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BLUEPRINT FOR SUCCESS

Alexandria, Va., takes an innovative approach to fire station construction.

Proactive measures for boosting firefighter morale

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The evolution of hazmat vehicles reflects the times



All photos courtesy of LeMay Erickson Willcox Architects

Alexandria's TRIPLE PLAY

Retail, residential and the fire service come together in this Virginia city to create a new model for station construction.

By Janet Wilmoth

In the early 1900s, five East Coast railroads merged to form the Richmond-Washington Co., which would manage rail traffic in the region. The company also would manage Union Station in Alexandria, Va., and the city's switching yard — known as the Potomac Yard, or Pot Yard. Soon after it opened in 1906, the Pot Yard became one of the busiest railroad yards in the eastern United States, interchanging thousands of rail cars each day, so many that it reached capacity by 1937.

Over the next 50 years, however, the need for the rail yard eventually diminished and land values increased. In 1989 the yard was decommissioned and declared a toxic waste site. Decades of industrial waste contaminated the soil with heavy metals, hydrocarbons and diesel fuel. Declared a Superfund site in 1995, the cleanup was completed in 1998.

Superstores and rows of townhomes soon sprouted where rails once traversed. In late 2008, the city of Alexandria formed a group to pursue extending

the Metro rail system to the site of the Potomac Yard. Plans are currently underway to tear down the superstores and re-develop 7 million square feet of space.

Four years ago, the decision was made to build a new fire station at Potomac Yard. The \$28 million project is attracting a great deal of attention up and down the East Coast for its innovative public/private funding model and its unique multi-purpose approach to constructing a new fire station in an urban area. The 5-story structure includes a four-bay fire station, 64 apartment units, a 2-story below-grade parking garage and a 1,400-square foot retail shop.

The station is designed to LEED Silver standards and the residential portion has received EarthCraft certification for energy-efficient construction. The project also won the U.S. Conference of Mayors' 2007 Excellence in Public/Private Partnership Award.

Alexandria Bttn. Chief John North was the project manager for the new station, which opened in

“The exterior of the building has the character of a throwback to another century. But on the inside, it’s trying to be fully 21st century.”

**Paul Erickson,
Architect**

November 2009. According to North, the concept was borne from the department’s realization that only 12% of its employees lived within the city due to the high cost of housing. Consequently, 20 of the one-, two- and three-bedroom apartments above the station are designated as work force housing — based on income — which puts them within reach of firefighters, teachers and police officers.

According to Paul Erickson of LeMay Erickson Willcox Architects in Reston, Va., the city of Alexandria is known for its Old Town area and a priority was made to extend that esthetic into the development at Potomac Yard.

“The exterior of the building has the character of a throwback to another century,” Erickson said. “But on the inside, it’s trying to be fully 21st century.”

Coming Together

The fire station at Potomac Yard is located off a main artery and is within minutes of Reagan National Airport. The northwest corner of the building has a retail shop and the west side of the structure provides the entrance to the apartment complex. The entrance to the fire station is located at the rear of the building.

The entrance to the fire station is a vestibule with a second locked door. North explained that the vestibule was created to be a safe haven for anyone having an issue or domestic abuse. A phone in the vestibule alerts the fire station to any situations. The watch room or command center is located across from the front door and is visible from the entrance.

Besides the separate entrances, there are locked

passages between the apartments and public areas of the station, as well as the sleeping area of the station.

The 21,953-square-foot station is in a U-shape configuration that surrounds the apparatus bay. The west wing houses the kitchen, day room, offices and exercise room that leads to the rear wing, which contains 15 individual sleeping rooms and several individual gender-neutral bathrooms. The east wing has additional offices and areas for gear-cleaning and small-equipment storage, and is shared by the department’s hazmat unit.

The combined kitchen and dining area has high vaulted ceilings with warm, golden colors and large arches that suggest the feel of the 19th century, but with contemporary finishes.

“This is probably the most exciting room in the station” North said. “We asked Paul to put the kitchen up front with big windows to [interact] with the public. It has a nice feel.”

The kitchen has stainless-steel appliances, but only one refrigerator. North explained that he drew the line on a refrigerator for each shift. “We don’t want our shifts to become so independent,” he said. “This station has a lot of design features that took that away, because we were finding firefighters were living in their rooms and not working together. So, we’re pulling them back and we see that as a good thing.”

