



# Soil and Materials Engineers, Inc.

## offices



### BAY CITY

1501 West Thomas Street  
Bay City, MI 48706-3241  
t: (989) 684-6050 f: (989) 684-0210  
Larry W. Shook, PE

### CINCINNATI

One N. Commerce Park Drive, Ste. 222  
Cincinnati, OH 45215-3174  
t: (513) 898-9430 f: (513) 898-9474  
Daniel O. Roeser, PG

### DETROIT

The Kramer Building  
43980 Plymouth Oaks Boulevard  
Plymouth, MI 48170-2584  
t: (734) 454-9900 f: (734) 454-0629  
Gerald M. Belian, PE

### GRAND RAPIDS

4705 Clyde Park Avenue SW  
Grand Rapids, MI 49509-5114  
t: (616) 406-1756 f: (616) 406-1749  
Louis J. Northouse, PE

### INDIANAPOLIS

3906 West 86th Street, Ste. B  
Indianapolis, IN 46268-1701  
t: (317) 876-0200 f: (317) 876-0300  
Michael S. Meddock, PE

### KALAMAZOO

3301 Tech Circle Drive  
Kalamazoo, MI 49008-5611  
t: (269) 323-3555 f: (269) 323-3553  
Timothy J. Mitchell, PE

### LANSING

2663 Eaton Rapids Road  
Lansing, MI 48911-6310  
t: (517) 887-9181 f: (517) 887-2666  
Davie J. Hurlburt, PE

### SHELBY TOWNSHIP

13019 Pauline Drive  
Shelby Township, MI 48315-3122  
t: (586) 731-3100 f: (586) 731-3582  
Chuck A. Gemayel, PE

### TOLEDO

407 Tomahawk Drive  
Maumee, OH 43537-1633  
t: (419) 897-0409 f: (419) 897-0429  
Daniel O. Roeser, PG

### TRAVERSE CITY

735 South Garfield Avenue, Ste. 120  
Traverse City, MI 49686-3471  
t: (231) 941-5200 f: (231) 941-5259  
Larry W. Shook, PE

## website

[www.sme-usa.com](http://www.sme-usa.com)

## founder

Kenneth W. Kramer, PE

## principals

**PRESIDENT**, Mark K. Kramer, PE  
Timothy H. Bedenis, PE  
Gerald M. Belian, PE  
Chuck A. Gemayel, PE  
James M. Harless, PhD, CHMM  
Larry P. Jedele, PE, D.GE

Cheryl A. Kehres-Dietrich, CGWP  
Edward S. Lindow, PE  
Gerard P. Madej, PE  
Timothy J. Mitchell, PE  
Robert C. Rabeler, PE  
Daniel O. Roeser, PG

## team members

200

## projects completed

62,000

## professional staff

Brownfield Consultants  
Environmental Scientists/Engineers  
Facility Engineers  
Forensic Engineers  
Geologists  
Geotechnical Engineers

Hydrogeologists  
LEED Accredited Professionals (AP)  
Materials Consultants  
Metals Consultants  
Pavement Engineers  
Roofing Consultants

## technical staff

Asbestos Specialists  
Certified Aggregate Inspectors  
Certified Bituminous Plant Inspectors  
Certified Masonry Inspectors  
Certified Welding Inspectors

Coating Specialists  
NICET Engineering Technicians  
Qualified Concrete Technicians  
Restoration Specialists  
Roofing and Pavement Specialists

### Engineering evaluation and design for soil, rock and groundwater conditions.

**Corrosion:** Perform and evaluate field and laboratory tests for corrosivity of buried metallic structures, and design of corrosion prevention systems.

**Dewatering:** Observe and model groundwater flow and field pump tests, and design temporary and permanent dewatering systems.

**Drilling:** Conduct soil borings, specialized sampling, in-situ testing (pressuremeter, Dutch cone, dilatometer, vane shear), observation wells, and Geoprobos.

**Earth Retention Systems:** Design of temporary and permanent earth retention systems including reinforced earth/geogrid walls, tiebacks, shoring and bracing.

**Foundation Engineering:** Design of deep and shallow foundations, including spread footings, mats, piles, caissons, micropiles, helical anchors and cast-in-place augercast piles. Develop underpinning designs. Construction services include wave equation analysis, load and integrity tests, and construction observation.

**Geodynamics/Vibrations:** Measure ambient and construction vibrations; conduct seismic, crosshole, downhole, attenuation and refraction surveys; perform Pile Driving Analysis (PDA); and evaluate existing foundations and design new foundations.

