

CASE STUDY: FACTORY DEEP CLEANING FOR A LEADING MICHIGAN MANUFACTURER

In today's competitive manufacturing landscape, facility cleanliness is far more than an aesthetic concern; it is a crucial factor in maintaining safety, operational efficiency, and regulatory compliance. This case study examines how Strength H2O successfully completed a full-scale factory deep cleaning project for a large Michigan-based manufacturer, addressing years of accumulated grime, dust, and production residue while minimizing downtime and disruption to operations.

THE CLIENT AND THEIR CHALLENGE

The client, a high-volume automotive parts manufacturer located in the Detroit metropolitan area, operates a 250,000-square-foot facility that runs nearly 24 hours a day. Over time, the continuous production schedule, combined with the use of heavy machinery and lubricants, had led to a significant buildup of industrial contaminants. The management team noticed that air quality was declining, overhead beams were coated in dust and oil residue, and production efficiency had begun to dip.

Safety inspectors also raised concerns regarding combustible dust accumulation on rafters, vents, and ceiling structures posing a potential fire hazard if left untreated. These issues not only risked regulatory penalties but also compromised the well-being of employees.

The company needed a partner capable of providing a thorough deep cleaning without halting production for an extended period. Strength H2O was selected for its expertise in industrial cleaning and proven ability to handle large-scale, high-ceiling environments.

ASSESSMENT AND PLANNING PHASE

Before any cleaning began, Strength H2O conducted a comprehensive site assessment. The team inspected all zones within the plant, including production floors, machinery enclosures, ventilation systems, and overhead structures. Using high-resolution imaging and particulate measurement tools, they identified areas where dust concentration exceeded safety thresholds.

After the assessment, a detailed cleaning plan was developed in collaboration with the client's operations team. The plan prioritized the most critical zones first, ensuring that cleaning would

proceed in phases to allow certain areas to remain operational while others were serviced. This phased approach was crucial for minimizing production interruption.

The planning process also included hazard analysis and compliance review. Strength H2O's safety specialists created a project-specific safety protocol aligned with OSHA and NFPA standards for combustible dust mitigation. Specialized equipment, such as explosion-proof vacuums and HEPA filtration systems, was selected to ensure safe and efficient removal of fine particulates.

EXECUTION: PRECISION CLEANING IN AN ACTIVE FACILITY

The project was executed over two weeks, with teams working during scheduled maintenance windows and off-shift hours. Strength H2O deployed a combination of industrial vacuuming, power washing, and high-reach cleaning techniques to target every surface, from the factory floor to the ceiling beams 35 feet above ground level.

For overhead cleaning, technicians used articulated boom lifts and telescopic vacuum systems designed to capture dust directly at the source, preventing it from becoming airborne. The rafters and trusses were carefully vacuumed before being wiped with industrial degreasing agents safe for metal structures.

On the production floor, attention was given to removing oil films and residue around heavy machinery. Utilizing an environmentally responsible cleaning agents to break down lubricants without introducing harmful fumes into the workspace. Specialized steam cleaning systems were also used to sanitize machine bases and conveyors where chemical cleaners were not appropriate.

Air handling systems and vents were another major focus. Filters were replaced, ducts were vacuumed and wiped, and exhaust hoods were degreased to improve air circulation. This step was critical in restoring healthy air quality and ensuring HVAC efficiency.

SAFETY AND COMPLIANCE AT EVERY STEP

Throughout the operation, safety remained the top priority. The cleaning teams followed confined space entry procedures, used harnesses and fall protection, and maintained communication with on-site supervisors through radios and digital monitoring systems. Daily safety briefings were conducted to ensure every crew member understood the scope of work and potential hazards.

In addition to standard safety measures, we used spark-free tools and intrinsically safe vacuum systems to eliminate ignition risks in areas with combustible dust. These precautions allowed the cleaning process to be carried out without any safety incidents or unplanned shutdowns.

RESULTS AND MEASURABLE OUTCOMES

Upon completion, the difference in the facility's appearance and performance was striking. Surfaces that had been coated with years of grime were restored to a clean, bright finish. The air quality readings improved by 35%, as verified through post-cleaning particulate testing. Overhead dust levels fell well below regulatory thresholds, ensuring compliance with NFPA and OSHA standards.

Machine efficiency also saw a measurable boost. With cleaner working environments and unobstructed ventilation systems, maintenance downtime was reduced by 20% in the following quarter. The improved lighting reflection from clean ceilings and fixtures also enhanced overall visibility on the production floor, contributing to a safer workspace.

Employee feedback was overwhelmingly positive. Workers reported a noticeable improvement in air quality and comfort, and management observed fewer complaints related to allergies and respiratory irritation. This reinforced the connection between deep cleaning and workforce well-being.

CLIENT TESTIMONIAL

The client's facilities manager shared that the project exceeded expectations in both scope and professionalism. They noted how Strength H2O's team maintained clear communication throughout the process, worked seamlessly around ongoing operations, and delivered visible

improvements that went beyond aesthetic value. The client has since committed to implementing a recurring deep cleaning schedule to maintain the results achieved.

TECHNICAL INSIGHTS AND BEST PRACTICES FROM THE PROJECT

This case study highlights several best practices that Strength applies to complex factory cleaning projects. One key takeaway is the importance of integrating cleaning operations with production schedules. By coordinating closely with the client's team, downtime was minimized without compromising the thoroughness of the cleaning.

Another essential factor was the use of advanced cleaning equipment. High-efficiency vacuums with multi-stage filtration prevented recontamination, while eco-friendly solvents reduced environmental impact. The team's ability to adapt techniques such as alternating between dry vacuuming, degreasing, and steam sanitization ensured optimal results across different materials and surfaces.

The project also demonstrated the value of proper documentation and reporting. Detailed logs of cleaned areas, before-and-after photos, and air quality data were provided to the client as part of a post-project report. This documentation not only verified compliance but also supported future maintenance planning.

SUSTAINABILITY AND LONG-TERM IMPACT

Beyond immediate cleaning outcomes, the project supported the manufacturer's long-term sustainability goals. The use of biodegradable cleaning solutions and efficient water reclamation systems minimized waste and environmental impact. Cleaned ventilation systems also reduced the facility's energy consumption, contributing to lower operational costs over time.

By maintaining a cleaner production environment, the company now experiences fewer mechanical breakdowns and lower risk of product contamination. This reliability supports consistent output and helps preserve the brand's reputation for quality manufacturing.

CONCLUSION: CLEAN FACTORIES DRIVE PERFORMANCE

The success of this deep cleaning project underscores why industrial hygiene is an investment, not an expense. For factories operating in high-demand sectors such as automotive manufacturing, cleanliness directly affects efficiency, safety, and product quality. Strength H2O's expertise in large-scale industrial cleaning enabled the client to restore their facility to peak condition while maintaining productivity.

Today, the manufacturer continues to partner with Strength H2O for scheduled cleaning and preventive maintenance services. This collaboration ensures that cleanliness, safety, and compliance remain integral parts of their operational strategy.

This case study serves as a powerful reminder that when it comes to industrial environments, deep cleaning is not just about appearance it is about performance, protection, and progress.