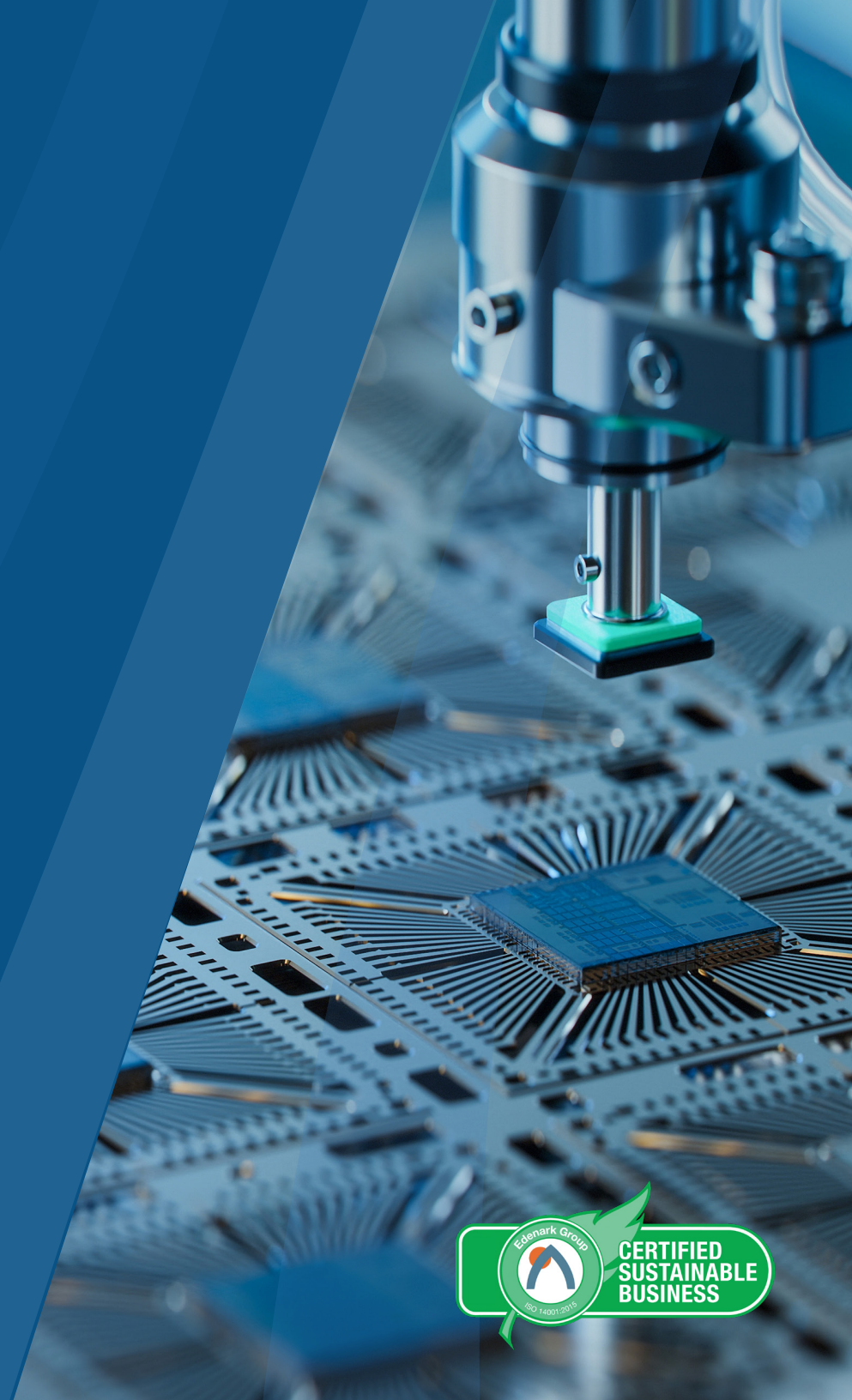
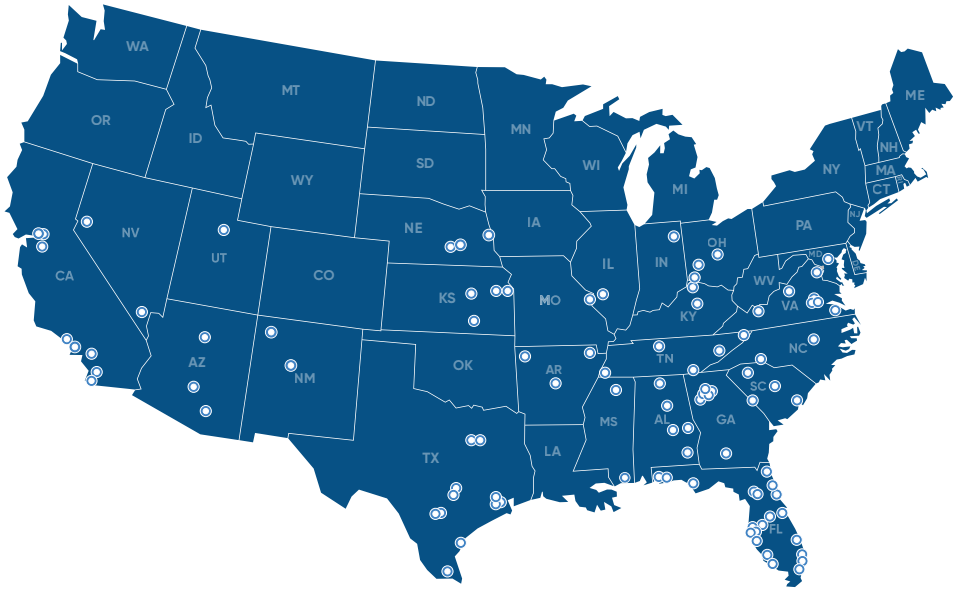
UES™