**Geophysical Surveys:** Conduct surveys, including electrical resistivity, seismic, borehole logging, EM, gravity, and ground penetrating radar.

**Geosynthetics:** Design of geosynthetic-based systems, such as reinforced earth walls, and slopes; and erosion protection for landfills, pavements, and special applications.

**Ground Improvement:** Design of special techniques to improve soil, including wick drains, surcharging, vibroflotation, deep dynamic compaction, grouting, chemical stabilization and surface compaction.

**Instrumentation:** Installation and monitoring (manual and remote) for in-situ determination of soil and rock properties and performance during construction.

**Slope Stability:** Design for stabilization of existing and proposed slopes, and design repair of failed slopes.

### Engineering evaluation of material properties, failure analyses, and design using life-cycle costs.

**Coatings:** Evaluation, selection, construction monitoring, and failure analysis for steel, concrete and wood construction.

**Concrete:** Construction monitoring, strength evaluation using destructive and nondestructive testing, flat floor measurements, corrosion, and durability evaluations.

**Construction Materials Services:** Monitor construction procedures and material properties for conformance to specifications, and total quality control/quality assurance plans.

**Energy Efficiency:** Evaluate building envelopes and mechanical/electrical systems using infrared technology for thermal anomalies. Develop predictive and preventative maintenance strategies.

**Facility Asset Management:** Evaluation of building components/systems and design of maintenance management programs.

**Forensic Engineering:** Expert witnesses who develop alternative dispute resolution strategies by researching facts, explaining complex technical issues, and conveying expert opinions involving issues in the built environment.

**Masonry/Stone:** Construction monitoring, material evaluation, and full scale testing.

**Metals:** Failure analysis, material characterization, and welding and jointing design.

**Pavements:** Evaluation of existing pavements and subgrade conditions, including use of falling weight deflectometer (FWD) and other specialized equipment. Pavement design, plans and specifications, construction monitoring, and maintenance management programs for concrete, asphalt and porous pavements.

**Restoration:** Condition assessment, and development of building and infrastructure improvements, including historic materials and structures.

**Roofs:** Evaluation of existing roofs including use of infrared technology, design of rehabilitation systems, green roof design, construction monitoring, and roof maintenance management programs.

**Sealants/Waterproofing:** Design and evaluation of moisture management systems for new construction and building restoration.

**Structural Steel:** Shop and site monitoring including bolted and welded connections, coatings, shear studs, use of ultrasonic, radiographic magnetic particle, and nondestructive testing.

### Environmental assessment, contamination evaluation, remediation, regulatory compliance and brownfield redevelopment.

**Acquisition Due Diligence:** Phase I/II ESAs, environmental impact assessments, state-specific environmental evaluations and management, compliance evaluations, regulatory/financial risk evaluation and quantitation, and safe use evaluation and planning.

**Air Quality:** Emission inventories, source sampling, screening models and permits.

**Geothermal:** Evaluation of geology to assess cost-effective geothermal systems.

**Hazardous Materials:** Assessment of asbestos, lead, PCBs, mercury and other hazardous materials; preparation of abatement specifications; and project monitoring.

**Brownfield Redevelopment:** Acquisition of brownfield incentives (grants, loans, TIF, tax credits), management of brownfield redevelopment programs and grants, environmental due diligence, assessment and planning for safe use, development-coordinated cleanups, and engineering and institutional controls. Work with design team to minimize site unknowns and reduce earthwork costs.

**Contaminate Site Assessment and Remediation:** Remedial/facility investigations, cleanup criteria and feasibility, groundwater modeling, vapor intrusion assessment, remedial action planning, remediation design and implementation, state voluntary cleanup programs, RCRA Corrective Action, UST assessments and closures, and remediation monitoring.

**Hydrogeologic Studies:** Evaluation of geologic conditions, aquifer flow characterization, groundwater quality, geothermal evaluation, and well field studies.

**Industrial Hygiene/Indoor Air Quality:** Exposure assessments, air quality testing, forensic studies, and health and safety programs.

**Landfills:** Site evaluation, monitoring programs, leachate containment, stabilization of excavations and construction slopes, and remediation systems.

**Regulatory Compliance:** Compliance reviews, compliance programs, pollution/spill prevention and contingency plans, TRI reporting, and environmental and natural resources permitting.

**Storm Water Management:** Conceptual plans, sampling programs, sustainable management planning and engineering, permitting, and certified operator monitoring at construction and industrial sites.

**USTs:** Manage removal of USTs, closure of UST systems, release assessments and implementation of Risk-Based Corrective Action (RBCA).