

CODE SUMMARY

Applicable Codes

- MJBEC - Maine Uniform Building and Energy Code
- 2015 International Building Code - IBC
- 2009 IECC: International Energy Conservation Code
- 2015 IEBC: International Existing Building Code
- NFPA 101 Life Safety

Accessibility Codes

- UFAS Fair Housing Act Section 504
- State of Maine Human Rights Act
- ADAAG Americans with Disabilities Act
- ICC ANSI 117.1 Accessible and Usable Buildings and Facilities

PROJECT SUMMARY:

This is the second phase in the renovation of the Reed School. The school consists of the original 1926 building and a 1960 addition. Phase 1 converted the addition into a daycare facility. Phase 2 will convert the original 1926 building into 8 apartment units.

This building is an historic renovation and is subject to the provisions and exceptions provided by the International Building Code's Chapter 12: Historic Buildings.

Square Footages:

I-4 = 16,509 SF (PHASE 1)
R-2 = 9,272 (PHASE 2) FLOORS 1 & 2
S-1 = 4,636 (PHASE 2) BASEMENT

Unit Count:

8 units

CODE SUMMARY :

Chapter 3 - Use and Occupancy Classification

310.4 Residential Group R-2 apartments

Chapter 4 -

420.2 Group R-2

420.2 Separation Walls. Walls separating dwelling units in the same building, walls separating sleeping units in the same building and walls separating dwelling and sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 708.

420.3 Horizontal Separation. Floor assemblies separating dwelling units in the same buildings, floor assemblies separating sleeping units in the same building and floor assemblies separating dwelling or sleeping units from all other occupancies contiguous to them in the same building shall be constructed as horizontal assemblies in accordance with section 711.

***IEBC 1205.4 Occupancy Separation.**

Required occupancy separations of 1 hour may be omitted when the building is provided with an approved automatic sprinkler system.

New horizontal and vertical assemblies separating dwelling units will be rated 1-hr. Existing assemblies to remain meet the requirements of the code.

Chapter 5- General Building Heights and Areas

Table 504.3 Allowable building height in feet above grade plane occupancy R, S13R, Type VB = 60' max height above grade plane

Table 504.4 Allowable number of stories above grade plane occupancy R-2, S13R, Type VB = 3 stories max above grade plane.

Table 506.2 Allowable area factor occupancy R-2, S13R, Type VB = 7,000 SF max

506.2.4 Mixed-occupancy, multi-story buildings
Each story of a mixed-occupancy building with more than one story above grade plane shall individually comply with the applicable requirements of Section 508.1.

Exception: For buildings designed as separated occupancies under Section 508.4 and equipped throughout with an automatic sprinkler system installed in accordance with 903.3.1.2, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories determined in accordance with Equation 5-3 based on the applicable provisions of Section 508.1, shall not exceed four.

508 Mixed Use and Occupancy 508.1 General

508.2 Accessory Occupancies

Aggregate accessory occupancies, ancillary to principal occupancy, shall not occupy more than 10% of the building area of the story and shall not exceed Table 503 values (without building area increases). Accessory occupancies shall be individually classified.

Note: Storage areas on each floor account for less than 10% of total floor area and are Accessory Occupancies (non-separated).

508.2.4 No separation is required between accessory occupancies and the main occupancy. (Exception 2: R2 occupancy dwelling units must be separated from accessory occupancies per Section 420 (1 hour).

508.4 Separated Occupancies

508.4.1 Occupancy Classification
Separated Occupancies shall be individually classified in accordance with Section 302.1. Each separated space shall comply with this code based on the occupancy classification of that portion of the building.

