

Code Analysis for 660-662 Congress Street

660-662 Congress Street, Portland, ME

Existing 3 story brick mixed-use commercial and residential building. Basement floor area, 1,813 sf; 1st Floor area, 1819 sf; 2nd Floor area, 1,821 sf; 3rd Floor area, 1,791 sf (total of 7,247 sf). Building will be fully sprinklered. Per the State Fire Marshal, an elevator is not required.

IBC 2009 Code Review

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| Chapter 3 Use and Occupancy Classification | |
| Section 303 | Assembly Group A-2 (Restaurant) |
| Section 310 | Residential R-3 |
| Chapter 4 Special Detailed Requirements Based on Use and Occupancy | |
| Section 420.2 Separation Walls | Walls separating dwelling units or dwelling units from other occupancies shall be constructed as fire partitions in accordance with Section 709. |
| Section 420.3 Horizontal Separation | Floor assemblies separating dwelling units or dwelling units from other occupancies shall be constructed as horizontal assemblies in accordance with Section 712. |

Chapter 5 General Building Heights and Areas

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| Construction Type | IIIB |
| Table 503 - Area Limitations (A-2) | 9,500 sf per floor Existing 1,409 sf - OK unlimited sf per floor |
| Table 503 - Area Limitations (R-3) | Existing 1,582 sf - OK |
| Table 503 - Height limitation (A-2) | 2 stories - OK, per Section 508.4.3 |
| Table 503 - Height limitation (R-3) | 4 stories - OK, per Section 508.4.3 |
| Table 503 - Maximum Height | 55' for Construction Type IIIB Existing 42'-3" - OK |
| Section 504.2 - Automatic Sprinkler system increase | If sprinklered, increase maximum height to 60' - OK |
| Table 508.4 - Required Separation | 1 hour separation required between A-2 & R-3 if sprinklered No separation required between commercial kitchen and restaurant seating area |
| Section 508.4.3 - Allowable Height | Each separated occupancy shall comply with the building height limitations based on the type of construction of the building in accordance with Section 503.1. |

Chapter 6 Types of Construction

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| Table 601 Fire Resistance Rating Requirements for Structure Elements | |
| Structural Frame | 0 Hour - OK |
| Exterior bearing walls | 2 Hours / Existing to remain, 2 hr - OK |
| Interior bearing walls | 0 Hour - OK |
| Nonbearing walls and partitions | 0 Hour - OK |
| Floor construction | 0 - OK |
| Roof construction | 0 - OK |
| Table 602 Fire Resistance Rating Requirements for Exterior Walls | |
| Less than 5' | 1 Hour (A-2, R-3) |
| 5' to 10' | 1 Hour (A-2, R-3) |
| 10' to 30' | 1 Hour (A-2, R-3) |
| More than 30' | 0 Hour (A-2, R-3) |

Chapter 7 Fire and Smoke Protection Features

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| Table 705.8 Max Area of Exterior Wall Openings Based on Fire Separation Dist. | |
| 0 to 3' | Not permitted |
| 3' to 5' | 15% |
| 5' to 10' | 25% |
| 10' to 15' | 45% |
| 15' to 20' | 75% |
| More than 20' | No limit |
| Section 712.3 Fire Resistance Rating | Dwelling unit separations in building of Type IIIB construction shall have fire-resistance ratings of not less than 1/2 hour when sprinklered. |
| Table 715.4 Fire Door and Fire Shutter Fire Protective Ratings | |
| Fire Walls, 2 hour | 1 1/2 Hour rating |
| Shaft, 1 hour | 1 Hour |
| Exit enclosures, 1 hour | 1 Hour |
| Corridor walls, 1 hour | 20 Minutes |

Chapter 8 Interior Finishes

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| Section 803.1.1 Interior Wall and Ceiling Finish Material | |
| Class A | Flame spread index 0-25; smoke-developed index 0-450 |
| Class B | Flame spread index 26-75; smoke-developed index 0-450 |
| Class C | Flame spread index 76-200; smoke-developed index 0-450 |
| Table 803.9 Interior Wall and Ceiling Finish Requirements By Occupancy | |
| Exit enclosures and exit passageways | B (A-2); C (R-3) |
| Corridors | B (A-2); C (R-3) |
| Rooms and enclosed spaces | C (A-2 & R-3) |

