



Case Study 020413

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**Fire, soot and smoke damage restoration at heavy equipment, manufacturing auto plant**

By Malcolm Stone

On November 20, 2012, Paul Davis National, the large loss specialists for Paul Davis, was contacted by the insurance company representing Toyota Boshoku America's heavy manufacturing plant in Princeton, Indiana. Scott Brown, Manager of Maintenance, Kaizen, Process Engineering, and Tool/Die for Toyota Boshoku of Indiana, and his team of highly-skilled employees had experienced a catastrophic loss where one of the extrusion presses that manufactures and assembles seats and door panels for Toyota cars caught fire and caused extensive contamination throughout the 225,000-square-foot metal frame structure.

Overall, the company is a premier manufacturer of automotive interior systems, which include seat, door trim, headliner, substrate, and carpet in addition to air and oil filters for a variety of customers such as Toyota Motor Corporation and General Motors. The main office, Toyota Boshoku Corporation is based in Kariya City, Japan. Its wholly owned subsidiary, Toyota Boshoku America (TBA), and its affiliates employ over 6,000 team members in 19 locations throughout the United States, Canada, Mexico, Brazil, and Argentina.

Specifically, the fire, soot and smoke damaged heavy equipment plant at 1698 S. 100 W. in Princeton, Indiana is operational 24/7. The company was planning on using its regular janitorial cleaning crew to do the cleaning of the building and in-house electricians to do the service work on the damaged areas and machines during a scheduled shutdown from December 21 until December 31. For the clean-up and restoration work, the company planned to use a crew of about 20 people and could get 10 to 15 more staff if needed. Brown planned for his staff to do most of the work along with their normal preventative maintenance functions. At this time, Murphy requested a meeting to go over the plan with the insurance adjuster and Brown on November 28.

During the meeting, Murphy toured the building and Brown explained concerns about the continual soot contamination and all of the extra work his people had to do just to control the damages on a daily basis.

After walking through the entire plant, the Paul Davis National plans included cleaning both the building and the equipment.

Murphy explained that a cleaning job of this magnitude along with the compressed time frame of seven working days, would take approximately 220 to 225 crew members on a cleaning team and another 75 to 90 crew members to clean and restore the equipment. Brown was very surprised to understand the magnitude of the project, but he understood the professional restoration process that Paul Davis recommended. After the meeting, the insurance company was interested in Paul Davis' cleaning and restoration plan along with the cost for review by the adjuster and Toyota.

Approximately one week later, Brown called Murphy and told him that he had spoken to his janitorial service company and they had no way to provide the needed manpower to do the job in seven days, and that Paul Davis could start the job immediately.

Paul Davis National then converged on the job and started planning for crew and equipment needs for the building restoration. The 28 to 48-foot ceiling heights required 65 lifts, 60 air scrubbers, and 55 HEPA vacs along with lining up all of the needed labor supervisors, supplies, and miscellaneous tools the company would need. Since Christmas was in the middle of the scheduled work, Murphy and his Paul Davis team had to plan for crews and equipment to be at the job before the holiday. Murphy knew that finding additional supplies and securing deliveries between Christmas and New Year's was going to be a challenge.

On December 22 with the first crews arriving at 7:00 a.m., four complete shifts worked around the clock before shutting down at 7:00 a.m. on December 24. Crews started up again at 7:00 a.m. on December 26 and worked around the clock, completing the job at 7:00 p.m. on December 30. The plan was critical due to Toyota's schedule to start operations testing at 8:00 a.m. on December 31.

Ultimately, Paul Davis National's work force included 240 project managers, supervisors, technicians, labor and subcontractors (for duct cleaning) along with teams from ERS, a renowned firm that specializes in optimizing processes and minimizing business interruption. Additionally, Toyota's work force carefully moved their products as needed.

According to Murphy, even though the initial small fire broke out on one of the machines at the exact damage site, and the fire was put out quickly, no structural damage occurred to the building. The machine was a total loss due to product materials that burned directly onto the equipment, plus a large amount of soot was generated and ultimately deposited throughout the building, equipment, racks, shelving, and products. Also, areas that were the farthest from the fire had soot residue deposited on flat surfaces and in upper corners of the ceiling and wall space.

"After walking the loss, we could see there was soot on some of the more obvious surfaces, but it was difficult to observe the soot on some of the more obscure surfaces. In some cases, the soot was so light that it almost blended in with the normal production dust. So, it was decided with the adjuster, plant manager and Paul Davis that we needed to qualify, and, if possible, quantify the areas with soot from areas that appeared to have only production dust," said Murphy.