508.4.2 Allowable building area.

In each story, the building area shall be such that the sum of the ratios of the actual building area of each separated occupancy divided by the allowable building area of each separated occupancy shall not exceed 1.

sum of the ratios not to exceed 4 per 506.2.4.

$$\frac{I \text{ actual: } 16,509}{I \text{ allowable: } 36,000} + \frac{R2 \text{ actual: } 4,636}{R2 \text{ allowable: } 7,000} = 1.12 < 4$$

508.4.4 Separation.

Individual Occupancies shall be separated from adjacent occupancies in accordance with table 508.4

Group R required to be separated from Group I-4 with 1 hour separation per TABLE 508.4

508.4.3 Allowable Height: Each separated occupancy shall comply with building height limitations based on the type of construction

Type VB:

Occupancy	Allowed	Actual
R-2 Residential	3 Stories	2 Stories

Table 601 - Fire Resistance Ratings for Building Elements

Building Element **Type VB**

Primary Structural Frame	0 hour
Bearing Walls	0 hour
Exterior Walls	0 hours
Interior Walls	0 hour
Non-Bearing Walls and Partitions, Exterior	(See Table 602)
Non-Bearing Walls and Partitions, Interior	0 hour
Floor Construction and Secondary Members	0 hour
Roof Construction and Secondary Members	0 hour

Table 602- Fire Resistance Rating Requirements For Exterior Walls Based on Fire Separation Distance (non-loadbearing walls)

Fire Separation Dist.	Construction Type	Group I/R
x < 5'	All	1 hour
5' ≤ x < 10'	Type VB	1 hour
10' ≤ x < 30'	Type VB	0 hour
x ≥ 30'	All	0 hour

**Higher of 2 determining factors (Tables 601 and 602) indicate exterior bearing walls to be 0 hour fire resistance rated.

602.3 Type V Construction

Structural elements, exterior walls, and interior walls are of any materials permitted by Code.

Chapter 7- Fire and Smoke Protection Features

705 Exterior Walls

705.2 Projections shall not extend any closer to the line used to determine the fire separation distance than shown in Table 705.2

705.2 Minimum Distance of Projection. Fire Separation Distance > 3'-0"; minimum distance from line used to determine FSD = 24" plus 8 inches for every foot of FSD beyond 3 feet or fraction thereof.

705.8.1 Allowable area of openings. The maximum area of unprotected and protected openings permitted in an exterior wall in any story of a building shall not exceed the percentages specified in Table 705.8

Table 705.8 Maximum Area of Wall Openings Based on Fire Separation Distance and Degree of Opening Protection

Fire Separation Dist.	Degree of Opening Protection	Allowable Area
0' to less than 3'	Unprotected, Sprinklered	Not Permitted
3' to less than 5'	Unprotected, Sprinklered	15%
5' to less than 10'	Unprotected, Sprinklered	25%
10' to less than 15'	Unprotected, Sprinklered	45%
15' to less than 20'	Unprotected, Sprinklered	75%
20' to less than 25'	Unprotected, Sprinklered	No Limit
25' to less than 30'	Unprotected, Sprinklered	No Limit
30' or greater	Unprotected, Sprinklered	Not Required

705.8.5 Vertical Separation of openings

Not Required, Exception no. 2, Automatic Sprinkler System in accordance with 903.3.1.1

705.11 Parapets

Not required on exterior walls per Exception No. 1. The wall is not required to be fire-resistance rated in accordance with Table 602 because of fire separation distance.

707 Fire Barriers (shafts, exit and floor opening enclosures)

707.3.1 Shaft enclosures shall comply with Section 713.4 (1 hour)

707.3.2 The fire resistance rating of exit enclosures shall comply with Section 1023.1 (1 hour).

*** IEBC 1203.6 Stairway Enclosure.**

In buildings of three stories or less, exit enclosure construction shall limit the spread of smoke by the use of tight-fitting doors and solid elements. Such elements are not required to have a fire resistance rating.

***IEBC 1203.4 Transoms.**

In groups of R-2 occupancy, existing transoms in corridors and other fire-resistance-rated walls may be maintained if fixed in the closed position. A sprinkler shall be installed on each side of the transom.

The existing stair walls meet the requirements of the IEBC that the walls be smoke-tight. The new wall enclosing the stair and separating it from the first floor will be 1 hour fire-rated.

707.3.6 Incidental Accessory Occupancies Fire barriers separating incidental accessory occupancies shall have a fire resistance rating of not less than that indicated in Table 509. Not required due to automatic sprinkler system.

707.6 Openings in fire barrier shall be protected in accordance with Section 716. Openings shall be limited to a maximum aggregate width or 25% of length of wall, with max area of any single opening not to exceed 156 sf. Openings in exit enclosures and passageways shall comply with Sections 1019, 1023.4 and 1024.5.

