



How preventive maintenance could have saved an area manufacturer from a paint booth fire, gruelling repairs and six weeks of downtime.

## CASE STUDY



### Overview

**Rebuilt Unit: Approximately 9-feet square by 3-feet high. 16-gauge sheet metal, cut with a plasma cutter and torch. All welded seams. No CAD drawings. Engineered to specifications on-site.**

First, VASEY chiseled away at the paint build up with chipping hammers and removed burnt batt-type insulation - a long, tedious, and dirty job. Once the top of the paint booth was opened and cleaned, the existing steel panels were removed and replaced with 16-gauge welded steel panels, making it stronger since the old panels warped from the excess heat build-up.

### Challenge

Chisel over 3-inches of hardened paint build-up to eliminate a 90 percent blockage within a paint booth ductwork, filtering system.

### Solution

VASEY designed and engineered a complete air duct system from square one, piece by piece, saving the manufacturer more than \$250,000 plus additional downtime required to purchase and install a brand-new paint booth system.



**“The fire could have been easily avoided with proper training and ongoing preventive maintenance.”**

- Danny Marshall  
VASEY Project Manager

With nothing more than the original opening dimensions, VASEY designed and engineered a new system for the paint drying booth - new panels (4-inches thick consisting of a 16-gauge, welded, metal casing and insulation), and industrial-style fan (with a maximum heat capacity up to 250°F) were installed in the original opening.

Once the new panels were in place, VASEY created an access door so maintenance could crawl inside for easy clean out. The new system now runs safely and efficiently at 140°F.

VASEY manufactured a custom filter rack, consisting of over 50 filters that maintenance can easily swap out. Initially four men were on-site for demolition. During the rebuild phase, there were primarily two men working on the system 12-hours per day. After six weeks we had our client’s system back up and operating at full speed.

## The Tear Out



The ductwork is located on each side of the burner (middle top).

The burner doesn't actually burn the paint particles. It provides heat to speed up the curing process.

The system created a circular motion to the air flow.



This is the cone-shaped opening of the blower housing.

Return air passed through this location where all the paint particles were pulled through the system.

The outer edge shows previous build up and our client's attempt to try and scrape off paint build up.

Everything was funneled back into the blower where particles were picked up and pushed back through and down into the paint booth ductwork.



Affected area after all the ductwork and insulation are removed.

## The Rebuild



The ductwork coming off the top of the fan was directed straight down and tied into the ductwork on the inside of the paint booth.

We custom designed and installed a brand new ductwork system in addition to new openings and access areas for easier preventive maintenance.



New top part of the system with the new panels in place. Notice the access door.  
Client's maintenance team can now access the ductwork  
to clean the system.

All materials were made on-site at the VASEY facility. No previous designs or plans  
existed. The only information available – the size of the opening. The end result, a  
new system 100% engineered from the ground up.



## The Finish



## Result

By safely restoring the fire-damaged ductwork, the VASEY team saved the client more than \$250,000 (not including the associated lead time and installation costs necessary for an entirely new paint-booth system).

In the end, we provided a solution to reduce the project's overall downtime at an affordable price point.

## Conclusion

Call VASEY first. Not only do we handle day-to-day service and preventive maintenance with ease, we have the expertise to design, engineer and repair complex applications.

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