Murphy hired an industrial hygienist to sample numerous areas including flat surfaces with the "known" soot and areas with what appeared to be production dust located outside and inside the control cabinets and on the finished product. The purpose of the sampling was to place sample swipes under a microscope and evaluate the "shape" of the dust particles from the soot particles.

"We learned that dust particles have rounded edges and soot particles have jagged edges. We quantified the intensity of the soot particles using a rating scale from one to four with one being the least amount and four being the most," he said. "The process demonstrated, with scientific certainty, that 78 percent of the building had a quantifiable amount of soot contamination as a direct result of the fire. The environmental evaluation gave us the direction we needed to establish a scope of work for both the building and equipment cleaning," Murphy said.

Once the scope of work was determined, Paul Davis began organizing the work flow and how much equipment and manpower was needed. Based on the understanding of how much cleaning one of the crews could perform in one day, Murphy extrapolated the amount into a square foot calculation and applied it to the square footage of the building. The calculation provided a basis for knowing how many cleaning techs and supervisors were needed and how much equipment was required to complete the cleaning of both the building and the equipment in the seven days allotted by Toyota management.

With five days to plan the project, Paul Davis was able to secure from its vendors, the needed equipment and supplies to complete the entire job. "At the pace we were going and to complete the job on time, we were not going to have time to reorder supplies or equipment. As a result, we were able to secure the delivery of 65 lifts of varying types and sizes sent directly to the job and have them all staged and ready to move into the building at the official start time of the job," said Murphy.

Murphy and his team obtained more than 130 hotel rooms and two passenger busses that moved crews at one time between two shifts. Four meals a day with two meals per shift were worked into the scheduling of the entire job. All of the logistical coordination was established several days in advance of starting the job which was a key factor in completing the project on time.

Specifically, once the job started, Paul Davis gave each project manager a specific area of responsibility along with a crew that was trained for the specific job responsibilities. Crews working on lifts all had to be “lift certified” with a clear direction and objective of how much was needed for completion by each hour throughout their shift. According to Murphy, it was this level of organizational calibration that enabled Paul Davis to manage the progress of each shift and make needed adjustments as necessary.

Additionally, throughout the seven days on the job, there was extraordinary cooperation among Toyota Boshoku personnel and Paul Davis to ensure that all working areas were cleared of any movable items. The Toyota team moved everything that could be located out of the way for lifts to be moved easily, among other activities that were required to complete the job on time.

“It was about in the middle of our third day at the project when we felt we were going to make our deadline. All of our planning and managed execution was paying off and we felt we were right on track for an on-time completion,” said Murphy. “This level of confidence seemed to transcend to all of the workers as they became more emboldened to work faster knowing that they were about to achieve a seemingly impossible task – cleaning a 225,000-square-foot building from top to bottom including all of the equipment, shelving, and product within seven working days.”

Scott Brown’s Toyota team was more than pleased with Paul Davis and commended the large loss company for its ability to study, recommend, execute, and finish the job on time.

For more information, contact J. Murphy at (281) 358-4077 or email [jmurphy@pdnational.com](mailto:jmurphy@pdnational.com). Visit the website at [www.pdnational.com](http://www.pdnational.com).

**About Paul Davis National:**

Paul Davis National specializes in large loss and is part of the Paul Davis franchise network. Paul Davis is a franchise system made up of more than 320 full service emergency services and restoration contractors providing site stabilization, emergency water mitigation, fire restoration, mold remediation, document restoration, contents cleaning, and remodeling services. Paul Davis National owns numerous tractor trailers and support equipment that are deployed throughout the U.S. to support their national clients as well as their fellow franchisees in the case of a major disaster. The company is headquartered at 2010 South 4th Street in Milwaukee, Wis.

**About FirstService:**

FirstService Corporation is a global leader in the rapidly growing real estate services sector, providing a variety of services in commercial real estate, residential property management and property services. As one of the largest property managers in the world, FirstService manages more than 2.3 billion square feet of residential and commercial properties through its three industry-leading service platforms: Colliers International, the third largest global player in commercial real estate services; FirstService Residential Management, the largest manager of residential communities in North America; and Property Services, including Field Asset Services, one of America’s largest providers of property preservation and distressed asset management and FS Brands, one of North America’s largest providers of property services through franchise networks. FirstService generates over US\$2.2 billion in annual revenues and has more than 20,000 employees worldwide. More information about FirstService is available at [www.firstservice.com](http://www.firstservice.com).

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