards. The Evac MBR is a package sewage treatment plant, which includes equalization, membrane and biological wastewater treatment, and effluent discharge. The Evac MBR is based on proven membrane bioreactor technology, which is capable of filtering out particles as small as bacteria.



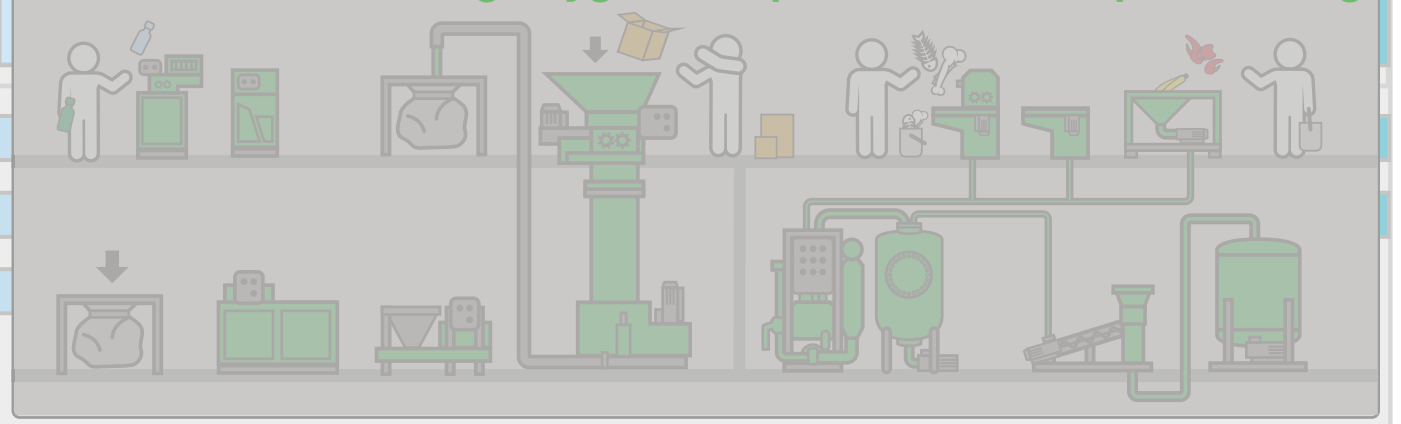
Evac's freshwater system provides an independent, long-lasting, low-energy and reliable supply of potable and/or process water for marine, coastal and island installations. Evac's equipment is easy to operate, has a small foot print and supplies fresh water of outstanding quality. Evac's drinking water solutions consist of sea water reverse osmosis, Evac ROSYS M, and potable water treatment systems, Evac WASYS. These systems can also provide mineralization and disinfection.



Bvac® offers a comprehensive range of equipment and systems for integrated solid waste management. Bvac solutions cover collection and transport, pretreatment for recycling and storage volume reduction, and complete onsite treatment.



Bvac® solutions for high hygiene requirements and space saving



Our references:



Aldi Grocery Stores

USA

ALDI, a leader in the grocery retailing industry since 1976, operates more than 1,800 U.S. stores in 35 states. In 2017, ALDI announced aggressive plans to expand and remodel 1,300 stores in addition to building nearly 900 new stores. ALDI is installing hundreds of Evac

vacuum systems annually. Evac systems prepare all stores for potential future expansion and reduce construction schedule time. Evac is uniquely qualified to manage large programs like this based on years of experience in the aviation and military markets.

Residential district Noorderhoek in Sneek

The Netherlands

This green district project in the Netherlands includes innovative and sustainable technologies for water and energy saving. Each of the 225 homes is equipped with one or two Evac vacuum toilets for low water consumption and high black water concentration. The houses also have Qua-Vac food waste disposers and all the services are connected to a single vacuum collecting unit. Vacuum piping transports the mixture to a local biogas plant where it co-generates energy. About 12% of the total gas demand in the district is produced this way.

