



**FSCI**

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**OUR GOAL IS TO COMPLETE ALL PLAN REVIEWS WITHIN 10 BUSINESS DAYS**

# SUMMER 2020 QUARTERLY REVIEW



BUILDING PLAN REVIEW



FIRE SAFETY PLAN REVIEW



CONSULTING SERVICES

## PRESIDENT'S MESSAGE

*An FSCI update from Keith Frangiamore, FSCI President*

### Tough Times

Since our Spring Newsletter, we have been through the most challenging time of my lifetime. From the COVID-19 virus pandemic, subsequent lockdown, massive unemployment and loss of business, to social injustice and subsequent protests throughout the country. Like many other businesses, FSCI has been greatly affected by the lockdowns. During the past few months, we have been adjusting to the various state and municipal government orders across the country where we have clients. FSCI struggled to provide the level of service our clients expect as we complied with CDC and state employee health safety guidelines, especially the staffing limitations at our offices.

We appreciate everyone's patience as these health safety guidelines and lockdowns impaired our ability to maintain our standard turnaround times. We are now back to full staffing and have reinstated our expedited plan review policy, allowing for 5 day expedited plan reviews, which was suspended in early April.

### Busy Times Ahead

FSCI continues to work on many large projects for essential service providers such as logistics companies and hospitals. They are in various stages of completion from plan review to field inspections. As we anticipate easing of safety restrictions and businesses begin reopening, FSCI is well positioned with our full staff ready to resume providing quality services to all clients and customers.

In addition, FSCI has many projects returning that were put on hold due to the COVID-19 pandemic where state orders shuttered businesses and others where health safety concerns precluded FSCI from entering buildings, such as senior housing, assisted living and skilled nursing facilities.

Please stay safe, protect others, and help us all work toward a healthy future!



# BUILDING CODE SUBMITTALS – HOW TO GET IT RIGHT

- Warren E. Olsen, CFPS CBO, Vice President of Building and Life Safety

Fire Safety Consultants, Inc. (FSCI) conducts full and partial third-party, building and life safety plan reviews for many of its municipal and fire district clients. We review the submitted plans using the model codes and our client's amendments for compliance. The focus of this article is on the building code portion of a plan review submittal.

Lack of sufficient detail on drawings, or missing drawings, is the primary reason that building and life safety plans are not approved. Plans submitted for permit review must be more than lines on paper or in a CAD file. More detail is always better than less. For example, one architect might submit two or three dozen architectural and structural sheets for a building while another architect will submit four or five pages for the same basic building. Typically, the larger plan set stands a better chance of being approved; or, having fewer comments which need to be addressed in a second submittal.

The number of pages submitted for review is not the sole reason in determining the likelihood that the plans will be substantially compliant with the applicable building code. Often the information and detail included on the additional plan sheets in an architect's submittal is likely to answer many of the questions that the plan reviewer may have when comparing the plans to the requirements of the jurisdictions adopted codes.

To submit a compliant set of construction plans the architect should review the code, section by section, to ensure that the design of the building meets the building code in effect within a jurisdiction. A good, thorough plan reviewer, while reviewing construction plans, goes through the code, section by section, using a checklist or other plan review tools.

## Construction Documents

The International Building Code (IBC) requires in Chapter 1, Administration, that construction documents be submitted that sufficiently indicate the location, nature and extent of the work proposed. The IBC further states that the submittal must show, in detail, that the construction documents conform to the codes and relevant laws, ordinances, rules and regulations as determined by the building code official.

While the code expects sufficient detail, often reviewers receive incomplete building details such as:

"Builder to construct stairways in accordance with the building code." Or,

"The owner will determine the interior finishes of the assembly areas before occupancy."

The first statement does not describe to the plan reviewer anything about how the architect wants the stairway constructed. The second statement doesn't include the flame-spread and smoke developed ratings of the finishes that may be installed within the assembly occupancy.

Complete and detailed drawings is the key to having construction plans approved on the first review.