ADVANCED MANUFACTURING CONSTRUCTION APPLICATIONS

SUPPORTING THE ENTIRE LIFE CYCLE OF CONSTRUCTION



Grounded in Excellence | TeamUES.com



100+ Locations

145+ Drill Rigs

4,000+ Team Members

ABOUT UES

At UES, we provide personalized engineering, environmental, testing, and inspection services for advanced manufacturing projects across the United States. Our engineers are experts in their fields and have extensive experience providing guidance and solutions to overcome any construction challenge while delivering exceptional customer service.

UES is licensed in 48 states, and our nationwide network of more than 4,000 professionals and 80 laboratories allows us to navigate even the most complex manufacturing and assembly facility projects.

Let UES serve as your trusted partner as we work together to build a more sustainable future.

Environmental Consulting

Geotechnical Engineering

Construction Materials Testing

Building Services

Geophysical Technologies (VDC)

Ground up or additions, advanced manufacturing facilities often include equipment with significant structural requirements. Facility delivery dates are often critical and explicit. The UES approach of embracing and solving project challenges facilitates project delivery at the geotechnical engineering, environmental, and construction materials testing stages.

At UES, we understand the intricacies of the advanced manufacturing landscape, and reflect our commitment to excellence in every project we undertake. From factories to distribution centers, our diverse portfolio showcases our ability to support projects of any size, scope, or timeline.

