



# Life-Science Solutions

## Future-Ready, Future Realized.

A future of sustainable, digital and adaptable operations can be realized with a partner like Black & Veatch. We provide a specialized set of expertise across the site, including the process, structure, power, water, data and telecommunication systems to help you develop an integrated ecosystem across your enterprise. When paired with our global reach and extensive design-build capabilities, this insight offers the life-sciences industry a trusted guide to create reliable, efficient and responsive facilities.



**BLACK & VEATCH**

## Actions Today, Shape Tomorrow

As you evolve to meet calls for accelerated manufacturing, sustainable operation and digital transformation, Black & Veatch's broad perspective across many industries can lend valuable perspective to help guide your decisions and investment. We lead in the engineering and construction industry in energy, water and telecommunications solutions, and can deliver the innovative solutions needed for highly efficient, sustainable and continuous operation.

We're global. With over 10,000 global professionals and a worldwide network of trade partners and suppliers, we can provide regionalized support in many areas. For a new region, our services can start with a utility infrastructure investigation and site due diligence in the development

phase to determine if the site is conducive to your requirements. We're here to help you plan for expansion to effectively meet demand, whether this is a new build or expanding an existing facility with the latest in modular design.

## Mission Critical Approach

Our solutions are scalable and flexible, and designed and constructed with a mission critical mindset to ensure the highest level of reliability. Working alongside our clients, we have experience working in live facilities, phasing equipment such that systems can be isolated for repair or upgrade to avoid costly shutdowns or lags in production schedules. We perform reliability analysis and incorporate results into our design and construction approach to mitigate risks.





## Services

From master planning and engineering to turnkey design-build services, our solution set is made to be comprehensive or incremental. Our teams develop customizable solutions for your facility needs that are designed to meet your operation's rigorous quality, sustainability and safety standards.

### Planning & Consulting

- Strategic or master planning
- Site selection and due diligence
- Site assessments and audits
- Energy efficiency improvements
- National or global permitting
- Feasibility and diagnostic studies

### Architecture & Engineering

- Engineering design, site planning and layout
- Architectural design
- Space planning, massing plans and test fit studies
- Civil, structural and geotechnical engineering
- Mechanical, piping, electrical and instrumentation & controls design
- Modular design
- Troubleshooting and optimization initiatives

### Construction

- Live facility installations
- General contracting
- Construction Management
- Construction only
- Design-build / Engineer-procure-construct (EPC)
- Commissioning and startup

### Project Management

- Project scope development
- Cost estimating and budgeting
- Scheduling and progress reporting
- Resource planning
- Document control
- Quality assurance and control
- Risk and opportunity management

# Solutions

## Efficiency & Sustainability

- Building energy alternatives
- Green reliable back-up power
- Utility scale offsets and interconnect agreements
- Water stewardship
- Environmental compliance, emissions and biodiversity
- Waste management and effluent reduction
- Electrical and hydrogen vehicle charging
- Climate adaptation & mitigation

## Plant Infrastructure

- Natural gas or diesel backup generation
- Co- and tri-generation (power, heat, and chilled water)
- Substations
- UPS/power distribution systems
- High, medium and low voltage design
- Communications networks
- Water conservation and reuse
- Advanced water and wastewater treatment
- Zero liquid discharge/discharge compliance

- Optimization of treatment processes and operations
- Smart water systems — digital data monitoring and diagnostics
- Water balance studies
- Water supply selection & review

## Environmental

- Acoustics
- Air quality and meteorology
- Site Selection Assessment
- Audit Certifications
- Compliance
- Environmental health & safety management
- Hazard Analysis and Communications
- Remediation

## Facilities

- Building core & shell
- Site civil design
- Parking & traffic control
- Landscape
- Physical security & access control
- Hardening / blast protection

- HVAC
- Electrical
- Fire protection

## Warehousing & Logistics

- Rail design
- Barge dock design
- Temperature control warehousing

## QA & QC

- Lab design & layout
- Sample system & accountability
- Chemical sewer (under water)

## Process & Packaging Design

- Process and equipment engineering
- Bioreactors and fermenters
- Downstream processing and purification
- Automated packaging design
- Clean rooms
- Process scale-up

## Risk Management

- Reliability Analysis

## About Black & Veatch

Black & Veatch is an employee-owned engineering, procurement, consulting and construction company with a more than 100-year track record of innovation in sustainable infrastructure. Since 1915, we have helped our clients improve the lives of people in over 100 countries by addressing the resilience and reliability of our world's most important infrastructure assets. Follow us on [bv.com](https://www.bv.com)

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