

# building healthy sustainable environments





# The story of Wavin

Wavin's story began in the 1950s, hailing from the city of Zwolle, in the Netherlands. At the time, WMO's director, Johan Keller found himself confronting the primary challenge of pipe corrosion, which led to a significant loss of water.

Keller discovered the solution in plastic piping, tailor-made for the supply of drinking water. Finding none on the market, he embarked on his endeavour in a small, workshop in Zwolle, producing the first plastic pressure pipes for potable water with diameters of 100mm and larger in 1953.

Eventually, Keller's work attracted the interest of utility companies both locally and internationally. With the increasing demand for pipes, an independent company with its sole focus on pipe production was established in 1955, which we know today as WAVIN.

## Who are we?

### We are Wavin. Leading in our field.

Wavin is now a global leader in the supply of plastic pipe systems and solutions for both above and below ground applications in projects around the world.

Since the 1950s, we have built an unrivalled reputation for continuous innovation, intelligent problem-solving, dedicated technical support and the highest standards.

Today, Wavin employees connect customers to the benefits of our technology and service. We link performance to practicality for durability and faster installation. We have sales and manufacturing operations in most European countries and around the world.

Wavin is part of Orbia



Orbia is a community of companies working together to tackle some of the world's most complex challenges.

We are bound by a common purpose:  
**To Advance Life Around the World.**

6

Training academies

1

Global innovation centre

Base in  
**37**  
countries

**10.5K**

Employees

**\$2.2B**

Revenue  
(Orbia annual report 2019)

**45**

Production sites



# Wavin Global Innovation Center

## Who are we? Some facts

<b>1</b> Test house & Field test facilities	<b>1</b> Accredited lab	<b>2</b> R&D Injection Moulding machines - Pilot plant
<b>4</b> R&D extrusion lines - Pilot plant	<b>5</b> Key plastic technologies (PP, PE, PVC, PPSU, PB)	<b>&gt;20</b> R&D partners (knowledge institutes, development partners, flex shell)
<b>&gt;20</b> Breakthrough innovators in past decades	<b>&gt;70</b> Highly knowledgeable creative global innovators	<b>&gt;500</b> Patents

## What we do

Our goal is to create positive change and advance living standards in the world. Our passion lies in the development of products that can keep cities liveable and lovable in the future. With goals and passions aligned, therein lies our purpose-led vision: building healthy and sustainable environments that result in long-lasting cities.

We strive to accomplish this vision by providing effective solutions for the essential needs of daily life. This includes safe distribution and drinking of water, sustainable management of rainwater and waste water, energy efficient heating and cooling for buildings.

Ultimately, we have inculcated four purpose drivers that empower and remind us of what Wavin is working towards as an organisation. These drivers and their respective products are always interconnected, each playing equally important roles in the development of long-lasting cities. Our primary mission is to deliver...

## Wavin Global Innovation Center

Fuelled by the passion to innovate and break boundaries, Wavin owns a dedicated Technology and Innovation (T&I) Centre. This T&I Centre is home to many customers and field trials and is also the heart of our breakthrough innovations.



## let's build long-lasting cities





Safe and efficient water supply

In many parts of the world, especially developing countries, water-borne diseases are the cause of concern. Access to safe water translates to reduced water-related diseases and an opportunity for building a healthy and sustainable environment. Where precious water resources are at play, we make every drop count.

The Challenge:

Delivering clean water efficiently and safely has become a worldwide problem as water is lost due to leakages and ageing networks.

Drinking Water Solutions:

We care about the quality of drinking water; after all, it is the most precious of all natural resources. In order to improve the distribution of clean drinking water from source to tap, our extensive range of pipe and fittings systems are here to set the highest standards for safety and hygiene.



Better sanitation and hygiene

Poor sanitation is linked to transmission of diseases such as cholera and diarrhoea. It also reduces human well-being and social and economic development. Everyone has a right to a clean and healthy future. With a desire to build healthy and sustainable environments, we work to make this a reality.

The Challenge:

Millions have no or limited access to sanitation facilities. Simultaneously, ageing and poorly designed sewer systems contaminate groundwater resources.

