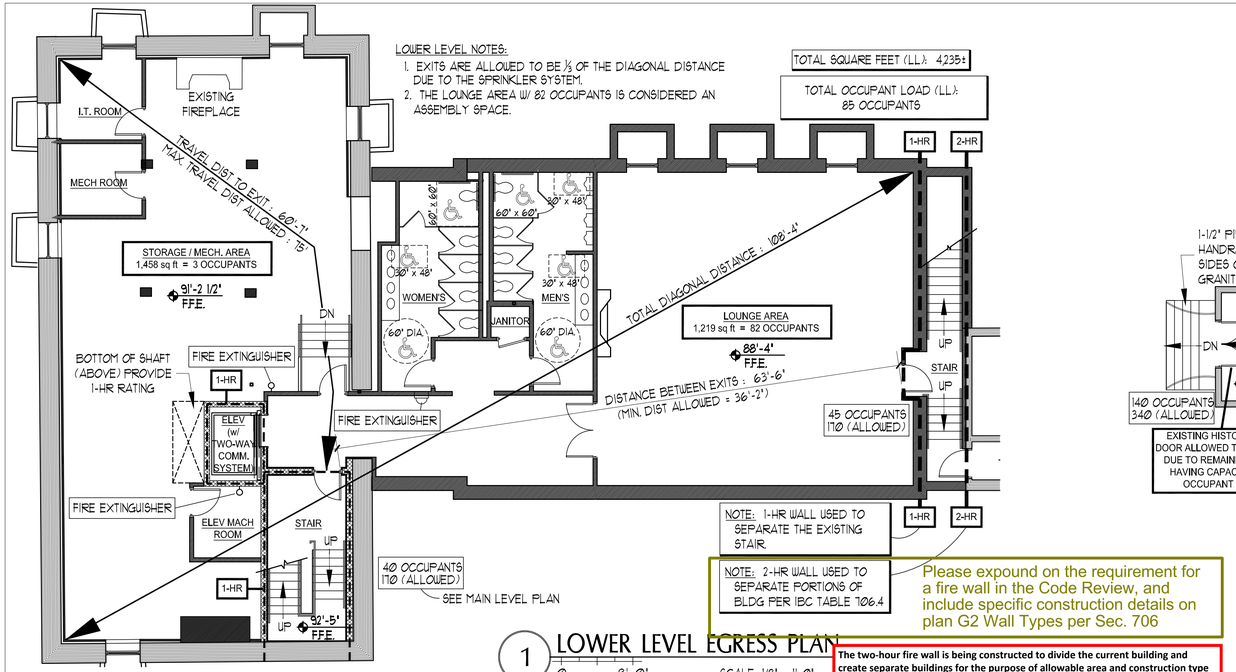
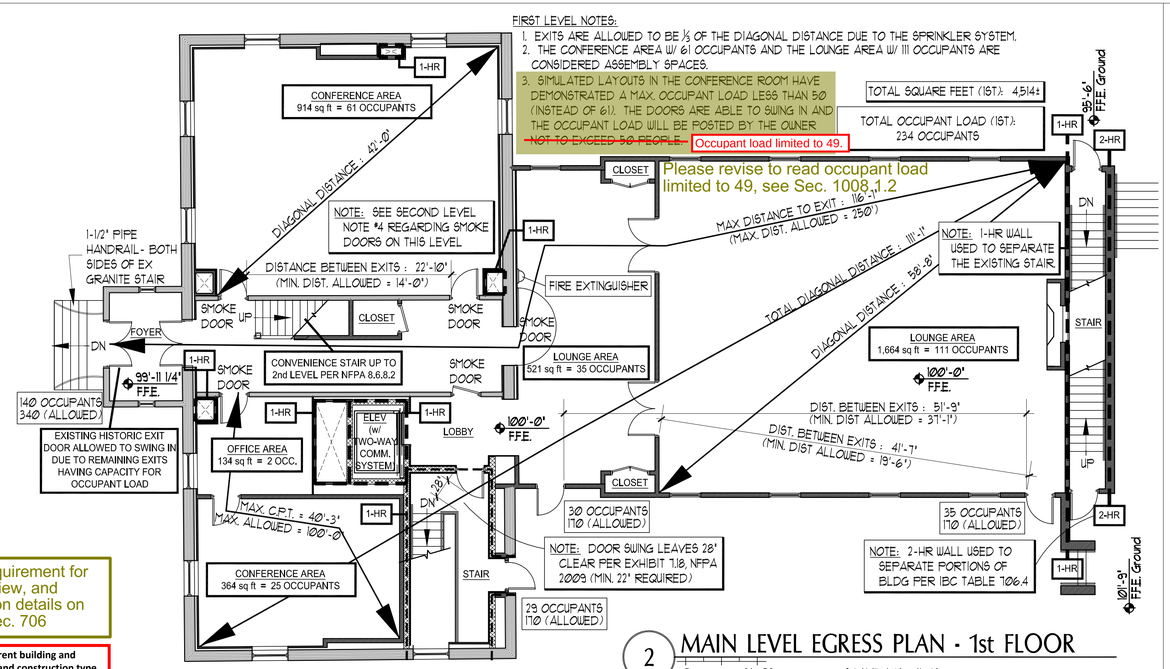


