CONSTRUCTION CODE APPEALS COMMITTEE
AGENDA

FEBRUARY 23, 2016 - 3:00 P.M.

CITY HALL CONFERENCE ROOM
15 LOOCKERMAN PLAZA
DOVER, DELAWARE

PUBLIC COMMENTS ARE WELCOMED ON ANY ITEM AND WILL BE PERMITTED AT APPROPRIATE TIMES. WHEN POSSIBLE, PLEASE NOTIFY THE CITY CLERK (736-7008 OR E-MAIL AT CITYCLERK@DOVER.DE.US) SHOULD YOU WISH TO BE RECOGNIZED.

AGENDA ADDITIONS/DELETIONS

1. **APPEAL OF REQUIREMENT FOR PLACES OF ASSEMBLY TO BE SPRINKLERED (CHAPTER 46 - FIRE PREVENTION AND PROTECTION, ARTICLE IV - PUBLIC OCCUPANCIES, SECTION 46-162 - SPRINKLER REQUIREMENTS) - 518 AND 524 SOUTH BAY ROAD *(PROVERBS 356 PROPERTIES, LLC)***

2. **ADJOURNMENT**

/JS
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THE AGENDA ITEMS AS LISTED MAY NOT BE CONSIDERED IN SEQUENCE. THIS AGENDA IS SUBJECT TO CHANGE TO INCLUDE THE ADDITION OR THE DELETION OF ITEMS, INCLUDING EXECUTIVE SESSIONS.

City of Dover

February 17, 2016

Proverbs 356 Properties, LLC
c/o Evan W. Smith
201 N. Union Street
Wilmington, DE 19805

Re: Appeal of Requirement for Places of Assembly to be Sprinklered - 518 and 524 South Bay Road, Dover, Delaware

Mr. Smith:

I have received your request to appeal the requirement for places of assembly to be sprinklered in accordance with the Dover Code, which states the following:

> Sec. 46-162. Sprinkler Requirements
>
> (a) Places of assembly shall be sprinklered throughout in accordance with the most recently adopted edition of NFPA 13 when the following apply:
>
> (1) All new indoor places of assembly with an occupant load of 150 persons or greater.
> (2) Any new interior renovations of 50 percent or more to an existing place of assembly with an occupant load greater than 150 persons.

A meeting of the Construction Code Appeals Committee has been scheduled for Tuesday, February 23, 2016 at 3:00 p.m. in the City Hall Conference Room, 15 Loockerman Plaza, Dover, DE 19901 to hear your appeal. If you have any additional documentation that you would like the Committee to review when considering your appeal, please provide this information to the City Clerk's Office prior to the appeal hearing.

Please feel free to contact me by e-mail at cityclerk@dover.de.us or by phone at (302) 736-7008 if you have any questions or concerns.

Sincerely,

Traci A. McDowell

Traci A. McDowell, CMC
City Clerk

TAM/js
S:\APPEALS\2016\518 South Bay Road - Appeal - Sprinkler System Requirements - Smith\Construction Code Board of Appeals - Receipt of Appeal - Places of Public Assembly to be Sprinklered BLOCK.wpd

cc: Ann Marie Townshend, Director of Planning & Community Development
Scott Koenig, City Manager
Nicholas Rodriguez, City Solicitor
Greg Akers, Chief Building Inspector
Tim Mullaney, Fire Marshal

Sec. 46-125. - Construction code appeals committee.

(a) *Composition; appointment.* There shall be a committee to be referred to as the "construction code appeals committee," consisting of three members, one of whom shall be the city manager and the other two being elected city officials. The city officials shall be appointed by the city council president at its annual meeting.

(b) *Appeal; hearing.* Whenever any person is aggrieved by a decision of the fire marshal with respect to the provisions of this chapter, it is the right of that person to appeal to the construction code appeals committee. Such appeal must be filed, in writing, within 30 days after the determination by the fire marshal. Upon receipt of such appeal, the construction code appeals committee shall set a time and place, in not less than ten or more than 30 days, for the purpose of hearing the appeal. Notice of the time and place of the hearing of the appeal shall be given to all parties, at which time they may appear and be heard. The determination by the construction code appeals committee shall be final in all cases.

(Code 1981, § 7-60; Ord. of 5-10-1982; Ord. of 11-22-1993)

Sec. 46-162. - Sprinkler requirements.

(a) Places of assembly shall be sprinklered throughout in accordance with the most recently adopted edition of NFPA 13 when the following apply:

(1) All new indoor places of assembly with an occupant load of 150 persons or greater.

(2) Any interior renovations of 50 percent or more to an existing place of assembly with an occupant load greater than 150 persons.

(3) Any additions or increase in interior size to an existing place of assembly that would create an occupant load of 150 persons or greater.

(b) Places of assembly where alcohol is served for consumption on the premises shall be sprinklered throughout in accordance with the most recently adopted edition of NFPA 13 when the following apply:

(1) All new indoor places of assembly with an occupant load of 100 persons or greater and where alcohol will be served for consumption on the premises.

(2) Any interior renovation of 50 percent or more to an existing place of assembly with an occupant load greater than 100 persons and where alcohol will be served for consumption on the premises.

(3) Any additions or increase in interior size to an existing place of assembly which would create an occupant load of 100 persons or greater and where alcohol will be served for consumption on the premises.

(c) New educational occupancies of 5,000 square feet or greater shall be sprinklered throughout in accordance with the most recently adopted edition of NFPA 13.

(d) Three feet of unobstructed clear width shall be designed, designated, and maintained around sprinkler risers for access by firefighters and for maintenance. The three feet shall be measured from the outermost components of the sprinkler riser and all related support equipment.

(e) Fire department connections. Unless otherwise approved by the fire marshal, fire department connections shall be on the street side of the building and shall be located and arranged so that hose lines can be readily and conveniently attached to without interference from any nearby obstructions as defined by the fire marshal's office. Fire department connections shall be a five-inch Storz. Fire department connections shall be within 300 feet of an approved City of Dover Fire Hydrant and within 50 feet of the main entrance of the structure it serves. All fire department connections shall be not less than three feet nor more than five feet in height above finished grade. The fire marshal shall have the authority to require more stringent requirements when deemed necessary.

(Ord. of 3-14-2005; Ord. No. 2015-07, 5-26-2015)

RECEIVED
FEB 10 2016
OFFICE OF THE CITY CLERK

TO: Property Maintenance Board of Appeal

FROM: Evan W. Smith Funeral Services

DATE: February 10, 2016

SUBJECT: 518 South Bay Road, Dover, DE 19901

As the current owner of the above named property, it is my desire to request an appeal re: sprinkler system code requirements. The City of Dover Code of Ordinance, Section 46-162. Sprinkler states

> (a) Places of assembly shall be sprinklered throughout in accordance with the most recently adopted edition of NFPA 13 when the following apply:
> (1) All new indoor places of assembly with an occupant load of 150 persons or greater.
> (2) Any interior renovations of 50 percent or more to an existing place of assembly with an occupant load greater than 150 persons.

We are not remiss in our understanding of the code and the importance of assuring the public's safety. Our review of fire sprinkler codes in other jurisdictions, offers the same concern for public safety however in a less stringent manner. Listed below are the citations that support this assertion:

- The national codes set forth by the National Fire Prevention Association and International Building Code.
- The State of Delaware Fire Marshall's Office follows the 2012 NFPA which states that the maximum allowed occupancy for an equivalent building is 300 occupants without a sprinkler.
- The New Castle County and Sussex County codes state that the maximum allowed occupancy for an equivalent building is 300 occupants without a sprinkler.
- The 2015 IBC addition also states that the maximum allowed occupancy for an equivalent building is 300 occupants without a sprinkler.

2

Mr. Jim Davidson, Fire Safety Engineer, hired by Evan W. Smith Funeral Services, has guaranteed state code compliance and has analyzed 518 South Bay Road for fire safety. The property will have ample exits; fire rated building materials will be used along with the installation of a brand new fire alarm monitoring system. All areas of the facility are easily accessible by entrance/exits and exterior windows resulting in the buildings ability to be fully evacuated in 1 ½ minutes.

