

Selectmen's Public Meeting Minutes November 14, 2022

7:00 PM Meeting called to order by Selectman Jack Esposito. Also present was Selectman Howard Brown. The Board reviewed the public minutes of 11/7/22. **Brown** motioned to approve the public minutes of 11/7/22 seconded by **Esposito**. All in favor. Lyn Jennings came before the Board via zoom to discuss 54/56 Weston Hill Road. She said the situation has gone from bad to worse; there are 35-50 vehicles on the property. They are running a business hauling many vehicles in at all hours of day and night all week long. There are many people living on the property. She can't understand why nothing can be done. Chief Slavin asked the Board where this stands with Town Counsel. Chief Slavin stated that if she can record the noise issue while it's happening, they can potentially do something. When she's called and they've gone down there they aren't witnessing anything. We had spoken with the attorney about potentially doing a civil search warrant for the property. Jennings said that the attorney sent a letter months ago and nothing has changed. **Brown** explained that there are multiple issues going on. What had been sent to the lawyer was in regard to the occupancy of the dwellings on the property. Now we need to address the junk yard and illegal business issues. Jennings said she keeps hearing the same thing and is beyond frustrated as she sees no movement on this. **Esposito** will contact the attorney tomorrow and someone will get back to Lyn.

7:15 PM Department Head Meeting **Chief Mark Slavin – Police Department**

- National Drug Take Back Day was a success. In the past the best we've done is about a pound of unused or unwanted prescriptions. This time they took in 8 pounds.
- They got car #2 back. There was a \$2,000 bill for getting the water pump replaced.
- Car #1 is in the shop now; there is a bucking issue that needs to be fixed.
- Tyler Swenson has been sworn in; he will come in to the next BOS meeting to meet us. He will start his FTO next week.
- Jason Johnson graduates from the academy on Friday at 2:00pm and will start with us the week after.
- Saturday the Souhegan football team is playing for the State Championship. The MVPD will be on standby and lead the parade with the Fire Dept. if they do win.
- As of 12/31/22 Amazon will no longer be providing business line of credit to anyone. They do the majority of their purchases on Amazon. This means we will either have to get a town credit card or he will have to continue to use his own personal credit card which he would rather not do. **Esposito** stated that we will explore options.

Bonnie Angulas – Library Director

- The Library Trustees & the Library Building Committee received and reviewed the final documents from DSK Architects. The Library Building Committee has developed a request for proposal and are taking recommendations for a construction management

- firms. They are inviting up to 8 construction firms to bid soon; they have a meeting tomorrow night.
- The Mont Vernon Charitable Foundation has two final fundraisers slated for the end of the year. Naming Rights November gives donors the opportunity to earmark their gift for certain spaces. Giving Tuesday starts on 11/29. This is a one-day global giving day. All donations are matched 25% by the National Endowment for the Humanities.
 - The library is collecting new underwear and new socks again for our Seats and Feets clothing drive for SHARE. They are accepting donations until 11/30.
 - The PTA is hosting a Winter Wonderland event the first Saturday of December. They've invited the library to participate in their light show, to decorate a tree and JoAnn has been asked to do story time.

Chief Jay Wilson – Fire Department

- Wilson asked if the Board has reviewed the Amtec Fire Report and the Fire Chief's report regarding the proposed new library. These will need to be part of the library proposal as it's required by law. **Esposito** noted that it's a report referencing the necessity for a sprinkler system in the new library (reports attached). **Brown** questioned if having Rick Crocker's Amtec report is a conflict of interest. Wilson responded that it is not; he works as an independent contractor and the person he works with is a retired Chief over in Swanzee. **Brown** would like to check with the lawyer as he feels it may be a conflict of interest. **Esposito** stated that we will need to get 2 or 3 bids from different vendors.
- Chief Wilson thanked the PD and DPW for their help with the fire on Saturday. There were a couple of minor injuries. One of the Engines got stuck in the mud. There was damage done to one of the Engines going through the iron gate. A police report was filed. There is damage to the rear fender; Joan contacted Primex.
- As far as their budget for the end of the year, they are waiting on materials; there is still a supply issue with a lot of stuff. They've had hose, etc. on order for quite a few months.
- The SCBA amount will be around 160K-170K replacement cost. They hope to know by late Dec. early January if they received the grant. **Esposito** noted that this would have to be a warrant article; we can write it and then withdraw it if the grant does come in.

Heather Kennedy – Recreation Director

- Halloween was a success. The new method of communication with the Main Street and village area folks was really effective. Over 2 weekends they delivered 62 full bags and 21 ½ full bags of candy which was estimated to be about 38,000 pieces of candy. The closing of the side streets was coordinated with the PD.
- The ski program through Crotchet Mountain is underway. It's for children 5-18 years old and will take place on Friday nights. The deadline for signing up is Dec. 2nd though it may get extended.
- Tree Lighting takes place on Saturday 12/10 from 5:30-7:00pm. They are seeking nominations for the Honorary Tree Lighter. The tent and heater will be in the parking lot again; there will be a kid's craft. The Fire Dept. will do their chili cookoff again. The Souhegan High School chorus will sing a few songs and the Cub Scouts will also be there to perform.

Approved

Ben Crosby – Highway Director

- Leighton White is finishing hauling our sand in this week. Getting ready for possible storm Tuesday night.
- Crosby has been given the opportunity to purchase cement blocks for half price. They will use these to repair some retaining walls at the Transfer Station. He can get them for \$30 a piece; they will pick them up to save cost of delivery.
- There are two diesel tanks that Crosby wants to hook up at the Highway Garage. Due to the possible shortage of diesel fuel this winter he wants to stockpile some diesel fuel., He gave numbers for the BOS to review.
- Chief Wilson and Crosby want to order more barricades, cones, etc. out of the Emergency Management budget line.

8:05 PM Brown motioned to go into non-public session to discuss a citizen's personal matter seconded by **Esposito**. All in favor.

8:10 PM Brown motioned to come out of non-public seconded by **Esposito**. All in favor.

Esposito motioned to seal the non-public minutes of 11/14/21 seconded by **Brown**. All in favor.

8:15 PM As there was no further business before the Board **Brown** motioned to adjourn seconded by **Esposito**. All in favor.