Please expound on the requirement for a fire wall in the Code Review, and include specific construction details on plan G2 Wall Types per Sec. 706

1 LOWER LEVEL EGRESS PLAN

0 8'-0" SCALE: 1/8" = 1'-0"

The two-hour fire wall is being constructed to divide the current building and create separate buildings for the purpose of allowable area and construction type requirements. This portion of the building (as shown in these documents) is a mixed use of "Business" and "Assembly" (see the Code Review on sheet LS1). The other portion of the building (also existing) is also a mixed-use of "Business" and "Assembly" and "Storage". Per Table 706.4, for the Use Groups of the current buildings and the Type V construction type, a 2-hour fire wall is required (per footnote a.). This allows the renovations of the portion of the building as shown in these documents to be its own project, without taking into consideration of the remainder of the existing building. See attached details for wall continuity and fire wall terminations as described in Section 706.5 and 706.6.

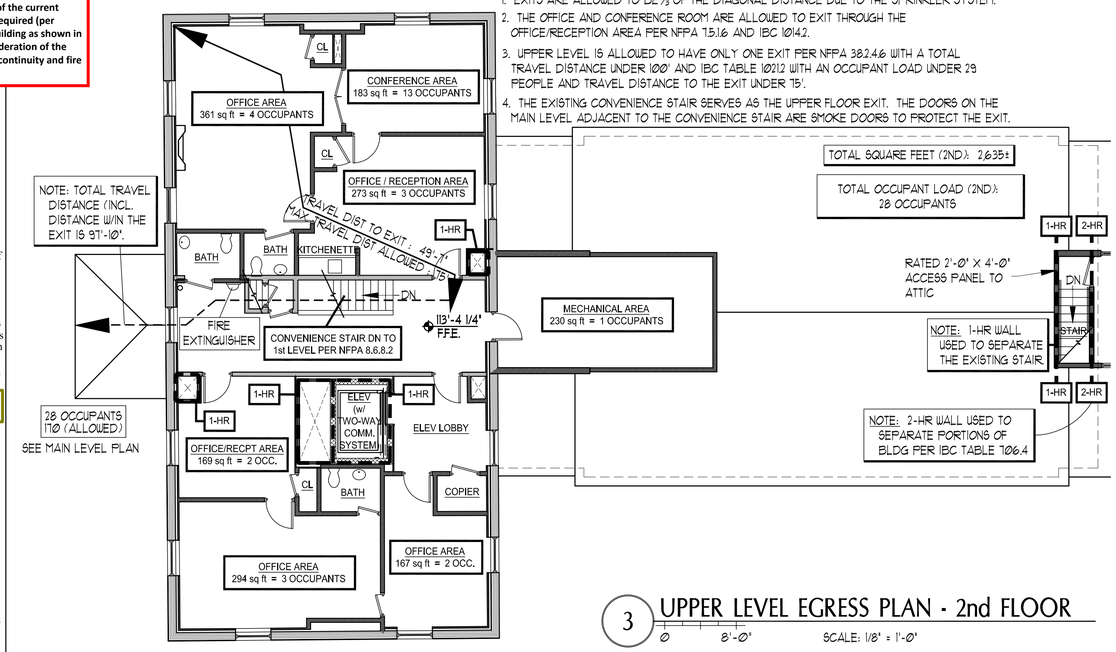


2 MAIN LEVEL EGRESS PLAN - 1st FLOOR

0 8'-0" SCALE: 1/8" = 1'-0"

SECOND LEVEL NOTES:

1. EXITS ARE ALLOWED TO BE ½ OF THE DIAGONAL DISTANCE DUE TO THE SPRINKLER SYSTEM.
2. THE OFFICE AND CONFERENCE ROOM ARE ALLOWED TO EXIT THROUGH THE OFFICE/RECEPTION AREA PER NFPA 7.5.1.6 AND IBC 1014.2.
3. UPPER LEVEL IS ALLOWED TO HAVE ONLY ONE EXIT PER NFPA 38.2.4.6 WITH A TOTAL TRAVEL DISTANCE UNDER 100' AND IBC TABLE 1021.2 WITH AN OCCUPANT LOAD UNDER 29 PEOPLE AND TRAVEL DISTANCE TO THE EXIT UNDER 75'.
4. THE EXISTING CONVENIENCE STAIR SERVES AS THE UPPER FLOOR EXIT. THE DOORS ON THE MAIN LEVEL ADJACENT TO THE CONVENIENCE STAIR ARE SMOKE DOORS TO PROTECT THE EXIT.



