

Complete capabilities for advanced facility construction

ABM's integrated expertise—in protocol management, cleaning, HVAC and mechanical, electrical, and battery energy storage systems—delivered nationwide under one contract.



Multiple disciplines, one contract

Stop losing time and opportunity to piecemeal solutions. ABM provides contractors with integrated expertise across five core scopes, handled in-house and delivered nationwide:

- 1

Construction Coordination
- 2

Construction and Controlled Environment Cleaning
- 3

HVAC and Mechanical Systems
- 4

Electrical Distribution Systems
- 5

Battery Energy Storage Systems (BESS)

Keep critical-path work on the fast track



FULL-CYCLE DELIVERY

Design-assist, installation, testing, and turnover (plus maintenance)



NETA CERTIFIED TECHNICIANS

Highly qualified to test and validate electrical power systems safely and correctly



24/7 AVAILABILITY

Nationwide emergency response and on-demand project support



NATIONAL REACH

Supporting every major U.S. manufacturing and energy market



SAFETY LEADERSHIP

Zero-incident culture maintained through continuous training



RAPID MOBILIZATION

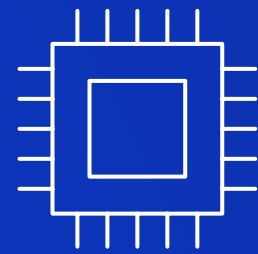
A repeatable mobilization framework built to launch complex, multi-site facilities without loss of continuity, safety, or performance

Large-scale construction projects across many industries

With essential trades under one roof, every phase of your build contains less risk, more control, and fewer surprises.



DATA CENTERS



SEMICONDUCTOR



**AUTOMOTIVE &
MANUFACTURING**



LIFE SCIENCES



FOOD & BEVERAGE



**WAREHOUSING &
DISTRIBUTION**

Delivering better outcomes in construction

ABM has over 1,000 skilled tradespeople deployed across five of the nation's most advanced manufacturing facilities. From reshored production lines to clean energy infrastructure, we're building the next generation of American industry.

CURRENT PROJECT FOOTPRINT

**MICROPROCESSOR
PRODUCTION COMPLEX**
(Northwest U.S.)
200 full-time equivalents

ADVANCED SEMICONDUCTOR FACILITY
(Southwest U.S.)
400 full-time equivalents

**SPECIALTY
MATERIALS PLANT**
(Mid-Atlantic U.S.)
140 full-time equivalents

**HIGH-TECH
MANUFACTURING CAMPUS**
(Central U.S.)
400 full-time equivalents

ELECTRONICS FABRICATION SITE
(South U.S.)
350 full-time equivalents





Built for the complexity ahead

1

No more chasing down answers

ABM consolidates multiple scopes under a single contract, streamlining communication and providing one source of accountability. This reduces coordination risks and administrative overhead.

RESULT: Faster project delivery with clearer alignment across trades and simplified vendor management

2

Leverage our network of certified technicians

ABM performs every inspection, test, and corrective action to the requirements governing system acceptance and energization. From NETA certified testing of electrical systems and ISO 14644-1 cleanrooms to NFPA/UL energy storage and IEEE arc-flash studies, our experts deliver work that meets inspection criteria the first time.

RESULT: First-pass acceptance, fewer inspection cycles, and safer field execution

3

Early coordination that protects your critical path

Design-assist teams embed during preconstruction to resolve constructability issues before they hit the schedule. On-site crews coordinate continuously to prevent trade conflicts, and comprehensive turnover packages ensure seamless handover.

RESULT: Fewer surprises, smoother transitions, and projects ready to operate on day one

1 | Construction Coordination

Fewer stakeholder conflicts, faster closeout

Large-scale projects move fast, and gaps between trades can cause costly delays. ABM’s coordination team manages schedules, dependencies, and handoffs from early construction through commissioning.

OUTCOME: Projects stay on schedule and close out clean without last-minute issues.

WHAT WE DELIVER

BASEBUILD AND TOOL INSTALL COORDINATION

We manage building construction and equipment installation phases, ensuring smooth handoffs from structural completion to production startup.

SUBCONTRACTOR MANAGEMENT AND LIAISON SERVICES

We coordinate specialty contractors on-site, resolve scheduling conflicts, and sequence work to keep the project moving.