Soil, Waste and Sewer Solutions:

We recognise the need to raise awareness on the global crisis of sanitation. In order to safeguard both human health and the environment, reliable and durable systems are needed for transporting waste water from domestic, commercial and industrial buildings to treatment plants. We need to future-proof wastewater transport and make sanitation accessible for everyone.



Climate resilient cities

Around the world, people are experiencing both the subtle and stark effects of climate change. Gradual shifting of weather patterns, rising sea levels and more extreme weather events including hurricanes, wildfires and droughts are all devastating evidence of a changing climate. These events can result in hunger and conflict, creating unprecedented challenges for millions already burdened by poverty and oppression. We need to get cities ready with solutions that can address the consequences of climate change.

The Challenge:

Climate change with massive rainfall, extreme heat and droughts puts pressure on cities. Growing populations increasingly demand for greener living spaces.

Stormwater Management and Sewer Solutions:

We will work towards these goals by creating integrated rainwater and stormwater management solutions to counter the risk of flooded streets, avoid urban heat stress, and support the ‘greenification’ of cities. Building liveable and loveable cities not only overcomes the consequences of climate change, it also ensures healthy and sustainable living environments for everyone.



Better building performance

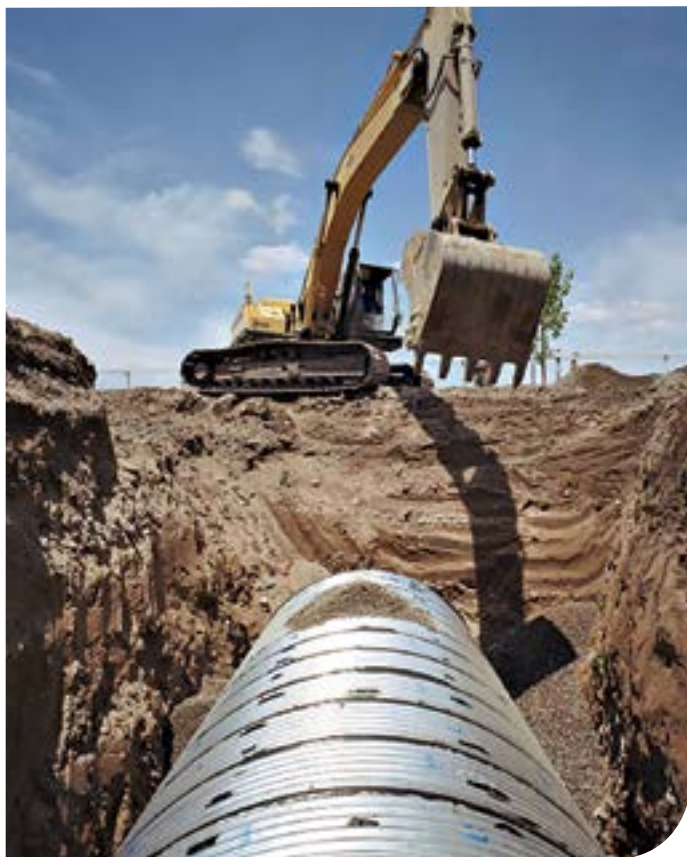
Comfort remains one of the core requirements for many when it comes to living and working spaces. Contractors and architects are hindered by the responsibility of taking comfort, efficiency and sustainability into account when designing and developing buildings. We understand that every building sector has its own agenda of challenging needs and demanding criteria that must be satisfied. That is why we’re here to create efficient and sustainable solutions.

The Challenge:

The construction and use of buildings are not leveraging on the full potential of technology, which leads to inefficiency and wastage. At the same time, people require increased comfort and well-being in the places they live and work.

Indoor Climate Solutions:

Wavin has demonstrated thorough understanding of each sector. We know that construction professionals and clients have to work within limitations to fulfill their objectives. This includes satisfying legal obligations, meeting environmental goals of sustainability, energy-efficiency, taking into consideration requirements for day-to-day safety and comfort. Accordingly, we connect customers to better targeted and innovative solutions that will help in the designing, building and use of comfortable living environments in the most efficient and sustainable way.







# A full suite of solutions

From piping to indoor climate and even to cable ducting, Wavin possesses a variety of solutions that span across different sectors and industries. For us, innovation revolves around saving time for our customers. We find ways to identify the right solution quickly and to increase the accuracy of information on which project decisions are based.

