



# PACHECO ROSS ARCHITECTS, P.C.

## EMERGENCY RESPONSE FACILITIES

DAVID J. PACHECO, AIA – CA, CT, DE, NJ, NY, NC, RI, TN, TX, VT  
DENNIS A. ROSS, AIA – CO, CT, ME, MD, MA, MI, MO, PA, NH, NJ, NY, TN, VA

### Fire Chief Magazine

### Trends in Volunteer Station Design

As the volunteer fire service evolves, so too must station design  
2/20/2013

To borrow a line from the incomparable Bob Dylan “the times they are a-changin’.” For the volunteer fire service, steeped in 276 years of tradition, this paradigm of transformation is not a new phenomenon. Some have always willingly embraced the changes as others resisted, but ultimately evolution and revolution have been ever present since the generally recognized founding of the first volunteer fire company by Benjamin Franklin in 1736. With hindsight we can easily visualize the technological transition from leather bucket brigades to hand drawn manually operated pumpers to horse drawn steam apparatus to open cab motorized vehicles and ultimately to today’s ever larger multi-purpose fire engines. Consider for a moment the influence that such a progression had on fire station design during that period. This leads one to ask: What are present trends impacting the facilities for the next generation of volunteers? Keep in mind, trends aren’t always universally applicable and often have different social, legal, political, or liability implications based on specific circumstance or region.



#### The Volunteer Firefighter as an Endangered Species:

It’s a known fact that fire department volunteerism is in decline as recruitment and retention plummet. The National Volunteer Fire Council (NVFC) indicates that while a majority of fire departments and 69% of all firefighters in the United States are still volunteer, the number of volunteers itself has declined more than 18% since 1984. The NVFC also notes that the average age of volunteer firefighters has increased significantly during that same span resulting in a smaller pool of candidates to replenish the retiring ranks. The realization that adequate volunteer personnel may not always be available has prompted many departments to seriously consider how station design must respond to or better yet transform future realities. For new or renovated facilities, the concepts of flexibility, transition, recruitment, training, public interaction, perpetual funding starvation, dealing with the “new normal” (doing more with less) and “where will we be in 10 years” are becoming more critical than a question of how many new apparatus bays are needed.

#### The Station as Volunteer Beacon:

The fire station itself is emerging as a significant piece of the puzzle for attracting and keeping volunteers. Areas for volunteers to socialize, exercise and play have been commonplace but in and of themselves are insufficient. Many of these spaces have traditionally been parochial, inwardly focused elements that in some cases have actually generated a negative image of the volunteer fire service. The alcohol bar in stations is nearly extinct. Most recognize why this is so. New thinking embraces the concept of the entire facility as one integrated tool for recruitment and retention: A volunteer beacon. If the building is inviting, radiates professionalism, addresses relevant needs, functions well for response and training, simplifies tasks, provides resources, is technologically advanced, and is responsive to the community it can be successful. Yes, social spaces will still serve a vital role, but designing stations that address specific issues is more important these days.



For example, Volunteer Fire Chief Dan Nichols of the Roosevelt Fire District in Hyde Park, NY notes “Today’s building designs need to consider uses to accommodate volunteers in ways we have not seen before: bunk rooms for overnight duty shifts, study rooms for college students, and even a multi-purpose office where telecommuters could work from and still staff the station. Thinking beyond volunteers responding to the station is very important.” And more volunteer departments are expanding their understanding of what volunteer response can be. We see a concerted effort to incorporate college dorm rooms where students get a free room at the station in exchange for volunteering. In communities where apartments are unavailable or unaffordable, stations are beginning to incorporate efficiency apartments for volunteers, providing needed manpower and rapid response while filling community needs. For volunteers who are self employed, access to business spaces such as teleconference equipped boardrooms and computer work areas can be attractive. Facilities that allow organized family and public activities foster greater in-station presence and recruitment possibilities. The real trend here: If there are specific community needs that the station can fill, it will attract more potential volunteers.

Volunteer stations are changing to reflect new demographics. Again Chief Nichols stated “different generations require different types of off-duty spaces. The younger generation wants more access to the internet and cell phone service, where the older generation still wants the proverbial kitchen table. Both need to be accommodated.” The trend is for technology and access. A room for the PlayStation is more alluring than one for a billiards table, Wi-Fi is more important than a physical study library and smart-phone access to response call information (such as with “i am responding”) is more relevant than showing up at the station to see who else will arrive. Stations need to reflect these new priorities.



### **Looking Beyond What We’ve Always Done:**

Co-location of facilities is finding greater traction with volunteers. The inclusion of the local ambulance squad, urgent care facility, state police or sheriff offices, local court and judge’s chambers or even a library are all examples that we have recently designed into volunteer fire house projects. A decade ago this type of thinking was unusual. The “we don’t want them in our station” attitude is trending towards “how can we design a mutually beneficial facility.” Reduced development costs, adding to the bottom line, increased project viability and greater financing power are but a few potential benefits. There is also value in shared use of common space such as parking, entry, service areas, mechanical space and infrastructure. But there are significant potential pitfalls. Any such trend requires acceptance from volunteers and the co-locator, outreach, creativity, proper functional separation and professional architectural guidance. Most of all it requires honest evaluation.

Perhaps out of necessity, many volunteer departments are making concerted efforts to look at stations from such new perspectives. The adage that “insanity is the act of doing the same thing over and over and expecting a different result” resonates in the probing minds of the latest generation of volunteers who are thinking beyond traditional answers in order to solve the new problems facing departments.