3 UPPER LEVEL EGRESS PLAN - 2nd FLOOR

0 8'-0" SCALE: 1/8" = 1'-0"

Code Review - NFPA 101 (Life Safety) 2009

Chapter 6 - Classification of Occupancy

Section 6.1.11.1 - This building is classified as "Business" (A.6.1.11.1(3)). The Conference room and Main Lounge area on the Main Level, along with the Lounge area on the Lower Level, are classified as "Assembly" per section 6.1.2.1.

Section 6.1.14.1 - This occupancy shall be classified as a "Multiple Occupancy" and further defined as a Mixed Occupancy.

Section 6.1.14.3.2 - The requirements of a Non-Separated Mixed-Use occupancy shall be utilized and the most restrictive of the Assembly and of the Business occupancies shall be used.

Chapter 7 - Means of Egress

Section 7.1.3.2.1(1) - All new exits connect three stories or less and shall be 1-hour rated.

Section 7.2.1 - Doors shall comply with this section (including panic hardware and fire exit hardware, section 7.2.1.7).

Section 7.2.2 - All stairs shall comply with this section.

Section 7.2.12.1.1 - Due to the Assembly occupancy, the Area of Refuge shall consist of two rooms separated by a smoke partition. In addition, the requirements of this section requiring a two-way communication system shall be applied. Due to the sprinkler system, this building is exempt from the further requirements in Section 7.2.12.2 and 7.2.12.3.

Table 7.3.1.2 - Occupant Load: see Egress Plans.

Storage / Mechanical spaces on the lower level: 1 person per 500 square feet

Lounge Area on the lower level: 1 person per 15 square feet

Conference rooms and Lounge area on the main level: 1 person per 15 square feet

Offices / Reception areas on the upper level: 1 person per 100 square feet

Conference room on the upper level: 1 person per 15 square feet

Section 7.4.1.2 - For the occupant loads on the lower level and the main level, two means of egress are required (85 and 234 occupants respectively). Furthermore, the Lounge area on the lower level, along with the Lounge areas and a Conference room on the main level, are required to have two means of egress out of the spaces (more than 50 occupants).

Section 7.4.1.6 - Each elevator landing shall have access to at least one exit.

Section 7.5.1.3.3 - Exits shall be separated by a minimum of 1/3 the overall diagonal of each space due to the sprinkler system.

Section 7.5.1.6 - Exit access from the offices on the upper level are permitted to pass through the intervening office/reception spaces.

Section 7.5.4.1 - Two accessible means of egress are required and have been provided.

Section 7.5.4.2.2 - Due to the sprinkler system, the two accessible means of egress are not required to be separated by one-half of the overall diagonal distance.

Table 7.6 - Common Path Limit = 75'; Dead-End Limit = 20'; Travel Distance Limit = 250' (All distances must defer to the Assembly occupancy per the requirements for Mixed-Use).

Chapter 8 - Features of Fire Protection

Table 8.2.1.2 - Construction shall by Type V (000).

Section 8.6.5(2) - The shaft enclosures are all under 4 stories and are required to be 1-hour rated.

Section 8.6.8.2 - The existing convenience opening only connects two stories, and is separated from the corridors. This is the only convenience opening in this building. This convenience opening serves as the means of egress from the upper level (reference section 43.10.4.3, 43.10.4.7.1, and 43.10.4.7.2 for further information).

Chapter 12 - New Assembly Occupancies

Table 12.1.6 - Construction Type V(000) and is allowed one level below the L.O.D. with 1000 occupants, a first story with 1000 occupants, and a second story with 300 occupants. All occupant loads are under the maximum numbers.

Section 12.1.7 - Occupant Load (see Egress Plans).

Section 12.2.3.6.2(2) - The main entrance shall accommodate 1/2 of the total occupant load (345 people). The main entrance/exit shall accommodate 173 persons at .2" per person (34.6" total), 68" is provided.

