JETS® VACUUM AND
WASTE TREATMENT TECHNOLOGY
CONSTRUCTION

JETS®

THINK SMART — SAVE MORE

Pioneering
eco-efficient
technology

THINK SMART — SAVE MORE

Jets® vacuum sanitary systems are the smart choice if you want to save water, money and the environment.

Our sanitary systems are environmentally friendly and easily adaptable, both when constructing new buildings and when renovating existing ones. Should you need to install additional toilet facilities later on, our systems are also easy to expand. And since Jets® vacuum sanitary systems are easier to install than traditional toilets, you save on installation costs as well.

Jets® offers high quality, modern design and durable solutions. It is now simpler than ever to make an environmentally sound choice for the future, and create a green building!

VACUUMARATOR® PUMP BY JETS®

THE HEART OF OUR SYSTEM

The unique Vacuumarator® pump is the heart of any Jets® system. It creates vacuum, macerates sewage and discharges — in one single-pass operation.

The Vacuumarator® pump is the most compact and reliable vacuum generator available for sanitary systems. It is highly efficient in transporting any combination of black and grey water under vacuum.

The first Vacuumarator® pump, invented and made by Jets® in 1989, was a revolutionary sanitary solution. Since then we have continuously developed and refined our technology, and expanded the capacity range.

Renowned for their reliability and impeccable quality, more than 60,000 Vacuumarator® pumps by Jets® are currently in operation worldwide.

VACUUM UNIT:

Several Vacuumarator® pumps can be assembled in larger, modular units for higher performance, improved capacity and added redundancy.

THE UNIQUENESS OF THE VACUUMARATOR® PUMP:

FLEXIBILITY

Small footprint and low weight allow unique installation flexibility.

UNSURPASSED RELIABILITY

The Vacuumarator® pump is the most reliable vacuum generator available for vacuum toilet systems.

HIGH CAPACITY

The Vacuumarator® pump provides unmatched system performance.

RANGE OF VACUUMARATOR™ PUMPS BY JETS™:

Jets® Edge S Vacuumarator® pump

Jets® Edge M Vacuumarator® pump

Jets® Edge L Vacuumarator® pump

Jets® Edge XL Vacuumarator® pump

JETS® MAKES IT EASIER TO CHOOSE GREEN

Installing a Jets® vacuum sanitary system is an environmentally sound choice – not just for today, but for the future. With water-saving qualities that are widely recognized in international rating and certification systems, Jets® is the natural choice for green buildings.

SANITARY SOLUTIONS FOR A SUSTAINABLE FUTURE

90% LESS WATER

Vacuum toilets use air to transport sewage, reducing water consumption by up to 90%. This is fantastic news for both the environment and for your running costs.

READ MORE ON PAGES 8-9

90% LESS SEWAGE

Due to the fact that Jets® vacuum sanitary systems use very little water, they effectively reduce the volume of sewage by up to 90% as well. This cuts transportation costs and lessens the load on pipes and treatment facilities, enabling truly efficient and cost-effective sewage handling. Our systems are also fully compatible with source separation of waste water, further enhancing the environmental advantages of choosing Jets®.

READ MORE ON PAGES 10-11

COST-EFFECTIVE RENOVATION

Building renovation is costly, and often hampered by the building's existing structure and local regulations. Jets® vacuum technology makes it possible to install waste pipes for toilets, washbasins and other equipment anywhere in the building. This allows better use of the available space, without costly changes to the building fabric. Our vacuum technology cuts construction times by reducing or even eliminating the need to tear up concrete floors, carry out core drilling or apply extra fire inhibitors.

READ MORE ON PAGES 12-13

GREEN BUILDINGS

Jets® vacuum sanitary technology helps you achieve top marks in international certification systems for eco-friendly buildings, such as the BREEAM and LEED rating systems. Jets® is a member of the Norwegian Green Building Council, meaning you can trust us to deliver smart, green solutions with excellent performance. With low water consumption, reduced sewage volumes, source separation compatibility and less use of energy, our vacuum systems are truly beneficial both to the environment and to your building's green rating.