KEEPING YOUR PROJECT ON SCHEDULE

Adjusting means and methods to mitigate schedule delays due to weather/seasons

Responsiveness and seamless communication throughout your project

Fleet of 145+ drill rigs to control our destiny on scheduling

ENVIRONMENTAL CONSULTING & PERMITTING

- Due Diligence and Site Selection Services
- Permitting and Compliance
- Environmental Drilling
- Phase I & II Environmental Site Assessments
- Threatened and Endangered Species Review
- Wetlands Delineation/Mitigation
- Historic Properties/Archaeological Resources Review
- NEPA/CEQA
- Water/Wastewater Monitoring and Treatment Planning
- Storm Water Pollution and Prevention Plans (BMPs and NPDES)
- IAQ: Asbestos, Mold, Radon and VeriDart Assessments
- Environmental Health and Safety Training
- Thermal and Electrical Resistivity Testing
- Air Corrosivity Testing
- Title V

GEOPHYSICAL & GEOSPATIAL TECHNOLOGIES

- Subsurface Information Modeling (SIM)
- Subsurface Utility Engineering (SUE)
- Sinkhole, Depth-to-bedrock
- Building Information Modeling (BIM)
- Digital Twin Preparation
- Scan-to-BIM Utilizing Mobile LiDAR
- GIS, CAD, Civil 3D, ORD, or Revit Software
- Terrain Mapping and Modeling
- Geohazard Mapping and Monitoring
- Locating Underground Features like Sinkholes and Storage Tanks
- Existing Condition Assessments
- Virtual Dimensioning to Reduce Site Visits

GEOTECHNICAL SERVICES

- Geotechnical Field Exploration, Testing, Evaluation, and Design
- Peer Review of Existing Reports and Analysis
- Remediation Planning
- Finite Element (FE) Analysis for Foundation Optimization
- Pre-check Permitting, Fiber, Power and Water Supply
- Shallow Foundation Design and Crane Pad Design
- Slope Stability Analysis
- Retaining Structures Design
- Deep Foundation Design
- Structural Engineering of Deep Foundations and Pile Caps
- Ground Improvement Recommendations
- Rock Coring/Lab Testing – Unconfined Compression, Rock Quality Designation
- Load Testing
- Infiltration Testing

DEEP FOUNDATION DESIGN

- Full Foundation Design
- Seismic Analysis
- Vibration Analysis
- Thermal integrity of Drilled Shafts
- Pile Integrity
- Load testing and Instrumentation

MATERIALS TESTING (FIELD & LABORATORY)

- Soils and Density Testing
- Concrete and Resistivity Testing
- Aggregates Testing
- Morter, Group and Asphalt Testing
- Flat Plate Dilatometer (DMT) GEO
- Pressuremeter Testing (PMT) GEO
- Vane Shear Testing (VST)
- Seismic Cone Penetration Testing (SCPTU)

SPECIAL INSPECTIONS & CODE COMPLIANCE

- Footing and Foundations
- Structural Reinforced Concrete
- Tilt-up Concrete Inspection and Testing
- Structural Steel – Certified Welding Inspections
- Structural Steel – Bolt Torque Testing and Bolted Connection Inspections
- Non-Destructive Evaluations – Level II Ultrasonic Testing, Magnetic Particle, and Dye Penetrant Testing
- Structural Reinforced Masonry Inspections
- Retaining Walls
- Fire Stopping Inspections
- Spray Applied Fireproofing Testing
- Private Provider Plan Review and Inspections
- Threshold Inspections

BUILDING ENVELOPE INSPECTIONS

- Facade Inspections
- Cladding and Exterior Walls
- Water Infiltration Testing
- Window, Door and Balcony Inspections
- Roof Inspections
- Water Proofing Inspections
- Firewall/Fire Stop Assembly Inspections
- Air Leaks/Drafts Analysis
- Thermal Imaging Inspections and Drones Capable of Thermal Survey of Building

POST CONSTRUCTION TESTING

- Half Cell Testing
- Rebar Detection
- Relative Humidity of Concrete
- Concrete Coring and Compressive Strength Testing

SITE SELECTION & GROUND IMPROVEMENT

Before an advanced manufacturing facility is built, our team of geotechnical engineers:

- Assess soil and rock conditions to identify suitable sites.
- Mitigate risks from soil instability, groundwater, or seismic activity.
- Use ground improvement techniques (like deep soil mixing, compaction grouting, or vibro-compaction) to prepare stable, durable ground for large-scale automated equipment.

