

Case Study: The Fox Plaza

San Francisco, California



Photo of the Fox Plaza by Doug Miller

Summary

At 1390 Market Street in San Francisco, California stands a 30-story mixed-use tower known as the Fox Plaza. The tower was built in 1966 on the site of the former historic Fox Theatre which was opened in June 1929 and demolished in 1963. The first twelve floors contain office space while floors 14 through 29 are exclusively rental apartments. [1]

The George Yardley Company, the TAMCO representative in Northern California, worked closely with ABM Industries, the provider of facilities services to the Fox Plaza, to identify and rectify issues within the building's HVAC system. This analysis led to the installation of TAMCO dampers throughout the Fox Plaza, greatly improving the function of the HVAC system, increasing energy efficiency, and reducing maintenance time.

The Fox Plaza marks the first building of record retrofitted solely with TAMCO dampers.

Introduction

The city of San Francisco presents a unique set of climate challenges: the cool moisture-infused air of the Pacific Ocean meets the warmer air from the low hills just east of the city. The climate matches that of the Mediterranean with warm dry summers and wet winters all influenced by coastal currents. [2] As the airstreams meet, they condense, forming a thick fog.

The fog isn't just condensed air, however. For fog to form the water particles must condense around microscopic solid particles. [3] In the case of most coastal fogs, the solid airborne particles that attract water is salt. The atmospheric salt particles form a ratio as high as 1:1 with the water particles forming a thick corrosive fog that lingers in the air. [4]

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The destructive nature of this salty fog continuously decays the city's infrastructure, even its famous landmark, the Golden Gate Bridge. [5] Salt, when in contact with steel, accelerates corrosion. Not all metals rust however: aluminum is known to form a protective layer of aluminum oxide making it stronger over time. [6] [7] [8]

The chief engineer for ABM Industries at the Fox Plaza is Jedidiah Oglesby. A typical day for Jedidiah involves juggling workorders from both the residential and commercial residents at the Fox Plaza, while managing the scheduled preventive maintenance (PM) tasks required for efficient operation of the building.

Doug Miller, sales engineer for the George Yardley Company, is charged with tailoring engineered air-handling solutions to meet specific and unique design needs for facilities' HVAC, plumbing, and process piping applications. [9]

Doug Miller first met Jedidiah Oglesby in 2017 and discussed the building's outside air economizer system. An air economizer is a duct and damper arrangement that enables the HVAC system to utilize external air to meet the cooling load when favorable. [10] This "free cooling" process is beneficial because massive amounts of energy can be saved when it is cool enough outside to combat the heat load generated by the building. An operational economizer can also aid greatly in early morning building warmup.

Doug emphasized the quality of TAMCO dampers, piquing Jedidiah's interest because the Fox Plaza had a problem: the existing dampers were constructed of galvanized steel and had seized due to corrosion and rust.

Discussion:

We met with Jedidiah Oglesby and Doug Miller to discuss how the exclusive utilization of TAMCO dampers in the Fox Plaza and throughout the city of San Francisco has contributed to higher levels of energy efficiency in the city's buildings.

"The galvanized steel dampers corroded to the point where they couldn't move the blades so they would lock them in a minimum position or one way or the other. You end up wasting energy and losing the opportunity for free cooling throughout the day." As Doug spoke on the issue, it became clear the dampers were no longer able to move preventing them from doing their primary task – regulating airflow. Jedidiah also explained the importance of damper functionality. "We should be able to go to the computer, click the button and the dampers do what they're supposed to do. We shouldn't have to go out in the field and wrench on them just to get them to move."



Fox Plaza's previous dampers were visibly inoperable - photo by Doug Miller

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Doug recognized a solution to the Fox Plaza problem – **TAMCO dampers**. Doug and Jedidiah worked together to establish a plan. They would replace the currently seized and rusted galvanized steel dampers with TAMCO extruded aluminum dampers, section by section, starting with the worst areas. This was one of Jedidiah's goals for the Fox Plaza, *"It's been a point of interest for me since I took over here as chief engineer, getting the antiquated dampers squared away."*

Aluminum does not rust over time; its oxidation process converts into aluminum oxide which is stronger than aluminum itself. This makes it the perfect material to combat the corrosive air of the Bay Area.