NGBC is a non-commercial association for companies involved in every aspect of construction and real estate in Norway. Jets® joined this association because we offer products and services that truly improve sustainability in buildings. We have extensive experience in this field, having worked closely with leading architects and developers of green buildings worldwide for a number of years.

Wasting expensive fresh water means flushing cash down the drain!

REDUCE WATER CONSUMPTION BY UP TO 90%

Fresh water is a limited resource – far too valuable to be wasted by flushing it down the toilet.

A traditional water-flushing toilet uses 6 to 8 litres of water per flush, and depends on gravity to function properly. Since Jets® vacuum toilets use air instead of water to transport toilet waste, they use a mere one litre of water per flush – nor do they depend on gravity.

The fast-growing world population is causing a corresponding rise in the demand for water, and so fresh water prices are already increasing around the world. Jets® vacuum sanitary systems allow you to cut water consumption, and in turn sewage volumes and costs, by up to 90%.

VACUUM TOILETS (VC)		TRADITIONAL TOILETS (WC)
1 LITRE per flush		6 LITRES* per flush
EXAMPLE: 1 litre per flush 6 flushes/day per person 5,000 people 365 days per year = **10,950,000 litres per year**	VS.	EXAMPLE: 6 litres per flush 6 flushes/day per person 5,000 people 365 days per year = **65,700,000 litres per year**

= save 54,750,000 litres
OF WATER PER YEAR

* Based on an average-sized, 6-litre cistern. Actual figure will vary with toilet model.

After treatment, the reclaimed grey water is so clean it can be used to water gardens. Its inherent thermal energy can be used in the building`s cooling and heating systems.

We are already familiar with source separation

Separating waste such as paper, plastic, glass and organic waste in different bins in order to protect the environment, has fortunately become second nature to many of us. But did you know that waste water can also be separated in a similar fashion, saving precious resources in buildings around the world?

BE AHEAD OF THE FUTURE — SEPARATE WASTE WATER NOW

In most buildings, waste water from washbasins, showers, kitchen sinks and toilets has traditionally all been mixed in a single soil pipe. But in the same way as we already sort household waste into separate fractions, the waste water in green buildings all over the world is now being separated into one pipe for black water from toilets, and another pipe for grey water.

Separating these two waste water fractions at the source means precious resources are suddenly more accessible. Reclaiming grey water for reuse becomes much easier this way, while the highly concentrated black water from our vacuum toilets leaves less sewage to be treated – or even used for biogas energy production.

In buildings and locations not yet ready for biogas production, the dual pipework separation approach is nevertheless advantageous. It still allows grey water to be reclaimed now, and paves the way for future exploitation of the energy potential found in black water.

SMARTER AND MORE COST-EFFECTIVE RENOVATION

One of the biggest challenges in any building renovation project is finding the optimal solution for sanitation. Jets® offers both the solutions and the expertise needed to help you get the job done – efficiently and at a lower cost.

Jets® sanitary systems provide a wealth of possibilities in both new buildings and modernisation projects. Building renovation in particular is greatly simplified with our systems, because the need for expensive core drilling is reduced and large diameter pipes are unnecessary when using vacuum.

Jets® vacuum sanitary systems are simply the smarter choice:

- 80% more compact pipes mean streamlined handling and reduced installation time
- Simpler logistics mean lower costs
- Piping can be routed around or even above ducts and other obstacles
- Vacuum piping can be installed at a later stage than traditional gravity piping
- Fire-proof penetration of floors and walls
- In protected buildings, good sanitation solutions can be achieved with only minor alterations

QUICK FACTS

HOTEL IVAR AASEN
Ørsta, Norway

The small-diameter vacuum piping proved a great advantage during this upgrade. Installation costs were reduced because there was less need to drill or tear up existing floors. The hotel remained open while construction work was underway.