MULTI-PARTY COMMUNICATION AND ALIGNMENT

Structured protocols keep prime contractors, equipment vendors, owners, and ABM teams aligned throughout every phase.

SCHEDULE COORDINATION AND MILESTONE TRACKING

We track critical path activities, monitor progress against milestones, and align our deployments with your project timeline.





2 | Construction and Controlled Environment Cleaning

Phased cleaning: The fast route to turnover

Controlled facilities demand cleaning that follows construction milestones and supports final validation. ABM executes progressive cleans from early rough-in through final particle count verification.

OUTCOME: Production-ready spaces that certify on schedule and go live faster.

WHAT WE DELIVER

Progressive Construction Cleans

STONE-BASED CLEANING SCHEDULES

Phased cleaning aligned with construction milestones, moving each area from debris removal through intermediate cleaning to certification readiness.

COARSE TO INTERMEDIATE CLEANING PHASES

Structured progression that reduces contamination levels as construction advances toward completion.

HEPA VACUUM AND AREA-SPECIFIC WIPE-DOWNS

Zone-by-zone cleaning using HEPA-filtered equipment to prevent particle redistribution.

PRE-CERTIFICATION READINESS CHECKS

Verification that areas meet baseline contamination levels before formal certification testing.

FINAL SUPER CLEAN PRE-TOOL-IN CLEAN REPORTS

Documentation confirming spaces are ready for equipment installation without contamination risk.

Cleanroom Certification (As-Built/At-Rest/Operational/Super Clean)

TEST MATRIX DEVELOPMENT AND SAMPLING LOCATION PLANNING

Test protocols designed to meet ISO 14644-1 requirements while optimizing efficiency.

PARTICLE COUNT EXECUTION AND AIRFLOW TESTING

Measurement of airborne particle concentrations and airflow using calibrated instruments to verify ISO classification.

PRESSURE CASCADE AND RECOVERY TIME VALIDATION

Verification that pressure differentials maintain contamination control and cleanrooms recover to specification after disruptions.

FULL CERTIFICATION PACKAGE DELIVERY

Complete documentation including test results, calibrations, sampling locations, and compliance statements.

Protocol Cleaning During Tool Move-In/Ramp

FREQUENCY AND ZONE PLANNING

Ongoing cleaning protocols matched to production ramp schedules and contamination risk levels.

RAMP SCHEDULE EXECUTION

Cleaning teams coordinated with tool installation timelines to maintain contamination control during startup.

SPOT AUDITS AND CORRECTIVE ACTIONS

Ongoing verification through particle monitoring and visual inspection, with immediate corrective action when needed.

STANDING PROTOCOL DEVELOPMENT FOR OPERATIONS TEAMS

Documented procedures that transition smoothly from construction cleaning to ongoing facility operations.

Standards: ISO 14644-1; ISO 14644-3

3 | HVAC and Mechanical

Precision-built environmental control

Environmental stability determines whether a facility meets spec or falls short. ABM designs, installs, and tests HVAC and mechanical systems that maintain tight control over temperature, pressure, and airflow.

OUTCOME: Systems that certify on schedule and keep tools performing to plan.



WHAT WE DELIVER

Airflow Zoning and Pressurization Cascade

BASIS OF DESIGN (BoD) DEVELOPMENT

Collaborative development of environmental control parameters during design, ensuring HVAC specifications align with cleanroom classification and process needs.

RELATIVE HUMIDITY AND TEMPERATURE SPECIFICATION

Definition and validation of environmental setpoints that meet cleanroom standards and manufacturing process requirements.

TEST, ADJUST, AND BALANCE (TAB) SERVICES

Measurement and adjustment of airflow throughout facility zones, documenting that performance matches design intent.

BAY/CHASE PRESSURE DIFFERENTIAL (ΔP) CALIBRATION

Precision tuning of pressure relationships between cleanroom zones and service chases to prevent contamination migration.

MAU/AHU/FFU INSTALLATION AND CONFIGURATION

Installation and startup of Make-Up Air Units, Air Handling Units, and Fan Filter Units that deliver required airflow volumes and filtration performance.

FINAL TAB REPORTING AND TRENDING BASELINES

Documentation of balanced system performance and baseline data for ongoing system monitoring.