## Necessary Elements of Construction Documents

In addition to detailed construction documents, which we will discuss later in this article, the IBC also specifically requires that construction documents address the following areas:

- Fire protection system shop drawings
- Means of egress
- Exterior wall envelope
- Site plan

### Fire protection system shop drawings

Although some jurisdictions may require fire protection system shop drawings prior to the issuance of a building permit, they are most-often submitted separately from the building construction documents. The building official or fire code official should be contacted in advance to determine when they want to receive fire protection shop drawings or preliminary design information. Typically, building plan submittals only require a note that sprinklers will be provided and the type of system that will be used (NFPA 13, 13R, or 13D). The reviewer will also look to see if a fire alarm system is provided.

### Means of egress

The review of a building or structure's means of egress is arguably one of the most important parts of any construction document review. A successful means of egress submittal will clearly show:

- The location and size of all doors and openings
- The occupancy load for all rooms and spaces on each floor
- The capacity of, or a means to determine, all exit accesses, exits, and exit discharges
- The location of all exit and emergency lighting fixtures
- Door hardware information include the type of door release and locking on each egress door

### Exterior wall envelope

The construction of the exterior wall envelope is regulated by the IBC. Requirements ensure that the construction of the exterior wall will resist moisture and is energy efficient. Exterior walls often act as bearing assemblies which must be designed to support roofs or floors. Where exterior walls require fire-resistance due to the building's construction type, or the wall's proximity to other buildings or lot lines. Construction documents must show the hourly fire rating, the construction of the wall, and shall include the fire-resistive design number of the assembly.

### Site plan

Site plans are a major part of the submittal for new buildings and when a building receives an addition. Site plans are necessary as they show the plan reviewer where the building will be located on the lot relative to other buildings and lot lines. A building's position on a lot determines the need for fire-resistance rated exterior walls and the protec-

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## LITTLE KNOWN FACTS

### ***NFPA 13 25.2.2.1.1 - Dry Pipe and Double Interlock Preaction System(s) Air Test***

For quite a while there has been an option which allowed a system working pressure hydrostatic test to be performed when minor modifications were made to an existing system. However, if the system was a dry-pipe system you were also required to perform a 24-hour air leakage test on the system. Starting in the 2016 edition of NFPA 13 there are now permitted alternative tests for air leakage testing when modifications have been made to an existing dry-pipe system. These options include an air pressure test of 40 psi for a duration of 2 hours with a permitted pressure loss of up to 3 psi being an acceptable loss. NFPA 13 also allows for an air pressure test which has the system remain at normal system air pressure for 4 hours with the air source turned off. During this test, the low-pressure alarm cannot activate.

***-Hannah Rodriguez, Fire Protection Consultant***

### ***Forward Flow Testing of Backflow Prevention Valves NFPA 13 (2013) 8.17.4.6.1, 25.2.5.1, NFPA 25 (2014) 13.6.3***

Since 2013, NFPA 13 has required that a permanent means be provided in order to facilitate the forward flow testing of the backflow prevention assembly at no less than the system demand, including hose allowances, as required by NFPA 25. This requirement is often overlooked during the design of a new system but plays an important role in maintaining a fire sprinkler system. The issue is that NFPA 13 does not specifically indicate how this requirement is to be met. Some of the most common solutions are to bypass the fire department connection check valve with a normally closed supervised indicating valve, provide hose connections downstream of the backflow prevention assembly, provide a dedicated forward flow test header, or size the main drain to handle the minimum flow rate of the system demand. For systems with a fire pump, the annual pump test header can be used for this test. Contractors often want to flip or remove the check valve on the FDC piping; however, this is not allowed. This practice is only permitted for systems installed prior to NFPA 13 (2013 ed.) being adopted.

Modifications to the system should not be needed in order to conduct this flow test.

***-Michael Gross, Fire Protection Consultant***

### ***Illinois Accessibility Code Fire Alarm System Update***

For our Illinois readers, the latest edition of Illinois Accessibility Code (IAC) became effective on October 23, 2018. While the regulations within the current IAC have come more in line with those found in the 2010 Americans with Disabilities Act, there are still differences (which are italicized in the IAC).