QUICK FACTS

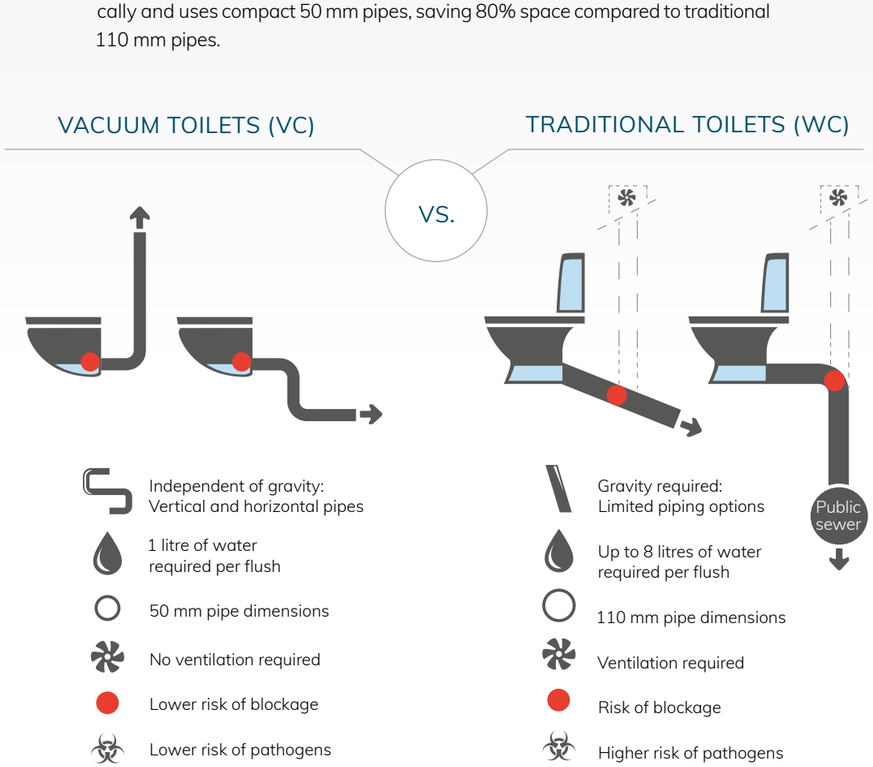
CASA DAROS MUSEUM
RIO DE JANEIRO, BRAZIL

Originally built in the 1860s, this museum building has recently undergone a complete renovation. Due to its protected status, maintaining the building's integrity was absolutely vital. Vacuum toilets from Jets® were therefore the natural choice.

A SMARTER SANITARY SYSTEM

Vacuum toilets have a number of advantages over traditional water-flushing toilets, as they use air instead of water to transport sewage. The airflow vents away toilet odours, and improves hygiene by preventing pathogenic aerosols from spreading.

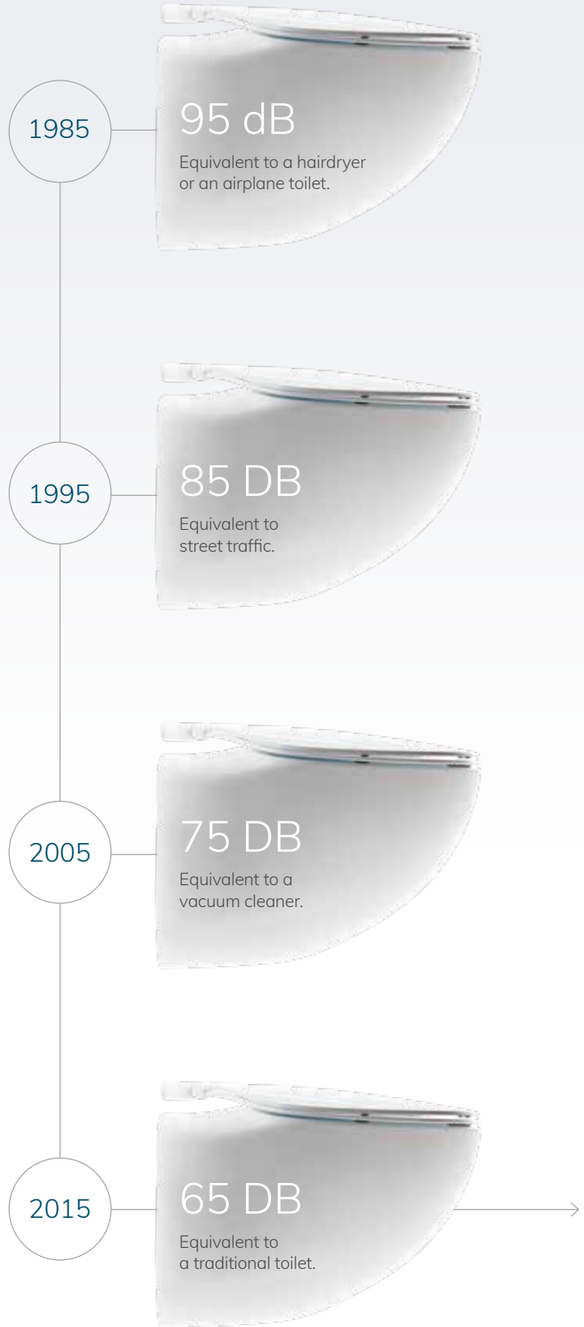
The plumbing is also more flexible, as you no longer have to depend on gravity for the toilets to work properly. The vacuum system can lift waste water vertically and uses compact 50 mm pipes, saving 80% space compared to traditional 110 mm pipes.