Filtration and Humidity/ Dew-Point Control

MULTI-STAGE FILTER SELECTION (PRE/MERV/HEPA/ULPA)

Engineering specification of filtration trains that progressively remove contaminants from outside air to cleanroom-grade quality.

CLEAN STEAM AND DESICCANT SYSTEM DESIGN

Selection and integration of humidification and dehumidification systems appropriate for cleanroom environments.

HUMIDIFIER AND DEHUMIDIFIER INSTALLATION

Installation of humidity control equipment sized to maintain stable dew-point conditions required for cleanroom certification and process equipment.

FILTER PRESSURE DIFFERENTIAL VERIFICATION

Measurement of pressure drop across filter stages, confirming proper installation and establishing baseline readings for maintenance programs.

PREVENTIVE MAINTENANCE PLANNING AND SPARES MANAGEMENT

Filter replacement schedules and spares inventory recommendations that prevent system degradation.

Controls/Building Management System (BMS) and Monitoring

POINTS LIST DEVELOPMENT AND SEQUENCE PROGRAMMING

Definition of control system architecture including sensor locations, alarm setpoints, and control sequences.

SENSOR INSTALLATION AND EMS/BMS INTEGRATION

Installation of temperature, humidity, pressure, and airflow sensors integrated with facility management systems.

FUNCTIONAL PERFORMANCE TESTING

Validation that control sequences execute as designed and that alarms activate at proper setpoints.

TREND FILE ANALYSIS AND FINAL SEQUENCE DOCUMENTATION

Review of system performance data over time to verify stability, with complete documentation of control sequences.

Commissioning (Cx) Support

Cx PLAN DEVELOPMENT

Creation of commissioning protocols that define acceptance criteria, testing procedures, and documentation requirements.

PRE-FUNCTIONAL CHECKLISTS AND EXECUTION

Verification that all equipment is properly installed and ready for functional testing before energization.

FUNCTIONAL TESTING AND ISSUE RESOLUTION

Execution of performance tests with rapid troubleshooting and correction of deficiencies.

FINAL Cx REPORT AND TRAINING COMPLETION

Delivery of commissioning documentation and hands-on training for facility operations teams.

Standards: ASHRAE Clean Spaces guidance; ISO 14644 acceptance alignment

4 | Electrical Distribution Systems

Certified reliability from start to finish

Reliable power distribution is the foundation of every advanced facility. ABM’s NETA-certified teams handle everything from utility interface to final testing, ensuring every system performs safely and consistently.

OUTCOME: Power infrastructure that passes inspection and protects operations against downtime.

WHAT WE DELIVER

Utility Interface and Substation

ONE-LINE DIAGRAM DEVELOPMENT AND UTILITY COORDINATION

Collaborative engineering with utilities and design teams to develop single-line diagrams that define system architecture and protection coordination.

SWITCHGEAR, TRANSFORMER, AND BUS DUCT INSTALLATION

Installation and startup of electrical equipment that steps down utility power to distribution voltages.

GROUNDING GRID IMPLEMENTATION

Design and installation of facility-wide grounding systems that provide personnel safety and equipment protection.

PRIMARY/SECONDARY INJECTION TESTING

NETA-certified testing of protective relays and circuit breakers, verifying that protection schemes operate correctly.

AS-BUILT DOCUMENTATION AND RELAY SETTINGS

Complete documentation including final one-line diagrams, equipment data, relay settings files, and test reports.



Protection and Controls

PROTECTION STUDY AND RELAY LOGIC DESIGN

Engineering analysis and relay programming that ensures protective devices coordinate properly and isolate only faulted equipment.

HMI/SCADA INTEGRATION

Integration of electrical distribution monitoring with facility management systems for centralized visibility and remote operation.

FUNCTIONAL TRIP TESTING AND ATS FAILOVER VALIDATION

Testing of protective relay trip functions and automatic transfer switch operations to confirm backup power activation during utility interruptions.

SETTINGS DATABASE AND O&M PROCEDURE DOCUMENTATION

Complete relay settings databases and O&M procedures that enable facility teams to maintain protection integrity.

Power Quality and Reliability

METERING PLAN AND HARMONIC MITIGATION STRATEGY

Strategic placement of power quality monitoring equipment and design of harmonic filtering to protect sensitive manufacturing equipment.