A fire sprinkler system was not factored into the original plans and overall renovation of 518 South Bay Road. The cost of installing a fire sprinkler system will well exceed the budgeted amount allocated and approved for the renovation of 518 South Bay Road, making it impossible for the project to proceed and be completed.

It is our hope that through your review, a decision will be rendered that will be amicable for all parties involved. Thank you.

Sincerely,
Evan W. Smith, LFD.
Owner

DAVIDSON ASSOCIATES
CONSULTING ENGINEERS
FIRE PROTECTION • CODE CONSULTING

November 11, 2015

E-Mailed to: davedubroff@verizon.net
Mr. David Dubroff
Dubroff L.L.C.
1 Spruce Lane
Chadds Ford, PA 19317

Re: NFPA 101 Code Review of Proverbs 356 LLC – 518 South Bay Road – Dover, DE

Dear Mr. Dubroff:

Per your request Davidson Associates reviewed the plans for this facility to determine if the plans comply with the 2012/2013 Delaware State Fire Prevention Regulations and the 2012 Edition of NFPA 101 Life Safety Code.

Review of Chapter 12 – New Assembly Occupancies, Table 12.1.6 Construction Type Limitations permits a single story, new assembly occupancy to be constructed of NFPA 220 Construction Type V (000) or Type V (111) as defined by **Note X4** which states:" Permitted for assembly limited to an occupant load of 300 or less."

The arrangement of the facilities' means of egress complies with Section 12.2.5 - Arrangement of Means of Egress, specifically paragraph **12.2.5.1.2** which states "A common path of travel shall be permitted for the first 20 ft from any point where the common path serves any number of occupants, and for the first 75 ft from any point where the common path serves not more than 50 occupants." The travel distance to an exit complies with Paragraph 12.2.6.2 which states that "Exits shall be arranged so that the total length of travel from any point to reach an exit shall not exceed 200 ft. in any assembly occupancy, unless otherwise permitted by one of the following; (The following does not apply).

Emergency illumination of the Means of Egress components is required by Paragraph 12.2.9 which references Section 7.9 and defined in paragraph 7.9.1.2 which states "For the purposes of 7.9.1.1, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of 7.9.1.1, exit discharge shall include only designated stairs, ramps, aisles, walkways, and escalators leading to a public way." Paragraph 7.9.2.1defines the performance of the system as the following "Emergency illumination shall be provided for a minimum of 1 1/2 hours in the event of failure of normal lighting. emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10.8 lux) and, at any point, not less than 0.1 ft-candle (1.1 lux), measured along the path of egress at floor level. Illumination levels shall be permitted to decline to not less than an average of 0.6 ft-candle (6.5 lux) and, at any point, not less than 0.06 ftcandle (0.65 lux) at the end of 1 1/2 hours. A maximum-to minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. Paragraph 7.9.2.5 requires that light unit equipment and battery systems for emergency luminaires shall be listed to ANSI/UL 924, *Standard for Emergency Lighting and Power Equipment*." **The emergency light units with incorporated "Exit" sign shall be mounted at each exterior exit door with remote light head mounted on the exterior of the exit door illuminating the egress path outside of the exit door. Additional emergency light units shall be provided as follows: in the Sanctuary at the front**

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and rear of the pews; in the corridor between the Sanctuary and rest rooms; and in the corridor between the rest rooms and the Conference Room.

An automatic fire detection system shall be provided through out the first floor of the facility. The automatic smoke detectors shall be of the verified detection type of smoke detector to limit false alarms. Visual and audible indicating devices shall be located through the first floor and in the second floor apartment to provide indication of a fire in a timely manner. Manual pull station shall be provided at the front entry area, exterior exit of the Sanctuary, and at the rear entry area. The automatic fire detection system shall be connected to a approved central station service in order to notify the local fire department in the event of a fire/emergency incident.

Consideration should be given to providing a one hour fire rated construction for the storage room adjacent to the sanctuary since this room will have a higher fuel loading than the remainder of the facility.

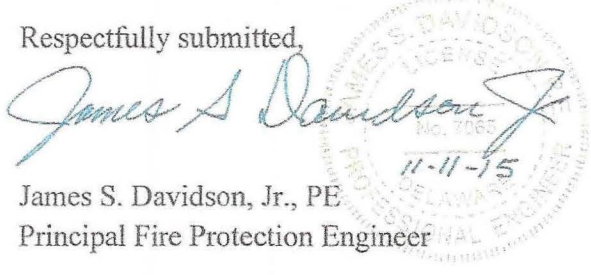
Occupant load is calculated as per NFPA 101 to be 227 occupants, with egress capacity through 6 – 36 inch doors (based on stair capacity factor of 0.3) of 720 persons.

It is Davidson Associates' opinion as a Registered Professional Fire Protection Engineer in the State of Delaware at this date with a high degree of professional engineering certainty that this facility upon completion of the items noted in this letter will meet the requirements of the Delaware State Fire Prevention Regulations and the 2012 Edition of NFPA 101 – Life Safety Code.

David, if you have any questions please call me.

Have a fire safe day.

Respectfully submitted,



James S. Davidson, Jr., PE
Principal Fire Protection Engineer

DAVIDSON ASSOCIATES
CONSULTING ENGINEERS
FIRE PROTECTION • CODE CONSULTING

February 19, 2016

The Construction Code Appeals Committee
Dover City Hall
15 Loockerman Plaza
Dover, Delaware

Re: 518 South Bay Road – Dover, DE – Construction Appeals Committee

Dear Code Appeals Committee Members:

Davidson Associates reviewed the plans for this facility to determine if the plans comply with the 2012/2013 Delaware State Fire Prevention Regulations and the 2012 Edition of NFPA 101 Life Safety Code, in order to ask for an appeal from the requirement to sprinkler this single story funeral home as formulated by Article IV – Public Occupancies, Section 46-162 Sprinkler Requirements.

We are requesting an appeal because of the cost required to bring a water supply to supply the required fire sprinkler system. This water supply will require the following additional construction items that were not figured in the original budget:

	SIZE (ft. or sq. ft.)	UNIT PRICE	TOTAL COST
METER PIT w 8 Ames 3000 DCV Fire			$45,000.00
8 x 8 inch tap into 8 inch water main	1	$14,500.00	$14,500.00
8" UNDERGROUND SUPPLY (Property)	271	$135.00	$36,585.00
8" UNDERGROUND SUPPLY (Road Not Rt 13)	45	$250.00	$11,250.00
Estimate sprinkler for 7,200 Sq Ft Bldg	7,200	$3.00	$21,600.00
Fire Hydrant (100 ft from FD Conn)	1	$7,500.00	$7,500.00
			$0.00
PROJECT COST			**$136,435.00**
15% Contingency			**$156,900.25**
Total Project Cost			**$156,900.25**

Cost for sprinkler system	**$21,600.00**
Cost for Sprinkler System Water Supply	**$114,835.00**

For all funeral homes constructed in areas outside the city of Dover, the IBC, IFC, The Delaware State Fire Prevention Regulations and NFPA 101 Life Safety Code would require automatic fire sprinkler protection for Assembly (A) Occupancies when there are more than 300 occupants. The City of Dover modified their Building and Fire Codes to require sprinkler protection when there are more than 150 occupants in the Assembly occupancy. There was no reference made in the Dover Codes as to why the Occupant load was reduced from the 300 occupant load defined in the Delaware State Fire Prevention Regulations, IBC and in NFPA 101 Life Safety Code.

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NFPA 101 Paragraph **12.3.5.1** states that "The following assembly occupancies shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1):

(1) Dance halls
(2) Discotheques
(3) Nightclubs
(4) Assembly occupancies with festival seating.

The NFPA 101 Life Safety Code which is referenced by the Delaware State Fire Prevention Regulations as an adopted standard addresses the Assembly occupancies with the highest life loss potential by requiring sprinkler protection without a minimum occupant load limitation. Paragraph 12.3.5.1 was adopted by NFPA 101 Code Committee Members and incorporated into the code because of the large life loss fires such as the February 2003Station Night Club fire, West Warwick, RI; the Happyland fire, 1990, Bronx, New York; and the Beverly Hills Supper Club fire, 1977, Southgate, Kentucky. The common elements to all these fires included occupants who had a reduced level of self preservation, reduced recognition of fire threat, failure to recognition and use available means of egress, plastic and other extremely combustible room decorations and wall finishes (foam egg-create) in building.