Respectfully submitted,
Joan Cleary



Mont Vernon Fire Department
PO 483
Mont Vernon NH 03057
Business: 603 673 1383 Dispatch: 603 673 1414
montvernonfd@montvernonnh.us

12NOV2022

To: Mont Vernon Board of Selectmen
 Library Trustees
 Daland Trustees

Fm: Chief Jay S. Wilson

Re: Library Plan Code Review

The new proposed library shall be required to have a sprinkler system, with a minimum of a 2000gallon cistern holding tank and backup generator to support the fire pump in the absence of shore power.

This requirement is based on the following factors

- Occupancy Load: excess of 300 [327]
- Building construction: Type V – unprotected wood frame
- Water flow calculations: 2500gpm

The Fire Department contracted with Fire Risk Management and AMTEC Fire Protection Services for a complete independent plan code review and provide recommendations to the Fire Department and the Town.

The conclusions of their report support a requirement that the proposed Library Building shall be required to have an approved Sprinkler System.

It is my position that the town should be protecting not only their facilities, but also the citizens and employees that are occupying those facilities. We are talking about completing the sprinkler system for the Department of Public Works facility. Past conversations with regards to either repairing the Town Hall or replacing it, have included the installation of a sprinkler system.

The town also has to recognize, that the new Library would be used as a temporary emergency shelter in case of natural disaster or evacuation of an area of town.



Mont Vernon Fire Department
PO 483

Mont Vernon NH 03057

Business: 603 673 1383 Dispatch: 603 673 1414

montvernonfd@montvernonnh.us

Occupant load calculations:

Area Number			Occupant Load 100 SF	Occupant Load 15 SF	Occupant Load 7 SF
101A	Lobby Seating+	472 SF		31.4	
103	Children's Room *	1,209 SF			
	Children's Stackable	400 SF	4		
	Children's Reading	800 SF		53.3	
105	Young Adult Collections	271 SF	2.7		
106	Young Adult Reading	238 SF		15.8	
107	Reading Room	489 SF		32.6	
108	Adult Collections	476 SF	4.7		
108A	Adult Reading	401 SF		27.7	
112	Meeting	82 SF		5.4	
117	Program Room	1,052 SF			150.2
	Area occupancy by SF		11.4	166.2	150.2
	Total occupancy				327.8

+ Does not include possible seating/standing in 101. As part of 101 has shelving and goes the length of the interior of the building with an apparent seating area/wall desk area outside of 112.

*Is separated, between stackable shelving at 100 SF to 15 SF reading/seating

Areas labeled 101, 101A, 101B, 102, 105, 107, 108, 108A are one contiguous room.

- There is no room enclosure or compartmentation for this area.
- This area is open floor to ceiling with exposed trusses.
- If something happens in one area, it will affect all aspects of this area.
- Apart from bolted in place stackable shelving, this is classified as one area of occupancy at 15 SF.

Plan Review and Code Analysis Report
Plan Review and Code Analysis Report
Mont Vernon Daland Memorial Library, Grand Hill Road, Mont Vernon, NH

November 1, 2022

To: Chief Jay Wilson
Mont Vernon Fire Department
1 Main St, PO Box 483
Mont Vernon, NH 03057

From: Norman W. Skantze
Fire Risk Management
669 Old Homestead Highway,
Swanzey, New Hampshire 03446
603-393-0021
normskantze@gmail.com

Richard Crocker
AMTEC Fire Protection Services, Inc.
PO Box 901
Amherst, New Hampshire 03031
603 673 4469
ricks41bn@aol.com

Re: Plan review and analysis of the features of fire protection
Mont Vernon Daland Memorial Library,
Grand Hill Road, Mont Vernon, NH

Principal Architect: DSK Dewing Schmid Kearns Architects & Planners
Suite 200B 30 Monument Square, Concord, MA 01742
978-371-7500

- Oak Consulting Group, Civil Engineer
- Foley Buhl Roberts, Structural Engineers
- Allied Consulting Engineering, MEP Engineer
- G-2 Collaborative, Landscape Architect

The Mont Vernon Library is controlled by an elected board of Library Trustees. The trustees are the elected representatives of the Daland Memorial Library. They are charged under RSA 202:-A, with the overall responsibility for the management of the library.

Library Trustees

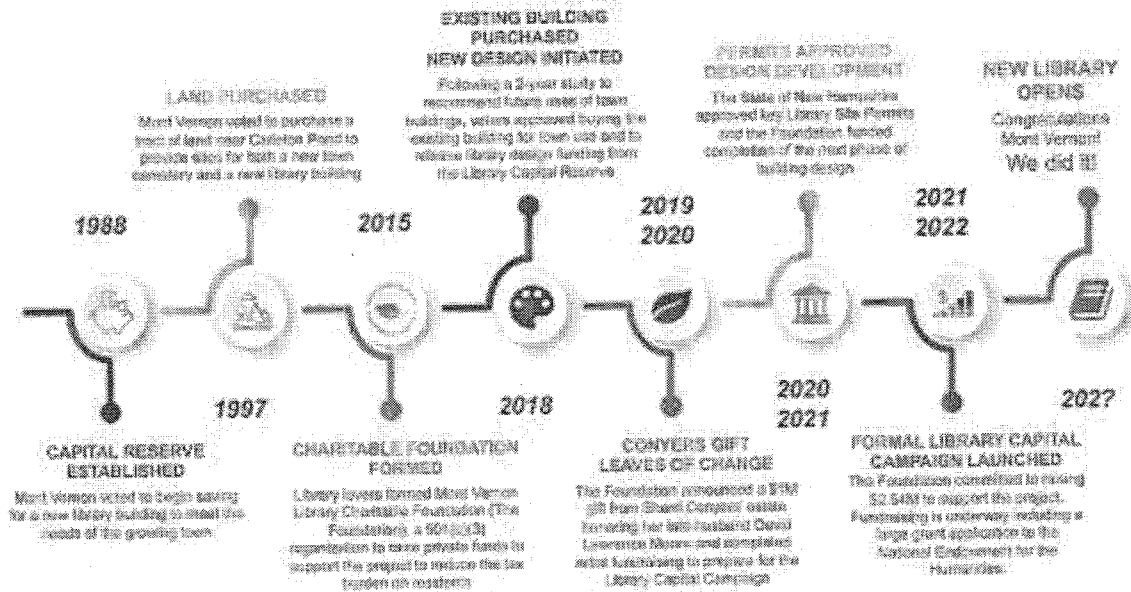
Current Board Members (elected for a 3-year term)