POWER QUALITY METER AND TRANSIENT RECORDER INSTALLATION

Installation of monitoring equipment that tracks voltage quality, frequency stability, and transient events.

BASELINE POWER QUALITY SURVEYS

Measurement and documentation of electrical system performance under normal operating conditions.

ONGOING MONITORING SOP DEVELOPMENT

Standard operating procedures for continuous power quality monitoring, defining alarm thresholds and response protocols.

Studies and Labeling

SHORT-CIRCUIT AND COORDINATION STUDIES

Engineering analysis calculating available fault current and verifying that protective devices are properly sized and coordinated.

ARC-FLASH HAZARD ANALYSIS AND MODELING

IEEE 1584-compliant calculation of arc-flash incident energy levels, determining PPE requirements per NFPA 70E standards.

COMPREHENSIVE DEVICE LABELING

Application of durable labels to electrical panels, switchgear, and circuit breakers identifying equipment ratings and arc-flash hazard levels.

FINAL STUDY FILES AND LABEL REGISTER DELIVERY

Complete engineering study documentation that satisfies OSHA, NFPA 70E, and facility safety requirements.

Medium-Voltage Cabling, Terminations, and Testing

CABLE SPECIFICATION AND ROUTING DESIGN

Engineering support for medium-voltage cable selection, routing optimization, and installation methods.

PULL, SPLICE, AND TERMINATION SERVICES

Skilled installation of medium-voltage cables with proper bending radius control and factory-quality splicing and termination.

VLF/HIGH-POTENTIAL TESTING

NETA-certified very low frequency (VLF) or high-potential (hipot) dielectric testing of medium-voltage cables after installation.

SHEATH INTEGRITY VERIFICATION

Testing of cable sheath continuity and grounding connections to ensure proper cable protection and personnel safety.

TEST CERTIFICATE DOCUMENTATION

Complete test certificates with equipment calibration records, test parameters, and acceptance criteria.

Standards: NFPA 70 (NEC); NEC Articles 490/495; IEEE 1584 (arc-flash); NFPA 70E (safe work); NETA and NERC Certified



5 | Battery Energy Storage Systems (BESS)

Reliable energy on demand

Battery storage strengthens facility resilience with backup power, peak demand control, and grid flexibility. ABM manages site design, safety integration, and commissioning in full compliance with code and standards.

OUTCOME: Energy storage systems that meet inspection, operate safely, and deliver reliable uptime from day one.

WHAT WE DELIVER

Feasibility and Interconnection

USE-CASE MODELING AND UTILITY INTERCONNECTION STUDIES

Engineering analysis of BESS applications including backup power, peak shaving, and demand charge reduction, with coordination studies ensuring safe interconnection.

MICROGRID MODE ANALYSIS

Evaluation of facility capability to operate independently from utility power using BESS and on-site generation.

STUDY DOCUMENTATION FOR PERMITTING

Study reports formatted for submission to utilities, authorities having jurisdiction, and permitting agencies.

Code Compliance and Permitting

SITING, SEPARATION, AND VENTILATION DESIGN

Application of NFPA 855 requirements for BESS location, separation distances, and ventilation system design.

FOUNDATION AND CONTAINER INSTALLATION

Installation of structural foundations sized for BESS equipment loads and seismic requirements, with placement of containers or cabinet assemblies.

AHJ-WITNESSED TESTING

Coordination and execution of commissioning tests witnessed by the authority having jurisdiction.

EMERGENCY RESPONSE PLAN DEVELOPMENT

Creation of facility-specific emergency response procedures coordinated with EHS teams and local fire departments.

Equipment and Integration

UL 9540 CERTIFIED SYSTEM SELECTION

Specification and procurement of battery energy storage systems holding UL 9540 certification.

PCS/INVERTER AND MV TRANSFORMER INTEGRATION

Installation and commissioning of Power Conversion Systems that interface battery DC power with facility AC distribution.

DC/AC CABLING AND EMS/SCADA CONNECTION

Installation of DC cabling between battery modules and inverters, AC cabling to facility distribution, plus EMS and SCADA integration.

FUNCTIONAL TESTING AND CHARGE/DISCHARGE VALIDATION

Verification of BESS operational modes including charging, discharging, and power quality performance during transitions.