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| Section 804.4 Interior Floor Finish Requirements | Interior floor finish for exit enclosures, exit passageways and corridors | Not less than Class II and comply with DOCF-1 "pill test" |
| Section 806 Decorative Material and Trim | Fabric partitions suspended from the ceiling | Shall meet flame propagation performance criteria of Section 806.2 and NFPA 701 for Group A-2 |

Chapter 9 Fire Protective Systems

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| Section 903.2.1 Group A - Sprinkler system required | Required if fire area exceeds 5,000 sf, fire area has an occupant load of 100 or more, or fire area is located on a floor other than the level of exit discharge. |
| Section 903.2.8 Group R - Sprinkler system required | An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout a building with a Group R fire area. |
| Section 903.3.1.2 Group R - NFPA 13R sprinkler systems | Where allowed in buildings of Group R, automatic sprinkler systems are permitted to be installed in accordance with NFPA 13R. |
| Section 903.4.1 Monitoring | Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an approved supervising station. |

Chapter 10 Means of Egress

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| Table 1004.1.1 Max. Occupant Load (refer to drawings) | |
| Basement | 44 Occupants (Group A-2) |
| Ground Floor | 77 Occupants (Group A-2) |
| Second Floor | 8 Occupants (Group R-3) |
| Third Floor | 8 Occupants (Group R-3) |
| Total occupant load = 137 | |
| Sec 1005 Egress Width | |
| Stairways | 0.3' per person - OK |
| Doors, ramps and corridors | 0.2' per person - OK |
| Sec 1005.2 Door encroachment | Doors and handrails shall not reduce required means of egress by more than 7". Doors in any position shall not reduce the required width by more than one-half. |
| Sec 1006.2 Illumination Level | Means of egress illumination level shall not be less than 1 foot-candle at the walking surface. |
| Sec 1006.3 Illumination Emergency Power | Power supply for means of egress illumination shall normally be provided by premises electrical power. |
| Sec 1007.1 Accessible Means of Egress | In power failure event, automatic illumination shall include corridors, exit enclosures, exit passageways, interior exit discharge elements for a duration of 90 minutes with battery backup or on-site generator. |

Accessible spaces must be provided with an accessible means of egress. Exception, accessible means of egress not required in alterations to existing buildings.

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| Sec 1007.3 Stairways | |
| Minimum width between handrails | 48" unless sprinklered - N/A |
| Sec 1008.1.1.1 Projections into Clear Width | No projections into required clear width allowed lower than 34" above the floor. Shall not exceed 4" between 34" and 80" above the floor. |
| Sec 1008.1.2 Door swing | Doors shall swing in the direction of egress travel where serving an occupant load of 50 or more persons. |
| Sec 1008.1.5 Floor Elevation | There shall be a floor or landing on each side of a door and shall be at the same elevation. Exterior may slope .25 / 12 units (2%). |
| Sec 1008.1.6 Landings at Doors | Landings shall have a width not less than the width of the stairway. When serving an occupant load of 50 or more, doors shall not reduce the landing to less than 1/2 its required width. Landings shall not have a length less than 44" in the direction of travel. |
| Sec 1008.1.7 Thresholds | Thresholds shall not exceed 1/2" |
| Sec 1008.1.10 Panic Hardware | Doors serving rooms or spaces with 50 or more occupants shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware. |

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| Sec 1009.1 Stairway width | |
| Minimum width | 3'-8" |
| Exception serving less than 50 | 3'-0" |
| Min headroom | 6'-8" |
| Sec 1009.4 Stair treads and risers | |
| Stair riser | Max 7" |
| Exception for R-3 occupancies | Max 7-3/4" |
| Stair riser | Min 4" |
| Stair tread | Min 11" |
| Exception for R-3 occupancies | Min 10" |
| Sec 1009.5 Stairway Landings | There shall be a floor or landing at the top and bottom of each stairway. The width shall not be less than the width of the stairway. The length must be at least the same as the width but need not exceed 48" in a straight run. |
| Sec 1009.7 Vertical Rise | Max 12' vertical rise between landings or levels |

