

INSIGHTS & IMPACTS

TOP OF THE CLASS

ONCE AGAIN, PEPPERDINE ACES WILDLAND FIRE TEST





Cut into a valley along the Pacific Ocean, the prestigious Pepperdine University in California, USA, is surrounded on three sides by the foothills of the Santa Monica Mountains.

ON NOV. 11, 2018, THOSE HILLS WERE ON FIRE.

Senior Vice President of Administration Phil Phillips calmly watched the wildland fire move down the hill toward campus. A veteran administrator of more than 26 years, he'd seen it all before. The fire marched down the hill just like it did in 1993, and in '96 and in '07. It had been a while since the last wildland fire had burned through the area in '07, so this time it burned hotter and with more intensity than it had before, consuming even the roots of the trees.

But Phillips already knew what would happen. Per FM Global recommendations, the school is surrounded by a buffer zone clear of all brush. And just like the fires before it, what became known as the Woolsey Fire would peter out when it reached the line.

Elsewhere on campus, Interim Director of Insurance and Risk Jon Weber watched a Los Angeles County helicopter scoop water from one of the university's retaining ponds. Weber was sheltering-in-place, along with much of the staff and a large portion of the student body.

The helicopter flew past his window, dropping its cargo of water on the burning hillsides on campus. Trip after trip, load after load was dumped on his alma mater and his professional home for his entire career.

Weber knew the university's wildland fire emergency plan was among the very best. After all, he had helped write it, pulling from FM Global's standards and local guidance to improve it year after year. But still, the helicopters were a welcome sight. Unsure if his own home on the other side of the hills was still standing, he at least knew the local firefighters were doing all that they could.

A few days later, the fire was out. Thanks to a well-designed and heavily practiced emergency response plan and a strict adherence to FM Global's wildland fire prevention recommendations, Pepperdine University had survived yet another California wildland fire.

"We had confidence our plan would work," Phillips says matter-of-factly, looking at the regrown campus several months later. "It always has."

Phillips' confidence stems from more than 20 years of working with FM Global to reduce the risk of wildland fires on the Pepperdine campus. Wildland fire is the greatest natural hazard the university faces. Years of drought, the dry Santa Ana winds, and the topography of the area make wildland fires inevitable.

"Our wildfire emergency response plan informs everything else we do," adds Phillips, who can rattle off the years the campus has been threatened by wildfire like he's reciting the birthdays of his children. "We have 22 emergency response plans. Everything from earthquake, to a measles outbreak, to an active shooter. All those plans are for if something happens. Our wildfire plan is for when it happens."

1,643 structures destroyed

Named after the Woolsey Canyon where it started, last year's Woolsey Fire was a stark reminder of the danger. The Woolsey Fire was part of the most destructive wildland fire season on record in California, and the largest wildland fire in Los Angeles County's



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**OUR WILDFIRE EMERGENCY RESPONSE
PLAN INFORMS EVERYTHING ELSE WE DO.**

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**Phil Phillips
SENIOR VICE PRESIDENT OF ADMINISTRATION,
PEPPERDINE UNIVERSITY**

recorded history. From August through December, more than 1.8 million acres (728,400 hectares) burned. According to the California Department of Forestry and Fire Protection, it was the most acreage consumed in any fire season in history. The Woolsey Fire destroyed 1,643 structures, burned 96,949 acres (39,234 hectares), and caused the evacuation of more than 295,000 people. The fire was one of several ignited in a single day, including the Camp Fire in northern California, which devastated the town of Paradise.

“These threats are becoming more frequent and more intense, so preparation is more important than ever.”

— JESSICA WATERS
STAFF VICE PRESIDENT, SENIOR ENGINEERING TECHNICAL SPECIALIST, FM GLOBAL

The emergency response plan at Pepperdine is just one piece of the school’s defenses against wildland fire.

Attractive stucco and clay tile roofs adorn all of the buildings on campus, which has helped make Pepperdine a fixture on the list of most beautiful places to study. But the stucco also serves as a noncombustible barrier to the outside environment. Per FM Global recommendations, new construction maximizes the use of noncombustible materials. FM Global reviews all new construction, renovations and building improvements to ensure they meet all FM Global’s guidelines.

“We are facing more extreme precipitation patterns all around the world,” explains FM Global’s Jessica Waters, staff vice president, senior engineering technical specialist. “While some areas are seeing more flooding and cyclones, others are facing extreme drought and wildland fires. As a result, these threats are becoming more frequent and more intense, so preparation is more important than ever.”

“Pepperdine is a true partner,” says Amy Daley, FM Global’s staff vice president and education global practice leader. “They really believe in loss prevention and look for every opportunity to lower their risks.”

