WATER
IMPROVING
QUALITY
OF LIFE
Our people focus on the entire water cycle - from source to tap and then back to nature. Through our wealth of experience in the water sector, Arcadis’ specialist teams of engineers, scientists and consultants around the globe are uniquely positioned to provide safe and secure water technology and innovations that are built to withstand the demands of a rapidly changing world.

Arcadis is proud to be a partner with UN-Habitat, the United Nations agency from human settlements aimed at improving the quality of life in growing cities; and a platform partner with 100 Resilient Cities – pioneered by the Rockefeller Foundation which focuses on building better resilience and more inclusive economies; and a foundation partner of the World Economic Forum, an independent agency focused on improving the state of the world.
Arcadis.
Improving Quality of life
Organized to bring solutions around:
Water Supply & Treatment

Providing safe water through drinking water, wastewater and reclaimed water solutions.

With so many people inhabiting planet earth and with so little freshwater, we need to ensure that the water we do have is used efficiently and effectively. The world's water supply is the lifeblood of our communities. Ensuring a safeguarded and durable water supply, however, is not as easy as it may sound. Through our expert knowledge we apply leading-edge technologies to meet ever-changing quality needs for drinking water and wastewater facilities. We act within local regulatory requirements and with minimal environmental impact to protect the world's water supplies for future generations. We also help communities and utilities expand and diversify their water supplies.

Associated solutions:
• Supply & Treatment Systems
• Wastewater Treatment Systems
• Desalination & Reuse

Conveyance & Networks

Allowing water to move reliably and efficiently for distribution, collection and drainage needs.

Moving our water reliably and efficiently is a major challenge of the modern day as urban populations grow and put increasing pressure on finite freshwater supplies. As the world’s cities continue to grow, so too does the need to collect and transport our water supplies, and to ensure our drainage facilities are effective and will stand the test of time.

At Arcadis, we have more than a century of experience in assisting our clients to convey and store water, wastewater and stormwater, while protecting public health.

Associated solutions:
• Drinking Water Distribution Systems
• Wastewater Collection Systems
• Stormwater and Green Infrastructure
Water Management

Enhancing the quality, safety and adaptability of urban and coastal, river-based and delta ecosystems.

Ensuring our cities and communities are protected from the elements is going to be a major challenge for tomorrow’s world. Our planet’s ecosystems are intricate and highly delicate; increased stress and strain placed upon them by urbanization and climate change put our environment under serious risk, especially our water systems.

With over a century of experience protecting the notoriously flood-prone Dutch coastline, Arcadis has the unique position to advise on all matters of water management. From developing flood defenses in Asia Pacific to storm proofing New York’s financial district, Arcadis’ unrivalled water resiliency expertise ensures quality of life for people, planet and built assets alike.

Associated solutions:
- Climate Resilient Delta Cities
- Coastal Management Systems
- River Management Systems
Industrial Water

Partnering with businesses to efficiently manage their water while also ensuring sustainability and positively impacting their bottom-line.

Around the world companies are looking for opportunities for competitive advantage – optimizing their water processes and practices can help companies lead the way and allow for not only cost savings, but sustainability. Making smarter use of industry’s resources is vital to minimizing the demand on the water used in manufacturing and production process each and every day.

With water impacting industries like never before, it is imperative that businesses invest and focus on securing and protecting their water supplies as well as addressing the impact on their infrastructure and operations.

With turnkey solutions, we help clients shift their focus with the market from compliance-driven to one driven by cost savings and sustainability in their operations.

Associated solutions:
• Water Supply & Treatment
• Conveyance
• Water Management

Water Business Advisory

Developing asset improvement, investment strategies and operational optimization that enhance value, productivity and reputation to our water clients.

From rapid urbanization and pressure on our most precious resources, to tighter regulation and market consolidation, we live in an increasingly complex world. Our business advisory experts help optimize your ability to manage critical infrastructure by driving better business outcomes, delivering measurable impacts and defining leading-edge performance.