FOUNDATION DESIGN

Advanced manufacturing (such as semiconductor fabs, robotics facilities, 3D printing hubs or silicon chip facilities) require extremely stable and vibration-free environments.

Our team of engineers analyze and help design foundations to minimize settlement and vibrations, ensuring high-precision machines can operate correctly.

For example, semiconductor fabrication requires micrometer-level precision, so even small ground movements must be controlled.

INFRASTRUCTURE SUPPORT

Advanced manufacturing depends on robust infrastructure (such as transportation, utilities, and data centers). UES helps design and stabilize:

- High-load pavements for automated guided vehicles (AGVs) and logistics systems.
- Underground utilities for power, cooling water, and fiber networks.
- Foundations for large-scale automation equipment and high-bay warehouses.

SUSTAINABILITY & RESOURCE MANAGEMENT

- Enabling reuse of industrial byproducts (like fly ash or slag) in ground improvement and construction materials.
- Supporting geothermal energy systems and ground-source cooling for factories.
- Managing waste storage, containment, and remediation for environmentally responsible manufacturing.

QUALITY ASSURANCE

UES provides real-time verification that construction meets design specifications — critical for advanced manufacturing projects with tight schedules and high investment costs.

- Field and lab testing of concrete cylinders, asphalt, soils, aggregates, and grout.
- Nondestructive testing (NDT) (e.g., ultrasonic, radiographic, or rebound hammer tests) to confirm integrity without damaging materials.
- Continuous monitoring of curing, compaction, and temperature for process control.

UES plays a critical role in supporting the development of manufacturing and assembly projects across multiple phases of the project's life cycle.

A ENVIRONMENTAL SOLUTIONS

Our team of certified environmental experts investigate potential hazards and provide cost-saving solutions to help reduce the environmental impact of healthcare construction projects. They provide mitigation plans to ensure a clean site following regulatory requirements. Unlike competitors who may offer this service through their CMT technicians, UES' environmental staff members are licensed ecological experts in their field.

B GEOTECHNICAL EXPLORATION

UES begins by conducting site investigations to assess the subsurface conditions and determine the overall stability of the site. At this point, UES will identify any project risks and mitigate any potential settlement issues before construction begins. Our engineers also review existing site reports to make valuable recommendations and alternative design considerations.

C QUALITY CONTROL & CONSTRUCTION MATERIALS TESTING

UES offers special inspections as outlined by Chapter 17 of the International Building Code (IBC), as well as construction materials testing services through our nationwide network of 80+ laboratories. These services ensure that the project is constructed in accordance with National Standards, design documents, and IBC requirements.

D GEOPHYSICAL TECHNOLOGIES

Our geophysicists specialize in subsurface utility engineering, mapping, and information modeling (SIM), creating 3D utility models, often termed "underground BIM." These models help identify potential underground challenges. Our team, adept at locating various elements like storage tanks and bedrock, employs LiDAR (mobile laser scanning) for precise as-built models during construction. These accurate models enable virtual dimensioning, eliminating the need for field measurements. All our models, both underground and above ground, are easily accessible in the cloud and compatible with Revit or Civil 3D for seamless BIM integration.

E VIBRATION MONITORING

UES utilizes vibration analysis to monitor linear behavior of a structure or system during its operation. That is, its stress/strain response is linear and when a load is removed, the structure returns to its original position in a stress/strain free condition.