A SOUND EVOLUTION

Since we launched our first vacuum toilet 30 years ago, we have succeeded in making them dramatically quieter.

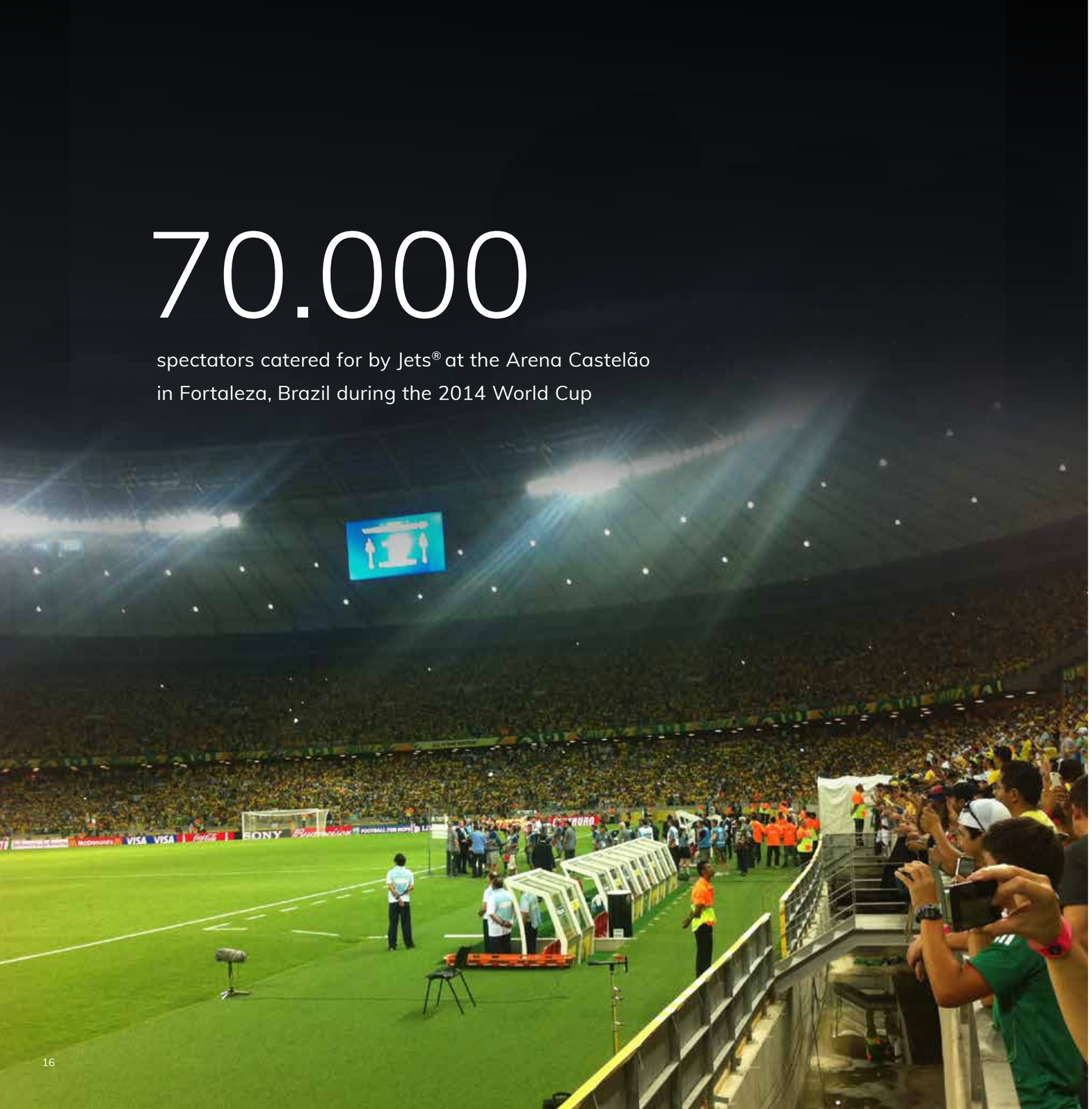
In 1985 a vacuum toilet sounded as loud as a hairdryer. Today, however, the quietest Jets® vacuum toilets are no louder than a traditional water-flushing toilet – just 65 decibels. If you are staying in a hotel and a Jets® vacuum toilet is flushed in the room next door, the sound will not disturb you.



