

### ***RJA's Construction Management and Smoke Control Testing Keep Schedules and a Complex System Running as They Should***

**Challenge.** The Orlando World Center Marriott is a 2,000-room resort hotel near Walt Disney World in Orlando, Florida. The high-rise hotel's amenities include more than 450,000 square feet of convention and meeting space, 10 restaurants and lounges, six pools and an 18-hole championship golf course.

The hotel's original fire alarm system, which was installed more than 15 years ago, was due for an overhaul. Plus, fire and life safety systems needed to become compliant with the Americans with Disabilities Act (ADA) provisions.

Host Hotels & Resorts, owners of the Orlando Marriott, hired Rolf Jensen & Associates (RJA) to provide pre-construction and construction management services for upgrading the fire alarm. RJA had initially worked for the hotel in the mid-1990s when it negotiated acceptance of the fire protection master plan for the hotel's guestroom tower addition. When the Marriott underwent a major fire alarm upgrade and replacement in 2001, which was troubled by another company's failure to gain approval on key points, RJA stepped in and completed the project.

**Solution.** This new project entailed managing the construction process – from assessing the schedule and verifying that contractors were meeting deadlines to controlling change orders and conducting adequate pretests.

RJA was not involved in the design portion of this project; rather, its role was to appropriately address issues from a construction standpoint. For ADA compliance of the fire alarms, RJA made sure the Marriott had enough strobe coverage without allowing excessive coverage that would unnecessarily add to construction costs.

RJA was also involved in testing the Orlando Marriott's smoke control system. All larger Marriotts are required to have a smoke control system, which can be a combination of fans, detection systems, doors and dampers that can confine and evacuate smoke from specific parts of each building. The Orlando Marriott had installed its first smoke control system when the hotel opened in 1984 and brought on more smoke control components for new building additions as they opened.

RJA did an initial test to verify how the smoke control system operated. From this, consultants generated a large spreadsheet matrix of what specific equipment stops/starts other systems and how those functions occur. From that data, RJA recommended changes to be consistent with the way the system was designed. For example, RJA had hotel engineers make some adjustments to certain dampers and fans, which failed during the first test. Then RJA consultants retested the systems to verify that all components were properly sequenced and set up.

The more complex part of RJA's job was to identify unwanted or problematic software program items that cropped up over time due to periodic programming changes and additions. If activation of the smoke control system on the 24th floor resulted in fan movement on the 2nd floor, RJA would eliminate those odd fans from the program sequence to better streamline the system.

**Result.** Local fire officials become aggravated when they are called in for an inspection, and fire and life safety systems don't work as they should. RJA has built a reputation with Host Hotels for working in a timely manner and for conducting thorough pretesting that ensures that fire inspections go smoothly.

Moreover, the Orlando Marriott's full-scale test of its smoke control system, under RJA's guidance, further raised RJA's profile as experts in this field. Smoke control system testing was new to the local fire department, and witnessing RJA's tests opened officials' eyes to how full system testing could, and should, be done. Plus, RJA increased the Orlando Marriott's engineering staff's knowledge about the smoke control system and what they should do to make sure it's running properly – simply, in some occasions, by checking on a fan they pass in their everyday routine.

It's that kind of attention to detail that has helped RJA earn Host Hotel's business at numerous properties around the world.



### ■ Construction Management



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