Associated solutions:
• Infrastructure Preservation: capital spending on critical assets, optimize performance, maintain regulatory compliance and improve the long term viability of the utility.
• Effective Risk & Resiliency: helping clients to anticipate and mitigate risks that affect their ability to deliver clean and safe water.
• Financial Sustainability: revenue enhancement and cost reduction strategies as part of a comprehensive long term financial plan.
• Technology Innovation: leverage existing technology to make informed business decisions and transforming our clients’ ability to define, track and measure successful outcomes.
Water Program Management

Delivering water programs successfully and safely within project quality, schedule and budget.

Through program management we allow you to achieve commercial objectives while providing utility services that safeguard human health and protect the environment. By becoming strategic partners we go beyond merely technical services providers, leading and setting the right strategy and managing the risks to achieve the desired outcomes and maximize investments and benefits.

Associated solutions:

• Managing and delivering large and complex water and wastewater infrastructure capital programs.
• Managing and delivering aging infrastructure replacement and rehabilitation programs while optimizing capital allocation.
• Planning and delivering preparedness and resiliency programs.
• Enhancing operational performance through programmatic consulting services.
Cutting-edge Ultraviolet Water Treatment: The second- and third-largest UV treatment facilities in the United States, located in Los Angeles and designed by Arcadis, have a combined capacity of 1.2 billion gallons per day. These facilities treat water for the largest public utility in the country which serves more than four million people in an area of high demand and scarce resources.

Making a Resilient New Orleans: Arcadis experts improved quality of life in New Orleans by helping build the world’s largest interior drainage stormwater pump station. The pump station provides protection from flooding and storm surges for 250,000 residents, businesses and industries for the West Bank area.

Engineering the Largest Desalination Facility in the Western Hemisphere: With extreme drought in California, this desalination plant will turn 50 million gallons of Pacific Ocean seawater per day into clean, drinkable and usable water meeting approximately 10% of San Diego County’s needs. Arcadis is the engineer of record for all site civil, mechanical and electrical disciplines for this landmark project.
Protecting the Big Apple: Winner of the US Department of Housing and Urban Development’s Rebuild by Design competition, the Big U, also known as the Dryline, is a visionary proposal developed by Arcadis and partners to protect Manhattan against flooding and stormwater. The East Side Coastal Resiliency Project is the first step in attaining this vision; while incorporating a flood prevention system, it will also deliver tangible benefits to the community including improvements of and access to local parks.

Innovating New Direct Potable Reuse Techniques: Pipe-to-pipe direct potable reuse (DPR) is rare, but a plant that can combine pipe-to-pipe DPR and desalination technology is the first of its kind. The Advanced Water Purification Facility in El Paso, Texas, will diversify the water source for the border city of over a million people, recycling water in an arid climate and directly piping it back into the water supply.

Ensuring water and wastewater services in Puerto Rico: By supporting the Puerto Rico Aqueduct and Sewer Authority (PRASA) with a broad range of services, from program, pre-construction and energy management to planning, design and business advisory services; Arcadis has been involved in securing over $3 billion USD in municipal revenue bonds for Capital Improvement Plan (CIP) financing, over $400 million USD in projected revenues through rate restructure and increase, and improving services for Puerto Rico’s 3.6 million residents.

Treating one of the largest plants in the United States: To help the Metropolitan Water Reclamation District of Greater Chicago (MWRD) meet its mission of protecting health and public safety, Arcadis provided services for several critical projects resulting in economic savings and carbon footprint reduction, and a 430 million gallon per day disinfection system for a service area of more than 10 million people.

Updating the infrastructure in the nation’s capital: The aging sewer infrastructure in Washington DC needs replacement and rehabilitation. Arcadis is providing innovative technologies and improvements under a risk-based approach. By replacing 75 miles per year, $5 million USD per year in efficiencies will be saved for the city.

Finding the right balance for an energy client: Gas extraction requires large amounts of water which can be a challenge in arid regions. By developing a groundwater flow model and a conceptual site model, Arcadis was able to identify locations most likely to yield the desired amount of water for the next 10-15 years providing the gas company business continuity.
UK

Improving the River Thames: This £4.2 billion essential infrastructure project will upgrade London’s sewerage system to meet the demands of the 22nd century and create a cleaner, healthier River Thames. As part of an embedded team of consultants working on the Thames Tideway Tunnel, Arcadis is providing commercial and project management services, specialist engineering support and strategic procurement advice and contract administration.