- Exception 1: Openings not limited to 156 sf with automatic sprinkler systems.
- Exception 2: Openings not limited to 156 sf or 25% of length at fire door serving exit enclosure.

713 Shaft Enclosures (stairs, chutes, elevators, duct shafts, etc.)

713.2 Shaft enclosures to be constructed as fire barriers

713.4 Shaft enclosures shall have a 1 hour fire resistance rating where connecting less than 4 stories.

***IEBC 2015 1203.7 One-hour fire-resistant assemblies.**

Where 1-hour fire-resistance-rated construction is required by these provisions, it need not be provided, regardless of construction or occupancy, where the existing wall and ceiling finish is wood or metal lath and plaster.

713.7.1 Penetrations other than those necessary for the purpose of the shaft shall not be permitted.

714 Penetrations

714.3 Fire-resistance-rated walls. Penetrations into or through fire walls, fire barriers, smoke barrier walls and fire partitions shall comply with Sections 714.3.1 through 714.3.3

708 Fire Partitions (exit access corridors, dwelling unit separations, etc.)

708.1 General

Fire partitions shall have a fire resistance rating of not less than 1 hour.

- Walls Separating Dwelling Units (420.2) One hour
- Corridor Walls per Table 1020. 1/2 hour (when fully sprinklered per NFPA 13)

***IEBC 1205.4 Occupancy Separation.**

Required occupancy separations of 1 hour may be omitted when the building is provided with an approved automatic sprinkler system.

708.4 Continuity: Fire partitions shall extend from floor below to underside of floor/roof sheathing above. Supporting structure shall be protected similarly to wall. Fire blocking is not required if equipped with automatic sprinkler system and sprinklers are installed within combustible floor/ceiling and roof/ceiling spaces.

708.5 Where exterior walls serve as part of the required fire resistance rating separation, walls shall comply with Section 705 Exterior Walls and fire resistance rated requirements shall not apply.

711.2.4.3 Dwelling units and sleeping units. Horizontal assemblies serving as dwelling or sleeping unit separations in accordance with Section 420.3 shall be not less than 1-hour fire-resistance-rated construction
Exception: 1/2 hour rating required when sprinklered.

***IEBC 1205.4 Occupancy Separation.**

Required occupancy separations of 1 hour may be omitted when the building is provided with an approved automatic sprinkler system.

711.2.6 Ceiling membrane not required over unusable crawl spaces or unusable ceiling spaces.

Chapter 8- Interior Finishes

Table 803.11 Interior Wall and Ceiling Finish Requirements

By Occupancy:	Sprinklered	Corridors	Rooms and Enclosed Spaces
Group R-2	Class C	Class C	Class C

Chapter 9- Fire Protection Systems

Table 903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

903.3.1.2 NFPA 13R Sprinkler Systems

The building will be equipped throughout with an automatic sprinkler system in accordance with NFPA 13R

903.3.2 Quick response or residential automatic sprinklers shall be installed in dwelling units.

903.4 Valve controlling water supply for automatic sprinkler system shall be electronically supervised by a fire alarm control unit.

905 Standpipe Systems

905.2 Standpipe Systems will be provided in accordance with NFPA 14

905.3.1 Height- Class 1 Standpipes are allowed in buildings equipped throughout with an automatic sprinkler system.

905.4 Class 1 standpipe hose connections shall be provided in the following locations:

- In every stairway at an intermediate floor level between floors, unless otherwise approved by the fire code official
- On each side of the wall adjacent to exit opening of horizontal exit (Not required where hose stream is reachable).

906 Portable Fire Extinguishers- Required in Group R-2

- in each dwelling unit provided with a minimum rating of 1-A:10-B:C
- on each floor of structures under construction
- where required by the International Fire Code Table 906.1
- special hazard areas where required by the code official

907 Fire Alarm and Detection Systems

907.2 Where Required-New Buildings and Structures

Exception 2: The manual fire alarm box is not required for Group R-2 occupancies unless required by the fire code official to provide a means for fire watch personnel to initiate an alarm during a sprinkler system impairment event. Where provided, the manual fire alarm box shall not be located in an area that is accessible to the public.

