

October 23, 2012

PIX THEATER BUILDING CODE ANALYSIS

461 N 1st St
Woodburn, OR 97071

DRAFT

Executive Summary

Since the most recent use in the building was a furniture store, the existing legal occupancy classification is probably M (Mercantile) and not A-1 (Theater). The existing occupant load is approximately 148 occupants, placing the building solidly in occupancy category II per table 1604.5. The established legal occupancy should be confirmed with the building code official.

Converting the building to a play space or theater use would require a change to an A occupancy, most likely pushing the occupancy to category III (above 300 occupants), and requiring a seismic upgrade. The proposed occupancy is probably A-3, but may be A-2 if significant food service is anticipated. If the total building occupant load is kept below 300, no seismic upgrade is required.

The building is small enough to qualify for nonseparated occupancies, meaning no fire separation is required between different occupancy types. An exception exists for Dwelling Units, which will need to be separated from other occupancies by 30 minute rated assemblies. If dwelling units are retained, acoustic separation is required between dwelling units and other occupancies.

Based on visual observation, the building appears to meet the requirements for Type IIIB construction, which requires 2 hr rated exterior bearing walls. The advantages to using this classification include reduced separation between dwelling units and adjacent occupancies. The building could also be classified as Type V construction if desired.

Sprinklers will likely be required if the occupancy is changed, and the limits described below are exceeded. Given the size of the building, it appears feasible to have an A-3 occupancy without sprinklering, although the ability to serve food and beverages would be limited.

If the proposed play structure is of a high level of complexity, the code official may determine it a "special amusement building", which would trigger significant additional life safety measures (smoke/fire alarm systems).

A minimum of 25% of any money spent upgrading areas of primary function shall be devoted to ADA upgrades. Existing non-compliant areas include:

- Restroom clearances
- Entry vestibule slope
- Main theater floor slope
- Stair rise, run and handrails

ADA upgrades to existing dwelling units are not required.

The existing number of plumbing fixtures does not meet code requirements for an A occupancy, but additional fixtures may not be required, pending approval by the building code official.

Generally, elements not altered are not required to meet current energy code. Any new exterior envelope or fenestration must meet energy code. If the building is re-roofed and the sheathing is exposed, the roof assembly must be insulated to code.

Applicable Codes

- 2010 Oregon Structural Specialty Code (2009 IBC w/ amendments)
- 2010 Oregon Energy Efficiency Specialty Code (2009 IECC)
- 2011 Oregon Plumbing Specialty Code (2009 UPC w/ amendments)
- 2010 Oregon Mechanical Specialty Code (2009 IMC w/ amendments)
- 2011 Oregon Electrical Specialty Code (2011 NFPA 70 NEC w/ amendments)

<u>Existing Occupancies</u>	Ground Level	M	Mercantile
	2nd Level	R-3	Residential, not more than 2 Dwelling Units

<u>Proposed Occupancies</u>	Ground Level	A-3	Recreation
	2 nd Level	B	Offices

Construction Type Type III-B (unsprinklered)
Existing building is not sprinklered. The building could also be categorized as Type VB.

<u>Building Area:</u>	1st level	5,338 gsf
	<u>2nd Level</u>	<u>1,536 gsf</u>
	Total	6,874 gsf

Allowable Height and Area (Table 503):

Allowable area for both A-2 and A-3 occupancies / construction type III-B

$$A_t = 9,500 \text{ sf}$$

If = no eligible for frontage increase since <25% of perimeter fronts public way

$$I_s = 3 \text{ per } 506.3$$

$$A_a = A_t + (A_t \times I_f) + (A_t \times I_s)$$

$$A_a = 38,000$$

Building qualifies for nonseparated occupancy per 508.3, except for R-3 dwelling unit

Fire Resistance Requirements for Construction Type (Table 601):

Structural Frame:	NR
Bearing Walls - Exterior:	2 hr
Bearing Walls - Interior:	NR
Ext Nonbearing Walls:	NR
Int Nonbearing Walls:	NR
Floor Construction:	NR
Roof Construction:	NR