Fire/Life Safety

VENTILATION AND GAS DETECTION SYSTEM DESIGN

Engineering and installation of continuous ventilation systems and gas detection sensors that monitor for hydrogen, carbon monoxide, and other off-gassing products.

ALARM SEQUENCE AND SHUTDOWN TESTING

Validation of integrated alarm and emergency shutdown sequences triggered by gas detection.

EHS AND FIRE DEPARTMENT TRAINING COORDINATION

Hands-on training for facility EHS teams and local fire departments covering BESS hazards and emergency response procedures.

Protection/Controls and Cybersecurity

RELAY SCHEME AND ANTI-ISLANDING DESIGN

Implementation of protective relay schemes that disconnect BESS during fault conditions, with anti-islanding functions preventing unsafe back-feed.

NETWORK HARDENING AND ZONING IMPLEMENTATION

Configuration of BESS control networks with cybersecurity best practices including network segmentation, firewall implementation, and access control.

END-TO-END INTERLOCK VALIDATION

Testing of safety interlocks that coordinate between BESS controls, fire suppression, ventilation, and emergency shutdown devices.

Commissioning and Performance

FACTORY AND SITE ACCEPTANCE TESTING (FAT/SAT)

Verification of BESS performance at the manufacturer’s facility and after installation.

CAPACITY AND ROUND-TRIP EFFICIENCY TESTING

Measurement of actual energy storage capacity and round-trip efficiency through controlled charge/discharge cycles.

PERFORMANCE CURVE DOCUMENTATION

Creation of performance documentation including charge/discharge curves, efficiency measurements, and thermal performance data.

WARRANTY ACTIVATION SUPPORT

Coordination of warranty registration and compilation of commissioning documentation required by equipment manufacturers.

Standards: NFPA 855; UL 9540; UL 9540A



CLIENT SUCCESS STORIES

Major US semiconductor manufacturing facility achieved zero safety incidents

CHALLENGE

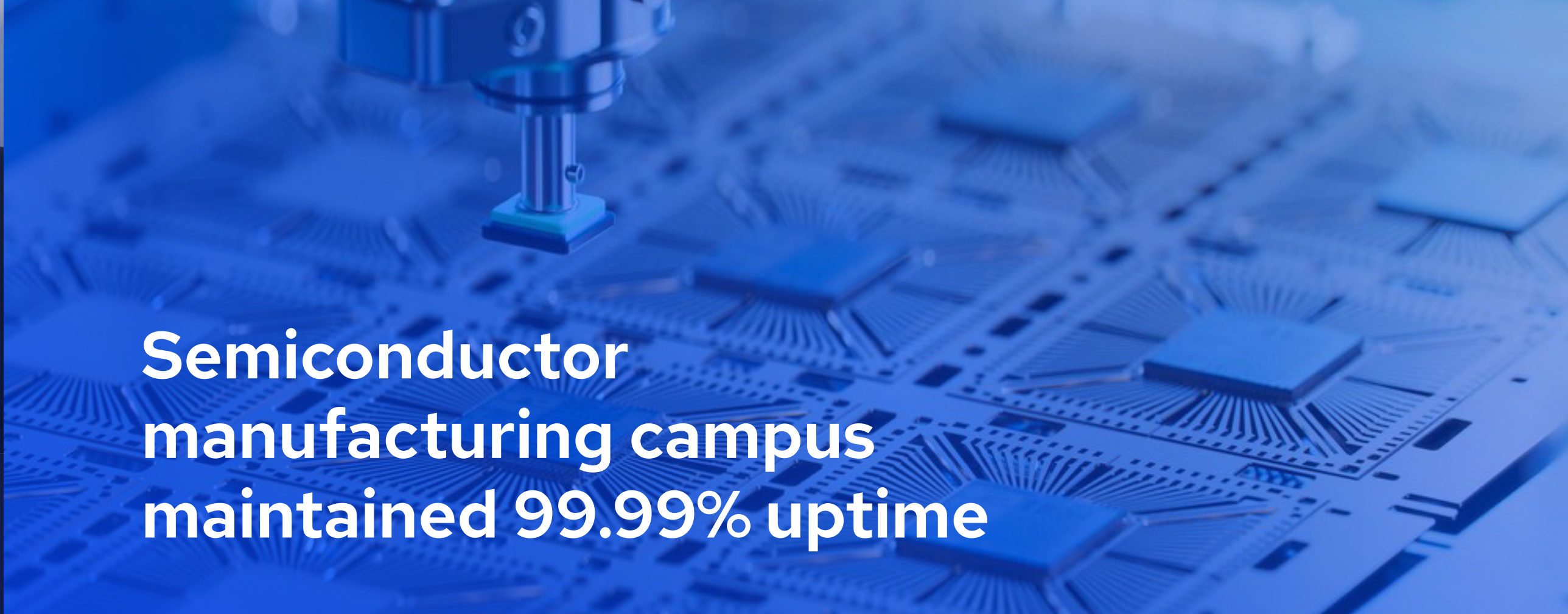
A leading contractor required comprehensive final construction cleaning for a 6 million square foot semiconductor fab involving multiple ongoing phases, stringent safety protocols, and coordination during plant startup.

