



Building Description

Existing 7,800 sf two storey buildings (two) connected by corridor link previously used as a Funeral Home (A-3 use Group). Owner wants to use north wing as a residence and south wing as Arts Education Center.

Design / Construction Issue

Minor modifications are required to change from assembly to education / business. Change of use to residential use also requires minor modifications but in addition would require a sprinkler system as part of a mixed use building. The majority of the existing highly ornamental ceiling in the proposed residential area would have to be removed to install the sprinkler

system. It is unknown if there is a sufficient water supply for a sprinkler system.

BAT Review

We reviewed proposed use of the building with the owners and determined that the buildings were originally two single family residences and have totally separate electrical, heat and plumbing systems. The only connection between the two buildings was the 25 ft enclosed single story corridor. Because of the change of use, the entire building must comply with the Commercial Code (International Building Code (IBC)).

BAT Solution

The BAT team proposed three solutions (in order of highest to lowest in cost) without the requirement for a sprinkler system -

Fire Wall:

Section 706 of the IBC allows for the two wings to be considered as separate buildings if there is a 3 hour rated fire wall between. A fire wall is a self supporting structure that maintains its structural stability even if the adjacent buildings collapse. It must extend 18" beyond the exterior walls at the dividing location and 30" above adjacent roofs. This would allow the north wing to be considered a single family house and comply with the International Residential Code (IRC) which does not require sprinklers as the residential building would be under 14,000 sf. A fire wall is not the same as a fire barrier or fire partition (see below).

Fire partition / Existing BBRS Variance:

There is an existing variance issued by the State (BBRS Decision Docket 11-1083) for a single occupant tenant for a mixed commercial residential building in Beverly. The building similarly had not been in use for many years, is a standalone, and the owner would reside in the building. The BBRS accepted the economic hardship not to installing a sprinkler system but as a code compliance alternative required a two hour separation between the residential and commercial use and a full interconnected fire alarm system throughout all spaces. A 2 hour fire barrier/partition (with 1 ½ hour doors) would need to be installed. The best location for the fire barrier would be along the single story connecting corridor.

Breezeway:



Removal of the windows and siding between the two wings would create two buildings linked by a breezeway if there is sufficient fire separation distances (FSD) between each. Exterior doors would have to be re-installed and the buildings would effectively revert to their original design. The north building would be a single family house and the south building a commercial business/educational use.

Next Step

The owner's Architect should review the three options and prepare a code analysis to present to the Building Commissioner for his initial review.

Cost Savings to the client = \$100,000.

Epilogue

The owner selected the third option and restarted their project in the summer of 2016. It is likely to be completed in the Fall of that year.

BAT Technical Explanation

The building is considered a Construction Type IIIB (IBC 602.3). Single Family Houses come under the International Residential Code (IRC) and houses under 14,000 sf do not require Automatic fire sprinklers systems (IRC 2012 Section R313.2 amended by 780 CMR 51.00 Massachusetts Residential Code R313.2).

It should be noted that the Sprinkler Law also applies to commercial buildings over 7,500 sf. Although the total building area is approximately 7,800 sf the law does not apply to residential spaces which results in a commercial area well below 7,500 sf. The sprinkler law therefore does not apply to this building.

Details of fire wall requirements are noted in section 706 of the IBC. Details of fire wall barriers and partitions are noted in section 707 of the IBC. The intended use does not comply with the Live / Work Unit requirements (IBC 2009 Section 419)

The BAT team offers free advice and consists of professional advisors with decades of experience and with one aim - to help as many businesses in Downtown Adams open and thrive. More details on the Downtown Adams Business Advisory Group can be found at <http://downtownadams.weebly.com/bat-team.html>