BURLINGTON
HIGH SCHOOL

TAPPÉ
ARCHITECTS

FIRE PROTECTION
EXISTING CONDITIONS REPORT
MAY 28, 2024

Fire Protection

Existing Conditions

The current school building was not fully sprinklered at the time of construction. There have been no modifications, renovations, or additions which would have required retrofitting the building with an automatic fire suppression system since that time.

There is a limited area sprinkler system which is tapped off of the domestic cold water piping in the basement. The sprinkler system serves the stage and adjacent storage room, and includes 2½" valved hose connections on either side of the proscenium.

Photo 1 – Sprinkler Service

Photo 2- Stage Hose Connection

Photo 3 – Storage Room Sprinklers

Photo 4- Sprinklers above Stage

The existing kitchen hoods are equipped with integral fire suppression systems.

Deficiencies

The existing building does not meet current code requirements.

The cross connection between the potable water system and the sprinkler system is not protected with a double check valve assembly as required per 310CMR 22.22.

The stage catwalk is not sufficiently open (less than 70%) and is an obstruction to the sprinklers above.

Discussion

The current Massachusetts State Building Code requires all newly constructed buildings of Use Group E – Educational which are over 12,000 square feet in area to be equipped with an automatic sprinkler system providing complete building coverage. In addition, legitimate stages are required to be equipped with automatic standpipe systems.

Massachusetts General Laws, Part I, Title XX, Chapter 148, Section 26G, requires automatic sprinkler systems be installed in all buildings, including additions, with a gross area totaling more than 7,500 square feet. This law is only triggered if a new building is constructed, an addition is built onto an existing building, or major alterations or modifications are planned for an existing structure. Major alterations and modifications are further defined and discussed in the 2009 advisory memorandum issued by the Executive Office of Public Safety and Security's Department of Fire Services.

Hydrant flow test data was not available, so it is unknown at this time if the existing public water supply system is of adequate capacity to support a fire sprinkler system without the installation of a fire pump.

If a fire pump is required, it would need to be diesel engine driven, or electric motor driven with an emergency generator for back-up. The fire pump and controller need to be located within a dedicated 2-hour fire rated room with exterior access.

Based on the building's footprint, the building will need to have at least two separate sprinkler system risers.

A standpipe system does not appear to be required.

Floor control valves would be required.

The building appears to be of non-combustible construction, so sprinklers would not be required in the non-combustible interstitial spaces above suspended ceilings.

Recommendations

In accordance with Chapter 34 of the current Massachusetts State Building Code, existing buildings in Use Group E are not required to be retrofitted with an automatic fire sprinkler system unless they undergo major alterations or a change in use. However, because of the proven property and life-saving benefits of these systems, this office would recommend retrofitting the original building in the near future regardless of renovation plans.