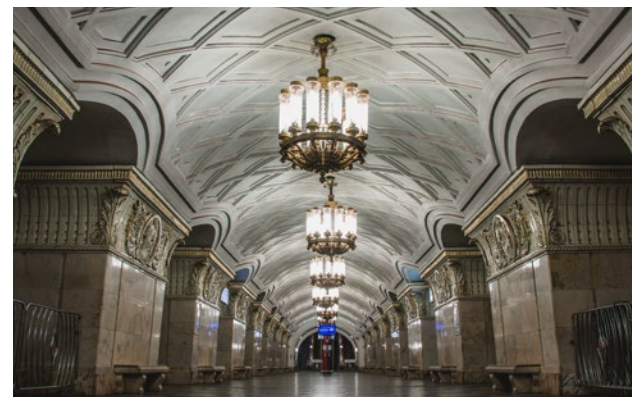


Moscow metro first public toilet

Russia

Moscow metro system serves about 7 million people per day across 196 stations. Users, especially the elderly, have long needed toilets to be installed as the stations can be very deep underground.

The new restroom has been installed on a platform at Prospekt Mira metro station where it is easily accessible. The new Evac vacuum toilet is environmentally friendly and does not have any leaks or smells. It also has the advantage of being a completely self-contained unit which does not need connection to sewage or water mains.



Tianjin First Central Hospital

China

Tianjin First Central Hospital is located in the Chinese metropolis of Tianjin. In addition to other medical services and teaching, it is a major center for liver transplants. It was founded in 1949 and refurbished in 2018, including an Evac vacuum system, for the outpatient and emergency departments with a traffic of 6000-7000 patients a day.

Renovation and installation of new vacuum toilets for the public restrooms of outpatient areas allowed greater odor reduction, solved ventilation and gravity drainage issues, and increased hygiene.



Mobile sanitations in Andorre-la-Vieille

Andorra

The Cirque du Soleil presented its famous show in July 2018 with up to 5000 attendees in the heart of Andorre-la-Vieille city. For this prestigious event, the sanitation provider chose a high-end mobile solution equipped with Evac vacuum toilets combining design, comfort and robustness. This technology incorporates an innovative vacuum evacuation system, drastically reducing water consumption and ideally suited to high volume usage.

Sao Paulo University

Brazil

Since 2014, Evac vacuum collection systems have been installed in 4 out of 5 modern campuses of the same University Group. In total, more than 1,700 Evac toilets have been installed in the 450,000 m² / 540,000 yd² construction area in São Paulo. Evac is also working on new universities as well as retrofits and extensions accompanying the rapid expansion of the University Group and university market in general.

The Evac toilet system minimizes the impact of water shortage on campus life and contributes to the modern and sustainable image of the University Brand.



Expo 2017

Astana, Kazakhstan

Evac was chosen to equip three main buildings in the World Expo which was held in Astana, Kazakhstan in 2017. "Action for global sustainability" was embodied in the installations, from high flexibility to minimal building impact on the site. The Evac system offers visitors a hygienic experience with waste moved away efficiently from the site. The project also promotes future use of this technology for long term sustainability. Furthermore, the system ensures cost-effective continued use of the building thanks to its flexibility and lack of hard point connections.



Close to you

We are dedicated to supporting you in environmentally-friendly operations and providing exceptional after-sales service.

With offices in 14 countries across four continents and representatives in more than 70 countries, we pride ourselves on being close to our customers wherever in the world they are located.