F DEEP FOUNDATIONS

UES serves in the capacity of the lead geotechnical designer, peer reviewer, load test expert, construction consultant and remedial repair designer. Our deep foundations services include:

- Drilled Shafts
- Micropiles
- Continuous Flight Auger (CFA) Piles
- Driven Piles

ADDED VALUE FOR PROJECT SUPPORT

SCHEDULE MANAGEMENT

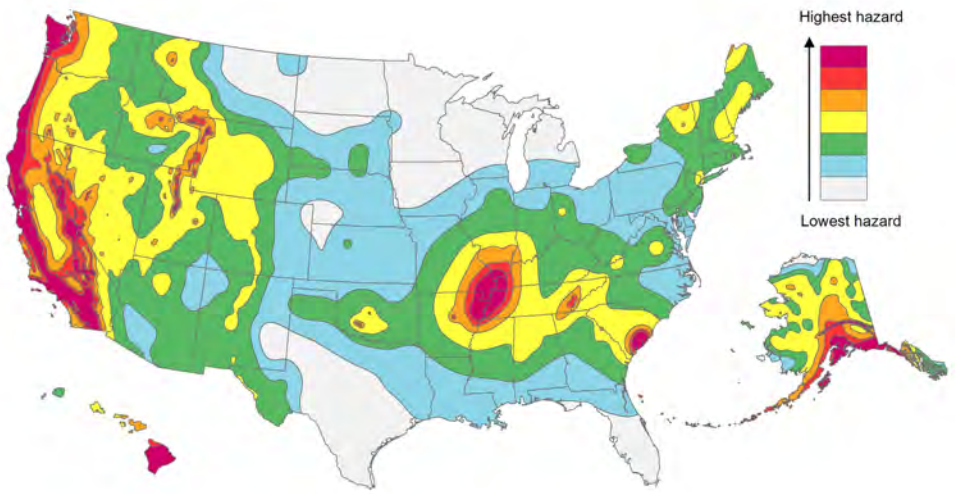
- Largest fleet of drilling rigs with 145+
- Permitting and ecological support
- Value engineering

SEISMIC ANALYSIS & DESIGN

UES offers Geotechnical Earthquake Engineering by analyzing seismic hazards, site response, and geo-hazards (e.g., liquefaction), including dynamic modeling using finite element and finite difference software.

We understand the process can be further improvised with the help of design tool APIs (Application Programming Interface) by integrating and leveraging Building Information Modeling (BIM) technology. Our engineering professionals recommend adequate vertical and lateral stiffness and strength when designing earthquake-resistant buildings.

- Seismic characterization
- Ground motions
- Liquefaction
- Lateral Spread
- Soil-Structure Interaction
- Parallel Seismic Testing

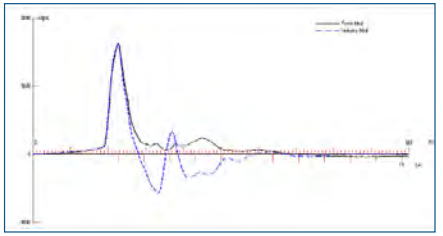


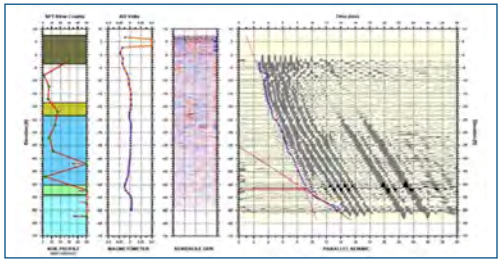
- Application of technologies like seismic (base) isolation, damping, fiber reinforced polymers, etc.
- Evaluation of existing seismic risk
- Design of seismic hazard mitigation schemes
- Development of seismic performance criteria
- Peer and plan review of earthquake resistant designs
- Nonlinear dynamic analysis
- 3D computer modeling
- Application of FEMA design guidelines
- Earthquake damage assessments and repairs