Section 12.2.8 - Means of egress shall be illuminated.

Section 12.2.9 - Emergency lighting shall be provided.

Section 12.2.10 - Exit signs shall be provided (see Electrical Plan for locations).

Section 12.3.1(3) - The existing convenience stair is permitted in accordance with 8.6.8.2.

Section 12.3.4.1.1 - With an occupant load of 347 people, a fire alarm system is required.

Section 12.3.5.2 - With an occupant load of 347 people, a sprinkler system is required.

Section 12.3.6.2(2) - Corridor and lobby protection is not required due to the sprinkler system.

Chapter 38 - Business Occupancies

Note: It is widely regarded that the Assembly occupancy is the more stringent of the two occupancies in this space. Since this space is being evaluated as a Non-Separated Mixed-Use, the requirements of the Assembly occupancy shall be used in most instances.

Section 38.2.2.12.2 - Due to the sprinkler system, an Area of Refuge consisting of two separate rooms is not required. (Note: Per the Assembly occupancy, this Area of Refuge is required.)

Section 38.2.4.1 - Two exits are required from the lower level and main level.

Section 38.2.4.6 - A single exit is permitted from the upper level as this is a single tenant 2-story, sprinkled building with an exit length to the outside of less than 100'.

Section 38.2.5.2.1 - Dead-End corridors shall not exceed 50' (use Assembly requirement of 20').

Section 38.2.5.3.1 - Common path of travel shall not e

Section 38.2.6.3 - The travel distance to an exit shall n

Section 38.2.8 - The means of egress shall be illuminat

Section 38.2.9.1 - Emergency lighting is required.

Section 38.2.10 - Exit signs shall be provided (see Ele

Section 38.3.1.1(1) - The existing unenclosed (conven

Section 38.3.4.1(3) - A fire alarm system is required.

Section 38.3.5 - Fire extinguishers are required.

Section 38.3.6.1(3) - The 1-hour rating for an exit access corridor is not required.

Chapter 43 - Building Rehabilitation

Section 43.1.3.1 - There are two areas of rehabilitation. The historic portion is defined as "Reconstruction" and the remainder is defined as "Addition" per sections 43.2.2.1.3 and 43.2.2.1.4.

Section 43.6.6.2 - Illumination and emergency lighting are provided.

Section 43.6.4.2 - An automatic sprinkler system is provided.

Section 43.10 - The existing portion of the building that is undergoing "Reconstruction" is considered Historic and shall comply with this section of the code.

Section 43.10.4.2 - Building elements (i.e. the existing stair, ballusters, ect...) that are historic and designated for replacement are allowed to comply with this section.

Section 43.10.4.3(1) - The authority having jurisdiction is allowed to approve the existing convenience stair as a means of egress, if in their opinion, it meets the requirements of this section (see also sections 43.10.4.7.1 and 2).

Section 43.10.4.4 - The existing historic front entrance doors are not required to swing in the direction of egress travel as there are additional exits that have sufficient capacity for the entire occupant load.

Section 43.10.4.7.1 - The existing convenience stair is allowed to remain as it serves one adjacent floor.

Section 43.10.4.7.2 - The existing convenience stair shall serve as the only exit from the upper level and is not required to be enclosed with a fire-rated assembly. The doors adjacent to the stair on the main level shall be smoke doors with closers and on automatic hold-opens tied to the fire alarm system (if warranted) as to resist the passage of smoke and comply with this section.

Section 43.10.4.9 - The existing hand/guardrail on the existing stair will be removed and reinstalled as to comply with the structural aspects of this section.

Code Review - IBC 2012

Please confirm there are no contradictions with the adopted code, IBC 2009

Yes, it meets IBC 2009.

Chapter 3 - Use and Occupancy Classification

Section 303.1 - This building is classified as Assembly (A-3).

Section 304.1 - This building is classified as Use Group B (Business).

Note: Due to the intermingling of the uses, this will be a Mixed-Use, Non-separated building. See Section 508.3.

Chapter 5 - General Building Heights and Areas

Table 503 - This building is partially existing and is classified under Type V (B) construction type. For the A-3 classification this building is limited to one story above the grade plane and 6,000 square feet per floor. For the B classification, 2 stories above the grade plane are allowed and 9,000 square feet are allowed. Due to the mixed use classification, the limits for the Assembly use shall be used.

Note: The heights and areas will be increased due to the sprinkler system.

Section 504.2 - The building height shall be increased by 20' and 1 additional story above the grade plan due to the sprinkler system.

Section 506.3 - The building area is allowed to be increased by 200% to 18,000 square feet per floor.

Section 508.3.1 - The requirements of this section to be utilized for this space to allow a Non-Separated occupancy within this building. The most restrictive requirements of Chapter 9 will be utilized. The remainder of requirements from other chapters will apply to the individual Assembly or Business spaces.

Section 508.3.3 - No separation between uses is required.

Chapter 6 - Types of Construction

Section 602.3 - The construction type shall be Type V (B).

Table 602 - For a fire separation distance over 10', no exterior wall fire-ratings are required.

Chapter 7 - Fire and Smoke Protection Features

Table 705.8 - There are no limits to the allowable area of exterior wall openings for separation distances over 20' (unprotected, sprinklered).

Section 708.2(7) - The existing convenience stair is not required to be enclosed in a shaft.

Section 708.4 - All stair enclosures connect less than 4 stories and are required to be 1-hour rated (except for the existing convenience stair as mentioned above).

Table 715.4 - Doors in the shaft/exit enclosures shall also be 1-hour rated (within a 1-hour rated enclosure).

Chapter 9 - Fire Protection Systems

Figure 903.2 - A sprinkler system is required (over 12,000 s.f. / over 300 occupants) and will be provided.

Section 906.1 - Portable fire extinguishers are required (see Egress plan).

Section 907.2.1 - A fire alarm system is required (Assembly with an occupant load over 300).

Chapter 10 - Means of Egress

Table 1004.1.1 - Occupant Load, see Egress plans.

Section 1007.1 - Two accessible means of egress are required from the lower level and the first floor. The elevator is not an accessible means of egress, the stairways are, per Section 1007.3.

Section 1007.3(2)(3) - The stairways are accessible means of egress, but are not required to be 48" wide or have areas of refuge due to the sprinkler system.

Section 1008.1.10 - Doors serving an occupant load over 50 people shall not be provided with a lock or shall be provided with panic hardware.

Section 1009 - The exit stairways shall comply with this section.

Section 1011.1 - Exit signs will be provided (see Electrical Plans for locations).

Section 1014.2 - The office spaces on the upper level are allowed to pass through the Office/Reception areas, as these spaces are accessory to one another.

Section 1014.2.4.3 - Travel distance within the suites (per Section 1014.2) is under the 100' maximum.

Section 1014.3 - The common path of travel for the Assembly areas is 75' (also see Section 1028.8), and for the Business areas is 100' (due to the sprinkler system).

Section 1015.1 - Two exits (min.) have been provided for the lower level and main level. In addition, two exits are required out of each Assembly space in excess of 50 people (lower level and main level).

Section 1015.2.1(2) - The exits from each space shall be placed a minimum of 1/3 of the diagonal of each space due to the sprinkler system.

Table 1016.1 - The maximum exit travel distance shall be 250' for the Assembly areas and 300' for the Business areas.

Table 1018.1 - There are no requirements for fire-rated corridors.

Section 1018.4(2) - The maximum dead-end corridor length is 50' in the Business areas. In the Assembly areas the maximum dead-end corridor length is 20'.

Section 1021.1 - The lower level and main level shall have a minimum of two exits.

Table 1021.2 - The upper level is allowed one means of egress as there is less than 29 occupants and less than 75' of travel distance to the exit.

Section 1022.1 - The new exit stairway connects less than 4 stories and are required to be 1-hour rated.

Section 1028.2 - The main entrance shall accommodate 1/2 of the total occupant load (345 people). The main entrance/exit shall accommodate 173 persons at .2" per person (34.6" total required), 68" is provided.

Section 1028.3 - The other exits (not the main exit) shall also accommodate 1/2 of the total occupant load (34.6" minimum).

Please provide a code review per the UPC 2009 for plumbing fixture requirements

As per email (7/13/2015) and conversation (7/14/2015) between Jeanie Bourke & Mark Chaloupecky.

NOTE: SEE SHEETS EL11, EL12, AND EL13 FOR EMERGENCY LIGHTING AND EXIT SIGN LOCATIONS.

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UNE UNIVERSITY OF NEW ENGLAND

Allied Engineering Structural Mechanical Electrical Commissioning

CONSIGLI Est. 1905

BECKER STRUCTURAL ENGINEERS

PERMIT SET

REVISIONS

No.	Description	Date
-	-	-

UNIVERSITY OF NEW ENGLAND
PORTLAND, MAINE

ALUMNI HALL RENOVATION

EGRESS

Project Number	14525
Date	May 01, 2015
Drawn by	JP TS SM AR
Checked by	LAS

LS1

Scale AS NOTED