Cindy Raspiller, Chair	Term expires 2025
Jane King, Treasurer	Term expires 2023
Amy White, Secretary	Term expires 2024

Plan Review and Code Analysis Report

Mont Vernon Daland Memorial Library, Grand Hill Road, Mont Vernon, NH

Project Timeline



The Mont Vernon Fire Department is controlled by an elected, board of Fire Wards. The board of Fire Wards are responsible for the efficient and effective operation of the Mont Vernon Fire Department. Chief Jay Wilson serves as Fire Chief and works under the provisions of RSA 154:2. Under the authority of the Fire Chief, Chief Wilson is the recognized official identified by statute to enforce any local or state laws or rules pertaining to the control of combustible or hazardous material or both, the design of exits, and **any other fire safety measures**: including the State Fire Code enacted pursuant to NH RSA 153:5. The Fire Chief is the **Authority Having Jurisdiction (AHJ)** with respect to the State of New Hampshire Fire Code and the adopted NFPA codes and standards. This analysis includes a review of requirements from the State Fire and State Building code as indicated below.

- Note 1: Chief Wilson is obligated by statute, RSA 154:2 II (b) to Provide information on the appeals process for local fire code ordinances and the variance process for the State Fire Code upon review of plans and notice of violation. This statute would only become pertinent in the event the final design does not include the life safety measures the Chief deems to be required by the State Fire Code or if a notice of violation is issued or denies approval of the permit applications.

2. Third Party Review – Life Safety Code 101 2018 edition 4.6.1.4 Technical Assistance.

4.6.1.4 The authority having jurisdiction shall be permitted to require a review by an approved independent third party with expertise in the matter to be reviewed at the submitters expense. 4.6.1.4.2. The independent reviewer shall provide an evaluation and recommendation necessary changes of the proposed design, operation, process, or new technology to the authority having jurisdiction.

Plan Review and Code Analysis Report

Mont Vernon Daland Memorial Library, Grand Hill Road, Mont Vernon, NH

- *Currently, the local fire chief is not requiring remuneration by the Library Trustees for this purpose. The Chief and Fire Wards seek to ensure that appropriate levels of fire protection are planned into the design of the building and are exercising the authority of the Fire Chief to utilize third party assistance.*
 - **Scope:** The scope of the review conducted by Amtec, Inc of Amherst, New Hampshire and Fire Risk Management, LLC of Swanzey, NH is limited to the features of fire protection and specifically the determination of whether an automatic sprinkler and fire alarm systems are required features of protection for this proposed structure. The Fire Chief has requested consultants provide the background and cite code sections that identify any code or legal requirement that impacts the installation of an automatic sprinkler system and automatic fire alarm.
 - **IBC - International Building Code by reference - NH Building Codes adopted 2022**
 - a. IBC - International Building Code (IBC) 2018 with NH Amendments •
 - b. IEC- International Energy Conservation Code 2018 (IEC) with NH Amendments •
 - c. IEBC- International Existing Building Codes 2018 (IEBC) with NH Amendments •
 - d. IMC - International Mechanical Code 2018 (IMC) with NH Amendments •
 - e. IPC - International Plumbing Code 2018 (IPC) with NH Amendments •
 - f. ISPSC- International Swimming Pool & Spa Code 2018 (ISPSC) with NH Amendments •
 - g. ICCA117.1 and FHA/UFAS as applicable 2009 NOTE: This is a partial list of the adopted codes. The list is provided as a resource for some of the most frequently used codes. Refer to Chapter 2 of NFPA 1 for complete list.
3. *RSA 155-A:2, 1: The state building code in effect at the time that the application for the building permit required by RSA 155-A:4 is received by the governing authority shall remain in effect for the duration of the work covered by that permit. This requirement notwithstanding, for a period of 6 months after the effective date of the code adopted under RSA 155-A:1, IV, a concurrency period is established, allowing building permits, and other required documents, at the election of the applicant, to show compliance using either the code in effect just prior the effective date of the code adopted under RSA 155-A:1, IV, or the code adopted under RSA 155-A:1, IV, but not a combination of the 2 codes.*
4. Although a grace period exists, it is intended for projects in which an application for the building permit has already been received by a town or city prior to the effective date and does not apply to this circumstance.

NFPA – National Fire Protection Association codes by reference - NH State Fire Code adopted 2022

- a. **2018 NFPA 1, Fire Code** as amended by Saf-FMO 300 •
- b. **2018 NFPA 101, Life Safety Code** as amended by Saf-FMO 300 •
- c. **2016 NFPA 13, Standard for the Installation of Sprinkler Systems** •
- d. **2016 NFPA 13R, Standard for the Installation of Sprinkler Systems for Low-Rise Residential Occupancies** •
- e. **2017 NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems** •
- f. **2018 NFPA 30, Flammable and Combustible Liquids Code** •
- g. **2018 NFPA 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages** as amended by Saf-FMO 300 •
- h. **2016 NFPA 31, Standard for Installation of Oil-Burning Equipment** as amended by Saf-FMO 300
- i. **2018 NFPA 54, National Fuel Gas Code** as amended by Saf-FMO 300 •
- j. **2017 NFPA 58, Liquefied Petroleum Gas Code** as amended by Saf-FMO 300 •
- k. **2020 NFPA 70, National Electrical Code (NEC)** with NH Amendments • **2016 NFPA 72, National Fire Alarm and Signaling Code**

Plan Review and Code Analysis Report

Mont Vernon Daland Memorial Library, Grand Hill Road, Mont Vernon, NH

- l. 2017 NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations •
- m. 2016 NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances •
- n. 2015 NFPA 720, Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment •
- o. 2015 NFPA 914, Code for Fire Protection of Historic Structures
- effective date: July 1, 2022

DSK preliminary plans for the Mont Vernon library specify the following in notes on G002:

**Note 1 G002: Occupancy Classification – International Building Code
Use Group A-3 Library**

**Note 2 G002: NFPA 101 Life Safety Code
Assembly Occupancy Assembly Occupancy**

Note 3 G002: Construction Type V – V000 (combustible unprotected)

DSK Note 8 on page G002: “Since the building is less than 12,000 square feet and the occupant load is less than 300” (DSK plans indicates and Occupant load of 226. DSK cites 2015 IBC903.2.1.3 and 907.2.1. DSK also cited NFPA 12.3.5.2 & 12.3.4.1.1. “The only requirement would be portable fire extinguishers in accordance with IBC 906.1”.