DEEP FOUNDATIONS TESTING

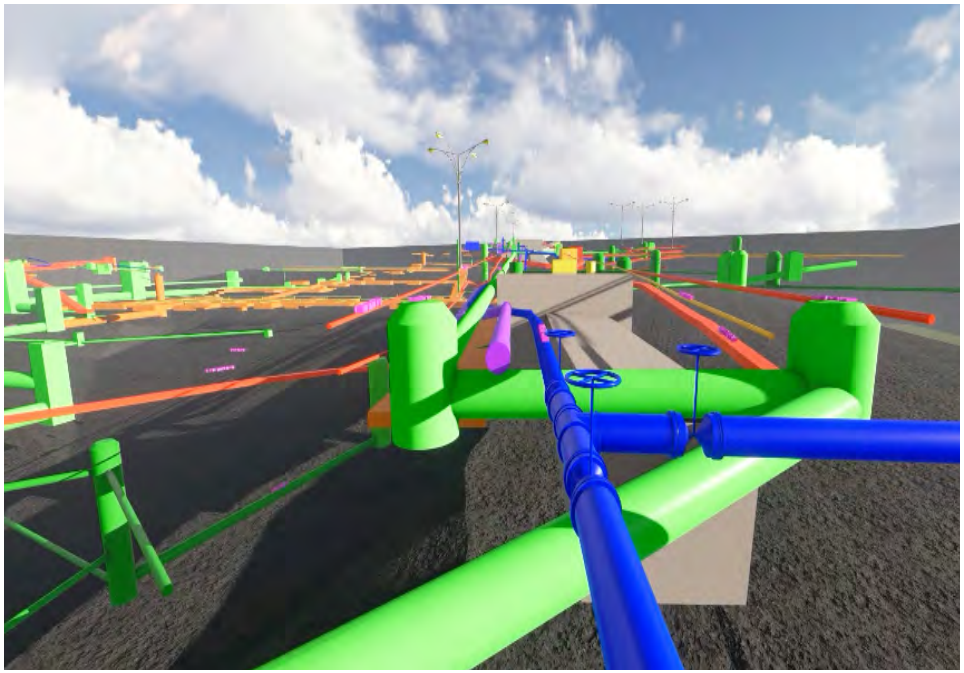
Deep foundations testing provides the key support for a wide range of bridges and other massive structures. The success of deep foundations is dependent upon a multitude of factors including but not limited to the type of pile and the type of driving equipment used to install them.

- Dynamic Pile Testing (PDA)
- Thermal Integrity Profiling (Probe and Wire)
- **E**xisting Foundation Exploration
- HSDPT Certified
- Static Load Testing
- Cross-Hole Sonic Logging (CSL)