SOLUTION

ABM deployed over 300 construction cleaners under a direct contract with the client. Services covered final deep cleaning across multiple zones, including fabrication, utility, and control areas. ABM also handled electrical room cleaning, waste disposal, logistics, and maintenance support.

OUTCOME

The project achieved zero safety incidents and earned commendations for responsiveness and quality. ABM's performance secured follow-on contracts without competition, underscoring confidence in our integrated, self-performed delivery model.



Semiconductor manufacturing campus maintained 99.99% uptime

CHALLENGE

A leading semiconductor manufacturer needed to reduce facility costs and improve operational efficiency across multiple sites while maintaining uptime, compliance, and sustainability performance. Managing complex cleanroom, data, and office environments internally was pulling resources from core innovation and production goals.

SOLUTION

ABM provided an integrated facility program covering engineering, mechanical, electrical, cleanroom, janitorial, and building automation services across more than 5 million square feet. The on-site team managed day-to-day operations, implemented predictive maintenance, and standardized systems through automated dashboards and benchmarking tools to unify best practices across all sites.

OUTCOME

The manufacturer achieved year-over-year cost savings despite labor increases, maintained five-nines uptime, and improved recycling rates by 12% within six months. ABM's embedded team ensured business continuity through major disruptions—from severe weather to the COVID-19 pandemic—while helping the client sustain innovation and facility reliability at scale.

CLIENT SUCCESS STORIES

Computing data center reduced operating costs with ABM's integrated teams

CHALLENGE

A large-scale supercomputing center aimed to double its power capacity while maintaining high uptime and cost efficiency across multiple data facilities. The client required an experienced partner to manage complex electrical, cooling, and operational systems to the highest service standards.