Providing capital program savings: Scottish Water is one of the UK’s largest utilities has the ambition to be recognized as a frontier performer in its £2.5 billion investment program by 2018. Arcadis established effective program and project management across Scottish Water for its £450 million per year capital program, providing savings in the region of 12%.

Identifying productivity improvements: As affordability challenges increase, Welsh Water (DCWW) will need to continue to review performing activities across capital and operations programs. Across 11 treatment works, Arcadis identified 48 efficiency opportunities with the potential of delivering 17-21% operational efficiency and provided a roll out methodology for application across all treatment plants.

Ensuring financial stability: Southern Water supplies water to one million properties and is looking to meet a 20%+ savings target across the Asset Management Program 6 (AMP6). As a part of the Strategic Solutions Partner arrangement, Arcadis is providing cost and commercial services, program optimization and lean construction advice during AMP6 after enabling a savings in excess of £50 million to be achieved in AMP5.

Increasing sewage capacity: Due to a growing population, a major upgrade is needed to improve the Deephams Sewage Treatment Works operations without disrupting current operations and keeping within the same site size. To achieve this, Arcadis is providing project leadership and commercial, planning and risk management services, ultimately leading to future-proof sanitation for one million residents.

Protecting the natural environment: Davyhulme wastewater treatment works is located in the north west of England and is operated by United Utilities and is their largest works serving a population of one million residents. Arcadis is providing specialist engineering support to a €200 million upgrade, which will allow the plant to continue operations and protect the environment.
Protecting Dutch Waterscapes: In the Netherlands there are many interested parties working to provide a safe and water-secure future. Arcadis has been working to define these numerous stakeholders and their interests for over a century. By making room for rivers and their flood waters naturally, over thirty locations in the Netherlands are now better equipped to handle rising waters and sea levels that protect the nation. Arcadis has also consulted on feasible future outcomes by creating models, facilitating dialogue and advising multiple parties to best meet the Dutch delta need and ensure positive outcomes for the Netherlands.

Ensuring valuable automotive assets: Due to climate change, a leading automotive manufacturing site in Germany was at risk of flooding and faced the potential loss of valuable assets. A comprehensive hydrologic model was developed that allowed Arcadis to plan, permit and design an innovative flood scheme that dramatically lowered the risks and protected assets.

Saving money and water in business: After a large acquisition across multiple continents, a global pharmaceutical client selected Arcadis to provide evaluation and design services for the development of water use and treatment strategies. These strategies provided savings of more than a billion gallons of water and several million Euros in operating costs.

Protecting the Flemish Coast: The current level of protection for the Flemish coast is too low to meet minimum safety standards in many areas. In the vulnerable area of Nieuwpoort, Arcadis is designing a storm barrier in the navigation channel of the port of Nieuwpoort thus protecting the critical infrastructure, businesses, tourists and 11,000 residents from powerful storms and flooding.
Improving Abu Dhabi’s Sewage Masterplan: Abu Dhabi has relied on Arcadis for more than 30 years to help develop and implement a masterplan for sewage management. The masterplan improves pumping capacity to securely deliver 230 million liters per day to a growing population of 650,000. Sewers, pumping mains, pump stations and storage reservoirs were evaluated for the distribution of purified effluent to municipal and agricultural sites of this growing city.

Doha’s North Sewage Treatment Plant: The Doha North Sewage Treatment plant, designed by an international Arcadis team provides a sustainable water treatment solution to serve an ever-increasing population of over one million people.

The World’s Largest Public Health Project: Serving and ensuring 16 million residents of Cairo have access to clean water, this wastewater project was managed by Arcadis over 25 years at a cost of more than $2 billion USD.

Securing Water in Mega Reservoirs: Due to Qatar’s rapid urbanization and need for increased security of water supplies, Qatar General Electricity & Water Corporation, KAHRAMAA, launched a water project to provide strategic water storage within its network and solicited Arcadis’ expertise to complete the challenge. Mega reservoirs with pump stations are under construction to ensure water supply for seven days in event of a water network disruption.