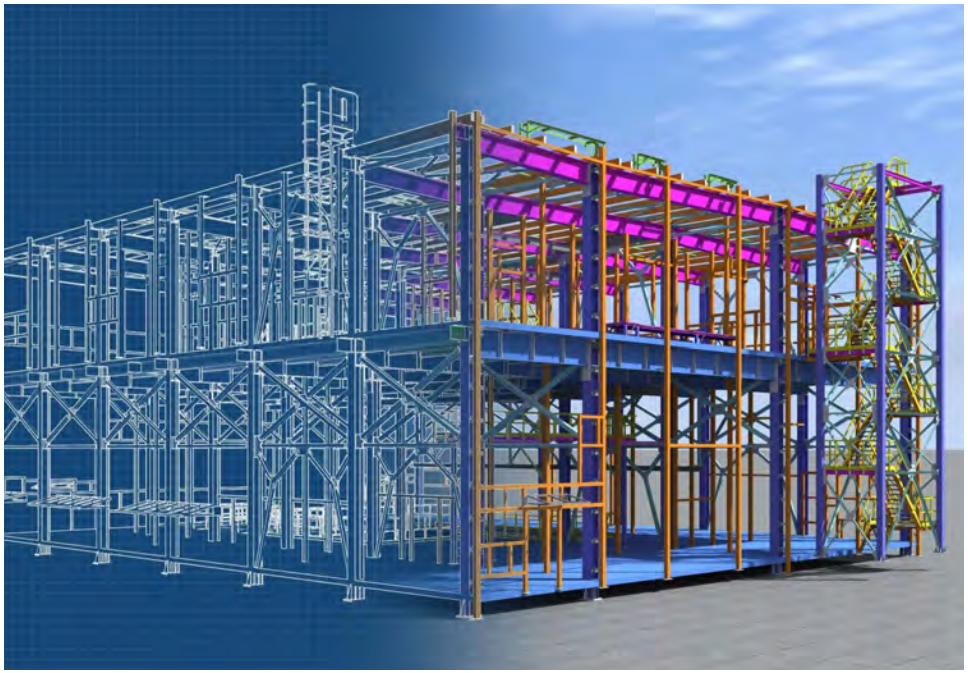




- Pulse Echo Method Testing (PEM)
- Geotechnical/Structural Instrumentation
- Inclometer Testing
- Parallel Seismic Testing
- Magnetometer Testing
- Ground Penetrating Radar



Clash Detection with a Subsurface Information Model (SIM) or "Underground BIM"



Clash Detection with a Building Information Model "BIM"

SUBSURFACE INFORMATION MODELING (SIM)

- Locate and designate buried utilities
- Find deep voids and sinkholes
- Determine depth-to-bedrock
- Evaluate karst geology conditions
- Delineate landfills and buried trash
- Resolve subsurface design clashes
- Provide underground existing condition models
- Create Civil 3D and mixed reality applications

BUILDING INFORMATION MODELING (BIM)

- Digital Twin Framework
- Reality Capture and Scan-to-BIM
- Architectural and structural conditions
- Mechanical and electrical modeling
- Virtual design and asset management
- Clash Detection Analyses
- Construction progress documentation
- Preventative maintenance planning

HYUNDAI / SK ON BATTERY CELL PLANT

Kingston, Georgia

UES provided a variety of geotechnical engineering services, construction materials testing, special inspections, and building envelope testing and inspections. The project included the construction of a large industrial manufacturing complex. The main plant buildings include an Electrode building, an Assembly building, and a Formation building. Foundations included various deep foundation and ground improvement techniques with an average of 20 foundation drilling machines operating daily.

Services Provided:

- Geotechnical Engineering
- Deep Foundations
- Construction Materials Testing
- Building Envelope
- Special Inspections

SILICON CHIP MANUFACTURING FACILTY

Confidential Client / Location

UES provided geotechnical engineering, construction materials testing and geophysical services for a confidential silicon chip manufacturing facility.

Services Provided:

- Geotechnical Engineering
- Geophysical Technologies
- Utility Locating
- Construction Materials Testing
- Special Inspections

DAIKIN MANUFACTURING FACILITY

Waller, Texas

UES provided geotechnical engineering and construction materials testing services for Daikin's $410MM manufacturing facility. The project features a 4 million SF tilt wall building. Due to an aggressive completion schedule, various phases of the work were performed concurrently. This required UES to monitor work being performed by multiple drilling, utility, and concrete contractors across the site. Over the course of the construction operations, UES maintained a field inspection staff of up to eight (8) individuals covering a 7-day per week work schedule.

Services Provided:

- Geotechnical Engineering
- Construction Materials Testing

PANASONIC LITHIUM-ION BATTERY MANUFACTURING

Reno, Nevada

UES provides air quality consulting service to Panasonic for their lithium-ion battery manufacturing operations at the Tesla Gigafactory Nevada. UES has been responsible for preparing and maintaining Panasonic's air quality operating permit and also provides compliance and air source testing support and coordination. UES has developed an intimate understanding of the lithium-ion battery manufacturing process and the associated regulatory and permitting framework and environment, which can be complex.