DSK sheet E.0.0 – E.1.0, E 2.0 and E.3.0 - provides notes related to a fire alarm plan for the library. Notes also indicate and reference the inclusion of a sprinkler bell and dry system compressor. The reference in the plan to a fire sprinkler is likely an error. We believe this because the Architect indicated in a subsequent meeting that although the automatic sprinkler and fire alarm are not required, they have elected to include an automatic fire alarm as an added feature of protection but not the sprinkler system.

DSK Note: G003: Occupant Load

OCCUPANT LOAD						
Number	Name	Area	Occupancy	Occupancy Gross or Net	Area Per Occupant	Maximum Occupancy
101A	LOBBY SEATING	472 SF	READING AREAS	Net	50 SF	9.45
101B	CIRC DESK	222 SF	STAFF WORK	Gross	100 SF	2.22
102	STAFF	168 SF	STAFF WORK	Gross	100 SF	1.68
103	CHILDREN'S RM	1,209 SF	READING AREAS	Net	50 SF	24.19
103B	STORAGE	35 SF	MEP/STORAGE	Gross	300 SF	0.12
104	KITCHEN	184 SF	KITCHEN	Gross	100 SF	1.84
105	YOUNG ADULT COLLECTIONS	271 SF	STACK AREAS	Gross	100 SF	2.71
106	YOUNG ADULT	238 SF	READING AREAS	Net	50 SF	4.76
107	READING ROOM	489 SF	READING AREAS	Net	50 SF	9.78
108	ADULT COLLECTIONS	476 SF	STACK AREAS	Gross	100 SF	4.76
108A	ADULT READING	401 SF	READING AREAS	Net	50 SF	8.02
109	STORAGE	89 SF	MEP/STORAGE	Gross	300 SF	0.30
110	IT/AV	51 SF	MEP/STORAGE	Gross	300 SF	0.17
111	MECHANICAL	155 SF	MEP/STORAGE	Gross	300 SF	0.52
112	MEETING	82 SF	ASSEMBLY	Net	15 SF	5.48
114	JC	35 SF	MEP/STORAGE	Gross	300 SF	0.12
117	PROGRAM RM.	1,052 SF	ASSEMBLY	Net	7 SF	150.30
118	STORAGE & RECYCLING	86 SF	MEP/STORAGE	Gross	300 SF	0.29
TOTAL OCCUPANT LOAD						226.68

Plan Review and Code Analysis Report

Mont Vernon Daland Memorial Library, Grand Hill Road, Mont Vernon, NH

The use and occupancy classification for the Mont Vernon Daland Library is Assembly A-3

International Building Code 2018 Classification Section 302

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes, shall be complete with all the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with section 508 (Mixed use and Occupancy) Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

International Building Code 2018

303.4 Assembly Group A-3 occupancies include assembly uses intended for worship, recreation, or amusement and other assemblies not classified elsewhere in Group A (Assembly) including but not limited to ...Libraries.

The proposed library is classified as Assembly A-3, Section 508 of the IBC 2018. The building code makes provisions for mixed use and occupancy that allows each portion of the building to be individually classified under section 302.1

International Building Code 2018

508.1 General: Each portion of a building shall be individually classified in accordance with Section 302.1 (Classification). Where a building contains more than one occupancy group, the building or portion thereof shall comply with the applicable provisions of Section 508.2 (accessory occupancies), 508.3 (Non-Separated Occupancies) or 508.4 (Separated Occupancies.), or a combination of these sections.

International Building Code 2018

508.3 Nonseparated Occupancies. Buildings or portions of buildings that comply with the provisions of this section shall be considered as non-separated occupancies.

508.3.1 Occupancy classification. Non separated occupancies shall be individually classified in accordance with Section 302.1 (Classification). The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space. **In addition, the most restrictive provisions of Chapter 9 (fire protection systems) that apply to non-separated occupancies shall apply to the total nonseparated occupancy area...**

International Building Code 2018

508.2 Accessory occupancies are those occupancies that are ancillary to the main occupancy of the building or portion thereof. Accessory occupancies shall comply with the provisions of Section 508.2.1 (Occupancy Classification) – 508.2.4 (Separation of Occupancies).

Plan Review and Code Analysis Report
Mont Vernon Daland Memorial Library, Grand Hill Road, Mont Vernon, NH

Δ Table 7.3.1.2 Occupant Load Factor

Use	(ft ² /person) ^a	(m ²)
Assembly Use		
Concentrated use, without fixed seating	7 net	0.61
Less concentrated use, without fixed seating	15 net	1.4
Bench-type seating	1 person/18 linear in.	1 p
Fixed seating	Use number of fixed seats	Use
Waiting spaces	See 12.1.7.2 and 13.1.7.2	See
Kitchens	100	9.3
Library stack areas	100	9.3
Library reading rooms	50 net	4.6
Swimming pools	50 (water surface)	4.6
Swimming pool decks	30	2.8
Exercise rooms with equipment	50	4.6
Exercise rooms without equipment	15	1.4
Stages	15 net	1.4
Lighting and access catwalks, galleries,	100 net	9.3

The children's reading area is one hundred and fifty square feet larger than the program room which has a stated occupant load of one hundred and forty-five (145) people. The occupant load used for this space in the DSK plan is based on table 7.3.1.2 -library reading room at one person for fifty square feet (50 sf) the occupant load is therefore 24 people. However, a February 2022 NFPA Fact Sheet describes how an occupant load is determined by the Life Safety Code when a building has areas used for **different purposes** such as a multipurpose room. The fact sheet states that the occupant load is based on how areas are used and not on the building's occupancy classification. For example, on one day, a reading room might be set up with tables and chairs for reading. This arrangement is typically considered to be less concentrated assembly use and the occupant load would be 1 person per fifty (50) square feet. However, on another day the tables may be removed and rows of chairs set up for a presentation. This use would then fall under the occupant load factor for concentrated use without fixed seating which is one person for every seven (7) square feet. For further information regarding occupant load and mixed uses see NFPA articles: How to Calculate Occupant Load NFPA Today April 6, 2020 page 13 and # 101 Wednesdays: Since multiple-occupancy buildings lead to multiple questions and interpretation, who's right? Page 14 for further explanation.