Our dedication to innovation and partnership continues to solve further complex challenges and connects customers to better solutions, whatever the project. Ultimately our products and solutions are concentrated towards fulfilling our four purpose drivers, with the outcome of healthy and sustainable environments.



## Drinking Water Solutions (hot and cold)

We care about the quality of drinking water: it's the most precious of all our natural resources. Our extensive range of pipe and fittings systems sets the highest standards for safety and hygiene.



MP Systems  
Tigris



PEX Systems



PB Systems  
Hep20



PPR Systems  
PP-RCT



PVC/CPVC  
Systems



## Sewer Solutions

While keeping our environment safe and healthy, sewer owners face many challenges. These challenges become increasingly complex as a result of climate change and growing urban population. Future proof systems at acceptable costs are key for sanitation systems to all, regardless of present and in the future.



Accessible  
Manholes  
Tegra 800, 1000  
& 1200



Inspection  
Chambers  
Tegra 315 - 600



Sewer Gravity and  
Pressure Systems



## Indoor Climate Solutions (surface heating and cooling)

Wavin's radiant heating and cooling systems integrate responsive, reliable and sustainable heating and cooling, while keeping your energy consumption (and cost) low: High comfort, low energy.



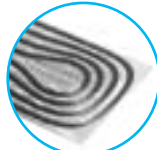
Controls  
Sentio New  
Generation UFF



Pipes and Panels  
PE-RT, PEX, PB Pipes



Underfloor  
Heating  
Manifolds



Ceiling Heating  
and Cooling



## Soil and Waste Solutions

Wavin's Soil and Waste solutions discharge wastewater from domestic, civic and commercial buildings, and are robust, reliable and sustainable systems. In addition, Wavin's low noise systems reduce noise levels more effectively than standard wastewater discharge systems.



Low Noise  
Systems  
SiTech+, AS+



HepvO



PVC Solvent  
Weld



## Rainwater and Stormwater Solutions

Wavin's Rainwater and Stormwater management solutions manage excess rainwater effectively, boost sustainability and reduce the risk of damage to buildings. The system can also be used for water attenuation to re-use the water in times of drought.



Siphonic Roof  
Drainage  
Wavin QuickStream



Road Gullies



Drainage System  
Wavin X-Stream



Infiltration/  
Attenuation Units  
Q-Bic Plus, AquaCell



## Water and Gas Distribution Solutions

Wavin has the innovation DNA, long term Water and Gas expertise and global presence to be the enabler for continuous improvement of Water and Gas distribution, addressing disruptive global challenges and improving the use of our resources.



PE 100-RC  
Wavin Safetech



Wavin TS  
Wavin Safetech



Compact Pipe



PE Fittings



# Case studies

The Wavin product portfolio is comprehensive and unrivalled in its breadth and depth. All our operations are dedicated to providing assured availability, competitive pricing and timely delivery to match our customers' expectations. We also work to help our customers achieve their own environmental goals and responsibilities alongside our own. For all of them, their continued partnership with Wavin means they can be sure of connecting to solutions that add value at every level.

## Outram Community Hospital

**Requirement:**  
A plumbing system suitable for tap water and central heating in a healthcare environment with the highest standards for hygiene.

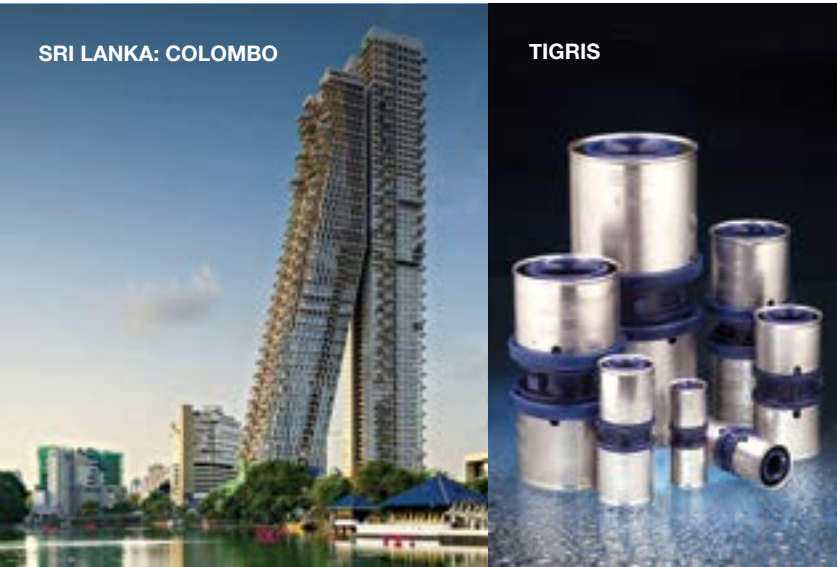
**Solution:**  
Tigris pipes and fittings. These are resistant to temperatures of 70°C, which is required to prevent legionella from developing.