Services Provided:

- Environmental Consulting
- Building Envelope
- Air Quality Consulting

CHLORUM SOLUTIONS PLANT

Casa Grande, Arizona

Chlorum Solutions USA is building its first U.S. chlor-alkali plant in Casa Grande, Arizona, with operations expected to begin in Q1 2027. The $70 million facility will produce essential chemicals like sodium hypochlorite (bleach), hydrochloric acid, and caustic soda directly from salt, using state-of-the-art membrane technology. This project is designed to enhance local supply chains, reduce reliance on long-distance chlorine transport, and improve safety by eliminating the need to ship chlorine gas, a known inhalation hazard, across long distances.

Services Provided:
- Geotechnical Engineering
- Construction Materials Testing
- Special Inspections

THE CUBES AT MESA GETAWAY

Mesa, Arizona

The Cubes at Mesa Gateway will be the largest development-ready industrial park in the Southeast Valley. The project brings up to 4 million square feet of speculative and build-to-suit space to a 268-acre site in Mesa. The Cubes is the largest master-planned, development-ready industrial park delivered in this hyper-growth submarket of Phoenix, which is expected to add more than 120,000 residents by 2025. UES provided testing and inspection services for a 1,200,000 SF building tenant improvement.

Services Provided:
- Construction Materials Testing
- Special Inspections

TEXAS INSTRUMENTS

Richardson, Texas

UES has provided geotechnical engineering and construction materials testing services for 30+ projects for Texas Instruments in the past 20 years, serving TI both directly and through TI's chosen design and construction teams.

Major Projects Included:
- RFAB Administration Building Buildout
- CUP Cooling Tower
- RFAB Sulfuric Acid Tank
- RFAB Facility
- DMOSS 5
- Fitness Facility Renovations
- D.A. Tank Project
- Aircraft Hangar
- Infrastructure/parking renovations
- Site Retaining Walls
- LN2 Tank Re-Location
- DSB Chiller Upgrade

NESTLE DYNASTY FACTORY

Waddell, Arizona

Nestlé's operations in the Waddell/Glendale area represent a substantial and technologically advanced footprint in the food and beverage industry, particularly in the production of coffee creamers. Nestlé's presence in Waddell, Arizona is centered on its Coffee Mate Factory/ Distribution Center, which operates 24 hours a day. The industrial beverage plant with production and warehouse building, silos, tanks, railroad spur, and auto and truck parking, is located on 62.5 acres of former farmland.

Services Provided:
- Geotechnical Engineering
- Construction Materials Testing

THE RIGHT TEAMS

Every manufacturing construction project is unique, and we strategically assemble the right team for each one by leveraging our network of nearly 4,000 experienced professionals nationwide. Our experienced field supervisors mentor, guide, and provide additional project oversight, and our engineers offer expert solutions for any issues that develop during construction.

THE RIGHT TOOLS

For each project we utilize a comprehensive cost accounting system and a scheduling and field report software to accurately assess, track, and report on project progress, budget, and completion. Each of our field technicians, engineers, project managers, and administration team has access to data input from the field immediately. This project management system ensures we consistently oversee project updates and team members.

THE RIGHT PROCESS

We conduct a kick-off meeting to outline project tasks, schedules, and requirements. This facilitates a shared understanding of client goals, service scope, equipment needs, reporting processes, and regulatory mandates. Following the meeting, we formulate project-specific approaches to define the work scope and schedule. The project team inputs details into our project management system, ensuring resource availability for the task at hand.

ACCREDITED LABORATORIES

UES manages a network of construction materials testing laboratories, many of which are accredited by leading organizations, including the AASHTO Accreditation Program (AAP), CMEC, A2LA, USACE, and others. To confirm a laboratory's accreditation status, clients should request a current accreditation certificate directly from the specific laboratory.

To find a UES laboratory near you, visit www.teamues.com/locations

COMMITMENT TO PROVIDING SOLUTIONS

UES brings a wealth of knowledge and expertise to every project, with professionals who are not just problem identifiers but problem solvers. Each project undergoes a careful review by seasoned experts, ensuring quality work that meets or exceeds industry standards and regulations.

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UES™

Learn more at **TeamUES.com**