



# Advancing Sustainable Solutions





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Ratified by the United Nations General Assembly in September 2015, the UN Sustainable Development Goals (SDGs) represent a comprehensive set of social and environmental benchmarks that demand the action of governments, businesses and communities to achieve inclusive global prosperity by 2030. In pursuing our purpose, we have identified six out of the 17 goals on which we can have the greatest impact, as noted below.

Feeding the world sustainably



Advancing responsible business



Making health and well-being more accessible



Making cities more livable, lovable and resilient



Better managing water systems



Empowering communities with data



Find out more: [www.un.org/sustainabledevelopment/sustainable-development-goals](http://www.un.org/sustainabledevelopment/sustainable-development-goals)





# Making Cities More Livable, Lovable and Resilient

11 SUSTAINABLE CITIES AND COMMUNITIES



As urbanization is on the rise, so too are the challenges of ensuring that cities become the enabling environments for connected, safe and fulfilling lives—and without further strain on our natural resources and climate. To make cities more livable, lovable and resilient, we need infrastructure that is truly efficient. Urban plans designed around green technologies and sustainable transportation models. Prudently managed and easily manageable water, energy and waste systems.

To these ends, Orbia has been a leader in urban solutions for decades, addressing a diverse range of infrastructure challenges and opportunities, from developing building information modeling (BIM) technologies for efficient construction to designing innovative material solutions for temperature regulation, sanitation, water management and more essentials for better and smarter urban living.





Our solutions cut across different applications, from chlor-alkali used in water purification, health care, aluminum, pulp and paper to vinyl used in medical devices, consumer products, building, construction and housing for social and institutional areas. These and many other applications are the key enablers that make our cities more resilient and offer ways to positively transform the everyday lives of people and communities.”

**Carlos Manrique Rocha**  
President, Polymer Solutions

## Sustainable Construction Around the World

Selected 2019 construction projects supported by the Building and Infrastructure group:

- **Gartnerkvartalet | Løren, Norway:** Designed and supplied all the piping systems for energy efficiency and noise reduction across this 450-apartment complex.
- **Apartment complex | Budapest, Hungary:** Supplied in-ceiling heating and cooling in the installation of 252 Wavin Sentio room-by-room climate control systems (one per apartment) and 500 wireless thermostats for efficient energy management.
- **Millennium Plaza | El Salvador:** A new high rise of 20 stories, constructed by using more than 20 kilometers of our pipe solutions for heating, cooling, water and sanitation efficiency.



Gartnerkvartalet | Løren, Norway

In 2019, Orbia advanced a range of innovative solutions to improve the livability, lovability and resilience of cities, for citizens around the globe:

- **Covering ground to a lovable destination:** In 2019, we completed an early phase in an ambitious project in Guatapé, Colombia, an important tourist destination. The multi-year megaproject revolves around reclaiming and redesigning 90,000 underutilized square meters surrounding the Guatapé reservoir into a park, docks, restaurants, shops and ample green spaces for visitors and residents alike. To support the development, Wavin provided 460 meters of durable, geosynthetic reinforcement infrastructure in a speedy installation with low environmental impact and a 40% cost reduction, achieved through using woven geotextile tubing filled with local materials.



Guatapé, Colombia

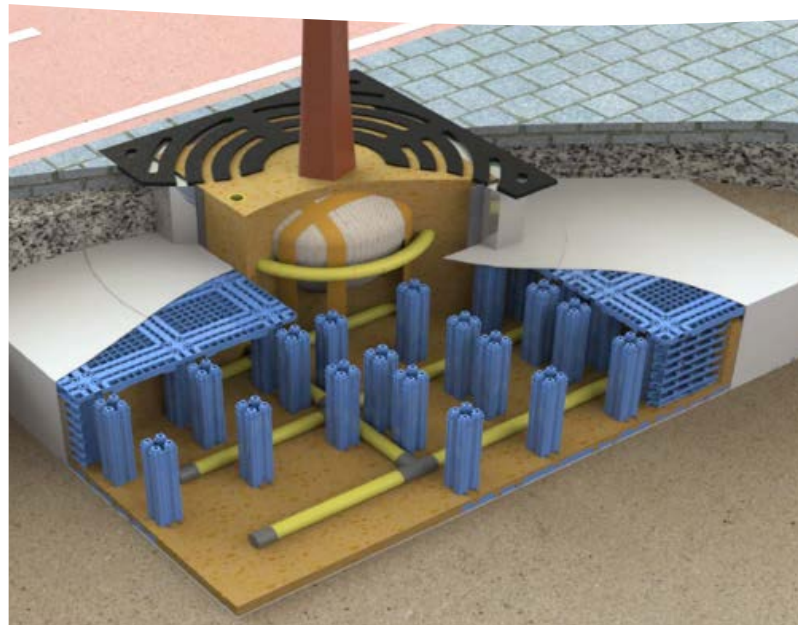


- **Charging into an electrified future:** Seeking to accelerate the electric revolution, Koura advanced the development of fluorinated additives for use in the current and next generation lithium-ion batteries that will be up to the charge of powering the world's electric vehicles, grid-scale energy storage systems and mobile electronics for the long, energy-light run.
- **Advancing electric mobility:** Meeting revved-up demand for carbon-light urban transportation infrastructure, Alphagary has developed a safe, flexible, and recyclable thermoplastic elastomer (TPE) material called Garaflex, that has been chosen by leading automotive manufacturers for electric vehicle charging station hoses. In 2019, Alphagary enhanced production of this durable, user-friendly material and shifted into producing custom formulations to meet customers' unique needs.



Garaflex application in hoses for electric vehicle charging

- **On the right path with PlasticRoad:** While Wavin's PlasticRoad is the world's first bicycle path made of 70% post-consumer recycled plastic, the road is now open to new applications for this award-winning solution. In 2019, Wavin introduced sensor monitoring and reporting from the pilot tracks of the PlasticRoad to test its performance under varying conditions and seasons. Determined to be three times as durable as asphalt while being 70% faster to install, parking lots, road systems, and a full market launch by 2021 are now right around the bend.
- **Rooting for urban trees:** To give trees a larger chance to survive in urban areas while greening up and cooling cityscapes, Wavin turned its existing Q-Bic Plus unit upside down to provide protection and aeration to tree roots in compressed urban spaces. In 2019, Wavin delivered Q-Bic Plus crates for the Quartier Blue project in the city of Hasselt, Belgium to support the build-out of an efficient arboreal ecosystem.



Q-Bic Plus Tree Bunker application