## Altair Tower

**Requirement:**  
Supplying of clean and fresh drinking water throughout the building.

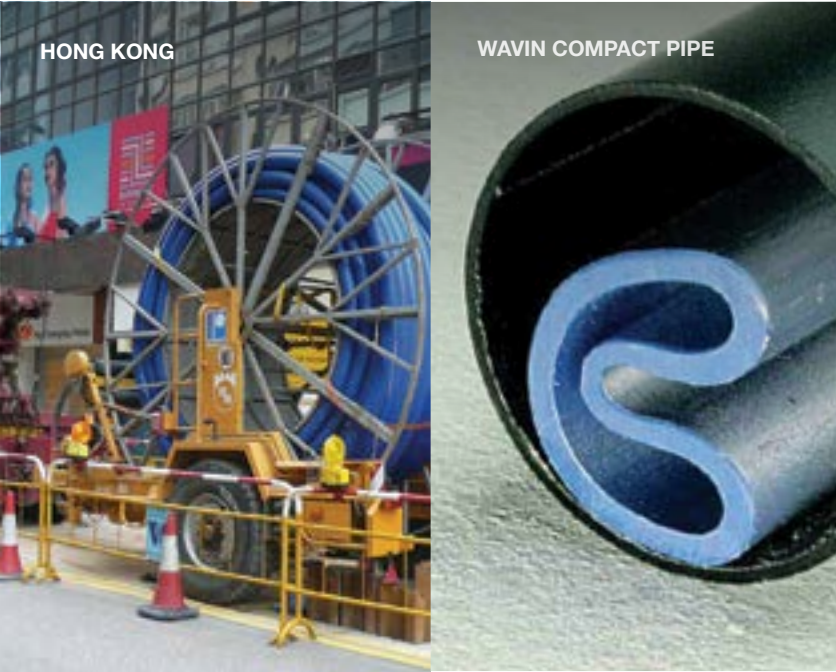
**Solution:**  
Tigris K1 and K5 systems. These systems are designed for potable water and ideally suited for installation on commercial projects including educational establishments, apartment blocks and hotels.



## Climate Resilient Cities

**Requirement:**  
Supply of durable and sustainable plastic pipes and plastic manholes for setting up infrastructure on the soft soil (sand) and corrosive environment.

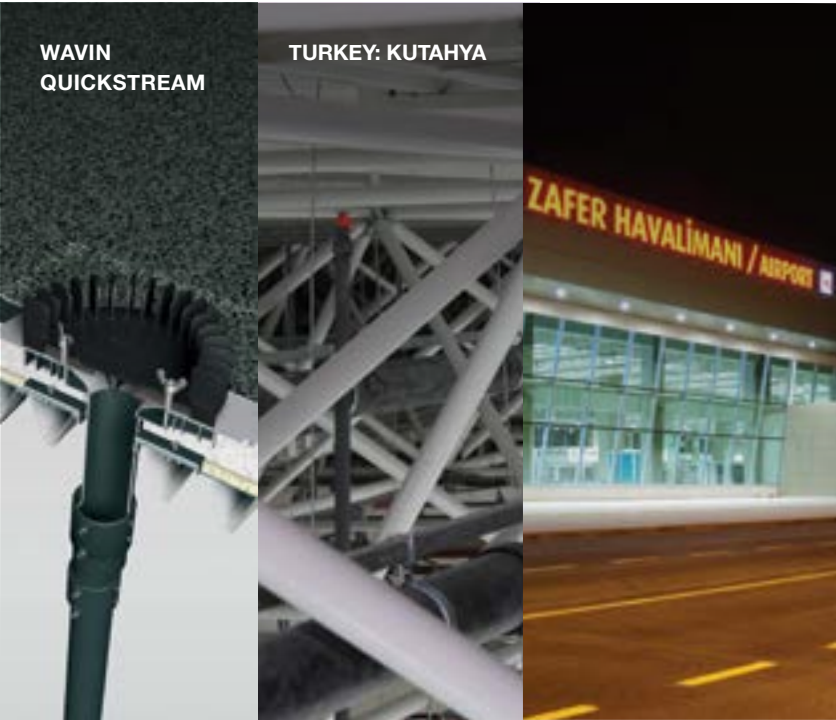
**Solution:**  
Wavin Tegra range of inspection chambers and manholes provides a more sophisticated solution for access, optimal flow performance and flexible inlets, providing ideal installation flexibility.