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| Sec 1009.12 Handrails | Handrails shall be on both sides of stairways |
| Sec 1012 Handrails | Between 34" and 38" above nosing |
| | Handrail gripping surfaces shall be continuous, without interruption |
| | Handrails shall return to a wall, guard, or be continuous. |
| | Handrails shall extend 12" horizontally above top riser and continue to slope for the depth of one tread beyond the bottom riser |
| Sec 1013.1 Guards | |
| When more than 30" above floor | Guards required |
| Height | 3'-6" |
| Exception for R-3 occupancies | 2'-10" |
| Sec 1014.2 Egress through intervening spaces | Shall not pass through adjoining spaces, including kitchens and storage rooms |
| Exception for dwelling units | Egress through kitchens within dwelling unit OK |
| Sec 1014.3, 1028.8 Common path of egress travel | |
| Occupancy A-2 (sec 1028.8) | Not more than 75', for areas serving less than 50 occupants. Not more than 30' for more than 50 occupants. |
| Occupancy R-3 (sec 1014.3) | Not more than 75' |
| Table 1015.1 Spaces with 1 exit | |
| Occupancy A-2 | Max occupant load = 49 |
| Occupancy R-3 | Max occupant load = 10 |
| Table 1015.2.1 Two exits | |
| When 2 are required | Not less than 1/3 overall diagonal when sprinklered |

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| Table 1016.1 Exit Access Travel Distance Limitations | |
| Occupancy A-2, R-3 | 250' (with sprinkler system) |
| Table 1018.1 Corridor Fire-Resistance Rating | |
| Occupancy A-2, corridor serving more than 30 | 0 Hour when sprinklered |
| Occupancy R-3, corridor serving more than 10 | 0.5 Hour when sprinklered |
| Sec 1018.2 Corridor Width | |
| Minimum width | 44" |
| Req occupant capacity less than 50 | 36" |
| Sec 1018.4 Dead Ends | |
| Group A-2 | Dead-end corridors shall not exceed 20' |
| Group R-3 | Dead-end corridors shall not exceed 50' when sprinklered |

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| 1021.2 Single Exits | |
| Occupancy R-3 | Only one exit required from R-3 Occupancy buildings |
| Mixed Occupancies | Permitted provided each occupancy complies with individual requirements of occupancy |
| Table 1021.2 Stories with One Exit | |
| First story or basement (A-2) | 49 Occupants and 75' travel distance |
| Sec 1022 Exit Enclosures | |
| Stairway enclosure | 2 Hour rating (4 stories) |
| Sec 1027 Exit Discharge | |
| Exits shall discharge directly to the exterior of the building and shall be at grade or direct access to grade. The exit discharge shall not reenter a building. | |
| Sec 1027.3 Exit Discharge Location | |
| Exterior balconies, stairways and ramps | Located at least 10' from lot lines |
| Sec 1029 Emergency Escape and Rescue | |
| Group R sleeping rooms below the fourth story shall have at least one exterior emergency escape and rescue opening. | |
| Sec 1029.2 Minimum Size | Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 sf. |
| Minimum height | 24" clear |
| Minimum width | 20" clear |
| Maximum height from floor | 44" |
| Sec 1029.4 Operational Constraints | Openings shall be operational from inside without the use of keys or tools. |

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| Chapter 11 Accessibility | |
| Sec 1105.1 Public Entrance | Minimum 60% accessible entrances |
| Exception | See Sec 3407.1 Historic Buildings |
| Sec 1107.6.3 Group R-3 | When there are 4 or more dwelling units in building, all units are to be Type B Unit. |
| Chapter 12 Indoor Environment | |
| Sec 1207.2 Air-borne Sound | Min STC of 49 for Wall and Floor assemblies between adjacent dwelling units and between dwelling units and adjacent public areas. |
| Chapter 13 Energy Efficiency | |
| Buildings shall be designed and constructed in accordance with the International Energy Code. | |
| Chapter 34 Existing Structures | |
| Sec 3409.1 Historic Buildings | The provisions of this code relating to the construction, repair, alteration, addition, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety hazard. |