dB = decibel, unit of measurement for sound.

INNOVATION & PRODUCT DEVELOPMENT

Jets® engages in extensive research and development to create innovative, new and better solutions for our sanitary systems. We are constantly at the forefront of vacuum technology, working closely with our customers to come up with even better solutions to further reduce sound levels.



70.000

spectators catered for by Jets® at the Arena Castelão in Fortaleza, Brazil during the 2014 World Cup

BEHIND A SUCCESSFUL MATCH

— A PROVEN SANITARY SYSTEM

When tens of thousands of football fans need to use the conveniences at half-time, your water and sewage capacity has to be phenomenally good. The world's largest integrated vacuum sanitary system can be found at the Arena Castelão stadium in Fortaleza, Brazil.

Sanitation is often a challenge in fast-growing urban areas, with infrastructure for both clean water and sewage frequently overloaded. A stadium adds considerably to this burden. In addition, operating traditional water-flushing toilets with many users is extremely expensive in Brazil, where water prices are high.

Faced with these challenges, the solution at Arena Castelão was the installation of 1,000 vacuum toilets from Jets®, which reduced water consumption and sewage volumes by a staggering 90%. This saves at least 500,000 litres of water at every single match, allowing the system to cope very well with periodic surges in use while at the same time placing very little strain on the city's water supply and sewage system.

QUICK FACTS

ARENA CASTELÃO
Fortaleza, Brazil

Arena Castelão is certified as a green building under the US environmental rating system LEED.

The dramatically lowered water consumption achieved with Jets® vacuum toilet systems results in an astonishingly short ROI time, particularly in large projects - both in Brazil and in other regions where water costs are high.

EFFICIENTLY ACCOMMODATING LARGE NUMBERS

The reliability and durability of our well-proven vacuum systems are two of the many reasons why water-saving Jets® solutions have been chosen for green buildings of all sizes, all over the world.

Jets® continues to develop and deliver elegant and effective sanitary solutions for hotels, hospitals, airports, schools and office buildings, to name a few.

Our vacuum sanitary systems are the perfect choice for locations where large numbers of people gather, with rugged vacuum generators capable of operating a virtually unlimited number of toilets.

The toilets themselves have a sleek, contemporary design which makes them very easy to keep sparkling clean.

AWARD FOR DESIGN EXCELLENCE
NORWEGIAN DESIGN COUNCIL

ELEGANT
IN ITS SIMPLICITY

In close cooperation with award-winning designers, all Jets® toilets and other interfaces have been developed specifically for use in our vacuum systems.

While our toilets and urinals are generally made of high-quality sanitary porcelain, stainless steel models are also available. We supply both wall and floor-mounted toilets to accommodate a wide range of installation requirements.

One of our most recent models, Pearl, is easier and quicker to clean than virtually any other toilet. This unique, highly hygienic, award-winning toilet model comes with several ground-breaking features, of which the most obvious is separate wall installation of the seat and cover.

