How I Survived Building a Fire/Rescue Station
Part Two

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This is a continuation of an article from the last issue of this publication.

If you've ever built a new home, you know how stressful and time consuming the process can be. Magnify that experience by four to twenty thousand square feet, along with over forty firefighters and you get an idea of how challenging the process of designing and building a new station can be. Since experience is the best teacher, learning from a "survivor" of this process is extremely beneficial.

At a recent FIERO (Fire Industry Equipment Research Organization, www.fierofirestation.com) Fire Station Design Symposium, Ken Newell moderated a panel discussion of fire officials who had recently navigated the process of designing and building a new station. This article is the first of two that will present essential questions about the process and the panel's answers.

The panel members included:

Chief Don Adam – Lehigh Acres Fire Control and Rescue District, Florida (an all paid department with 109 members)
Div. Chief Mike Caudill – Rock Hill Fire Department, South Carolina (an all paid department with 106 members)
Chief Marty Dailey – Thomasville Fire Department, North Carolina (an all paid department with 61 members)
Chief Len Needham – Bahama Fire & Rescue, North Carolina (a volunteer department with 75 members)

On average, how many man-hours <u>per week</u> did you or your fire department project members spend dedicated to the project during the planning/design phase and during the construction phase?

Dailey: Our building committee spent on average at least 20 hours a week during the design phase. In the construction phase, one of our staff spent at least 6 hours a day answering questions and looking over the project to make sure everything was going okay.

Adams: We probably spent 6-8 hours per week during the design phase with the committee, not counting the meetings with the Architect. Even with a third party, project manager on site during construction I still spend two hours a week on the phone answering questions.

Caudill: During design and construction, we spent about 6-8 hours per week. However, some of this was because we did two stations at one time. During construction, I usually

liked to run by the jobs after the construction crews had all left. I wanted to really take my time and look and see what was going on.

Needham: During design, we spent pretty much the same as Chiefs Adams and Caudill…about 6-8 hours per week. During the construction phase I probably spent about 2 hours per day. Since I have a full time job, I would spend a good bit of time on the weekends looking over the construction.

How did you control construction site visits by Fire Department personnel that were not "authorized" to visit the site or speak to the contractors?

Caudill: Besides the Chief and myself, the City had one, non-Fire Department project manager whose job it was to look after construction. This was a real challenge for one of our two stations built because it was being built about 8 feet away from the functioning station that it was to replace. So we just let it be known to our personnel that we had one project manager and that he is the only one that is able to speak to the contractor.

Do you recommend buying Furniture, Fixtures, and Equipment (FFE) through the General Contractor or directly from the vendors themselves?

Adams: From my perspective I recommend going buying through the General Contractor. This helps eliminate some of the headaches you have to deal with.

(***Ken Newell****: What we've typically seen is that the larger municipalities with less limited financial resources will tend to put more of the FFE into the general contract itself compared to some of the smaller departments on tighter budgets who will typically purchase FFE outside of the general contract. Ultimately, the General Contractor will buy the FFE from the same vendor you will. But they obviously will add profit and overhead to the price. So you can typically save 7 to 15% by purchasing it yourself.)*

What was your biggest challenge during the construction phase?

Needham: I guess the biggest challenge for me was dealing with the little issues that would come up day to day. The 2 hours± per day that I spent on the project was challenging, especially considering that I have a full time job away from the VFD.

Dailey: I think the biggest challenge for me was to keep the General Contractor in focus with the Architect. There are many times the contractor will come to you about little change requests. I would go to the Architects and say "this has been brought to me for my decision". The Architect would then go to the GC and bring him back in line. The Architect would remind the GC that "this is the way it was designed and this is what we're going to do". For a person like me who had not been involved in construction before, it was important to have the architect to go to.

Caudill: Our biggest challenge was staying on schedule. Sometimes that gets to be the biggest construction challenge, especially if you're building a new station and not just a

replacement station. You have to time the hiring of your new hires and training so that everything and everyone will be ready exactly when the station is ready to occupy. Having a "moving target" completion date makes that very challenging.

How many of you made Liquidated Damages part of the General Contract so that the builder would pay a "per day penalty" if the project was not completed on time?

(All four answered "yes".)

If you had to do the entire process again, what would you do differently?

Adams: Start sooner! In Florida permitting takes an awful long time

Caudill: Plan reviews and permitting takes longer than we as fire service members would like. We stay in a hurry about a lot of things and we want to push, push, push. It just doesn't go that way when you get into this process. So the thing that we would change the most would be to start the permitting process just a little bit earlier. This would ease a little of our heart burn instead of really trying to push those things through.

Needham: I agree. We're in the process of getting rezoning and permits on another new station. The process is just tremendously drawn out.

Dailey: We probably would consider designing a little more growth space into our facility. While we still have plenty of room to grow into, you'll never build it cheaper than during the original construction.

What was the most unexpected thing you encountered during the entire planning, design and construction process?

Dailey: During construction, we ran into a lot of rock. This was unexpected and resulted in additional costs. We knew from pre-design borings that we had some rock to deal with, but we didn't know we had quite that much.

Adams: During construction, we encountered a great deal of unsuitable soils that had to be replaced. Our preliminary soils report did not reveal this. This cost was unexpected.

Needham: We were in a very rural setting. Therefore, our water source had to be a drilled well. The cost of the well, due to the drill depth necessary, along with the pump, waterline, and well house size were unexpected prior to construction

*(**Ken Newell:** Speaking of unexpected costs…this is another good reason to make sure you have a contingency allowance in the general contract. It is guaranteed that you will encounter unanticipated costs during construction!)*

Caudill: Sewer lines were our unexpected encounter. We knew that City sewer lines did not run all the way to our site, but they were not far away. We proceeded "assuming"

that the Utilities Department would take care of getting the sewer line extended to our site…especially considering that there were significant development plans slated for the area that would require sewer line extension. The Utilities Department felt that the Fire Department should pay for the sewer line extension. So we learned that you can run into interdepartmental issues that can cause conflict and potential delays.

What procedures do you have in place that assures the lessons learned from the previous project will be beneficial to your next project?

Caudill: What we tried to do is to have some younger members of the department involved in the building committees so that if the current administrative teams retire or leave you will always have some younger members that are experienced in the process. They can step in and take a leadership role in the process. They'll know the mistakes that we've made in some of our building processes and will be aware of why we had to do some of the things we did before.

Needham: We kept a record of everything that went on during the process. We put little stars beside all the critical items and had the notes typed up so that someone could always go back and review the process.