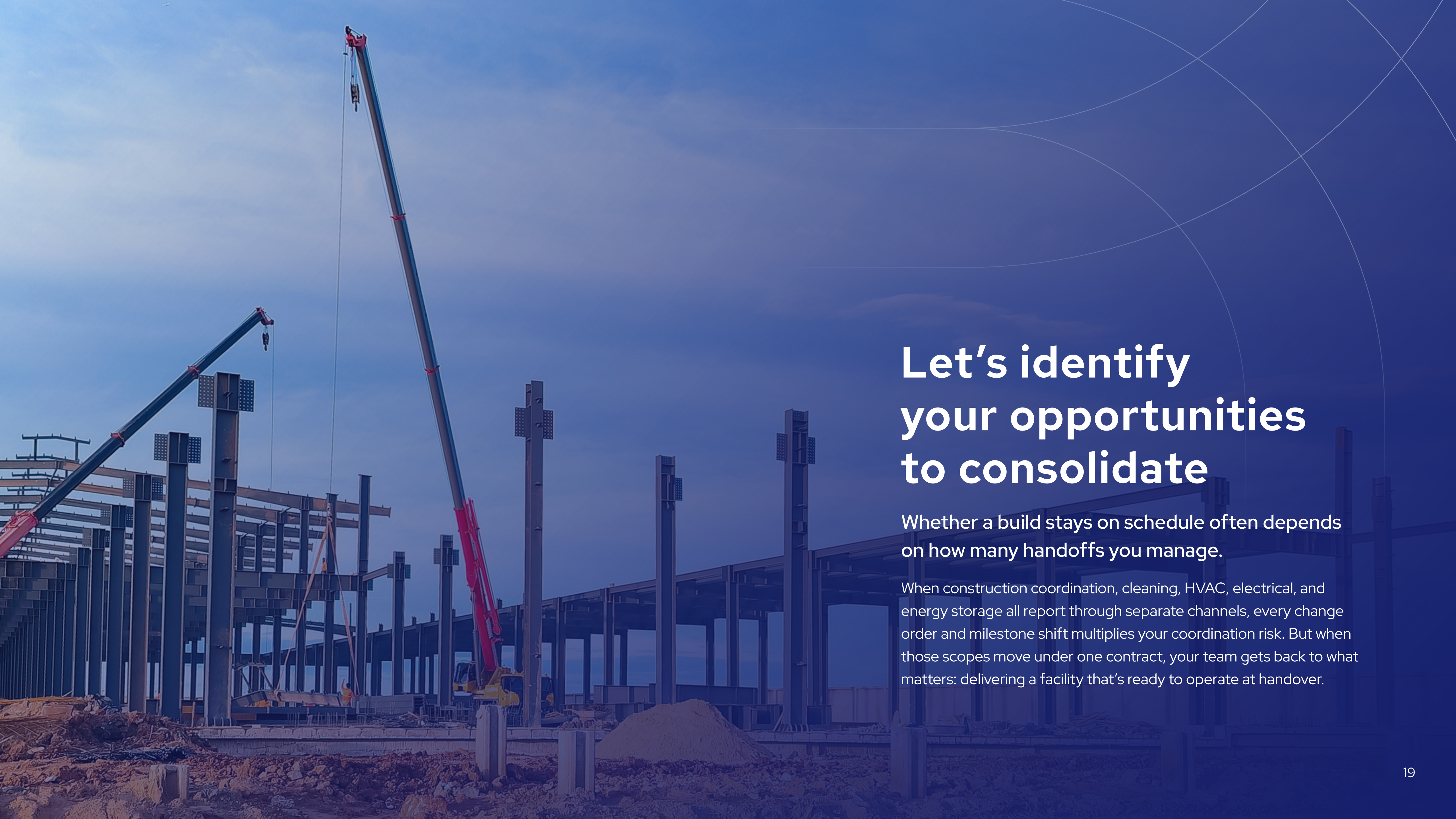
SOLUTION

ABM deployed integrated teams to self-perform all mission-critical services, including mechanical, HVAC, and electrical system maintenance. The team managed equipment across the center's entire infrastructure—switchgear, backup power systems, power distribution units, and megawatt-scale generators—while maintaining precise climate control through large-scale chillers, dry coolers, and advanced humidity control systems.

OUTCOME

The data center achieved uptime above industry benchmarks and significantly reduced operating costs through optimized energy and maintenance performance. ABM's integrated service delivery improved operational efficiency across multiple facilities, strengthened emergency response capabilities, and provided the client with a scalable foundation for future capacity expansion.





Let's identify your opportunities to consolidate

Whether a build stays on schedule often depends on how many handoffs you manage.

When construction coordination, cleaning, HVAC, electrical, and energy storage all report through separate channels, every change order and milestone shift multiplies your coordination risk. But when those scopes move under one contract, your team gets back to what matters: delivering a facility that's ready to operate at handover.

● HVAC & Mechanical

● Electrical Power

● Electrical & Lighting



A national leader with local touch

Ready to simplify your next build? Contact ABM to discuss how integrated delivery across multiple scope items can reduce vendor overlap, accelerate closeout—and give you one source of accountability.

Visit [ABM.com](https://www.abm.com) or call 866.624.1520.



FACILITY ENGINEERING & INFRASTRUCTURE SOLUTIONS

ABM drives possibility through facility, engineering, and infrastructure solutions across a wide range of industries. Our inclusive teams work together to advance a healthier, more sustainable, ever-changing world. Under our care, systems perform, businesses prosper, and occupants thrive. Every day, over 100,000 of us work together with our clients to care for the people, places, and spaces important to you. We are making spaces smarter, modernizing infrastructure, and transforming facilities to become more resilient.

Driving possibility, together.