



Water Management for Data Centers

For business leaders mindful of their environmental impact, optimizing water usage is fundamental to both the economics and long-term sustainability of their data centers.

As a pioneer and leader in water supply and reclamation, Black & Veatch can offer you water solutions on the forefront of conservation and innovation while serving as your trusted advisor throughout planning, design and commissioning.



BLACK & VEATCH



Achieve Water Optimization

Finding the optimal water usage level for your data center takes careful consideration of the available water supply and a broad technical understanding. Black & Veatch's proven processes and expertise is intended to uncover the potential of your operation and resources to ensure everything is used to their maximum value and designed for your specific needs.

Ensure Water Availability Through Integrated Resources Planning

As a critical resource, data centers need to consider their use and its impact on their surrounding communities. Black & Veatch's insight into water resources and use will help you devise solutions that consider environment and public interest, while ensuring you have enough water to meet your current and long-term needs.

If you're evaluating a new site or expanding an existing one, Black & Veatch can perform a water balance study to evaluate your water demand, assessing all possible sources including surface water, groundwater, brackish water, seawater, reclaimed water, etc. We consider factors such as climate, data center design and cooling systems, and sustainable use through reclaiming or recycling water, or treating and using reclaimed effluent or discharge water. These services, along with our deep relationships and involvement in national and international water associations, as well as knowledge of the applicable regulations, allows us to factor in multiple perspectives to ensure you receive a cost-effective, integrated water resources plan with strong contingency and resilience.

Technical Expertise Leads to Innovation

Black & Veatch's long history delivering sustainable water solutions offers you sought after insight and perspective. With water being a critical operational cost and factor to where and how you develop a data center, Black & Veatch can guide you through all of the different options for managing water use and ensuring quality and reliability. Our solutions include:

Cooling Technology

- Air cooled vs. liquid cooling
- Chilled water systems / chillers and CRAHs
- Evaporative cooling
- Direct liquid cooling
- Heat rejection i.e., cooling towers
- Water-side economizers

Water Quality & Treatment

- Water quality (pH, conductivity, alkalinity, hardness, etc.)
- Traditional (chemical) water treatment systems
- Onsite water treatment
- Filtration (including reverse osmosis)
- Softening
- Deionization
- Ozone
- Ultraviolet

Source Redundancy

- n+1 redundancy and concurrent maintainability for every component level

Reach Sustainability Goals

Black & Veatch can help you achieve your corporate sustainability goals through smart water decisions and solutions. Our experience in water, energy, advanced communications and automation provides the needed insight to help you reach sustainability status for your data center while achieving the right balance of economic, social and environmental benefits. Our water services include:

Sustainability

- Corporate carbon reduction mandates
- Incorporation of LEED design principles
- Increased use of renewable power options that decrease water use
- Water reclamation systems, including recycling treated wastewater effluent
- Immersion cooling
- Use of artificial intelligence
- Green rooftops to reduce power consumption as well as stormwater runoff – a flood and pollution hazard

Water Saving Retrofit & Replacements

- Thermal storage systems for peak shaving in locations with high peak utility costs
- Side stream filtration to remove suspended solids, organics, and silt to improve efficiency of chiller/ water towers
- Reverse osmosis filtration – either for desalinating seawater because of inadequate freshwater supply or to treat cooling tower blowdown for reuse as makeup water
- Water-side economization with heat exchanger
- Increased cycle concentration within cooling towers
- Improvements in automation systems



Comprehensive Expertise

With a century's worth of critical infrastructure experience, Black & Veatch can serve as your single point of contact for water management. Our team of experts average over 25 years of experience in industrial water and wastewater treatment and reuse solutions and can provide the technical insight to address water supply, conveyance and treatment challenges. As one of the most diverse service providers in the industry, we can offer you a variety of support models across a comprehensive set of services to deliver a flexible and customizable execution across the life-cycle of a project.

- Project or program management
- Owners engineer
- Staff augmentation / supplementation
- Permitting and planning
- Studies / conceptual design /business case development
- Detailed design
- Bid and construction phase services
- Design-build
- Construction management and inspection
- Operations and maintenance – monitoring and optimization

Connect With Us Today

Begin your journey to optimal and sustainable water use today. Connect with us to learn how to navigate through all of your options and alternative solutions for better water management.

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