Inside the entrance to the kitchen is a separate beverage counter with coffee and hot water separated from the kitchen by the eating area. This arrangement keeps personnel and visitors from interfering with the cooks, without taking away the camaraderie between firefighters that occurs around the kitchen table.

“Everybody knows that the kitchen area is where firefighters come together,” Erickson said.

Creature Comforts

Contrasting the open feel of the kitchen is the station’s smaller day room. Deep tonal colors and inverted window blinds offer a retreat from the public eye. According to Erickson, the challenge of having a sidewalk right up next to the building is that the public could see firefighters watching television — something that could create the wrong impression.

“What portions remain private and what portions stand up to public scrutiny as they move through the station?” he said. “We always wrestle with how do we take a civic facility that is operating 24 hours a day and make it feel like home.”

In addition to the television, the day room also has audio/visual equipment for viewing training programs, conferencing with other stations and conducting multi-company drills. “Rather than bring everyone down to the training center to watch a video, we can conference in the stations and not leave their response area unprotected,” North said.

After cases of MRSA contamination occurred



The area above the apparatus bays is used as a patio area for the apartment residents.

within the department, North opted for easier-to-clean leather recliners versus cloth to reduce the incidences of infectious diseases.

From the day room, through double-wide doors toward the rear of the station, a couple of offices line the hallway. Each office has a glass wall that faces the hallway, providing a spacious feeling with plenty of light, and keeping with the department's goal of creating a sense of openness and staying connected. However, blinds are in place for privacy, when needed.

The station — which is constructed from cast-in-

place concrete (the apartments are of lighter and less expensive construction) — features high ceilings that allowed mezzanines on the east wing to be built for storage and training purposes. Other station features include radiant heating in the floor of the apparatus bay supported by radiant slabs in the residential area, and a workout room with large glass windows located along one of the corridors.

The location of the workout room was a direct result of a tip North picked up during FIRE CHIEF's *Station Style* Conference. He learned that firefighters often are injured in exercise rooms in basements or other areas that are not visible. Alexandria wanted to make sure that if a firefighter was injured in its workout room, the incident would be noticed.

The floor consists of two rows of vehicles — daily-use vehicles, e.g., the pumper and aerial, are in front, while specialty vehicles, e.g., the hazmat unit, are in back — which are separated by a grid of horizontal and vertical aisles. Access to the apparatus floor is provided by multiple double-wide doorways. The aisle configuration and multiple doorways provide firefighters with easy access to any vehicle from anywhere in the station.

While the station currently has five personnel on three shifts, North looked to future growth in the Potomac Yard area and planned for 15 personnel on



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four shifts. Consequently, there are 15 individual sleeping rooms across the back "U" of the structure, which faces the main highway. Two rooms currently are used as guest rooms and three rooms are designated for executive staff that might stay late at council meetings.

North acknowledged department concerns about firefighters spending too much time alone in their rooms after calls. "We no longer allow televisions in the sleeping rooms," North said. "We put a small desk in for studying, but it's not a place we want firefighters to stay."

Four pass-through lockers were installed in each sleeping room to allow shift personnel coming on duty to put their bags in their locker without disturbing the person in the room, yet a firefighter in the room still can have access to his belongings.

The bathrooms are not gender specific; rather, they simply are designated as occupied or vacant. But they are private, and in a culture where everything is common or shared, privacy is a valuable commodity, according to Erickson.

"You can take care of any and all your

business in there without having to contend with others," he said.

'A Long Way'

North also acknowledged that different needs exist amongst diverse personnel, which is one of the reasons behind the individual sleeping rooms. "If someone needs to pray five times a day, he can pray privately and we can accommodate that."

Each individual sleeping room is equipped with an electronic display that is tied to the station's alert system. When a call comes into the station, the display's six different-colored lights — each of which corresponds to an individual response team — illuminate in various combinations to indicate which teams are needed.