NFPA 101 Life Safety Code Review

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| Chapter 7 Means of Egress | |
| Sec 7.1.3.1 Exit Access Corridors | 1 Hour when occupant load exceeds 30 |
| Exception | Does not apply to existing buildings if occupancy classification does not change |
| Sec 7.1.3.2 Exits | 1 Hour separation for exits in existing buildings allowed when sprinklered |
| | Openings in exit limited to doors from normally occupied spaces and corridors and doors for egress from the enclosure |
| | An exit enclosure shall provide a continuous protected path of travel to an exit discharge |
| Sec 7.1.5.1 Means of Egress Headroom | Not less than 7'-6" with projections from the ceiling not less than 6'-8" |
| Sec 7.1.5.2 Headroom in Existing Buildings | Not less than 7'-0" with projections from the ceiling not less than 6'-8" |
| Sec 7.2.1.4.2 Door Swing Direction | When serving occupant load of 50 or more, doors shall swing in the direction of egress travel |
| Sec 7.2.1.4.4 Egress Encroachment | During its swing, a door in a means of egress shall not obstruct more than 1/2 of passageway and shall not project more than 7" when open |
| Sec 7.2.2.1 New Stairs | |
| Minimum width | 36" when occupant load less than 50 44" when occupant load less than 2000 |
| Maximum riser | 7" |
| Exception: Sec. 10-3 Amendment (g) | Maximum 7 3/4" riser permitted in one and two family dwellings |
| Minimum riser | 4" |
| Minimum tread depth | 11" |
| Minimum headroom | 6'-8" |
| Maximum height between landings | 12' |
| Sec 7.2.2.3.2 Landings | Not required to exceed 48" |
| Exception: Sec. 10-3 Amendment (g) City of Portland - Code of Ordinances | Maximum 7 3/4" riser permitted in one and two-family dwellings |
| Sec 7.2.2.4.1 Handrails | Stairs and ramps shall have handrails on both sides |
| Sec 7.2.2.4.5.2 Guards | Not less than 42" |
| Exception: Sec. 10-3 Amendment (g) City of Portland - Code of Ordinances | Minimum 36" guard height permitted in one and two-family dwellings |
| Sec 7.2.2.4.5.3 Open Guards | 4' sphere shall not be able to pass through any opening to a height of 42" 6" max sphere at triangular openings |
| Sec 7.2.2.5.2.1 Exposures | Where nonrated walls or unprotected openings enclose the exterior of a stairway, and the walls are exposed by other parts of a building at an angle of less than 180 degrees, the building enclosure walls within 10' shall be 1 Hour rated |
| Sec 7.2.2.5.3 Usable Space | Enclosed, usable spaces within exit enclosures shall be prohibited, including under stairs |

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| Chapter 24 One and Two-Family Dwellings | |
| This chapter applies to one and two-family dwellings, which includes buildings containing not more than two dwelling units. | |
| Sec 24.1.2.3 Mixed Use | Dwelling units and exits shall be separated from nonresidential occupancy by 1 Hour construction |
| Sec 24.3.4.1 Smoke Alarms | Installed in all sleeping rooms, outside each separate sleeping area, and on each level of dwelling unit, including basements |
| Sec 24.3.5.1 Sprinkler System | Must be installed in all new one and two-family dwellings |
| Chapter 12 New Assembly Occupancies | |
| Sec 12.2.2.2.3 Door Lock | Doors serving rooms or spaces with 100 or more occupants shall not be provided with a latch or lock unless it is panic hardware. |
| Table 12.1.6 Construction Type Limitations | Any assembly type limited to 1 level below level of exit discharge |
| Sec 12.2.3.6 Main Entrance/Exit | Assembly occupancy to be provided with a main entrance/exit at the level of discharge or connected to a stair leading to street Shall be of width to accommodate 1/2 of total occupant load |
| Sec 12.2.5.1.2 Common Path of Travel | Shall not exceed 20' for any number of occupants and 75' for not more than 50 |
| Sec 12.2.5.1.3 Dead-end Corridors | Shall not exceed 20' |
| Sec 12.2.5.2 Access Through Hazardous Areas | Shall not pass through kitchens, storerooms, platforms, etc. |
| Sec 12.2.6 Travel Distance to Exits | Shall not exceed 250' if sprinklered |