907.2.9.2 Group R-2: Manual fire alarm station is not required per exception 2, where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and the occupant notification appliances will automatically activate throughout the notification zones upon a sprinkler water flow.

907.2.11 Smoke alarms shall be installed per Section 907.2.11 (within sleeping units)

907.2.11.2 Group R-2: Smoke alarms shall be installed outside each sleeping area and within each room used for sleeping.

907.5.2.3.3 Group R-2: All dwelling and sleeping units shall be capable of supporting visual alarm notification and extended to the unit smoke detectors.

912.2.1 Fire Department Connections: Locations as approved by fire chief so vehicles and hose lines will not interfere with building access (visible location on street side of building).

Chapter 10- Means of Egress

1004 Occupant Load

Table 1004.1 Maximum Floor Area Allowances per Occupant
Residential 200 gross sf

1005 Egress Width

Function of Space	Location	Floor Area	Occupants	Req'd Egress Width (1005.1)
Residential		4636 sf max	23 x .3"	6.9" Stairs
		(23 occupants)	23 x .2"	4.6" Other

Notes:

1. min 36" wide doors and 36" wide stairs provided within units, minimum 44" wide stairs provided elsewhere.

1006.2.1 spaces with one exit or exit access doorway

R-2, max OL = 10, 125' max common path of egress travel distance with sprinkler

1009 Accessible Means of Egress

1009.3 Stairways

Clear width 48" - Not Required in buildings with automatic sprinkler system. Exception no. 2

Area of Refuge- Not Required in Group R-2, Exception no. 8

1010 Doors, Gates and Turnstiles

1010.1.1 Size of Doors- Minimum Clear width = 32", maximum leaf width 48" Exception no. 1- Minimum and maximum widths do not apply to door openings not part of the required means of egress in Group R-2 occupancies.

1010.1.5 Provide a level landing on each side of door, except at exterior locations with 2% slope pitch for drainage.

1010.1.8 48" plus door width required minimum space between doors in series.

1010.1.9.10 Egress doors shall be readily operable from the egress side without the use of a key or special knowledge or effort.

1011 Stairways

1011.2 Stairway width - Minimum required width of 44". Exception 1: Stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches.

1011.3 Headroom 80 inches minimum measured vertically from a line connecting the edge of the nosings.

1011.11 Handrails required on each side of stair.

Exception 1: Stairways within dwelling units are permitted to have a handrail on one side only.

Section 1017 Exit Access

1017.2 Exit Access Travel Distance.

Group R sprinklered max distance = 250'

NFPA 101 - 2009

OCCUPANCY - RESIDENTIAL - NFPA 6.1.8
CONSTRUCTION TYPE NFPA TABLE A.8.2.1.2 (V000) - NFPA TABLE A.8.2.1.2
SPRINKLED WITH NFPA 13R
STAIR MATERIALS SAME AS BUILDING CONSTRUCTION 7.2.2.3.1.2
NO DIAGONAL MEASUREMENT SEPARATION REQUIRED 7.5.1.3.5

COMMON PATH OF TRAVEL < 50 FT. 30.2.5.3.2
DEAD END CORRIDOR < 50 FT. 30.2.5.4.2
TRAVEL DISTANCE FROM UNIT TO EXIT < 200 FT. 30.2.6.3.2
TRAVEL DISTANCE WITHIN UNIT < 125 FT. 30.2.6.2
SPRINKLED BLDG. EXIT ENCLOSURE 1 HOUR 30.2.2.1.2
AREA OF REFUGE NOT REQUIRED 30.2.2.12.1
CORRIDOR WALLS: 1/2 HOUR (SPRINKLED) 30.3.6.1.2
CORRIDOR DOORS: 20 MIN. RATED (33 HOURS) 30.3.6.2.1
CORRIDOR DOORS: SELF CLOSING AND SELF LATCHING 30.3.6.2.3
DWELLING UNIT DEMISING WALLS: 1/2 HOUR 30.3.7.2

Prepared For:

Consultant:

Architect:

Project:

Revisions:

Scale:

Date:

AC0.1

12" = 1'-0"

06/15/2018

CODE SUMMARY

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