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Mont Vernon Daland Memorial Library, Grand Hill Road, Mont Vernon, NH

This seemingly minor detail significantly impacts the occupant load and life safety of the building. The occupant load factor for the Children's reading room occupancy could potentially increase depending on how the space is divided and how the use is allocated in the future.

DSK specifically identified in Note 8, G002: **"Since the building is less than 12,000 square feet and the occupant load is less than 300, neither a sprinkler system or fire alarm system is required."** This may be a fair conclusion, provided the rooms are only used in the manner indicated. If, however the children's reading room or the lobby area is used for a function other than the stated purpose the occupancy load may exceed the 300-person threshold.

NFPA Life Safety Code 101 – 2018 Edition

The life safety code defines an assembly use as follows.

Life Safety Code 101 – 2018

6.1.2.1 An occupancy used for a gathering of 50 or more persons for deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation or similar uses, or used for a special amusement building regardless of occupancy.

The library design is a multiple and mixed-use occupancy:

Life Safety Code 101 2018 Edition

6.1.14.1 A building or structure in which two or more classes of occupancy occur.

Life Safety Code 101 2018 Edition

6.1.14.1.1 Multiple occupancies shall comply with the requirements of 6.1.1.4.1

1. Mixed Occupancies
2. Separated Occupancies

Life Safety Code 101 2018 Edition

6.1.14.1.2 Where exit access from an occupancy traverses another occupancy the multiple occupancy shall be treated as a mixed occupancy.

The requirements are determined as much by what features of protection are not provided as much as by those that are. The library without the benefit of fire separations of various mixed occupancies is a mixed occupancy.

Life Safety Code 101 2018 Edition

6.1.14.2.3 Separated occupancy. A multiple occupancy where the occupancies are separated by fire barriers.

Plan Review and Code Analysis Report

Mont Vernon Daland Memorial Library, Grand Hill Road, Mont Vernon, NH

In a mixed-use occupancy, the life safety code requires that each portion of the building be classified as to its use in accordance with section 6.1. The building shall comply with the most restrictive requirements of the occupancies involved, unless separate safeguards are in place.

Life Safety Code 101 2018 edition

6.1.14.3.1 Each portion of the building shall be classified in accordance with section 6.1.

Life Safety Code 101 2018 edition

6.1.14.3.2 The building shall comply with the **most restrictive requirements** of the occupancies involved, unless separate safeguards are in place.

Additional sections of this chapter discuss separated occupancies including 6.1.14.4.1, 2, 3, and 5., Table 6.1.14.4.1 (a) and others. Because the plan does not indicate the use of fire barriers, we have not expanded this report to include a discussion of these requirements at this time.

The Life Safety Code outlines the how the occupant loading shall be determined by specifically stating:

Life Safety Code 101, 2018 edition

12.1.7.1 General: The occupant load in number of persons from who means of egress and other provisions are required shall be determined based on occupant load factors of Table 7.3.1.2 that are characteristic of the use of the space or shall be determined as the maximum probable population of the space under consideration whichever is greater.

Life Safety Code 101, 2018 Edition

12.3.5.2 Any building containing one or more assembly occupancies where the aggregate occupant load of the assembly occupancies exceeds 300 shall be protected by an approved supervised automatic sprinkler system in accordance with 9.7, 12.1.6.12.3.2, 12.3.6.

Life Safety Code 101, 2018 Edition

12.3.5.3 The requirements of 12.3.5.2 shall not apply to the following.

- (1.) Assembly occupancies consisting of a single multipurpose room less than 12,000 square feet that is not used for exhibition, display and is **not part of mixed occupancy.**
- (2.) Gymnasiums, Skating rinks, and swimming pools used exclusively for participant sports with no audience facilities form more than 300 people.

Plan Review and Code Analysis Report

Mont Vernon Daland Memorial Library, Grand Hill Road, Mont Vernon, NH

Further impacting the requirement for additional features of fire protection are section 12.3.6, 12.3.3.4, 12.3.6, 7.1.3.1 and 8.3 **having to do with requirements for fire separation of common corridors and exit corridors** throughout the building. Specifically, corridors and egress must be fire separated by a one-hour wall and ceiling assembly. There are four exceptions given the most significant being exception # 2 which states that corridors and egress are **not required to be fire rated if the building has an automatic sprinkler system**. It is recommended that you review these sections as well.

The consultants believe there are ample reason to include an automatic fire alarm and sprinkler system requirements for the Mont Vernon Library based on the proposed use group, the occupant load requirements, and the most compelling argument the provision of **NFPA 1 Fire Code, 2018 edition section 18, Fire Department Access, and Water Supplies**. The proposed library is not located within a municipal water district and as a result cannot meet the minimum requirements for water supply and fire flow outlined in NFPA 1, Section 18, which is an adopted reference of the New Hampshire Fire Code.

The NFPA Fire Code 1 requires a water supply capable of supplying the required fire flow for fire protection shall be provided to the premises. The code allows the **Authority Having Jurisdiction to consider approved reservoirs, pressure tanks, fire department capabilities to deliver water, or other approved systems**. Additionally, **the Authority Having Jurisdiction is authorized to consider a fire flow reduction method for other reasons including; fire sprinkler system, building location, type of construction, occupancy, building density and setbacks**.

NFPA Fire Code 1 2018 edition

18.3.1 An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of building are hereafter constructed or moved into the jurisdiction. The approved water supply shall be in accordance with Section 18.4

NFPA Fire Code 1 2018 edition

18.3.1.1 Where no adequate or reliable water distribution system exist, approved reservoirs, pressure tanks, elevated tanks, fire department tanker shuttles, or other approved systems capable of providing the required fire flow shall be permitted.

NFPA Fire Code 1

18.4.3.1.1 **Fire Flow requirements shall be permitted** to be decreased by the AHJ for isolated buildings or a group of buildings in rural areas or suburban areas where the development of full fire flow requirements is impractical as determined by the Authority Having Jurisdiction.

NFPA Fire Code 1 2018 edition

18.4.3.1.2 The **Authority Having Jurisdiction shall be authorized to establish conditions on fire flow reductions approved in accordance with 18.4.3.1.1 including but not limited to, fire sprinkler protection**, type of construction of the building, occupancy, development density, building size and setbacks.

Plan Review and Code Analysis Report **Mont Vernon Deland Memorial Library, Grand Hill Road, Mont Vernon, NH**

The minimum required Fire Flow and Flow duration is determined by NFPA 1 Fire Code 2018 edition, table 18.4.5.2.1

1-222

Table 18.4.5.2.1 Minimum Required Fire Flow and Flow Duration for Buildings

Fire Flow Area ft ² (× 0.0929 for m ²)					Fire Flow gpm (× 3.785 for L/min)
I(443), I(332), II(222)*	II(111), III(211)*	IV(2HH), V(111)*	II(000), III(200)*	V(000)*	
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500

The required fire flow for the Mont Vernon, Deland Library is 2500 GPM. This requirement is based on the Construction Type V00, and a formula which multiplies the area by a fire flow GPM factor. [Fire Flow Area Ft² (X 0.0929 for m²). Table 18.4.5.2.1 indicates that a Type V000, with an area of 8,367 (G003) requires a fire flow in Gallons per minutes of 2500.

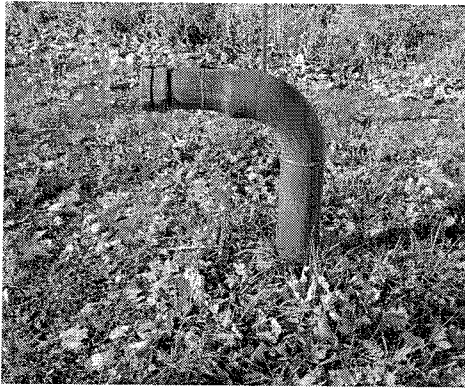
Mont Vernon does not have a municipal water supply or hydrant system. Therefore, the fire department achieves water flow using combination of draft sites, dry hydrants, fire department tanker shuttles and mutual aid. The fire department tanker shuttle is initially conducted by the town's local fire department and then supported by mutual aid from the Souhegan Mutual Aid Association. Additional firefighters, apparatus and tankers are available to the town of Mont Vernon based on a predetermined response card system which activates additional resources both automatically and on demand during a fire. These assest are not equivalent to a municipal water supply system. The absence of municipal water supply and fire hydrants significantly restricts the town's ability to meet the requirements of minimum fire flows for a building of this size (2500 GPM) as identified in table 18.4.5.2.1. According to the local Fire Chief, Jay Wilson, the town of Mont Vernon has not had an ISO evaluation in recent memory. The current public protection rating according to the Chief is 9/10. The town will likely benefit from an updated evaluation that takes into consideration other factors which may help improve the department's rating.

The ISO rating system is a system that determines the town's public protection classification. The public protection classification considers the availability of municipal water, the capability of the fire department to provide required fire flows using tankers, the number, and types of (career/on call) firefighters, training records, equipment, appraratus and other factors which lead to the rating. The rating is used by insurance companies to aid in the determination of insurance premiums. The rating ranges from a high of 1/10 to a low of 10/10. The rating system reflects a fire department's ability to suppress fires.

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Typical Dry Hydrant, Mont Vernon NH.



Two dry hydrants are located within proximity of the proposed library site. Both hydrants are within 1000 feet of the proposed library. 1000 feet is the absolute maximum distance (1000 feet) allowed for effective alternative water supply.

It is therefore reasonable to conclude the local fire department cannot deliver 2500 GPM and by using only dry hydrants and tankers supplemented by mutual aid potentially could potentially deliver between 500 – 1000 GPM for a sustained (2 hour) period of time. **It is not recommended to reduce the minimum required fire flow without the benefit of automatic sprinkler system and cistern for the building.**

With the implementation of an automatic sprinkler system in the building, the Authority would be justified in reducing the required fire flow by as much as 75% but not less than 1000 GPM. of table 18.4.5.2.1.

NFPA Fire Code 1 2018 edition

18.4.5.3.2 Required fire flow shall be reduced by 75 percent when the building is protected throughout by an approved automatic sprinkler system. The resulting fire flow shall not be less than 1000 GPM

NFPA Fire Code 1 2018 edition

18.4.5.3.4 Required Fire Flow and Automatic Sprinkler System Demand. For a building with an approved sprinkler system demand. For a building with an approved fire sprinkler system, the fire flow demand and the fire sprinkler system demand shall not be required to be added together. The water supply shall be capable of delivering the larger of the individual demands.

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Summary

The services of Fire Risk Management, LLC and AMTEC, Fire Protection Services, Inc. were engaged by Fire Chief Jay Wilson for the purpose of evaluating the preliminary construction documents and plans submitted by Dewing Schmid Kearns Architects + Planners. The Fire Chief seeks third party review in support of determining whether the plans are compliant with the NH State Building and Fire Codes specially to the inclusion of an automatic fire alarm and automatic sprinkler system for the proposed library. The Fire Chief is authorized to seek an independent third-party review and to consider any evaluation or recommendations provided.

The proposed building is 8,350 square feet. The architect specifically noted in the plans G002, note 8: that since the building is less than 12,000 square feet and the occupant load is less than 300 neither a sprinkler or fire alarm system are required. Cited is IBC 903.2.1.3, 907.2.1, 906.1 and NFPA Life Safety Code 101, 12.3.5.2. The consultants agree with the premise of the section cited by DSK related to occupant load, however there are additional codes and code sections which must be considered. We have provided evidence in this report from both the IBC 2018 edition, the Life Safety Code 101, 2018 edition and the NFPA 1 Fire Code, 2018 edition which contradict the assumption that a fire alarm and sprinkler system are not required and outline the rational for why the building requires both in order to be compliant.

The building is an unprotected, open wood frame and combustible construction. It is categorized as building type V000 type construction. It is the least protected and most vulnerable building type.

The Daland Library as proposed is comprised of multiple occupancies. Because there are multiple occupancies the plan must meet the requirements of a mixed and separated occupancy. This includes providing rated fire separations of occupancy types in accordance with table 6.1.14.4.1 and one hour rated walls and ceilings of corridors and egress pathways where occupancies transverse one another or share corridors. When considering mixed use occupancy, the most restrictive section applies.

The consultants believe an argument can be made for increasing the proposed occupant load as provided by DSK. This is based on potential uses of space within the library. These uses can be subjective and certain spaces within the library could be used for assembly instead of reading rooms and lobby areas. Ultimately the fire chief has the authority to make the final determination of occupancy of the building.

The most compelling argument for inclusion of a sprinkler system and fire alarm is found in the NFPA Fire Code 1 table 18.4.5.2.1 which indicates that the required minimum fire flow and duration for a building between 7701 and 9400 square feet is 2500 Gallons per minute for a duration of two (2) hours. The ability to deliver 2500 Gallons per minute in a rural setting and without the benefit of a municipal water supply system and hydrants is daunting at best. **The Fire Code accounts for this deficiency by providing opportunities for the local Authority Having Jurisdiction to consider other methods for supplying the minimum requirements including:** draft sites, dry hydrants, fire department tanker shuttles, and cisterns. The code also allows a provision where the required fire flow can be reduced by 75 percent but not less than 1000 GPM **if the building has an automatic sprinkler system.** The consultants recommend that the architect begin a dialogue with the fire chief or designee to determine how the plan will account for compliance with the fire flow requirements using a sprinkler and the departments 7/10 ISO rating and skill in delivering water with tankers from dry hydrants which are currently in place within 1000 feet of the proposed building.

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¹How to Calculate Occupant Load NFPA Today April 6, 2020

BY VALERIE ZIAVRAS

A fundamental concept of model building codes, fire codes, and life safety codes is that a means of egress is designed to accommodate all occupants of a building. Knowing how to determine the total occupant load of a building is an integral part in determining if the building meets that basic concept. It can be difficult to estimate how many people are going to use a space within a building so most model codes that address egress design will provide requirements for how to estimate this number.

If you are working with *NFPA 101, Life Safety Code*, Table 7.3.1.2 provides occupant load factors for different uses found in a building. Occupant load factors are chosen based on how the space is used and not the occupancy classification of the space. For example, it isn't uncommon for a business occupancy to have spaces that would fall under "business use", as there will almost always be spaces used for non-business purposes also within the building. A conference room within the business occupancy wouldn't be considered an assembly occupancy unless it was determined to have an occupant load of 50 or more people. For the purposes of determining the occupant load, that conference room has an assembly use. Once the occupant load factor has been determined based on the use of the space, it is then used to calculate the occupant load of that space. Calculating occupant load can be thought of in three steps:

- Select an occupant load factor
- Determine the size of the room
- Apply the occupant load factor to the space

There is a common misconception that the calculated occupant load is the maximum number of occupants the space can contain. Instead, the calculated occupant load is actually the minimum number of expected occupants. If the designer, building owner, or other involved party knows the expected number of occupants may be higher than the calculated number of occupants, then that number should be used as the occupant load. If, for example, the building owner knows there will be 5 people working in a storage room that has a calculated occupancy of 3 people, the design needs to be based off of the expected occupant load (5 people). Now, if the building owner says there will only be 1 person in the storage room that has a calculated occupancy of 3 people, the design needs to be based off of the calculated occupant load (3 people).

For a detailed step-by-step explanation of calculating occupant load and to learn about changes to some of the occupant load factors for the current edition (2018), [download your free fact sheet!](#)

Important Notice: Any opinion expressed in this column (blog, article) is the opinion of the author and does not necessarily represent the official position of NFPA or its Technical Committees. In addition, this piece is neither intended, nor should it be relied upon, to provide professional consultation or services.²

¹ (Ziavras, 2020)

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² # 101 Wednesdays: Since multiple-occupancy buildings lead to multiple questions and interpretation, who's right?

BY GREG HARRINGTON

Image: Wikimedia Commons

Over the 20+ years I've been working with NFPA 101, Life Safety Code, the concept of multiple-occupancy buildings hasn't been all that controversial. In fact, I'd go so far as to say it's been relatively straightforward—until recently.

Over the past couple weeks, I've seen a spate of questions relating to buildings with multiple tenants having the potential for different occupancy classifications. I've also seen some interpretations from authorities having jurisdiction (AHJs) that don't align with the code's intent. While I recognize that the AHJ has the final say regarding code interpretation, it doesn't make an incorrect interpretation right. I don't like disagreeing with the AHJ; I was one for several years, and I know how difficult the job is given the volume of work and limited resources. AHJs take their responsibilities very seriously; after all, the safety of the public and emergency responders is in their hands. But my job is to educate and inform about the intent of the *Life Safety Code*, and when I know it is being misapplied, I have a duty to share that information.

NFPA is transforming from a codes-and-standards organization into a knowledge-and-information organization. Here is some knowledge and information to help everyone get on the same page with regard to multiple-occupancy buildings.

Occupancy classification is addressed in Section 6.1 (all references are to the current 2018 edition). The term “multiple occupancy” has the following definition:

6.1.14.2.1 Multiple Occupancy. *A building or structure in which two or more classes of occupancy exist.*

NFPA's headquarters in Quincy, Massachusetts is an example of a multiple-occupancy building. Our building contains offices (business occupancy) and a cafeteria with an occupancy load of more than 49 persons (assembly occupancy).

Where a building contains multiple occupancies, it must comply with the requirements for mixed occupancies in 6.1.14.3 or the requirements for separated occupancies in 6.1.14.4, as prescribed by 6.1.14.1.1. **Here is the key takeaway: use of the separated-occupancy criteria is not mandatory unless specified by another section of the code.** This occurs only in a few instances. For example, a health care occupancy (e.g., a hospital or nursing home) is permitted to be in a building containing other occupancies only when it is separated from the other occupancies by a two-hour fire barrier (see Chapters 18 and 19 for details). Even if a building looks like it contains multiple-separated occupancies, nothing prohibits it from being classified as a multiple-mixed occupancy as long as all of the occupancies comply with the most restrictive requirements of the occupancies involved, unless separate safeguards are approved, as stated in 6.1.14.3.2.