Maine State Internal Plumbing Code (Uniform Plumbing Code 2009)

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| 301.1.4 Existing Buildings | |
| | In existing buildings or premises in which plumbing installations are to be altered, repaired, or renovated, the Authority Having Jurisdiction has discretionary powers to permit deviation from the provisions of this code, provided that such a proposal to deviate is first submitted for proper determination in order that health and safety requirements, as they pertain to plumbing, shall be observed. |
| Table A. Occupant Load Factor | |
| Group A - Restaurants | 50 Occupants (1 occupant per 30 sf) |
| Table 4-1 Minimum Plumbing Facilities | |
| Dwellings | 1 water closet, 1 lavatory & 1 shower/bathtub per dwelling |
| Restaurant Unit (Group A) | 50 Occupants / 25 men, 25 women |
| Male | 1 WC required 1 Urinal required |
| Female | 1 WC required |

2009 International Energy Conservation Code - Code Review

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| Chapter 1 Administration | |
| 101.4.4 Mixed Occupancy | Where a building includes both residential and commercial occupancies, each occupancy shall be separately considered and meet the applicable provisions of Chapter 4 for residential and Chapter 5 for commercial. |
| 101.4.5 Historic Buildings | See Section 3409 of the IBC |
| Chapter 3 Climate Zones | |
| Cumberland County, Maine | Climate Zone 6 |
| Chapter 4 Energy Efficiency | |
| TABLE 401.1 (1) Prescriptive Envelope Requirements | |
| Wall insulation (above grade) | R-15 (Recommended value for historic brick structures in cold climates similar to Portland, Maine.) |
| Ceiling Insulation | R-49 |
| Windows | U-0.35 |
| Skylights | U-0.60 |
| 407.2 High-efficiency lighting systems | A minimum of 50 percent of the lamps in permanently installed lighting fixtures shall be compact or linear fluorescent, or a lighting source that has a minimum efficacy of 40 lumens per input watt. |

660-662 CONGRESS STREET

PORTLAND, MAINE

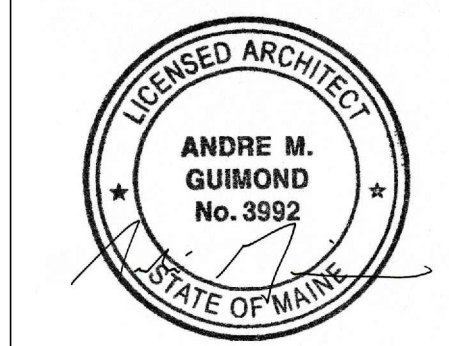
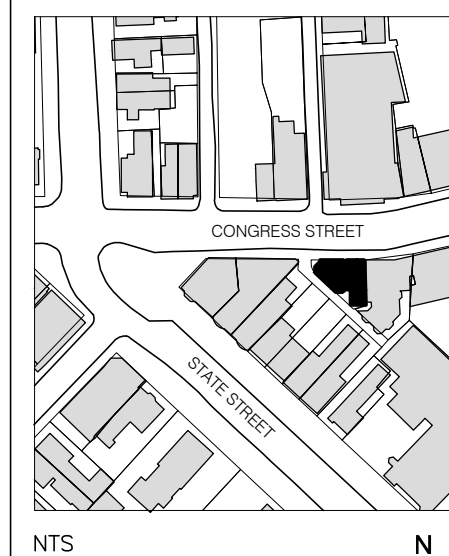
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| 4 | 7/18/2014 | PHASE 2 PERMIT ISSUE |
| 3 | 1/15/2014 | FIRE MARSHAL ISSUE |
| 2 | 5/15/2013 | PHASE 1 PERMIT ISSUE |
| 1 | 3/28/2013 | HPCA SET |
| NO. | DATE | ISSUE |



B-SCAN:
DWG. CONTENTS:
CODE ANALYSIS
DATE: September 5, 2014
SCALE: N.T.S.
DWG. BY:
PROJECT NO.: 008
DWG. NO.: **A-002**
SHEET NO.: