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CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 02/17/16

Date: 20 November, 2015

Memo Report

From: W. Mark Cummings, P.E.

To: Mr. Peter Bissell; Bissell Brothers

CC: Mr. Bill Hopkins, Archetype Architects

Subject: Fire Protection & Life Safety Review of the Proposed Bissell Brothers Brewery

As requested, Fire Risk Management, Inc. (FRM) reviewed the floor plan (drawing A1.01) for the proposed brewery that is planned for construction within the Brick North building at the Thompson's Point development in Portland, ME. This brewery facility is also to include a "Tasting Room" that will be located at one end of the brewery space. It is noted that the brewery space also includes two small mezzanine areas; one that is to be used as part of the Tasting Room, and another that is to be used as an office space. The focus for this review is to provide a preliminary evaluation of the fire protection and life safety features of the proposed design.

The primary codes and regulations used as reference for this review include;

1. The Maine Uniform Building and Energy Code "MUBEC" (2009 IBC with amendments).
2. The Life Safety Code®, NFPA 101; 2009 ed.
3. The City of Portland Code of Ordinances; primarily Chapter 10, *Fire Prevention and Protection*
4. City of Portland Technical Manual, Section 3 – Public Safety, and
5. City of Portland Fire Department Rules and Regulations.

DISCUSSION

This initial review focuses on the proposed addition of a brewery into the existing Brick North building located within the Thompson's Point development. The primary codes being referenced are NFPA 101 and the IBC/MUBEC. This review was based on the Floor and Framing Plans drawing (A1.01) provided by Archetype Architects; dated 11/20/2015. As indicated on the drawing, the brewery is to be located such that it will "share" internal separating walls on its east and west sides. It is reported that the brewery is to be located between two assembly occupancies; a museum (group A-3) to the west and a wine tasting facility (group A-2) to the east. Based on previous evaluations of the Brick North building, this building's construction would be classified as Type IIIB; per the requirements outlined in the IBC.

Brewery Information

The brewery will consist of a single story that occupies slightly more than 10,000 ft^2 of floor space, but will also include two small mezzanine levels at its southeast and northwest corners. A brewery is classified by the IBC as a low hazard Factory / Industrial occupancy, Group F-2. The design plan for the Bissell Brothers brewery also includes an area that will be designated as a "Tasting Room", which will need to be classified as an Assembly occupancy; Group A-2. As outlined by Table 508 of the IBC, there is no need to provide any fire separation of Group F-2 and A-2 occupancies and it is therefore acceptable for the Tasting Room to be open to the actual brewery portion of this facility.

A small Boiler Room is located at the northeast corner of the brewery. Since the building is protected by an automatic fire sprinkler system, there is no requirement for the Boiler Room to be separated from the rest of the facility by a fire rated barrier.

The small mezzanine area located at the southeast corner of the facility consists of less than 425 ft^2 of floor space. This area is to be used as part of the Tasting Room. The second mezzanine area is located at the northwest corner of the facility and consists of approximately 560 ft^2, which is to be used as office space that supports the brewery operation. Each mezzanine is open to the rest of the facility and is provided with a single staircase that leads to the main floor level.

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The remainder of the main floor space within the facility is primarily dedicated to the equipment used to produce the beer, along with areas dedicated to storing the raw materials and containers. In general, areas used for storage would be classified as a low hazard storage occupancy, Group S-2, which are required to be separated from the remainder of the facility.

Fire Protection Systems

The Brick North building is fully protected by an automatic fire sprinkler system(s) throughout. Additionally, it is reported that a fire alarm / notification system is installed throughout the building, which will need to be modified, as necessary, for this facility such that it is fully compliant with the requirements outlined in NFPA 101 and NFPA 72.

Means of Egress

Based on a review of the proposed facility design, all areas of the brewery are provided with adequate means of egress. The only "caution" that needs to be included with this review is the fact that the occupant load calculations included on the plans are based on a portion of the Tasting Room being provided with installed tables and chairs; hence using an occupant load factor of 15 ft^2/person in lieu of 7 ft^2/person for areas that are to be "open" floor space. The Tasting Room area, which includes its associated mezzanine level, is provided with access to two (2) exits as required by code. Each exit consists of a 3-foot door, which typically provides approximately 34 inches of clear width. As such, each exit has the capacity to accommodate up to 170 persons; for a total capacity of 340 persons. It is also required that 50% of the remaining occupant load for the rest of the brewery areas be accommodated by these exits. Based on the current plan/occupant calculations; the exit capacity from the south side of this facility is only slightly higher than the estimated occupant load that must be accommodated; FRM calculated an occupant load of 330 persons to be accommodated by these exits. Any reduction in the actual configuration for the Tasting Room that is dedicated to the installation of tables and chairs could result in the estimated occupant load exceeding the exit capacity available on this side of the facility. The remainder of the brewery facility will have access to two separate exits that will have more than sufficient capacity to accommodate the estimated occupant loads from these areas.

Each of the two mezzanine levels is provided with adequate means of egress; which consists of a single stairway that provides access to the main floor level. All exit travel distance requirements/restrictions, including both common path of travel and total distance to an exit, are compliant from all areas, including the mezzanine area that is part of the Tasting Room.

RECOMMENDATIONS

Given the inherent nature of brewing operations and the type of equipment and materials used, these facilities do not pose a significant threat to life safety. Often due to issues associated with compliance with health safety, the majority of the equipment used consists of non-combustible materials. Equally, steam is being used as the medium to provide heat to the various fermenting/brewing vessels, such that exposure to any significant ignition source(s) is very limited beyond the confines of the boiler room. It is primarily this reason that these facilities are classified as being "low hazard" occupancies.

Based on a review of the plans provided by Archetype Architects, the proposed design for the new Bissell Brothers brewery appears to be fully compliant with all applicable codes. Based on the configuration for this facility, coupled with the lack of any significant fire hazards that exist, the proposed layout easily provides sufficient life safety for all occupants. However, consideration should be given to providing additional exit capacity from the south (Tasting Room) side of the facility to allow greater flexibility in the arrangement used for the Tasting Room; specifically to alleviate any need to dedicate a specified amount of floor space within this area that must be provided with tables and chairs. If one of the two exits was provided with a set of double doors, no restrictions would exist on how this area would need to be configured.

Should there be any questions regarding this evaluation and the recommendations contained herein, please do not hesitate to contact me.

W. Mark Cummings, P.E.
Principal Engineer