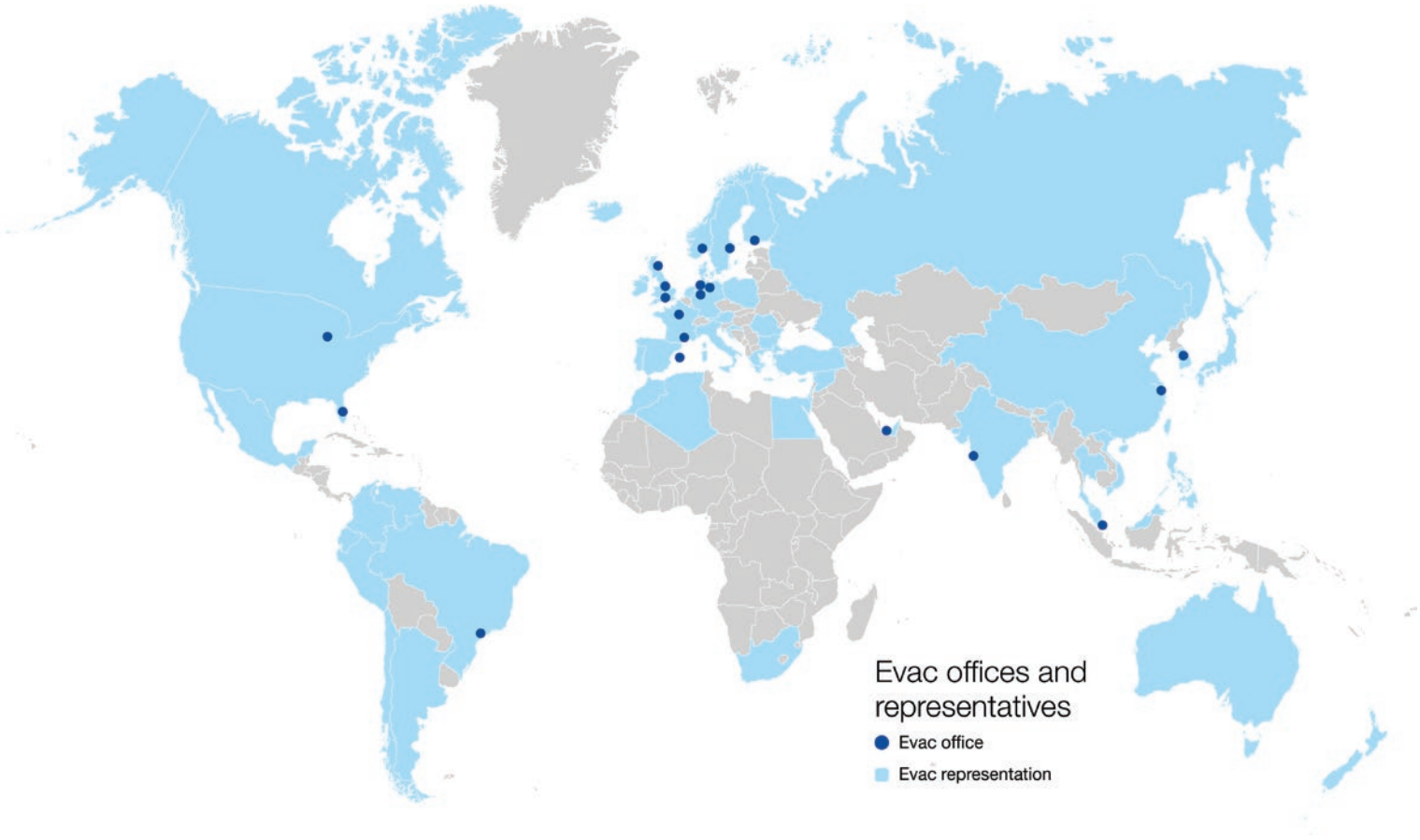
We support our stakeholders by providing:

- Engineering and technical supervision
- Local codes and green building labels compliance
- Installation and start-up
- Service and repair
- Service contracts
- Refurbishment and retrofits
- Spare and replacement parts
- Training and education
- Building system and spares analysis.





Cleantech Solutions. Anywhere.



Read more about our references on www.evac.com/references



Vacuum collection



Wastewater treatment



Ballast water management



Fresh water generation



Marine growth prevention



Dry and wet waste treatment*



Corrosion protection

Evac is the world's leading provider of integrated water and waste management systems, as well as corrosion-protection systems, for the marine, offshore, and building industries. Our cutting-edge solutions and services have been helping leading global players in these industries to significantly reduce their environmental footprint for 40 years. With offices in 14 countries across four continents and representatives in more than 70 countries, we pride ourselves on being close to our customers wherever in the world they are located.

* Solutions for building industry customers are sold by Bvac

Our contact information at www.evac.com/contacts

www.evac.com



www.cathelco.com



www.hemwater.com

