

COMMONWEALTH OF MASSACHUSETTS

SUFFOLK, ss.

Building Code Appeals Board
Docket No. 08-508

Harold Cutler,)
as agent for Tufts University,)
Appellant,)
)
v.)
)
Thomas White,)
City of Boston)
Inspectional Services Department,)
Appellee)

BOARD'S RULING ON APPEAL

Procedural History

This matter came before the State Building Code Appeals Board ("Board") on Appellant's appeal filed pursuant to 780 CMR §122.1. In accordance with 780 CMR §122.3, Appellant asks the Board to grant variances from 780 CMR §§ 705.3, 705.5, 1014.11.1, and 403.8 of the Massachusetts State Building Code ("Code") with respect to the addition to an existing building located at 704-780 Washington Street, Boston, MA ("Property").

By letter dated December 3, 2007, Thomas White, Commissioner of the Boston Inspectional Services Department ("Appellee"), denied Appellant's application because the Property was in violation of 780 CMR §§ 707.3, 705.5, 1014.11.1, and 403.8 of the Code.

In accordance with G. L. c. 30A, §§10 and 11; G. L. c. 143, §100; 801 CMR §1.02 et. seq.; the Board convened a public hearing on January 3, 2008 where all interested parties were provided with an opportunity to testify and present evidence to the Board.

Present at the hearing were Harold Cutler, Rob Quigley, Bryan Thorp, Joseph Castellana, and Glenn Hand on behalf of Appellant. Harold McGonigle was present on behalf of the Appellee. It was noted that no one was in attendance on behalf of the adjacent building referred to as the Tupper Building.

Reasons for Variance

I. Variance #1

The first variance requested by the Appellant is in reference to 780 CMR §§705.3 and 705.5. Section 705.3 refers to openings in exterior walls of buildings and states in relevant part:

705.3 Openings: The maximum area of unprotected or protected openings permitted in an exterior wall in any story shall not exceed the values set forth in Table 705.3. Where both unprotected and protected openings are located in the exterior wall in any story, the total area of the openings shall comply with the following formula:

where:

A = Actual area of protected openings, or the equivalent area of protected openings A (see 780 CMR 705.2.4).

A_e = Allowable area of protected openings.

A_u = Actual area of unprotected openings.

A_u = Allowable area of unprotected openings.

Table 705.3

MAXIMUM AREA OF EXTERIOR WALL

OPENINGS

Classification of opening	Fire separation distance (feet)							
	0 to 3	> 3 to 5	> 5 to 10 ^d	> 10 to 15 ^{c,d}	> 15 to 20 ^c	> 20 to 25 ^c	> 25 to 30 ^c	> 30
Un-protected	NP	NP ^b	10%	15%	25%	45%	70%	No limit
Protected	NP	15%	25%	45%	75%	No Limit	No Limit	No Limit

NP (Not permitted)

Section 705.5 provides:

705.5 Vertical exposure: Approved protectives shall be provided in every opening that is less than 15 feet (4572 mm) vertically above the roof of an adjoining building or adjacent structure which is within a horizontal *fire separation distance* of 15 feet (4572 mm) of the wall in which the opening is located, unless such roof construction affords a fire-resistance rating of not less than one hour.

The Property is the Tufts University School of Dental Medicine which is mixed use building specifically containing Use Groups B, A-3 and F-1. The project involves the addition of

five stories to an existing ten story building. The building area of a typical upper floor of the Property is approximately 20,540 square feet, and the area of all levels of the existing building is 195,393 square feet. This addition will provide added clinical, research, office and assembly space to the existing teaching, treatment, and research space. Additionally, the Property includes a utility facility is located in the basement.

The east exterior walls of the 11th through 15th floors of the Property will be approximately 15 feet from the adjacent lot line. The wall will have fire separation distances ranging from 0'-09" to 20'-6". The Appellant indicated that the exterior walls will include a "unrated curtain wall assembly backed by rated interior partitions." The proposed area of unprotected openings will be 44% with a fire separation distance of 3-5 feet. Additionally, the east exterior wall of the 11th floor will be located within 15 feet horizontally and vertically of the roof of the adjacent Tupper Building. The fire rating of the roof of the Tupper Building is unknown. According to the supporting statement submitted by the Appellant, opening protectives required by Section 705.5 are not proposed on the 11th floor.

The Appellant provided several site and building constraints including the fact that the property is located in close proximity to the lot line of the Tupper Building and the additional floors will have the same fire separation distances as the existing portion of the building. Additionally, the property is subject to the energy conservation requirements which involve increased daylight and views to boost energy efficiency and the proposed openings are intended to satisfy such requirements.

Finally, the Appellant testified that interior two hour fire separation walls will be installed approximately 10 feet inside the non-complying exterior wall openings. Sprinklers will be installed at the windows on the 11th floor. The 14th and 15th floors will include an interior fire shutter and sprinklers to protect unrated vision glass panels.