One major difference can be found in Section 215.3 involving Employee Work Areas. Section 215.3 reads: "Where employee work areas have audible coverage, visual alarms complying with 702 shall be provided." Section 702 adopts the 2013 edition of NFPA 72. Employee work areas, as defined by Section 106.5, are spaces used only by employees and used only for work. An example of such would be a single-user office. The prior edition of the IAC, through the U.S. Architectural and Transportation Barriers Compliance Board Bulletin #2: Visual Alarms, did not require single-user offices to have visual signals unless the employee using the office had a hearing difficulty and asked for a reasonable accommodation from the employer. The latest edition of the IAC would require, by Section 215.3, a visual appliance in each single-user office as each such office would be required to hear a fire alarm signal that was sounding.

There may be instances where the flash effect from a visual appliance located outside of the office may be seen (directly or in-directly) within the office. In this case the AHJ may accept the visual appliance as serving the room. The AHJ should evaluate the likelihood that the flash effect from outside the room will always be visible within the room. Closed office doors, or curtains on office windows cannot obstruct the flash from the visual appliance located outside of the office. Additionally, when the visual appliance located outside of the office is to be used to cover the individual office(s), appliance spacing must meet the requirements of NFPA 72, Chapter 18. The coverage area outside, and within, the office(s) must be considered in the design of appliance spacing.

***-Warren E. Olsen, CFPS CBO Vice President Building and Life Safety***



## RECALL NOTICE

Click on the link below for information from Edwards Fire Safety on their Mechanical Heat Detectors recall.

[Edwards Mechanical Heat Detector Recall Notice](#)





## SEMINAR INFORMATION

Stay up to date on the latest Fire, Building and Life Safety code changes and equipment by attending one of our seminars. Fire Safety Consultants, Inc. is teaching seminars throughout the United States, led by our experienced staff of Matt Davis, Keith Frangiamore, Brent Gooden & Warren Olsen. Whether you are a Contractor, Architect, Technician, Engineer or an Authority Having Jurisdiction, each seminar is full of practical insight and first-hand experiences to help you comply with applicable codes and standards. FSCI can also provide custom seminars at your location. Be sure to check out our [website](#) to view our listing of available seminars or to check the schedule to see what we are teaching next! Contact us to learn more by emailing [info@firesafetyfsci.com](mailto:info@firesafetyfsci.com) or by calling our corporate office at (847) 697-1300 x206.



## EMPLOYEE SPOTLIGHT

*Natalie McBride*

Natalie McBride started with Fire Safety Consultants, Inc. as a temporary employee in the fall of 2018. A few months later in February, Natalie was hired on as a permanent full-time Administrative Assistant, with her primary role being the processing of completed plan review letters. Currently, Natalie has moved into to a different administrative role and is currently processing the plan review submissions when they arrive in our offices. This role includes plan intake, creating invoices and collecting payment as well as other general office duties.

Prior to coming to us, Natalie worked for DePaul University for 21 years, where she started as an Administrative Assistant. Over the years, she worked her way up to the Financial Affairs Division and she also spent over 10 years in Procurement Services as a Buyer where she managed purchase order approvals and supplier relations for



supplies, science equipment, printing and contract management. Going forward, Natalie hopes to work towards receiving some certifications in the Administrative field.

Natalie has been married for 7 years and is a mom to 3 kids, Connor, 20, Carissa, 15 & Caden who is almost 5. When Natalie has some free time, she enjoys admiring nature and her garden from her deck, swimming in the pool with her kids, and catching up on her favorite tv shows.



## EMPLOYEE SPOTLIGHT NEWS

We would like to congratulate Michael Gross for successfully passing his NICET Level 1 exam for Water Based Systems on July 6th, 2020. Congratulations Michael!



**WE'RE LISTENING!**

Tell us what you are interested in learning about!

Email us at: [info@firesafetyfsci.com](mailto:info@firesafetyfsci.com)