The National Fire Protection Association's Fire Analysis and Research Division Report on "Structure Fires by Occupancy 2007-2011 Annual Averages, published by NFPA in April 2013 shows that there were an average of 498,500 structure fire per year for the years 2007 through 2011 (Page 1 of Structure Fires by Occupancy 2007-2011 Annual Averages, report attached). Further break down by occupancy shows 1,780 fires occurring in "Places of worship or funeral property" (Page 2 of Structure Fires by Occupancy 2007-2011 Annual Averages)

A more detailed breakdown of 1,780 fires occurring in "Places of worship or funeral property" was developed by National Fire Protection Association's Fire Analysis and Research Division Report on "US Structure Fires in Religious and Funeral Properties" this report is also for the years 2007-2011 and are the Annual Averages, published by NFPA in June 2013. On Page 3 Table A "Structure Fires in Religious and Funeral Properties" shows that the annual average numbers of fires in funeral parlor were 70 fires causing 0 deaths, 2 civilian injuries and caused $2 million of property damage, approximately $29,000 per fire .

The following are positive attributes for Life Safety of the occupants:

Building Characteristics

- Sanctuary Seating Area – Ceiling height at least 10' AFF, flat ceiling, with windows (approximately 3' x 3') in the south and east walls of the Area. The wall and ceiling covering will be paint over gypsum sheet. The floor will be carpet on concrete slab. Furniture for services will be metal and/or wood framed chairs with minimum cushion and sofas against wall with table separating the sofas (limit ignition source to single sofa).
  Sanctuary Seating Area will be separated from the remainder of the building with a 2 hour fire rated partition wall extending from the floor to roof deck, openings will be protected with UL listed Class "B" opening protective devices.

- The Sanctuary Seating Area has 4 – 36 inch wide door leafs providing egress to the exterior of the building. The capacity of the means of egress exceeds the requirements of NFPA 101, The Delaware State Fire Prevention Regulations, the IBC, IFC and City of Dover Fire and Building Codes. The Sanctuary has 4 – 36 inch leaf doors providing 144 inches of egress width from the room and per NFPA 101 Table 7.3.3.1 Capacity Factors for "all Other" areas has a width per person of 0.2 inch resulting is an egress capacity of 720 persons, the proposed occupant load is 229 persons. The entire building has 6 – 36 inch leaf doors providing 216 inches of egress width from the building and per NFPA 101 Table 7.3.3.1 Capacity Factors for "all Other" areas has a width per person of 0.2 inch resulting is an egress capacity of 1,080 persons, the proposed occupant load for the entire building is 285 persons.
- Remainder of building can be classified as a business type occupancy with similar fuel loading as typical for a business, no high heat release fuel loads such as stored wood/plastic pallets, no storage or use of flammable liquids within the facility.
- The environment within the facility will be a positive factor to permit occupants to be responsive to a fire alarm indicating signal. The facility is provided with and HVAC system designed to maintain ambient temperature, humidity levels at a comfortable level and reduce background noise from the building exterior environment. The interior environment of the facility will permit all occupants to hear and respond to the fire alarm system alarm indicating devices, since the noise levels in the funeral home environment is usually quite low.
- Outside of the HVAC heating and cooling equipment there will be no commercial grade or manufacturing grade heat producing process housed in this facility.
- Storage of chairs and tables will be in a 1 hour fire rated constructed room with one hour fire rated opening protective devices.
- The facility will be fully occupied only when funeral services are being provided, funeral home staff is present at all times when funeral services are being conducted. During non-funeral service hours normal funeral home staff will be present with some clients working with funeral home personal deciding on funeral arrangements for the deceased.
- 518 South Bay Road is a mostly single story 6,994 sq ft building with a partial un-occupied 784 sq ft second floor. The exterior exposure to/from this building is considered as light:
  - North exposure – 38 to 40 feet open driveway from exterior wall to property line,
  - South exposure – 90 ft open lot to adjacent building
  - West exposure – 168 to 170 feet to Martin Street
  - East exposure – 72 to 75 feet to South Bay Road
  - Using windows on the East, West and South exterior walls fire department hose streams (assuming a 50' hose stream) can be applied to the Sanctuary Room, Foyer, Sitting Room and the Offices and Storage Room on the West side of the Sanctuary Seating Area.





Photo – Exterior Access for FD Hose

- Review of NFPA 101 – Life Safety Code, Chapter 12 – New Assembly Occupancies, Table 12.1.6 Construction Type Limitations permits a single story, new assembly occupancy to be constructed of NFPA 220 Construction Type V (000) or Type V (111) as defined by **Note X4** which states: "Permitted for assembly limited to an occupant load of 300 or less." The "Owner" is providing Type 5 (000) construction as defined by NFPA 220 but providing 1 hr rated:
    - exterior bearing walls,
    - interior bearing walls, and
    - providing a 2 hour fire rated wall between the Sanctuary Seating Area and the Foyer, Sitting Room, Rest Rooms, Conference Room, Selection Room section of the building. The Sanctuary Room will be separated from the remainder of the facility with a 2 hour fire rated partition wall with openings protected by 1 ½ hour fire rated open protective devices.

Occupant Characteristics

- One of the most important factors in review of Life Safety is the "Alertness" of the occupants all of the facilities clients will be alert, cognitive of their environment and capable of self-preservation. For clients in wheel chairs all exits are at grade level and available for wheel chair use.
- Trained funeral home staff is present at all times a service is ongoing and will assist any client or occupant in a wheel chair.
- The age of occupants can vary, similar to the typical population of the geographic area that the funeral home services.
- The majority of clients will be in the Sanctuary Seating Area during the service, which is at grade level and will have two means of egress directly to the exterior of the building along with a third exit just outside of the Sanctuary Seating Area.
- All occupants should be responsive to any fire alarm indicating device since the alarm indicating devices will consist of both audible and visual (horn & strobe) indicators. All exits will be provided with lighted

exit signs, emergency lighting with remote light heads illuminating the exterior area of the means of egress. Additionally funeral home staff will direct occupants to the closest means of egress.

- Most occupants will not be familiar with the details of the building; funeral home staff will direct occupants to the means of egress.

To better judge the time of Egress from the Sanctuary Seating Area Davidson Associates modeled the estimated egress time using the egress model "Estimated Egress Travel Time" developed by National Institute of Standards and Technology's (NIST), Building and Fire Research Laboratory. Davidson Associates modeled the time it would take 229 occupants to egress through 4 - 36 inch wide door leafs after traveling 90 feet to reach the egress doors. **The "Estimated Egress Travel Time" model indicated that it would take approximately 104 seconds for 229 occupants to egress through the two (2) – double leaf egress doorways from the room.** Print out of model attached to this report.

FASTLite is a zone model to predict the environment in a compartmented structure, and one of the fire model programs developed by the National Institute of Standards and Technology's (NIST), Building and Fire Research Laboratory. These software programs are a collection of procedures that builds on the core routines of FIREFORM and a simplified version of the computer model CFAST to provide engineering calculations of fire phenomena. FAST, which stands for Fire Growth and Smoke Transport, is designed to provide quantitative estimates of some likely consequences of fire, such as room temperatures, ceiling layer height, and time to flashover. FastLite is a fire model program that is capable of modeling two or three adjacent compartments and to predicate when a compartment reaches "flash over" conditions.

Using the results of the "Estimate Egress Travel Time" model and results of the FASTLite (Model of Fire and Smoke Transport, Model) for the Sanctuary Seating Area shows that for the time to egress the compartment the lower smoke interface level is approximately 7.7 feet AFF with an interface temperature of 72.77 degree F. With the two sofas, located three (3) apart, with a wood table between them, and metal and wood frame chairs with cushioned seats layout as shown on the architects floor plan the model indicated that there was no flashover of the compartment. This is most likely because of the high (10ft.) ceiling and limited combustible loading with minor amounts of plastic materials in the room.

