

LEAN
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Civil & Environmental Consultants, Inc.

LEAN
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expertise for today's manufacturers

**CEC MANUFACTURING
INDUSTRY CONSULTING
GROUP (ICG)**

This diverse team of engineers, scientists and professionals is our conduit to the latest thinking and advancements in the manufacturing industry; providing clients with concise, timely information and regulatory updates to facilitate informed decision-making.



Manufacturers often face challenges as diverse as the industry itself: pricing pressures and global competition, business complexities, and delivery of product to market and customer.

To stay focused on the primary objectives of production efficiency and increasing market share, manufacturers need a partner with expertise in a complete scope of engineering and environmental services to assist with challenges ranging from selecting or acquiring a new site for development to maintaining compliance in today's regulatory environment.

CEC starts with a commitment to understanding the specific needs of manufacturers and then applies sound science and practical engineering to help clients successfully acquire, develop, operate, and manage their facility assets. Using a multidisciplinary approach, CEC has developed an extensive portfolio of industrial real estate and facility-related expertise.

Civil & Environmental Consultants, Inc. (CEC) is a company of professionals who provide comprehensive industry-focused consulting services that advance our clients' strategic business objectives. CEC scientists and engineers are recognized for delivering knowledge, innovative design solutions and integrated expertise in the primary practice areas of civil engineering, environmental engineering and sciences, ecological sciences, waste management and water resources.

THE CEC ADVANTAGE

What sets CEC apart is that we put ourselves in our clients' shoes and make recommendations from their strategic vantage point. These are the real differentiators:

Cradle to Grave Services

With multiple disciplines in-house, CEC is able to work with manufacturers at every stage of an operation's lifecycle—from site selection to decommissioning—creating an opportunity to build in-depth knowledge of the operation and a long-term commitment to client success.

Asset and Information Management

Integrating web and mobile applications creates a centralized, streamlined method for collecting, organizing, maintaining, and reporting on large, even massive data sets. Information on environmental status, health and safety programs, and infrastructure is easily accessible by multiple users through a single user interface, and updates occur universally and in real time.

Direct Industry Experience

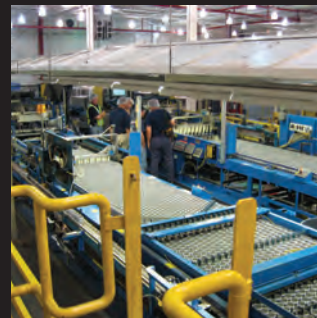
CEC understands the manufacturing business from the inside and can complement a facility's existing staff. Having previously worked for the owner's side, senior consultants combine past experience and established regulatory relationships with strong technical knowledge to tailor CEC resources to best serve project and client needs.

Cost-Effective Solutions

Today's manufacturers face cost pressures at every step of an operation. With a focus on advancing client interests, while also considering agency objectives, CEC has developed innovative approaches to corrective actions that not only obtained regulatory approval but also saved clients millions of dollars.



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TOP: Engineering and design of an overall water recycle system for this seamless steel pipe manufacturer in Youngstown, Ohio, included these final strainers to supply clean water for contact and non-contact cooling.

LEFT: Facility inspections and updated SPCC plans for 8 can plants and 5 agricultural facilities across the Midwest for a major beverage manufacturer.

RIGHT: Environmental services at facilities in Ohio, New York, North Carolina, and Washington for a leading plastic product manufacturer of a broad range of thermoplastics and high-performance materials.

COMPLIANCE AND OPERATIONS SUPPORT

Maintaining operations and compliance

CEC actively monitors the complex and changing regulatory environment to support manufacturers as they record, report, and retain compliance and maintenance standards. Upstream and downstream links in your supply chain may require conformance with ISO or other industry specifications while internal policies and procedures are met. CEC can take on the paperwork, enabling businesses to focus on producing goods profitably and efficiently.

Evolving requirements and BMPs prompt operators to implement modifications and controls. CEC solutions reduce risk, maintain compliance, and facilitate continued operations. CEC water resources professionals provide turnkey industrial wastewater treatment and compliance services and also determine appropriate technologies by conducting bench- and pilot-scale tests in-house or on site.

Enabling new or expanded operations

When demand dictates that operations must grow, or when improvements in processes and technologies require new equipment and renovations, CEC assists with site development and facility expansions by providing site selection and characterization, cost-effective designs, permitting, and construction-related services. Geotechnical engineers evaluate the feasibility of supporting heavy equipment by investigating soil and bedrock characteristics.

CEC analyzes incoming water quality and the performance characteristics of facility equipment to develop water treatment processes that ensure the precise water quality required for a range of processes and applications. As water resources become increasingly stressed, CEC examines the inlet and outlet balance of the entire facility to develop tailored incoming water treatment and recycling programs.



TOP: Assistance with Title V air permitting and compliance, as well as water and waste compliance at this steel plant in Michigan serving the automotive, construction, and appliance markets.