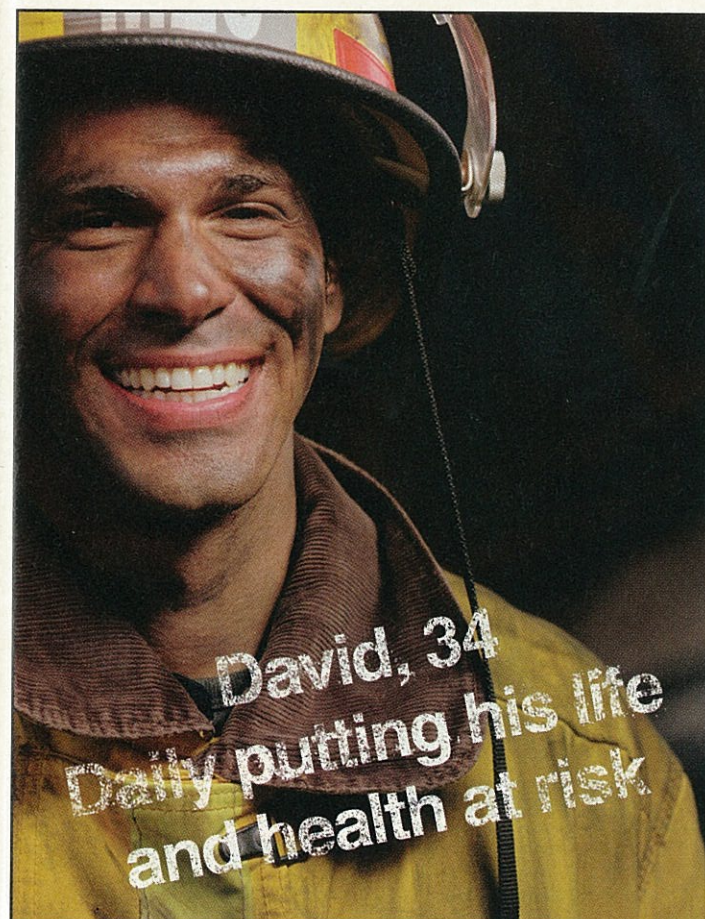
Carpeting is used to delineate the station's sleeping areas from the work and public areas of the station, but its use is limited due to maintenance and noise reduction. Residential-grade washing machines are available so that firefighters can launder their stationwear on site. The building also has 100% generator back-up power. Finally,

the station shares the building's trash room with the trash chute from the apartments. Emergency stairwells also are shared, but access to the station is secured.

Erickson pointed out that the storage room for turnout gear has a separate ventilation system from the rest of the building to avoid cross-contamination, and includes a dehumidifier for the wet gear. All racks are raised off the floor for easier cleaning.

According to Chief Adam Thiel, the department fought for quality lockers and racks versus cheaper versions or gym lockers. "If you think about the investment we have in gear, we extend the life of the gear and people don't tend to think about the life cycle costs of PPE. Sure you can shove it in a gym locker or surplus locker, and that would have been an easy way to save money tactically, but in the long run it would have cost us more."

The turnout gear room can be accessed from outside the station and from the bays, but gear is prohibited in the living areas. Anticipating an EMS unit in the station, storage space for such gear also was allocated.



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“We asked ...
to put the
kitchen up
front with big
windows to
[interact] with
the public.”

John North, AFD

Alexandria is an eco-city and the department identified the need for a full-time commitment to industrial-type occupancies that interface with life and property. Two fire marshals were reassigned to environmental issues and to work with the hazmat team. The first week operational, one of the environmental fire marshals identified a new occupancy that had improperly stored hazardous materials.

Alexandria's hazmat unit trailer is based out of the Potomac Yard station. The unit requires plenty of storage, so storage and training facilities were built

onto a mezzanine level with removable guard rails. In-station training capabilities include tripod evolutions, ladder, and rope.

Two large conference rooms are located off the apartment's residential lobby. The conference rooms are available to the fire department and are available for booking by residents on nights or weekends.

The apartment entrance is on the west of the building and has a separate streetscape decor, again with high arches. The 64 apartments are located above the living quarters of the station rather than the apparatus bay. One other unique aspect of this facility is the area above the apparatus bays is used as a patio area for the apartment residents, with a view of the Washington Capital.

Erickson explained some of the challenges in this project included the outdoor patio area had water run-offs to be managed, as well as all the utilities and the exhaust system had to be designed out of the building and out of the way of the residential apartments.

“There's a lot more horizontal runs that make this more complicated than most buildings,” he said. [FC]

Editor's note: Paul Erickson will be a speaker at the 2010 Station Style Conference, April 11-13 in Kansas City. www.firechief.com/stationstyleconference.



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