In developing our analysis Davidson Associates delayed the occupants from starting their travel to the means of egress by 60 seconds to account for normal delay associated with normal response to a new sound and condition. With the 60 second delay the model indicated that at 160 seconds (104 seconds plus 60 seconds rounded) the lower smoke interface level is approximately 7.7 feet AFF with an interface temperature of 72.77 degree F which are tenable conditions for Life Safety; even at 300 seconds the model indicates that the lower smoke interface level is approximately 4.5 feet AFF with an interface temperature of 77.63 degree F which are tenable but uncomfortable conditions.

Emergency illumination of the Means of Egress components is required by NFPA 101, Paragraph 12.2.9 which references Section 7.9 and defined in paragraph 7.9.1.2 which states "For the purposes of 7.9.1.1, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the

purposes of 7.9.1.1, exit discharge shall include only designated stairs, ramps, aisles, walkways, and escalators leading to a public way." Paragraph 7.9.2.1defines the performance of the system as the following "Emergency illumination shall be provided for a minimum of 1½ hours in the event of failure of normal lighting. emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10.8 lux) and, at any point, not less than 0.1 ft-candle (1.1 lux), measured along the path of egress at floor level. Illumination levels shall be permitted to decline to not less than an average of 0.6 ft-candle (6.5 lux) and, at any point, not less than 0.06 ftcandle (0.65 lux) at the end of 1½ hours. A maximum-to minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. Paragraph 7.9.2.5 requires that light unit equipment and battery systems for emergency luminaires shall be listed to ANSI/UL 924, *Standard for Emergency Lighting and Power Equipment*." **The emergency light units with incorporated "Exit" sign will be provided and mounted at each exterior exit door with remote light head mounted on the exterior of the exit door illuminating the egress path outside of the exit door. Additional emergency light units shall be provided as follows: in the Sanctuary at the front and rear of the pews; in the corridor between the Sanctuary and rest rooms; and in the corridor between the rest rooms and the Conference Room.**

Recommendations

No.1 Provide An automatic fire detection system shall be provided through out all areas (occupied and non-occupied) the first floor of the facility in accordance with NFPA 72, IBC, IFC and The Delaware State Fire Prevention Regulations. The automatic smoke detectors shall be of the verified detection type of smoke detector to reduce/limit false alarms. Visual and audible indicating devices shall be located through the first floor and in the second floor area to provide indication of a fire in a timely manner. Manual pull station shall be provided at the front entry area, exterior exit of the Sanctuary, and at the rear entry area. The automatic fire detection system shall be connected to a approved central station service in order to notify the local fire department in the event of a fire/emergency incident.

No. 2 Provide one additional 36 inch wide egress door from the Sanctuary Seating Area. The new egress door should be located southeast corner of the compartment either on the south or east exterior wall. This door will provide an additional means of egress directly to the exterior of the building.

No. 3 Provide a two hour fire rated partition wall extending from the floor slab to the underside of the roof deck, with 5/8 inch type X gypsum sheet extending a minimum of 4 ft. on either side of the fire partition wall to separate the Sanctuary Seating Area form the remainder of the building. Openings in wall provided with Class "B" 1½ hour fire rated opening protective devices.

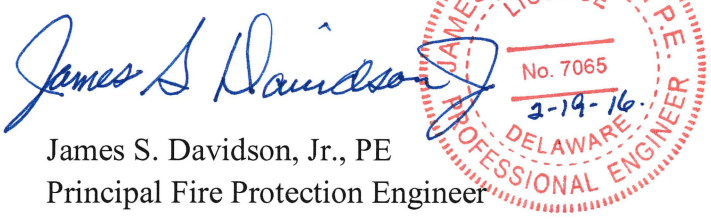
No. 4 Provide a one hour fire rated partition wall extending from the floor slab to the underside of the roof deck, with 5/8 inch type X gypsum sheet extending a minimum of 4 ft. on either side of the fire partition wall for all storage areas. Openings in wall provided with Class "C" 1 hour fire rated opening protective devices.

No. 4 Provide emergency illumination of the Means of Egress components as required by NFPA 101, Paragraph 12.2.9. Illumination levels shall be permitted to decline to not less than an average of 0.6 ft-candle (6.5 lux) and, at any point, not less than 0.06 ftcandle (0.65 lux) at the end of 1½ hours. A maximum-to minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. Paragraph 7.9.2.5 requires that light unit equipment and battery systems for emergency luminaires shall be listed to ANSI/UL 924, *Standard for Emergency Lighting and Power Equipment.*" The emergency light units with incorporated "Exit" sign will be provided and mounted at each exterior exit door with remote light head mounted on the exterior of the exit door illuminating the egress path outside of the exit door. Additional emergency light units shall be provided as follows: in the Sanctuary at the front and rear of the pews; in the corridor between the Sanctuary and rest rooms; and in the corridor between the rest rooms and the Conference Room.

It is Davidson Associates' opinion as a Registered Professional Fire Protection Engineer in the State of Delaware at this date with a high degree of professional engineering certainty that this facility upon completion of the items noted in this letter will provide a level of Life Safety for the occupants of the building that are not detrimental to their safety and well beginning meet the requirements of the Delaware State Fire Prevention Regulations, the 2012 un-modified editions of the IBC and IFC; along with the 2012 Edition of NFPA 101 – Life Safety Code.

Have a fire safe day!

Respectfully submitted,



James S. Davidson, Jr., PE
Principal Fire Protection Engineer
Attachments

FASTLite Fire Estimation Tools
Developed by: Building and Fire Research Laboratory
Gaithersburg, MD 20899

Licensed to: Jim Davidson
Project Reference: 518 S. Bay Road, Dover, DE
Project: New Castle, DE

Calculation: Estimated Egress Travel Time
Date of Calculation: 19 February 2016

This procedure estimates the time needed for a group of people to exit a given space or building. This calculation is based on a hydraulic model of people movement and reported estimates are not multiplied by a safety factor.

Population: 229 persons
Relative movement speed: 100 %
Exit door(s): 4
Exit travel speed for able persons on level surfaces: 3.30052 ft/s
Flow through each leaf of exit door(s): 0.743999 pers/s

Level travel distance: 90 ft

Estimated total horizontal and stairway travel time: 27 s
Estimated total doorway exit time: 77 s

CFAST Version 2.2.1 One Compartment Base Case

Data file is 518BAY.DAT (Checksum 00000000)

OVERVIEW

Compartments	Doors, ...	Ceil. Vents, ...	MV Connects
1	1	0	0

Simulation Time (s)	Print Interval (s)	History Interval (s)	Restart Interval (s)
600	20	10	0

Ceiling jet is on for all

COMPARTMENTS

Compartment	Width (m)	Depth (m)	Height (m)	Ceiling Height (m)	Floor Height (m)
1	17.22	12.34	3.05	3.05	0.00

VENT CONNECTIONS

Horizontal Natural Flow Connections (Doors, Windows, ...)

From Compartment	To Compartment	Vent Number	Width (m)	Sill Height (m)	Soffit Height (m)
1	Outside	1	0.91	0.01	0.01

There are no vertical natural flow connections

THERMAL PROPERTIES

Compartment	Ceiling	Wall	Floor
1	GYPSUM	GYPSUM	CONCRETE

Thermal data base used: THERMAL.DF

Name	Conductivity	Specific heat	Density	Thickness	Emissivity
GYPSUM	0.160	900.	790.	1.600E-02	0.900
CONCRETE	1.75	1.000E+03	2.200E+03	0.150	0.940

FIRES

Compartment: 1
Fire Type: Constrained
Position (x,y,z): 6.17 8.61 0.00
Relative Humidity: 50.0
Lower O2 Limit: 10.00
Pyrolysis Temp.: 293.