## Water Main Renovation

**Requirement:**  
Restore water supply pipework to full performance functionality without disruptions or inconveniences to commercial and social life.

**Solution:**  
Wavin Compact Pipe. Installed using no-dig trenchless technology. Factory deformation reduces the pipe diameter by 35% for easier insertion into old pipework. Using special installation equipment, it is re-rounded to create a tight fit.



## Zafer Airport

**Requirement:**  
Fast dispersal of rainfall from large flat roof areas – even during storm conditions.

**Solution:**  
Precise design using the Wavin QuickStream siphonic roof drainage system. Wavin's speed in designing the solution was decisive in winning this assignment.

**Also provided by Wavin:**  
Training and on-site supervision of installation.



## European Car manufacturer

**Requirement:**  
Fast dispersal of heavy rainfall from large flat roof areas.

**Solution:**  
Wavin QuickStream siphonic roof drainage. Its smaller pipes save material and space, allowing for greater design flexibility.

**Also provided by Wavin:**  
Design support for all systems, as well as highly durable KG PVC pipes to discharge collected rainwater into open-air infiltration ponds.



Hotel Keraton

**Requirement:**  
Provide a solution that is both durable and offers a peaceful night's sleep for the hotel's ageing waste water management system.

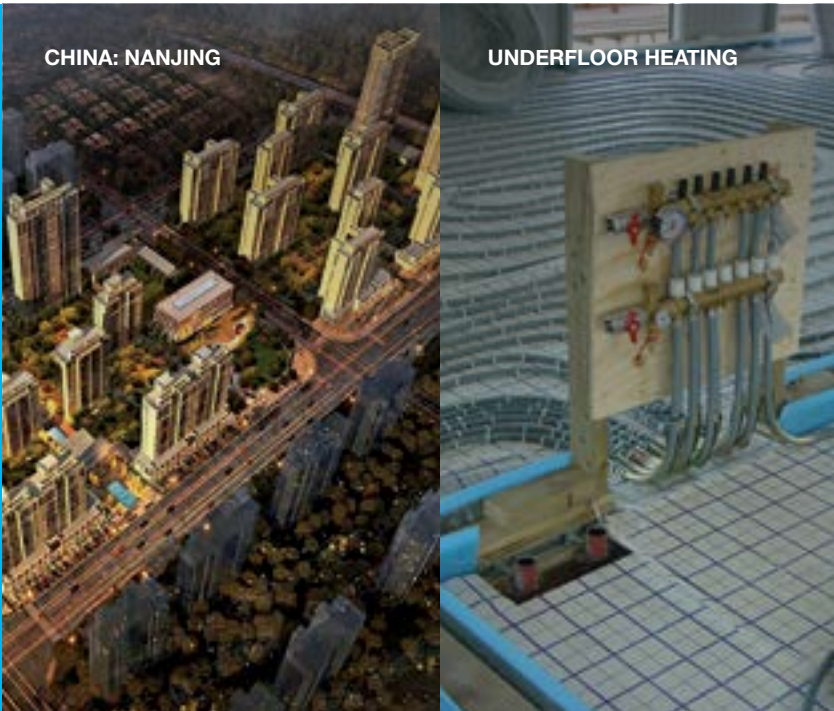
**Solution:**  
Wavin AS ensures low noise installation in its waste water drainage system. Directly in charge of plumbing supplies and working with the hotel management's contractors, Wavin's professional team was part of inspecting and developing an improved water system.