A SELECTION OF OUR RANGE

A Jets® delivery can include a range of toilets, urinals and squat pans in either porcelain or stainless steel. Please see our Toilets brochure for a complete range.

THE HIGHEST STANDARDS

All Jets® products and systems are manufactured to the highest industrial standards, with each and every component carefully assembled and thoroughly tested.

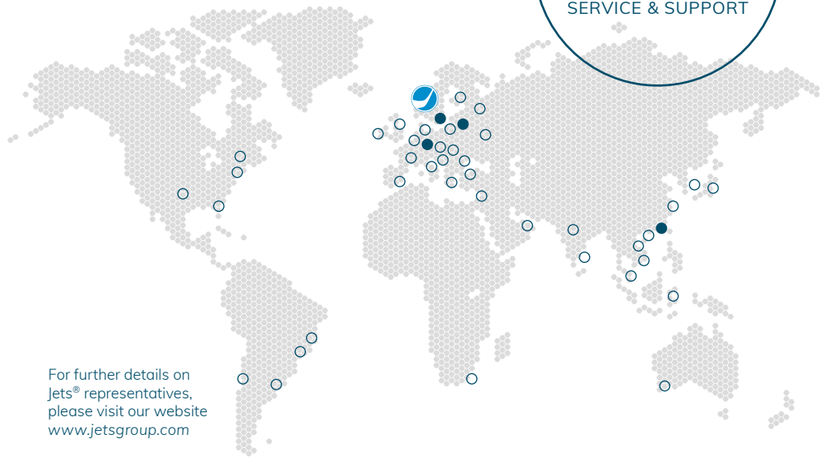
Jets® has three decades of experience in vacuum sanitary systems, and has grown to be a worldwide organisation. Product development, production, testing, logistics and service are carried out by a handpicked network of internal and external resources, keeping our customers worldwide satisfied by delivering quality on time – every time.

It is imperative to us that our customers are satisfied with the quality of our products, technology, customer service and technical follow-up.

ISO 9001:2015	ISO 14001:2015
CERTIFIED	CERTIFIED

To ensure unsurpassed quality and environmental compliance, Jets Vacuum AS Management System is certified in accordance with ISO 9001:2015 and ISO 14001:2015. These and other cerifications help inspire and promote continuous improvement at Jets®

JETS® GLOBAL NETWORK
- Head office
- Jets® sales offices
- Jets® representatives



24/7
SERVICE & SUPPORT

For further details on Jets® representatives, please visit our website www.jetsgroup.com

WE CONTINUE TO CARE — EVEN AFTER DELIVERY

We always strive to please our customers, believing that caring for them and sharing our know-how at all times — anywhere in the world — are key to our continued success.

A Jets® representative is the customer's local expert and point of contact. Highly motivated and well-trained staff provide first-class technical service and support, either by remote troubleshooting or on-site.

Jets® representatives do their utmost to solve problems and carry out inspections, installations and repairs without interrupting your day-to-day operations.

Original parts are available worldwide from our handpicked network of local representatives and from strategically located central hubs.

QUICK FACTS

COMPLEXA JK

Commercial building, Brazil

LEED-certified

Complexa JK is a massive building complex in São Paulo. The price of water in Brazil is high, but here, a Jets® vacuum sanitary system has reduced costs and benefited the environment. Jets® has supplied sanitary systems to numerous buildings at the site. For example, in the office block belonging to Santander Bank, one of the world's largest financial services providers, Jets® has installed more than 500 toilets.

Jets® is fast becoming the preferred supplier of sanitary systems for green buildings of every size, shape and kind, solving challenges all over the world.

TROLLSTIGEN MOUNTAIN PASS PUBLIC TOILET
Rauma, Norway

MELBOURNE WATER AUTHORITY
Melbourne, Australia
6 Star Green Star certificate

HAREID GROUP HEADQUARTERS
Hareid, Norway

PARQUE DA CIDADE COMMUNITY CENTRE/COMPLEX
São Paulo, Brazil *LEED-certified*

WATER CAMPUS
Leeuwarden, The Netherlands
BREEAM-certified

UDDEVALLA PRISON
Uddevalla, Sweden

Pioneering
eco-efficient
technology

JETS®

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