Time (s)	Fmass (kg/s)	Hcomb (J/kg)	Fqdot (W)	C/CO2 (m)	CO/CO2 (kg/kg)	H/C (kg/kg)
0.	0.00E+00	1.95E+07	0.00E+00	3.00E-02	3.00E-02	8.00E-02
26.	1.02E-04	1.95E+07	1.98E+03	3.00E-02	3.00E-02	8.00E-02
52.	4.06E-04	1.95E+07	7.92E+03	3.00E-02	3.00E-02	8.00E-02
78.	9.14E-04	1.95E+07	1.78E+04	3.00E-02	3.00E-02	8.00E-02
104.	1.63E-03	1.95E+07	3.17E+04	3.00E-02	3.00E-02	8.00E-02
130.	2.54E-03	1.95E+07	4.95E+04	3.00E-02	3.00E-02	8.00E-02
156.	3.66E-03	1.95E+07	7.13E+04	3.00E-02	3.00E-02	8.00E-02
182.	4.98E-03	1.95E+07	9.71E+04	3.00E-02	3.00E-02	8.00E-02
208.	6.50E-03	1.95E+07	1.27E+05	3.00E-02	3.00E-02	8.00E-02
240.	8.65E-03	1.95E+07	1.69E+05	3.00E-02	3.00E-02	8.00E-02
400.	8.65E-03	1.95E+07	1.69E+05	3.00E-02	3.00E-02	8.00E-02
426.	6.88E-03	1.95E+07	1.34E+05	3.00E-02	3.00E-02	8.00E-02
452.	5.31E-03	1.95E+07	1.04E+05	3.00E-02	3.00E-02	8.00E-02
478.	3.94E-03	1.95E+07	7.69E+04	3.00E-02	3.00E-02	8.00E-02
504.	2.78E-03	1.95E+07	5.42E+04	3.00E-02	3.00E-02	8.00E-02
530.	1.82E-03	1.95E+07	3.55E+04	3.00E-02	3.00E-02	8.00E-02
556.	1.06E-03	1.95E+07	2.07E+04	3.00E-02	3.00E-02	8.00E-02
582.	5.05E-04	1.95E+07	9.86E+03	3.00E-02	3.00E-02	8.00E-02
608.	1.54E-04	1.95E+07	3.00E+03	3.00E-02	3.00E-02	8.00E-02
640.	0.00E+00	1.95E+07	0.00E+00	3.00E-02	3.00E-02	8.00E-02

Time = 0.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	294.8	294.8	3.0	0.000E+00	0.000E+00	3.914E-03	0.000E+00
Outside					0.000E+00		

Time = 20.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	295.9	294.8	3.0	7.813E-05	1.523E+03	3.48	6.39
Outside					0.000E+00		

Time = 40.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	296.6	294.9	2.9	2.657E-04	5.180E+03	15.7	10.3
Outside		71.15°F	9.51 FT		0.000E+00		

Time = 60.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	297.6	294.9	2.8	5.626E-04	1.097E+04	42.8	16.4
Outside		71.15°F	9.18 FT		0.000E+00		

Time = 80.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	298.9	295.0	2.7	9.689E-04	1.889E+04	94.7	24.2
Outside		71.33°F	8.85 FT		0.000E+00		

Time = 100.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	300.5	295.2	2.6	1.516E-03	2.955E+04	181.	34.1
Outside		71.69°F	8.53		0.000E+00		

Time = 120.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	302.4	295.3	2.4	2.188E-03	4.266E+04	310.	46.1
Outside		71.87°F	7.84		0.000E+00		

Time = 140.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	304.7	295.6	2.3	2.969E-03	5.789E+04	492.	60.5
		72.41°F	7.55 FT				

Outside					0.000E+00		

Time = 160.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	307.3	295.8	2.2	3.860E-03	7.526E+04	732.	77.6
Outside		72.77°F	7.21 FT		0.000E+00		

Time = 180.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	310.3	296.1	2.0	4.876E-03	9.506E+04	1.036E+03	97.5
Outside		73.31°F	6.5 FT		0.000E+00		

Time = 200.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	313.7	296.5	1.9	6.032E-03	1.176E+05	1.409E+03	120.
Outside		74.03°F	6.23FT		0.000E+00		

Time = 220.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	317.4	297.0	1.8	7.308E-03	1.425E+05	1.854E+03	147.
Outside		74.93°F	5.9 FT		0.000E+00		

Time = 240.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	321.5	297.5	1.7	8.655E-03	1.687E+05	2.376E+03	177.
Outside		75.83°F	5.5 FT		0.000E+00		

Time = 260.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	325.3	297.9	1.6	8.655E-03	1.687E+05	2.850E+03	206.
Outside		76.55°F 5.24FT			0.000E+00		

Time = 280.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	328.4	298.3	1.5	8.655E-03	1.687E+05	3.184E+03	231.
Outside		77.27°F 4.9FT			0.000E+00		

Time = 300.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	330.9	298.5	1.4	8.655E-03	1.687E+05	3.407E+03	251.
Outside		77.63°F 4.5FT			0.000E+00		

Time = 320.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	333.0	298.7	1.4	8.655E-03	1.687E+05	3.540E+03	269.
Outside		77.99°F			0.000E+00		

Time = 340.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	334.7	298.9	1.3	8.655E-03	1.687E+05	3.602E+03	284.
Outside		78.35°F			0.000E+00		

Time = 360.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)

1	336.2	299.0	1.2	8.655E-03	1.687E+05	3.608E+03	296.
Outside		78.53°F			0.000E+00		

Time = 380.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	337.4	299.0	1.2	8.655E-03	1.687E+05	3.569E+03	306.
Outside		78.53°F			0.000E+00		

Time = 400.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	338.4	299.1	1.1	8.655E-03	1.687E+05	3.497E+03	315.
Outside		78.71°F			0.000E+00		

Time = 420.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	338.8	299.1	1.0	7.290E-03	1.421E+05	3.286E+03	319.
Outside		78.71°F			0.000E+00		

Time = 440.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	338.3	298.9	1.0	6.035E-03	1.177E+05	2.875E+03	315.
Outside		78.35°F			0.000E+00		

Time = 460.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	337.2	298.6	0.96	4.890E-03	9.533E+04	2.335E+03	305.
Outside		77.81°F			0.000E+00		

Time = 480.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	335.7	298.3	0.93	3.854E-03	7.513E+04	1.726E+03	292.
Outside					0.000E+00		

Time = 500.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	334.0	298.0	0.90	2.958E-03	5.767E+04	1.098E+03	277.
Outside					0.000E+00		

Time = 520.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	332.1	297.7	0.88	2.188E-03	4.265E+04	501.	261.
Outside					0.000E+00		

Time = 540.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	330.1	297.6	0.86	1.527E-03	2.976E+04	3.71	245.
Outside					0.000E+00		

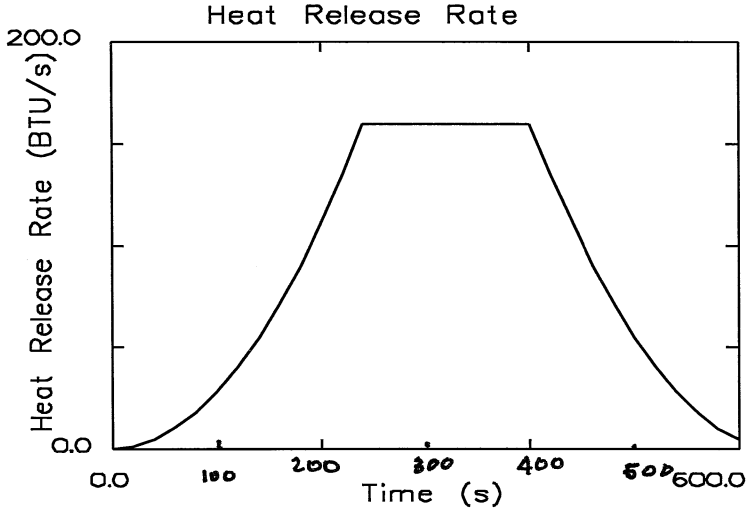
Time = 560.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)
1	328.3	297.6	0.85	9.749E-04	1.901E+04	-239.	231.
Outside					0.000E+00		

Time = 580.0 seconds.