Vanke Nanjing Metropolitan Project

**Requirement:**  
Sustainable heating and cooling system for high-rise residential apartments.

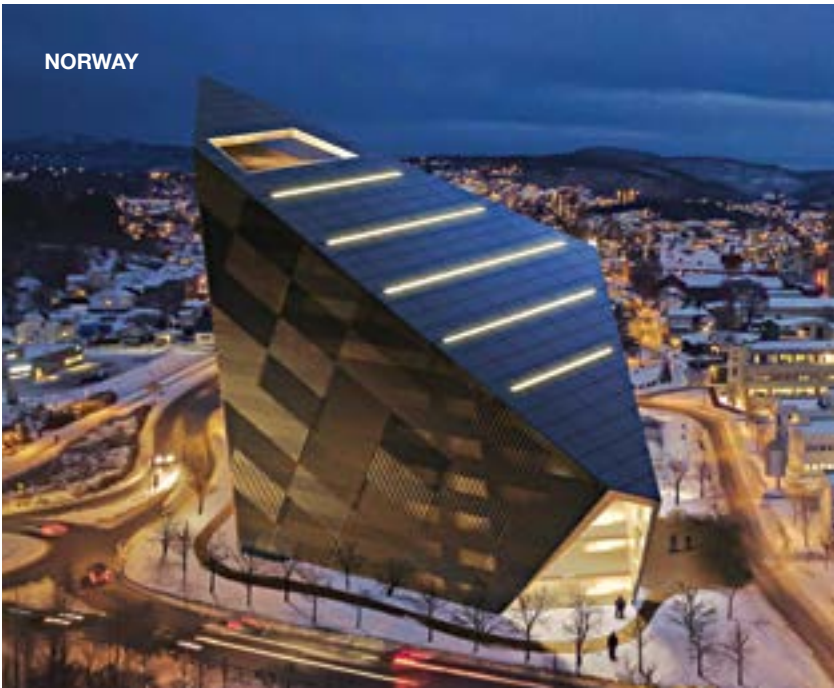
**Solution:**  
Wavin's radiant heating and cooling systems integrate responsive, reliable and sustainable heating and cooling, while keeping energy consumption and cost low with high comfort and low energy.



Power House Project

**Requirement:**  
Ensure that the design and build of a new office building produces more energy than it consumes.

**Solution:**  
AS BIM Revit Package. Developed the world's northmost energy-positive office building.



BIM Revit packages:  
A revolution in building design

Beyond our desire to advance life around the world, Wavin is also advancing with the world. Over the years, digitalisation has shaped our lives and we, as an ever-progressive organisation have integrated digital solutions, predominantly in building design. Our Building Information Modelling (BIM) Revit Packages aid in better, more efficient building processes.

Benefits of BIM Revit packages






Building projects are difficult to plan with regards to time and money.

Between 2012 and 2015, less than one third of construction projects globally were completed between

10% of their budget

Only 25% of these projects were completed within 10% of their original deadlines

BIM is the link that connects all key players and stages of construction projects.

				
<b>BIM Modelling</b>	<b>Purchase</b>	<b>Logistics</b>	<b>Building</b>	<b>Maintenance</b>
Easiest and most accurate Revit piping content	Quick and accurate order processing	Just-in-time and accurate deliveries	Prefab, accurate deliveries and 3D drawings on tablets	Accurate models reducing maintenance costs

Wavin has created Revit content packages with integrated intelligent assistance, which enables accurate installation models of pipe systems. This new way of working will significantly reduce time spent on design. The Wavin Revit packages will allow users to reach a 100% accurate representation of the way piping systems will actually be installed; easily and without the use of product catalogues. A fully integrated Bill of Materials is also featured.

When the San Diego Community College District switched to using BIM, changed orders dropped from 8.6% to 4.1%

...and average days of delay dropped from 79.6 to 24.5





## Sustainability: A social responsibility

## Sustainable initiatives in focus

Replacing alternative materials such as copper, concrete and clay with easy to install, sustainable plastic solutions is one of the ways in which we help lower environmental impact.