LEFT: Assistance with implementation of a RCRA Corrective Action program at a 590-acre West Virginia coke-making facility with a capacity exceeding 1 million tons each year.

RIGHT: Volumetric flow, moisture, and volatile organic compounds are being ducted to the inlet of the regenerative thermal oxidizer control device as part of stationary source sampling at 8 interior locations within this South Carolina plant.

FACILITY AND ASSET MANAGEMENT SUPPORT

Strengthening real estate portfolios

CEC understands the connection between the manufacturing industry and brownfield redevelopment and its impact on local economies. Corporate facility and asset managers and real estate portfolio managers rely on CEC's ability to navigate zoning, geotechnical, logistical, and regulatory criteria for the development and management of brownfield sites, in addition to existing or greenfield sites.

Due diligence, site selection, environmental assessments, and engineering services support strategic property acquisitions, as well as the ongoing management of property assets, including disposition and decommissioning. CEC has performed environmental assessments for multiple facilities as part of corporate acquisitions/divestitures, investments, or financing applications.

Transitioning to closure

If the time comes to cease operations or demolish a facility, CEC will assess the nature and extent of contamination and recommend either containing it or remediating the impaired site to commercial and industrial standards, reducing legacy liabilities. CEC has in-depth experience in each phase of site rehabilitation and demolition and works with clients to remediate and rehabilitate active production or idle legacy sites.

Projects begin with developing a concrete understanding of client objectives and designing the best strategy to achieve client goals within the limits of governing regulatory programs. CEC site planners and civil engineers evaluate options to achieve the highest and best use possible for assets, even encouraging repurposing facilities and recommending potential alternative uses to generate revenue.



TOP: At this southwestern Pennsylvania float glass manufacturing plant, CEC prepared E&S control and earth disturbance permit applications for site development activities surrounding construction of a selective catalytic reduction system.

LEFT: One of two sludge dewatering filter presses that produce a material suitable for reuse in steelmaking. The presses are the terminal treatment elements of an overall water recycle system at a steel mill in Ohio.

RIGHT: Site engineering design plans for a new 52,000-square-foot metal giftware manufacturing facility in western Pennsylvania including retail store space, production, office areas, and associated parking.

800.365.2324

www.cecinc.com

Manufacturing

Mining

Natural Gas

Power

Public Sector

Real Estate

Solid Waste

Air

Air Emissions Testing
Construction and Operational Air Permitting
Perimeter Ambient Air Monitoring
Dispersion Modeling
Odor Evaluations
New Source Review/Prevention of Significant
Deterioration Analyses
Emission Inventories and Characterization
Fugitive Emissions Studies and Control Programs

Engineering/Site Development

ALTA/ACSM Surveys
Land Planning and Site Evaluations
Geotechnical Analyses
Cadastral (Land Title) and Mortgage Surveys
Landscape Architecture and Master Planning
Sustainable Landscape/Infrastructure Planning
Regulatory and Land Development Permitting
Erosion and Sedimentation Control
Subsurface Investigation, Testing, and Stabilization
Foundation Analysis and Design
Slope Stabilization and Retaining Wall Design
Green (Vegetated) Roof Design
Structural Condition Assessment and Design
Construction QA/QC Monitoring and Inspections
International Building Code (IBC) Special Inspections
Building System Analysis and Maintenance Design
LEED® Preliminary Assessment and Existing
Building O&M
Parking Lot/Pavement Analysis, Maintenance, and
Rehabilitation

Environmental Health & Safety

Phase I & II Environmental Assessments
Environmental Liability Cost Estimates
Operational Compliance Evaluations and Liability
Cost Estimates
Human Health and Ecological Risk Assessments
Property Condition Assessments (PCAs)
Health & Safety Plan Preparation

Remedial Design and Implementation
Environmental Compliance Audits and
Regulatory Reporting
ISO 14001 Audits
Groundwater Assessment, Monitoring, Remediation,
and Modeling
RCRA, CERCLA, and State Voluntary Program
Implementation
Site Characterization
Spill Prevention Control and Countermeasures
(SPCC) Plans
Transformer Inspections
Hazardous Chemical Inventory and Toxic
Chemical Release Inventory Reporting

Waste Management

Waste Characterization, Management, and Reporting
Hazardous and Regulated Material Surveys and
Management
Universal Waste Surveys and Management
On-site Waste Disposal Facility Design and Permitting
Facility Construction Management and Quality
Assurance
Facility Decommissioning and Demolition Planning
and Permitting
Storage Tank Inspections, Design, and Installation

Water/Wastewater

Stormwater Management/BMP Design
Stormwater Pollution Prevention Plans (SWPPP)
NPDES Design and Permitting
Water and Wastewater Permitting
Water and Wastewater Treatment Design
Water Treatment System Installation
Industrial Process and Wastewater Treatment
Technologies
Treatment System Evaluation, Selection, and
Specification
Treatability Testing

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