Compartment	Upper Temp. (K)	Lower Temp. (K)	Inter. Height (m)	Pyrol Rate (kg/s)	Fire Size (W)	Pressure (Pa)	Ambient Target (W/m^2)

1	326.6	297.8	0.85	5.481E-04	1.069E+04	-420.	217.
Outside					0.000E+00		



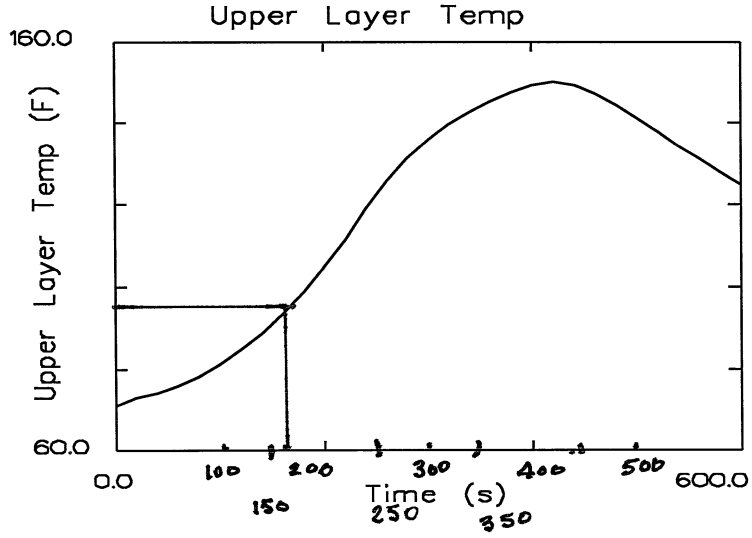
Fire Compartment 1

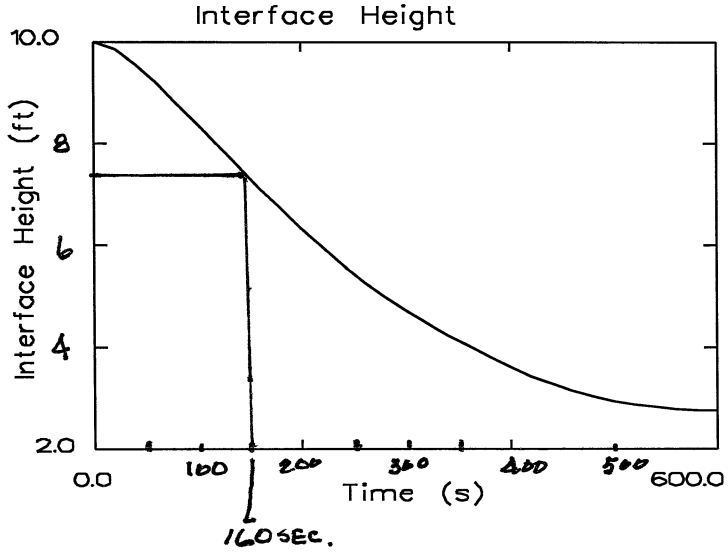
DELAY START OF EGRESS BY 60 SEC.

EST EGRESS TRAVEL TIME - 104 SEC

EST EGRESS TRAVEL TIME W/DELAY = 160 SEC.

AT 300 SEC LOWER LAYER TEMP IS 77.63°F AT A LEVEL OF 4.5 FT AFF.







Google earth

feet 800

meters 200

Structure Fires by Occupancy
2007-2011- Annual Averages

One Stop Data Shop
Fire Analysis and Research Division
National Fire Protection Association

April 2013



National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471
www.nfpa.org

Structure Fires by Occupancy
2007-2011 Annual Averages

Occupancy	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
1 - Assembly	14,650	(3%)	5	(0%)	173	(1%)	$425	(4%)
2 - Educational	5,690	(1%)	1	(0%)	85	(1%)	$92	(1%)
3 - Health Care, Detention & Correction	6,820	(1%)	5	(0%)	172	(1%)	$57	(1%)
4 - Residential	392,800	(79%)	2,696	(96%)	13,754	(90%)	$7,605	(71%)
5 - Mercantile, Business	17,740	(4%)	22	(1%)	325	(2%)	$810	(8%)
6 - Industrial, Utility, Defense, Agriculture, Mining	2,860	(1%)	4	(0%)	51	(0%)	$232	(2%)
7 - Manufacturing, processing	5,300	(1%)	7	(0%)	170	(1%)	$593	(6%)
8 - Storage	21,770	(4%)	30	(1%)	283	(2%)	$614	(6%)
9 - Outside or special property	22,330	(4%)	15	(1%)	113	(1%)	$81	(1%)
Unclassified, unreported, and unknown	8,540	(25)	13	(0%)	94	(1%)	$142	(1%)
Totals	**498,500**	**(100%)**	**2,798**	**(100%)**	**15,221**	**(100%)**	**$10,650**	**(100%)**

Partial Detail

Structure Fires by Occupancy
2007-2011 Annual Averages

Occupancy	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Public assembly								
11 - Fixed use amusement or recreation	540	(0%)	0	(0%)	5	(0%)	$17	(0%)
12 - Variable use or amusement or recreation	1,220	(0%)	0	(0%)	7	(0%)	$11	(0%)
13 - Place of worship or funeral property	1,780	(0%)	2	(0%)	19	(0%)	$111	(1%)
14 - Club	1,660	(0%)	0	(0%)	10	(0%)	$38	(0%)
15 - Library, museum, courthouse or other public property	590	(0%)	0	(0%)	6	(0%)	$16	(0%)
16 - Eating or drinking places	7,480	(2%)	3	(0%)	114	(1%)	$214	(2%)
17 - Passenger terminal	780	(0%)	0	(0%)	1	(0%)	$1	(0%)
18 - Studio or theatre	230	(0%)	0	(0%)	4	(0%)	$7	(0%)
10 - Unclassified or unknown-type public assembly property	380	(0%)	0	(0%)	6	(0%)	$9	(0%)
Educational								
21 - Preschool through grade 12	4,060	(1%)	0	(0%)	70	(0%)	$70	(1%)
24 - Adult education or college classroom	700	(0%)	0	(0%)	4	(0%)	$7	(0%)
25 - Day care	580	(0%)	1	(0%)	8	(0%)	$6	(0%)
20 -Unclassified or unknown-type public educational property	360	(0%)	0	(0%)	2	(0%)	$9	(0%)
Health care, detention & correction								
31 - Nursing home or residential board and care facility	2,750	(1%)	5	(0%)	98	(1%)	$11	(0%)
32 - Mental retardation or substance abuse	1,240	(0%)	0	(0%)	14	(0%)	$5	(0%)
33 - Hospital or hospice	1,330	(0%)	0	(0%)	32	(0%)	$7	(0%)
34 - Clinic or doctor's office	670	(0%)	0	(0%)	5	(0%)	$28	(0%)
36 - Prison, jail or police station	490	(0%)	0	(0%)	18	(0%)	$3	(0%)
30 - Unclassified institutional property	350	(0%)	0	(0%)	6	(0%)	$3	(0%)
Residential								
41 - One-or-two-family homes	260,180	(52%)	2,165	(77%)	8,931	(59%)	$5,959	(56%)
42 - Apartment or multi-family homes	106,370	(21%)	410	(15%)	4,276	(28%)	$1,248	(12%)
43 - Boarding house, residential hotel	2,850	(1%)	18	(1%)	87	(1%)	$33	(0%)
44 - Hotel or motel	3,610	(1%)	11	(0%)	139	(1%)	$125	(1%)

U.S. STRUCTURE FIRES IN RELIGIOUS AND FUNERAL PROPERTIES

Richard Campbell

June 2013



National Fire Protection Association
Fire Analysis and Research Division

On average, 1,780 structure fires were reported in religious and funeral properties per year between 2007 and 2011. These fires caused an annual average of two civilian fatalities, 19 civilian injuries, and $111 million in direct property damage. The vast majority of these fires took place in religious properties, with funeral properties representing four percent of the total and another six percent representing unclassified religious or funeral properties. A breakdown of this information is presented below in Table A.