## Wavin PlasticRoad

Wavin PlasticRoad reduces carbon dioxide emissions, enhances water permeability and improves safety (flatter roads). It also empowers more efficient construction as compared to traditional roads with three times longer lifespan, 80% less transport emissions and 70% faster construction time.



## Wavin Recycore Technology

Wavin has applied Recycore Technology to its new multi-layer, solid-core pipes, made with over 50% recycled content. Recycore Technology uses as much recycled PVC as possible to ensure the same proven and excellent performance as the virgin products that they replace.



## Wavin Road Gully

Reliable, durable and made with 100% recycled plastics, Wavin Road Gully delivers quality hydraulic performance to help municipalities cope with the challenges of climate change.



## Climate Change Resilient Products

Designed to improve water management and protect sewage systems from damage, we produce fully sustainable water infiltration and detention solutions that can last for over 50 years.



# Words into action

Producing sustainable solutions is just the beginning. We continue practicing what we preach in our daily operations by:

Continuously investing in more modern and energy-efficient machinery.

Equipping our sites with energy monitoring and sub-metering systems.

Renewing and upgrading to more energy-efficient alternatives in lighting, compressed air and heating and cooling.

These measures are being implemented across all Wavin operations as we continue raising the bar and setting the standards in ecological performance.

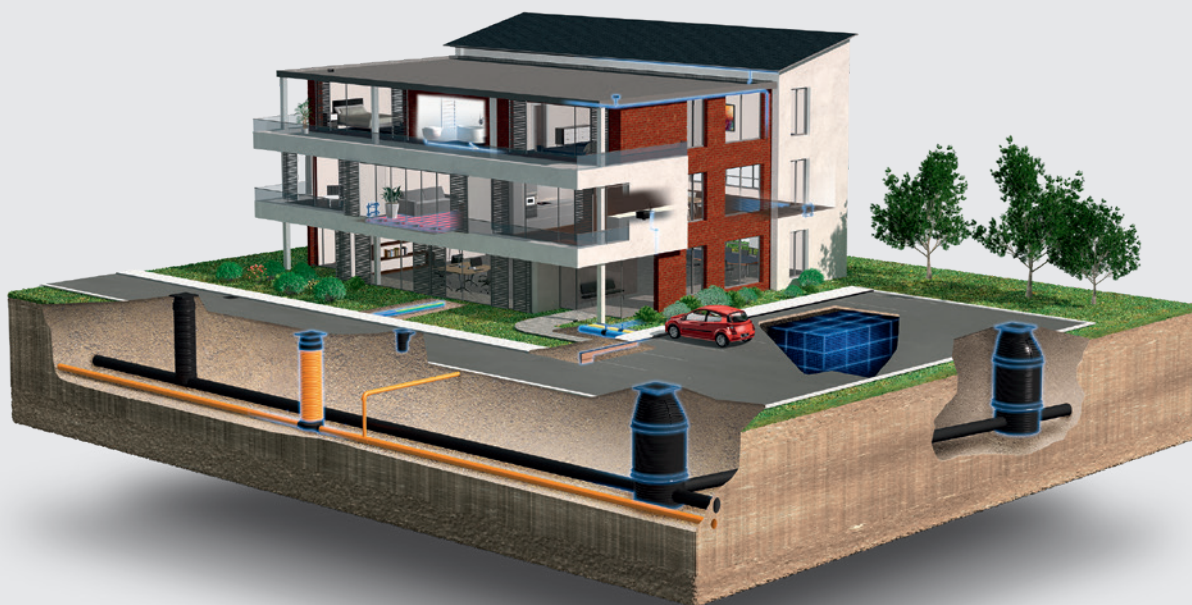
## Notes

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# Discover our broad portfolio at [wavin.com/asia](http://wavin.com/asia)

- Drinking water distribution
- Waste water drainage
- Indoor climate solutions
- Urban climate resilience solutions



Building &  
Infrastructure



Wavin is part of Orbia, a community of companies working together to tackle some of the world's most complex challenges. We are bound by a common purpose: To Advance Life Around the World.

**Wavin SEA+**  
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