It is important to note that Doug believes in a "boots on the ground" strategy. For him it's not just about the dampers but forming a sustainable client relationship by going the extra mile. Even if the client is familiar with HVAC systems, he approaches each situation prepared to provide his specific expertise. He ensures that each client has a complete understanding of the processes involved.

He consults closely with the Fox Plaza along with multiple buildings in the city of San Francisco. *"Most of my repeat clients are very happy to see me on site because they know I will get up in the system with my measuring tape and flashlight and they're pleased because by the end of the process they're going to have an operational system."* Through his hands-on approach, Doug has become an expert in the HVAC challenges specific to the Bay Area.

By employing proper products and materials, understanding the HVAC processes, and building a strong working relationship, Doug and Jedidiah found a logical solution.

When asked about the most pressing challenges presented by replacing the dampers within a 60-year-old building, Doug mentioned the fog. *"Every single morning San Francisco has bay fog that is very moist and very salty along with the dirt, pollen grime, grit that's in the air that just gets caked on everything. When they built these buildings, the dampers they put in were 'value engineered' galvanized steel and everything was metal-to-metal contact, and it is just is a failure place that rusts and seizes up"*.



Galvanized steel rusts over time resulting in damper failure- photo by Doug Miller

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TAMCO Series 1000 Saltwater option dampers were installed throughout the Fox Plaza - photo by Doug Miller

When asked about the fog Jedidiah said, *“We refer to it as saltwater air”* and explained, *“That salt adds to the corrosion, adds to the buildup, adds to the time needed to keep them [the dampers] functional.”*

To combat the ever-present environmental challenges, Doug specified the TAMCO Saltwater Resistance option - aluminum dampers specifically designed for coastal climates with stainless steel components, and clear anodized frames and blades. This option helps prevent rust and corrosion where a galvanized steel damper would rust and seize. *“I use the series 1000 Saltwater Resistance option almost exclusively in the Bay Area. I have a few buildings that are on their way to being 100% TAMCO dampers.”*

Doug has found the Saltwater Resistance option to be the standard in the Bay Area. *“There’s nothing unusual about the Fox Plaza and we’ve got several buildings in the city. We’re putting 100% damper buildings all over the city. I mean, there’s a 60-story building that we’re working towards completing. Basically, every building I work on in the Bay Area we’re working towards being 100% TAMCO.”*

Having a functional damper with preventive environmental protection allowed Jedidiah to eliminate monthly damper maintenance. *“We were doing a monthly PM that took anywhere from 2-4 hours to complete on all of the dampers to check and ensure they’re modulating properly, they’re cleaned up, and lubricated.”* Jedidiah also explained that replacing malfunctioning linkage was no rare occurrence. A similar sentiment was expressed by Doug *“our competitor’s aluminum dampers typically utilize the same linkage systems that are used on their galvanized dampers, so while the blades and frames may be aluminum, the linkage systems corrode and lock up with a very similar frequency as the galvanized dampers.”*

With the new functional dampers in place, Jedidiah expressed *“We can be more productive when we aren’t focusing our energy to ensure that the dampers modulated properly.”*

With the Fox Plaza being the first of its kind and more buildings on the way, Doug Miller has been able to support his clients by providing product knowledge, HVAC process understanding, and guidance to find a long-term solution – TAMCO dampers.

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Conclusion

Utilizing TAMCO dampers, Doug Miller of the George Yardley Company helped the Fox Plaza maximize the use of an air economizer for energy-efficient HVAC operation and minimize monthly damper repair and maintenance. Through the installation of TAMCO Saltwater Resistance Option dampers, specifically designed for coastal climates and high concentrations of salt air, which accelerate rust and corrosion, TAMCO dampers provided a practical, cost-effective solution for the Fox Plaza.

[Learn more on saltwater resistant dampers](#)

[Reach out to us for more information](#)

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