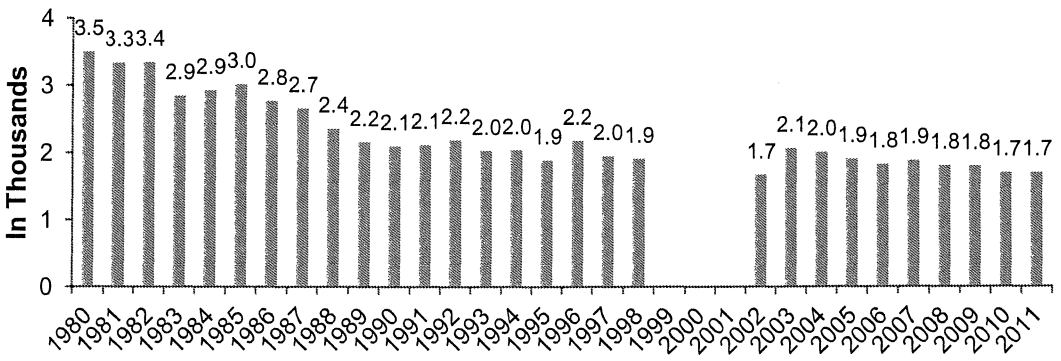
Table A.
Structure Fires in Religious and Funeral Properties
2007-2011 Annual Averages

Occupancy	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Church, mosque, synagogue, temple or chapel	1,600	(90%)	2	(100%)	16	(81%)	$105	(94%)
Funeral parlor	70	(4%)	0	(0%)	2	(9%)	$2	(2%)
Unclassified religious or funeral property	100	(6%)	0	(0%)	2	(10%)	$4	(4%)
Total	1,780	(100%)	2	(100%)	19	(100%)	$111	(100%)

Source: NFIRS 5.0 and NFPA survey.

Fires in religious and funeral properties have fallen substantially over the past 30 years, declining from 3,500 a year in 1980 to 1,660 in 2011 – a 53% decrease, as shown in Figure 1 below. Data are not included for the years between 1999 and 2001 because a new version of NFIRS (Version 5) was introduced in 1999 and gradually adopted by fire departments. Estimates for the transition years should be viewed with caution. While not shown in Figure 1, they are shown in Table 1.

Figure 1. Reported Structure Fires in Religious or Funeral Properties by Year, 1980-2011



Source: NFIRS 5.0 and NFPA survey.

Akers, Gregory C

From: Akers, Gregory C
Sent: Wednesday, October 07, 2015 4:24 PM
To: [redacted]
Cc: Mullaney, Timothy; Mullaney, Kristen N
Subject: Permit Application 15-1305
Attachments: Evan W. Smith Funerals.pdf; UPDATED SEPT. 25, comm-PLANS DOCII.pdf; 2677_001 State Codes.pdf; Asbestospdf.pdf; Bldg permit application.pdf; 3283_001.pdf; business_license_application_8-11_3.pdf

Permit application 15-1305
518 / 524 Bay Rd. Dover DE
Evan W. Smith Funeral Service

Good afternoon,

Information as discussed is attached for you to share as well with Mr. DuBroff as I do not have his e-mail……..

The intent is to move forward as a team and there are requirements, proper plans and record of the same are both necessary and required. Notice the plans submission document as the 2nd attachment.

Notice the existing permit (needs correction / completion) the new building permit, and Asbestos information (an asbestos report confirming the presence or absence of the same is required).

Regards,

Greg

Greg Akers
Gregory C. Akers
CBI / Plans Examiner
Certified- IBC, IRC, IPMC
Member ICC, DBOA

City Hall - 15 Loockerman Plaza
Dover City, Delaware
East Loockerman St.

Akers, Gregory C

From: Akers, Gregory C
Sent: Monday, December 07, 2015 5:05 PM
To: Mullaney, Kristen N; John Barrett
Cc: Mullaney, Timothy
Subject: RE: APPLICATION AND DRAWINGS FOR 518 SOUTH BAY ROAD

I concur,

To my knowledge there has been no revisions to date submitted that reflect sprinkler / fire alarm or the separation requirements etc.... discussed on site 9/9/15

Gregory C. Akers
CBI / Plans Examiner
Certified- IBC, IRC, IPMC
Member ICC, DBOA

City Hall - 15 Loockerman Plaza
Dover City, Delaware
East Loockerman St.
19901

Phone- 302.736.7010 *or extension* 7011

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From: Mullaney, Kristen N
Sent: Monday, December 07, 2015 3:46 PM
To: John Barrett [redacted]
Cc: Mullaney, Timothy <tmullaney@dover.de.us>; Akers, Gregory C <GAkers@dover.de.us>
Subject: RE: APPLICATION AND DRAWINGS FOR 518 SOUTH BAY ROAD

Hi John,

Per the Fire Marshal, Tim Mullaney, the fire permit is on hold until a building permit is re-submitted as the contractor/owner was instructed. In addition, based on preliminary information a fire suppression system might be needed so this could change your drawings. Please contact us with any questions at 302-736-4457. Thanks, Kristen Mullaney

From: John Barrett [redacted]
Sent: Friday, December 04, 2015 6:53 PM
To: Mullaney, Kristen N
Cc: [redacted]
Subject: APPLICATION AND DRAWINGS FOR 518 SOUTH BAY ROAD

John R. Barrett
Securitech, Inc.
[redacted]

Akers, Gregory C

From: Akers, Gregory C
Sent: Thursday, December 24, 2015 10:10 AM
To: Mullaney, Timothy
Cc: McGregor, Mike; Scott, Chris
Subject: FW: Permit Application 15-1305

518 / 524 Bay Rd.
Renovations Permit 15-1305
DCO- Sec. 46 - 162

FM Mullaney,

Timmy, below is the most recent correspondence (12/09/15) regarding the above address.

As discussed in brief review this AM, and unless can be otherwise demonstrated we agree that this building as submitted is to be fully sprinklered and per Dover Fire Marshal requirements.

Thank you for your input and the ongoing joint effort regard.

Greg

Gregory C. Akers
CBI / Plans Examiner
Certified- IBC, IRC, IPMC
Member ICC, DBOA

City Hall - 15 Loockerman Plaza
Dover City, Delaware
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From: Akers, Gregory C
Sent: Wednesday, December 09, 2015 2:33 PM

To: [redacted]
Cc: Mullaney, Timothy <tmullaney@DOVER.DE.US>
Subject: RE: Permit Application 15-1305

Permit application 15-1305

518 / 524 Bay Rd. Dover DE

Evan W. Smith Funeral Service

Good afternoon,

Please provide the status of revisions for the referenced project.

Respectfully,

Greg Akers

Gregory C. Akers
CBI / Plans Examiner
Certified- IBC, IRC, IPMC
Member ICC, DBOA

City Hall - 15 Loockerman Plaza
Dover City, Delaware
East Loockerman St.
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Save Paper

Akers, Gregory C

From: Mullaney, Timothy
Sent: Monday, December 28, 2015 8:14 AM
To: [redacted]
Cc: Akers, Gregory C; McGregor, Mike
Subject: 518/524 Bay Rd; Renovations Permit 15-1305 for Evan W. Smith Funeral Service

Sir,

In conversation/review with Chief Building Inspector Greg Akers for the above referenced permit, I have a concern regarding the fire protection. The updated submitted permit/plan information does not show that a Fire Suppression System as being required.

Per City of Dover Code 46-162;

Sec. 46-162. - Sprinkler requirements.

(a) Places of assembly shall be sprinklered throughout in accordance with the most recently adopted edition of NFPA 13 when the following apply:

(1) All new indoor places of assembly with an occupant load of 150 persons or greater.

(2) Any interior renovations of 50 percent or more to an existing place of assembly with an occupant load greater than 150 persons.

(3) Any additions or increase in interior size to an existing place of assembly that would create an occupant load of 150 persons or greater.

(b) Places of assembly where alcohol is served for consumption on the premises shall be sprinklered throughout in accordance with the most recently adopted edition of NFPA 13 when the following apply:

(1) All new indoor places of assembly with an occupant load of 100 persons or greater and where alcohol will be served for consumption on the premises.

(2) Any interior renovation of 50 percent or more to an existing place of assembly with an occupant load greater than 100 persons and where alcohol will be served for consumption on the premises.

(3) Any additions or increase in interior size to an existing place of assembly which would create an occupant load of 100 persons or greater and where alcohol will be served for consumption on the premises.

(c) New educational occupancies of 5,000 square feet or greater shall be sprinklered throughout in accordance with the most recently adopted edition of NFPA 13.

(d) Three feet of unobstructed clear width shall be designed, designated, and maintained around sprinkler risers for access by firefighters and for maintenance. The three feet shall be measured from the outermost components of the sprinkler riser and all related support equipment.