Muharraq Sewage Treatment Plant: The Muharraq STP provides the busy, crowded island with much needed infrastructure to enable growth. This project is a 27-year build, operate and transfer scheme (BOOT) and the first of its kind in the Kingdom of Bahrain with Arcadis providing the detailed design of the sewage treatment. The project recently won the MEED Quality Award in Bahrain.
ASIA

Feasibility in the Philippines: For Metro Iloilo Water District in the Philippines, Arcadis assessed the utility’s assets and water supplies to provide reliable safe water to the growing population of 830,000.

Water Management in Myanmar: The country of Myanmar has little in infrastructure, flood protection and water masterplanning. Backed by the Dutch Ministry of Infrastructure, Arcadis provided a comprehensive study and development plan to Myanmar’s officials to help better understand the needed water management strategy.

Protecting a Subsiding Mega City: In order to address climate change and protect five million residents of Jakarta, Indonesia for generations to come, Arcadis prepared and reviewed a coastal defense masterplan with government stakeholders.
AUSTRALIA

Meeting half of Adelaide’s Needs: A desalination plant in South Australia is expected to produce around 100 billion liters of water per year, meeting half of Adelaide’s drinking water needs for decades to come. Arcadis provided verification of the design, construction and commissioning of the desalination plant, as well as full environmental services and tender design for the offshore and pump station works. This project ensures Adelaide against further droughts and contributes to the health of the Murray River by reducing demand on its precious environmental resource.

Improving Tasmania’s Water: The TasWater Inlet Works project provides new inlet works facilities at 11 sewage treatment plants across southern Tasmania. Arcadis provided the detailed design of the new inlet works. The solutions are tailored for each area’s treatment plants and include screens, grit removal and dewatering, odor control and pumping.

Helping to refinance Desalination: The Victorian Desalination Plant is a vital piece of Victoria’s water infrastructure with a capacity to supply 150 billion liters of water per year to support Melbourne’s future water needs. This facility and related infrastructure will help support long-term water security for the state, and Arcadis completed the due diligence to refinance the A$3.5 billion project.

Saving money in Queensland: Queensland is home to 98% of Australia’s coal seam gas reserves—an emerging, economically important sector where water recovery from the mining process is environmentally crucial. Our innovative design made the on-site plant not only safe, reliable and economically viable, but is providing a new water resource for residents, farmers and industry. It has also brought an estimated A$10 million in cost savings.
LATIN AMERICA

Improving the Quality of Water: By collecting and treating 84% of the sewage across five plants in São Paulo from the polluted River Tietê, 17 million inhabitants will benefit from cleaner water.

Providing for Industrial Water Needs: Servicing a large industrial area, the Aquapolo water and sanitation project lessens the burden on São Paulo’s shrinking freshwater supply by saving 1.68 billion liters of fresh water per month. It allows for consistent, high-quality water to be used for industrial purposes and is the largest reuse wastewater plant in the Southern Hemisphere.

Creating a Flood Management Masterplan: Urbanization caused major stresses on and damages to the water systems in Oaxaca de Juárez, Mexico and the greater valley region. By applying knowledge from other resiliency plans around the world, Arcadis delivered a comprehensive strategy along with MapTable (an innovative spatial planning processes technology) to protect the 255,000 residents of Oaxaca, their environment and their businesses against floods.

Designing a Masterplan for the Colombian Coast: With climate change intensifying, Colombia’s coastlines are vulnerable to storm surge, erosion and flooding. To protect the coast Arcadis, in conjunction with the Dutch Ministry of Foreign Affairs, is aiding in creating a sustainable and integrated long-term vision that will safeguard the Colombian coastline for generations.

Optimizing a Mining Wastewater Treatment System: Scarcity of water and the client’s vision helped Arcadis optimize water use for a leading mining company in Chile by minimizing losses, increasing efficiency and developing sustainable water management business practices.
ABOUT ARCADIS

Arcadis is the leading global Design & Consultancy firm for natural and built assets. Applying our deep market sector insights and collective design, consultancy, engineering, project and management services we work in partnership with our clients to deliver exceptional and sustainable outcomes throughout the lifecycle of their natural and built assets. We are 27,000 people active in over 70 countries that generate more than €3.4 billion in revenues. www.arcadis.com

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