II. Variance #2

The next issue is whether Appellant should be granted a variance from Section 1014.11.1 regarding fire rating of exterior walls of enclosed exit stairways. Section 1014.11.1 specifically states:

1014.11.1 Exterior walls: Exterior walls of an enclosed *exit stairway* shall comply with the requirements of 780 CMR 705.0 for exterior walls. Where nonrated walls or unprotected openings enclose the exterior of the *stairway*, the building exterior walls within ten feet (3048 mm) horizontally of the nonrated wall or unprotected opening shall be constructed as required for *stairway* enclosures, including opening protectives, but are not required to exceed a one-hour fire resistance rating with ¾-hour opening protectives. This construction shall extend vertically from a point ten feet (3048 mm) above the topmost landing of the *stairway* or to the roof line, whichever is lower, and down to the ground.

This project involves nonrated windows in a stair enclosure with a proposed separation of 5'-3" from the nonrated glass from adjacent use space to the south. In the

supporting statement, the Appellant explained that during an interior fire, "radiant energy [is] emitted from burning combustibles within the building." Furthermore, "the majority of the energy is transmitted through window openings..." and very little energy is "transmitted to the building exterior walls of adjacent stairs at 90 degrees to wall of the fire room." The Appellant further explained that the current project involves a 180 degree relationship between the walls of the adjacent space and the stair, as a result, there is a "limited threat to a stair enclosure due to an uncontrolled fire in an adjacent space." Additionally, the Appellant asserts that the installation of automatic sprinklers "provides a high probability that a fire in a space adjacent to the northwest exit stair will be controlled at levels that would not threaten building occupants using the stair to evacuate the building."

III. Variance #3

The final issue is whether to allow a variance from Section 403.8 and authorize the use of the Smoke Guard system for sealing elevator door openings as opposed to requiring an elevator lobby or pressurization of the elevator shafts. Section 403.8 provides:

403.8 Elevators: Elevator operation and installation shall be in accordance with **524 CMR**. Elevator service shall be provided for fire department emergency access to all floors. Elevator cab dimensions shall conform to the applicable requirements of 524 CMR.

Except for the main entrance level, all elevators shall open into a lobby separated from the remainder of the building by one hour fire-resistance rated construction. Exit stairways, chutes, janitor closets, tenant spaces in Use Group R and service rooms shall not open into the elevator lobby. In Use Groups other than R, tenant spaces opening into the elevator lobby shall be provided with other means of exit access that do not require passage through the elevator lobby.

Exception: elevator lobbies are not required when a smoke control system is installed in accordance with 780 CMR 921.7.

The project will include the installation of the Smoke Guard system for sealing elevator doors at the elevator bank at both the existing and new floors of the building. This system is intended to prevent smoke from entering the elevator shaft when a fire is controlled by operating sprinklers. In the case of a fire that is not controlled by the sprinklers, smoke may enter the elevator shafts and spread to other floors; however, the Smoke Guard screen would act to prevent smoke from dispersing onto those floors through the elevator shaft.

The Appellant testified to the difficulty of creating elevator lobbies in the building because of the small space and construction difficulties. The requirement of pressurized shafts would involve significant utility installations. The Appellant further indicated that the Smoke Guard system is an effective and widely accepted alternative.

The Appellee is not opposed to granting any of the proposed variances. The Board acknowledged this fact.

Decision

Board member Alexander MacLeod motioned to grant the variance from § 705.3 and § 705.5 because the Appellant will install two hour fire separation walls to limit fire intrusion, a fire shutter on the assembly space, and additional sprinklers ("Motion"). The motion was seconded by Brian Gale.

The Chair entertained a motioned to grant the variance from §1014.11.1 since the location of the exit stair enclosure was not alongside any other buildings. A motion was made by Brian Gale and seconded by Alexander MacLeod.

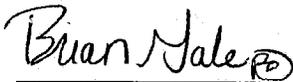
A motion was made by Brian Gale to allow a variance to §403.8, as an exception from the requirement of an elevator lobby, and allow the installation of the Smoke Guard system. It was noted that the Appellee does not oppose any of the three variances. Following testimony, and based upon relevant information provided, Board members voted to allow the Motions, as described on the record. The Board voted as indicated below.

..... **Granted** Denied Rendered Interpretation

..... Granted with conditions Dismissed

The vote was:

..... **Unanimous** Majority



Brian Gale



Alexander MacLeod



Rob Anderson -Chair

Any person aggrieved by a decision of the State Building Code Appeals Board may appeal to a court of competent jurisdiction in accordance with Chapter 30A, Section 14 of the Massachusetts General Laws.

A complete administrative record is on file at the office of the Board of Building Regulations and Standards.

A true copy attest, dated: June 13, 2008


Patricia Barry, Clerk

All hearings are audio recorded. The digital recording (which is on file at the office of the Board of Building Regulations and Standards) serves as the official record of the hearing. Copies of the recording are available from the Board for a fee of \$5.00 per copy. Please make requests for copies in writing and attach a check made payable to the Commonwealth of Massachusetts for the appropriate fee. Requests may be addressed to:

Patricia Barry, Coordinator
State Building Code Appeals Board
BBRS/Department of Public Safety
One Ashburton Place – Room 1301
Boston, MA 02108