(e) Fire department connections. Unless otherwise approved by the fire marshal, fire department connections shall be on the street side of the building and shall be located and arranged so that hose lines can be readily and conveniently attached to without interference from any nearby obstructions as defined by the fire marshal's office. Fire department connections shall be a five-inch Storz. Fire department connections shall be within 300 feet of an approved City of Dover Fire Hydrant and within 50 feet of the main entrance of the structure it serves. All fire

department connections shall be not less than three feet nor more than five feet in height above finished grade. The fire marshal shall have the authority to require more stringent requirements when deemed necessary.

(Ord. of 3-14-2005; Ord. No. 2015-07, 5-26-2015)

The plans submitted need to reflect the compliance with the above City Code. Please contact me with any questions or concerns. Thank you in advance for your time.

Timothy P. Mullaney Jr.
Fire Marshal / Law Enforcement Officer
City of Dover Fire Marshal's Office
15 Loockerman Plaza
Dover, DE 19901
Office: 302-736-4457
Fax: 302-736-4217
Email- tmullaney@dover.de.us

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City of Dover - BUILDING PERMIT APPLICATION

15 Loockerman Plaza ♦ Dover, Delaware 19901 ♦ (302) 736-7010 ♦ FAX (302) 736-4217

Project Address/Tax Parcel Identification Number

518 + 524 BAY RD - ED-05-077.10-01-510.000-000

Applicant's Name

PROVERBS 356 PROPERTIES LLC

Owner Name and Address — Phone # ( )

E-mail address:

Contractor Name and Address — Phone # (302) 275-3235

DAVID DUBROFF

E-mail address: — Dover Business License #

BUILDING DETAILS

Proposed Occupancy _____

Type of Construction _____

Change in Occupancy or Use? Yes or No

If yes, describe the previous use _____

Type of work: ( ) New ( ) Addition ( ) Demolition
( ) Renovation – Interior ✓ Exterior ✓
( ) Roof – tear off ___ overlay ___ # of layers _____
( ) Alteration ( ) Siding ( ) Solar panels
( ) Full Building Demolition ( ) Selective Demolition
( ) Fence - Height _____ ( )Pool ( ) Elevator
( ) OTHER _____

Number of Stories _____

Total Height in Feet _____

Total Land Area to be Disturbed (in SF) _____

Proposed Occupant Load _____

Square Footage All Floors _____

Total Work Area (in SF) _____

Description of Work:

[redacted] INTERIOR
FITOUT EXTERIOR

Sprinkler System? Yes or No

Fire Alarm System? Yes or No

Estimated Value of Construction: $ 448,000

Before You Dig! Call Miss Utility 1-800-282-8555 or other authorized locator.

Attention! Please post your issued permit on site and visible from the street.

Office Use Only

Permit Number 15-1305

Roll Plans (Fold Plans) 2 CD/Email Will email

Date Received 9/24/15 DK

Date Issued _____

Flood Plain Y (N) Taxes Y (N) H.D. (N) Y

Public Works (Y) N KCD Y (N)

FIXTURES SHEET (Y) N
C/O Required _____

Review Approvals	
( ) Building Plan	Date___ Initials___
( ) Fire Plan	Date___ Initials___
C-4 ( ) Zoning / Site Plan	Date___ Initials___

Total Fee 3,601.00

Fees Paid ( )

Check #_____ Cash _____

Collected By _____

Certification in Lieu of Oath

I hereby certify that I am the owner of record or a contractor authorized by the owner of record to make this application, and that all work will be performed in accordance with the applicable Codes and Ordinances.

[signature]
Signature

9-24-15
Date

REVIEW NOTES / CORRECTIONS

RE: 518 SOUTH BAY RD

PROPOSED EVAN W. SMITH FUNERAL SERVICE

PERMIT APPLICATION 15-1305

Please provide the following:

1) Complete the Building Permit completely including whether or not the building is to be sprinklered and or provided with a fire alarm. If neither is being proposed, then the same must be demonstrated within the drawings, including and not limited to the Codes Data Summary.
2) Correct Codes Data Building "Summery" with "Building Summary"- this may appear fastidious in review, but it is important to have proper record for eventual archive to the State.
3) Demonstrate / confirm the level of alteration per the IEBC referencing the appropriate sections within the IEBC and IBC for the sections that apply.
4) Per the occupancy classifications within the Code, the proposed is Assembly and specifically an A-3, the Business portion is incidental to the primary classification as Assembly.
5) Update the codes list per the attached document- year specific codes State vs. local.
6) Provide within the Codes Data Summary Information that cross references both the Building Code and Life Safety Codes respectively. We perform both a Building and Life Safety Code review together, as such summary data is required for both in order to expedite the review.
7) Note that there is a change in Occupancy Classification from the previous Assembly classification as A-2 to the new Classification as an A-3.
8) Confirm the type of construction as either VA or VB within the Codes Data Summary.
9) Demonstrate / confirm that no sprinkler system is to be provided. The same must be demonstrated as is typical and within the Codes Data Summary referencing the appropriate sections in the IBC, the IEBC and includes cross references as is typical to the Life Safety Code(s) and Dover's Fire Marshal Ordinance(s). *Note the most restrictive prevails.
10) Provide a complete set of plans that reflects the scope of work and as described within the plans submission document provided.
11) Please understand that an Architect's City "Business" license is required in addition to State licensing requirements.

BUILDING CODE REVIEW

518 SOUTH BAY RD.
DOVER DE.
EVAN W. SMITH
FUNERAL SERVICE

PROJECT DESCRIPTION-
THIS PROJECT CONSISTS OF RENOVATING
AND EXISTING STRUCTURE WITHIN
ITS EXISTING BOUNDARY'S.
THE EXISTING USE IS AS A
RESTAURANT (A-2) AND WILL BE
CONVERTED TO BE USED AS A FUNERAL HOME (A-3)

APPLICABLE CODES
IBC- International Building Code- 2009
IRC- International Residential code- 2009
IPC- International Plumbing Code- 2009
IMC- International Mechanical Code- 2009
IFGC- International Fuel and Gas Code- 2009
IEBC- International Existing Building Code- 2009
IFC- International Fire Code- 2009
2013 Delaware State Fire Prevention Regulations
2013 NFPA Life Safety Code

BUILDING USE GROUPS- ASSEMBLY-3/BUSINESS
BUSINESS DESCRIPTION- FUNERAL HOME
CONSTRUCTION TYPE- TYPE IIIB (SINGLE STORY,
WOOD TRUSS ROOF,MASONRY EXTERIOR WALLS,
INTERIOR NON BEARING METAL STUD PARTITIONS,
CONCRETE FLOOR.
OF FLOORS- BUILDING CONSISTS OF MAIN FIRST
FLOOR -7200 SQ.FT., SECOND FLOOR UNUSED SPACE-
768 SQ.FT.. THE SECOND FLOOR SPACE WILL NOT BE
OCCUPIED AND OR PART OF THE FUNERAL HOME. A
TWO HOUR RATED CEILING WILL SEPARATE THE FIRST
AND SECOND FLOOR (SEE PLAN).
GROSS FLOOR AREA- FIRST FLOOR FUNERAL HOME-
7200 SQ.FT., SECOND FLOOR UNOCCUPIED SPACE-768SQFT
OCCUPANCY LOAD- 227 TOTAL.

1600 sq.ft. of seating area sanctuary and 5600 sq.ft. of
office/business
No separation required (B-S1) table 508.4
Occupant load- Assembly sanctuary- concentrated chairs-
171 occupants
Group B- 5600 sq.ft. 100 gross- 56 occupants (table 1004.1.1)
Total occupant load- 227
Furthest travel distance to exit- 85'
Maximum allowable travel 200' (table 1016.1)
Minimum required exits 2 (table 1021.1)
Total exits-4
Building is 100% accessible
Minimum required plumbing fixtures-table 2902.1-
7 water closets, 5 lavatories
Drinking fountain- 1
Service sink- 1

STANLEY E. MINKA
STATE OF DE. REGISTERED ARCHITECT
S5-7399
2 JUPITER RD. NEWARK DE. 19711
302.290.7414