The school has worked with the local fire department to develop a site-specific plan for campus, and often serves as a command post for the department during fire emergencies. Pepperdine worked with the fire department on the 2003 expansion of its graduate campus, which pushed the campus further up into the Santa Monica Mountains. The access road to the upper campus was intentionally designed to loop around the perimeter, providing access to firefighters and serving as a man-made fire break.

The Woolsey Fire

The Woolsey Fire was part of the most destructive wildland fire season on record in California. From August through December 2018, more than 1.8 million acres (728,400 hectares) burned.





Free and clear: Per FM Global recommendations, a buffer zone stripped of vegetation surrounds Pepperdine University's campus, creating a natural fire break.

Fire-resistant plants

Even the landscaping on campus is carefully designed with wildland fires in mind. Areas of campus are left natural or are stripped of vegetation to control the spread of fires. The buffer zone around campus, one of the most effective means of controlling wildland fires, exceeds the minimum clearance distances recommended by FM Global.

Per FM Global guidelines, landscaping is selected based on its combustibility. The school uses plants with high water content and avoids those containing certain oils.

"We did have one plant catch fire during the Woolsey Fire," Phillips says. "We've since gone through campus and pulled that species out."

The university did not escape the fire unscathed. The landscaping that caught fire led to some damage at an on-campus hotel and a malfunctioning vent system allowed some smoke into the school's theatre. The campus also needed to be thoroughly cleaned before students returned to classes following the Thanksgiving holiday.

Practice makes perfect

In fact, as a result of the fire, Weber now has a 70-point action plan to improve Pepperdine's wildland fire preparedness. He's developing a plan to better seal the cracks around doors. Now during an emergency, the school will issue an update every hour or two, even if nothing has changed, to avoid any "absence of information."

"After an incident, we always look at how can we improve, what can we do to make it that much better for next time," says Weber, whose house was spared despite his neighborhood being evacuated. "We owe it to our students."

Weber even studies other natural disasters to learn from them. He reviews other California wildland fires, incidents at other schools, and even larger natural disasters like hurricanes and floods.

"After Hurricane Katrina in 2005, a lot of places had three days of emergency supplies, but we could be cut off following an earthquake," Weber explains. "Because of that, we now have a two-week supply of

everything on campus. And when those supplies get close to expiring and need to be replaced, we donate them to local food banks as part of our sustainability efforts."

Pepperdine also learned a valuable lesson from the Thomas wildland fire in Montecito, California, about an hour up the coast in December 2017. Mudslides became a threat once the vegetation had burned away and rainstorms began to hit the area. Pepperdine received a substantial amount of rain following the fire, so the facilities team took efforts to stabilize the slopes surrounding campus. That included bringing in barriers to direct potential mudflows, emptying debris basins and hydroseeding the hillsides in an attempt to encourage plants to regrow. Campus hillsides were reevaluated after every rainstorm and adjustments to mitigation efforts were made as necessary.



From left to right: Jon Weber, interim director of insurance and risk, Pepperdine University; Amy Daley, staff vice president and education global practice leader, FM Global; Phil Phillips, vice president of administration, Pepperdine University; and Abe Moyer, account manager, FM Global, team up to protect the university from the ever-present threat of wildland fire.

Dangers beyond wildland fire

And wildland fire is not the only danger Pepperdine faces. In July 2019, a 7.1 magnitude earthquake hit Ridgecrest, a remote area of California about 150 miles (240 kilometers) northeast of Pepperdine. While it wasn't close enough to cause any damage, it was a reminder of the other natural hazards the school faces.

Fortunately, Pepperdine is just as diligent in following FM Global's earthquake guidelines. During 2005 and 2006, Pepperdine began installing seismic gas shutoff valves on the gas lines feeding its buildings. The valves are an extremely effective tool to aid in fire prevention because they shut off the gas supply to a building

after an earthquake. Every building at Pepperdine now has the shutoff valves.

And as buildings on campus are renovated, additional sprinkler bracing is added, where needed, to meet FM Global's latest earthquake bracing standards. The bracing is key to keeping the sprinklers operational following a quake.

"They are the ultimate professionals and a great client to work with," says Abe Moyer, FM Global account manager, who was also the account engineer on the Pepperdine account for 10 years. "Senior-level management is actively involved in the process and it's been that way for many, many years. I think that shows the value they place on the relationship with us and on the expertise we provide."

At Pepperdine, reducing risk is a year-round effort. On a July 2019 tour of campus with FM Global, Weber pulled over near a maintenance truck on the edge of campus. About a half dozen workers armed with string trimmers were spread out on the hillside.

"There's brush clearing in action," he says, pointing up the hill. "It's really that simple and it makes such a difference."

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