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Conversely, situations exist where the code mandates the use of the multiple-mixed occupancy provisions. Where multiple occupancies lack separation by fire barriers (occupancy separations) as required by 6.1.14.4, the occupancies are mixed by default. Also, where multiple occupancies share common exit access travel paths

(e.g., corridors) as described in 6.1.14.1.2, the occupancies are mixed. Note that multiple-separated occupancies are permitted to share common exits (e.g., stair enclosures). Let's take a closer look at 6.1.14.1.2:

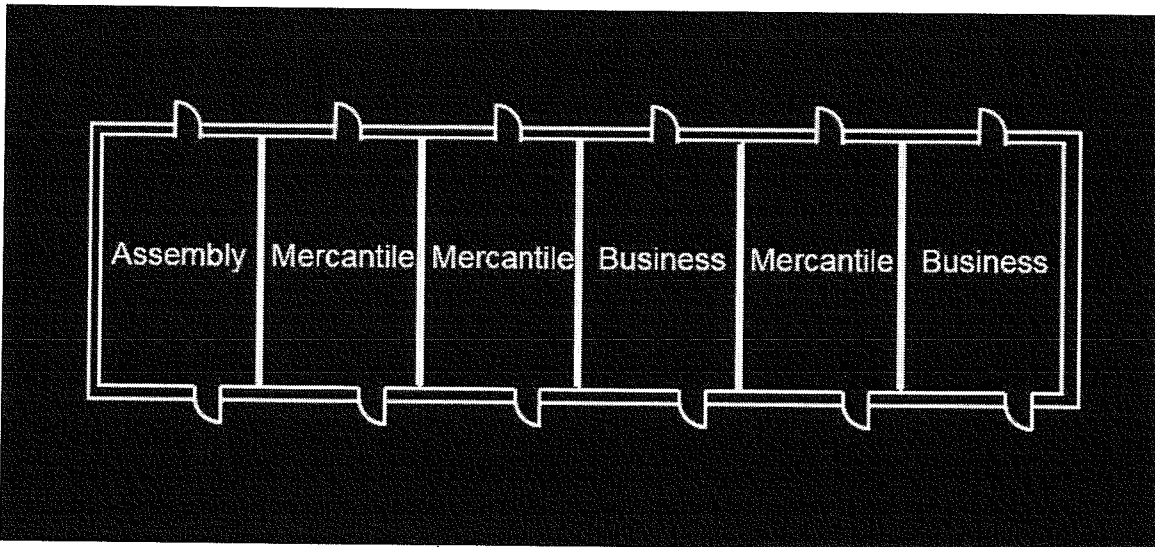
6.1.14.1.2 *Where exit access from an occupancy traverses another occupancy, the multiple occupancy shall be treated as a mixed occupancy.*

I'm aware of a jurisdiction extrapolating this to mean where exit access from an occupancy does not traverse another occupancy, the multiple occupancy must be treated as a separated occupancy. This is not the case; the code doesn't work like that. If that was the code's intent, it would specifically say so, and it does not. Part of the confusion arises from the definition of "mixed occupancy" and the use of the undefined term "intermingled":

6.1.14.2.2 Mixed Occupancy. *A multiple occupancy where the occupancies are intermingled.*

What constitutes intermingling of occupancies? Based on the mandatory requirements in the code, intermingling occurs where multiple occupancies share exit access paths or lack occupancy separation fire barriers, or both. The definition describes a condition resulting from the mandatory code provisions.

As an example, consider the generic "strip mall" depicted in the accompanying figure. This is a classic example of a multiple-separated occupancy building provided that the partitions separating the different tenants are fire barriers meeting the requirements of 6.1.14.4.



Also, each tenant space is provided with independent exit access. As a result, the code's requirements for each occupancy are applied independently. If the space identified as an assembly occupancy is a new nightclub, it requires automatic sprinkler protection (12.3.5.1). If the occupancies are separated, the code requires the installation of an automatic sprinkler system only in the assembly occupancy; the other occupancies would be permitted to remain non sprinklered.

But does anything require these occupancies to be separated by fire barriers? The answer is no as long as each occupancy meets the more restrictive requirements of the occupancies involved. It's less expensive to build non-

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rated partitions to separate the tenant spaces. If the owner can show that the entire building meets the most restrictive requirements, they have the right to use the mixed occupancy provisions even though the occupancies are separated by non-rated tenant separations and have independent exit access.

I suspect this is really an enforcement issue. Once the building is constructed with non-rated tenant separations, it might be challenging for the AHJ to enforce the separation requirements when a tenant comes along that impacts the other tenants or needs to be separated so as to not adversely impact the other tenants (e.g., the previously described nightclub). In my experience, this needs to be addressed at the permitting stage. Building permits for “speculative-use” buildings (i.e., the occupancy classification is unknown) should be for the “shell building” only. Certificates of occupancy should only be issued once the occupancy classification is known and inspected. Subsequent certificates of occupancy should be issued only after being reviewed by the AHJ whenever a change of occupancy classification occurs as required by NFPA 1, Fire Code. If the shell building tenant separations are to be non-rated, make it clear in the permit process that additional protection in the form of occupancy separation fire barriers might be required depending on the occupancies ultimately present.

If the building owner chooses to go this route, it's their problem down the road if upgrades are needed. An example: I once had the pleasure of telling a tire storage facility that their occupancy wasn't permitted in a spec-use warehouse protected by an ESFR sprinkler system that wasn't designed to protect the hazard – after they had moved in. Good times. The job of the AHJ isn't always sunshine and lollipops. I'm sure there were some animated meetings between the owner and the tenant after I broke the bad news. Buyer beware.

It's important for developers and AHJs to work together to achieve a safe building design. The mixed- and separated-occupancy protection strategies are both safe, and the owner has the right to choose which one works best for their building unless the code explicitly mandates the use of one or the other based on the arrangement or occupancies involved. I know this will put me in the doghouse with at least some jurisdictions, but I didn't take this job to be popular. You can relate to that, right AHJs? Hopefully we're all on the same page now.
#InfoKnowledge

Thanks for reading, and as always, stay safe.

Got an idea for a topic for a future #101Wednesdays? Post it in the comments below – I'd love to hear your suggestions!

Did you know NFPA 101 is available to review online for free? Head over to www.nfpa.org/101 and click on “FREE ACCESS.”

Follow me on Twitter: @NFPAGregH

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²(Greg Harrington, 2022)