### **The Line between Volunteer and Paid Stations is Blurring:**

According to the NVFC, 25% of fire departments in the country are a combination of volunteer and career. Many volunteer departments are transitioning to hybrids or anticipate such a change in the near future. We see a steady trend of incorporating spaces for paid station keepers, drivers and overnight and/or day crews even if no such positions currently exist. At the same time, vibrant volunteer departments are thinking of station layouts much as their paid counterparts with emphasis on efficient, safe response from within the facility, integrated training, operational segregation and a more visible presence in the community.

Fire Chief Dale Lingenfelter of Niskayuna Fire District #1 in New York manages a combination department. Paid firefighters share a facility with the volunteer Grand Boulevard Fire Company. Their award winning new station (an addition/renovation to a 1937 structure) is less than a year old. Chief Lingenfelter noted “the only difference between the two groups in terms of design is the social space for the volunteers. Due to respect for the taxpayer’s funding and opinions, these spaces are all renovated, none were new construction. Bays, support spaces, active and classroom training, living and administration are essential to both groups.” In comparing his observations with other Chiefs at trade shows and symposiums, Lingenfelter has found similar emerging attitudes toward volunteer station design. One of the District’s Commissioners added “certain rooms and designs may be unique to specific departments depending on their response and mission, but overall nowadays there is little difference in the level of sophistication.”

In a very astute observation, Chief Lingenfelter noted that “every LODD emphasizes the need to enhance training regimens for volunteers and career firefighters alike.” If a combination group is to function effectively as a team they must implement that knowledge at the same level. What does this mean in terms of station design? Flexibility to create training regimens as mandates increase, classroom space to teach about basic and advanced techniques and areas that promote gathering and camaraderie to discuss these rapidly evolving changes. Training spaces in all-volunteer facilities now more closely parallel those of paid departments.



Incorporating convenient on-site and in-house active training components has become essential as volunteerism is strained due to family, work and other commitments. A benefit to current responders, it can also attract new volunteers. Integrated training towers, confined space elements, bailout windows, simulated standpipes, rappelling walls and exposed sprinkler risers are all examples of using the facility to enhance training and make life easier for volunteers. While there are some initial costs for including these components in the design, progressive departments are recognizing the advantages of making training convenient, not going off site and keeping volunteers at the facility.

### **Accommodating the Future:**

Designing for tomorrow’s needs with today’s budget is challenging. The trend is to allow for future flexibility. For example, while many volunteers need bunks for overnight stays when storms, power outages or other specific events demand it, 24/7 use is not typical. Most volunteer departments cannot afford the additional square footage that dedicated bunks require. Overlapping spaces translates to efficient use of limited resources. A classroom widened several feet may easily incorporate banks of fold-down beds for standby emergencies. This idea can be further extrapolated to anticipate the addition of future building areas such as bunk rooms, apparatus bays or meeting room expansions. The design must anticipate and accommodate this potential prospective growth.

The outgrowth of this thinking can be seen in more extreme approaches where essential components of the station are fully constructed, but less critical spaces are provided as a plain “vanilla box” with utilities and services, left for the volunteers to finish and equip at a later time. For specific spaces such as bunk rooms, day rooms, kitchens or extra offices, this can lower the initial cost. One recent project successfully implemented a variant of this strategy, utilizing a bid alternate to obtain pricing for both a fully finished and reduced-scope facility. (An alternate is a method in the bidding process whereby a contractor provides a base price and a separate number for other work.) Much of this alternate is now being completed by the contractor since additional funding has become available.



### **Station Funding has Become More Creative:**

Volunteers continue to suffer from lack of funding, and although this is not unique to the volunteer fire service, it does manifest itself differently. Fundraising strategies such as auctioning naming rights for spaces in a new facility, direct asks of known benefactors and donation of building materials or labor have flourished. In the end, initial construction cost savings is the name of the game and lease-back arrangements, downsizing with expansion plans and pursuing joint facilities are the trends.

### **Sustainability Strategies are Evolving:**

Particularly in the Northeastern United States we are seeing a re-examination of LEED (Leadership in Energy and Environmental Design). More and more volunteer departments are embracing the ideas behind LEED, but are not pursuing the certification process itself. When balancing funding for a project, many departments understand the benefits of sustainability, high levels of insulation, energy efficiency and off-the-shelf proven systems for long-term energy savings. They are not convinced that the cost for certification, commissioning or more exotic energy systems such as geothermal heating are worth the initial cost when fighting for desperately needed square footage.

### **Community Outreach is Impacting Station Designs:**

Transparent overhead doors highlighting apparatus and extensively glazed training and meeting rooms that show the station being used are replacing bunker style architecture. Public museum spaces are documenting the efforts, memorabilia and history of the volunteers. Available community rooms, outreach spaces and public services (such as the local clerk or water bill payment window) are finding their way into volunteer stations.



### **Transforming the Future:**

How do we sum up the current trends in volunteer design? One word: sophistication! The designs of volunteer, paid and combination stations are converging. Each requires flexibility now and into the foreseeable future, they must incorporate the latest technology, active and classroom training are essential, gender equity is the norm, sustainable design and commercial grade construction lasting 50+ years are common. Nearly gone are the days of volunteers holding a “barn-raising” event. Complex, modern facilities

require professional design and construction and this trend will continue. There is no one path, no silver bullet. Trends do and will continue to emerge, morph and conflict. It is a careful balancing act. Your architect design team is constantly helping to define the pros, cons and costs of balancing. It takes vision. Ultimately the single greatest trend we see in volunteer station design today is departments and their architects actively participating in shaping the coming transformation rather than simply being carried along by it “for the times they are a-changin.”

David J. Pacheco, AIA, NCARB

Dennis A. Ross, AIA, NCARB