Fire Resistance Requirements for Exterior Walls Based on Separation (Table 602):

x < 5':	1 hr. (2 hr. for possible F-1 occupancy)
5' < x < 10':	1 hr.
10' < x < 30':	NR
x > 30':	NR

Means of Egress Illumination (Section 1006)

Emergency lighting facilities shall be arranged to provide initial illumination that is at least an average of 1 footcandle and a minimum at any point of 0.1 footcandle measured along the path of egress at floor level. A maximum to minimum uniformity ratio of 40 to 1 shall not be exceeded. Backup power for emergency lighting shall be provided for a minimum of 90 minutes.

RELEVANT CODE SECTIONS

- 310 Buildings not containing more than two dwelling units are classified as R-3
- 411.2 Definition of "Special Amusement Building". This definition may apply if the space contains a device or system that conveys passengers or provides a walkway along, around or over a course in any direction so arranged that the *means of egress path* is not readily apparent due to visual or audio distractions
- If the proposed use qualifies for this occupancy, increased smoke detector, alarm and fire sprinkler requirements will apply.
- 420.2 Requires fire partitions per 709 between dwelling units and other occupancies
Requires horizontal assemblies per 712 between dwelling units and other occupancies
- 508.3.3 Exception 1: R-3 occupancies must be separated from other occupancies contiguous to them per 420
- 709.3 exception 2: dwelling unit separations in Type IIIB permitted to be 30 minute rated.
712.3 exception: dwelling unit separations in Type IIIB permitted to be 30 minute rated
- 903.2.1.2 Sprinklers required in A-2 fire areas exceeding 5,000 sf / 100 occupants
903.2.1.3 Sprinklers required in A-3 fire areas exceeding 12,000 sf / 300 occupants
- 1027.5.2 Where an *egress court* serving a building or portion thereof is less than 10 feet (3048 mm) in width, the *egress court* walls shall have not less than 1-hour *fire-resistance-rated* construction for a distance of 10 feet (3048 mm) above the floor of the *court*.
- 1029.1 R-3 sleeping rooms must have emergency escape and rescue openings. Minimum area of 5.7 sf and minimum dimensions of 20"x24". Bottom of opening to be max. 44" from floor.
- 1207.2 Assemblies separating *dwelling units* from each other or from public or service areas shall have a sound transmission class (STC) of not less than 50 (45 if field tested) for air-borne noise per ASTM E 90. Penetrations or openings in assemblies to be sealed, lined or insulated
- 1207.3 Floor/ceiling assemblies between *dwelling units* or between a *dwelling unit* and a public or service area within the structure shall have an impact insulation class (IIC) rating of not less than 50 (45 if field tested) when tested in accordance with ASTM E 492.
- 1604.5 Category III includes Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300.

- 3408.1 No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies. Subject to the approval of the *building official*, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.
- 3408.3 Existing stairways in an *existing structure* shall not be required to comply with the requirements of a new *stairway* as outlined in Section 1009 where the existing space and construction will not allow a reduction in pitch or slope.
- 3408.4 When a change of occupancy results in a structure being reclassified to a higher occupancy category, the structure shall conform to the seismic requirements for a new structure of the higher occupancy category. (occupancy categories are described in chapter 16)
- 3411.1 Exception: Type B dwelling or sleeping units required by Section 1107 of this code are not required to be provided in existing buildings and facilities being altered or undergoing a change of occupancy.
- 3411.7 Per ORS 447.241: Every project for renovation that affects or could affect the usability of or access to an area containing a primary function shall be made to insure that, to the maximum extent feasible, the paths of travel to the altered area and the rest rooms, telephones and drinking fountains serving the altered area are readily accessible to and usable by individuals with disabilities, unless such alterations are disproportionate to the overall alterations in terms of cost and scope. Alterations may be deemed disproportionate when the cost exceeds 25 percent of the alteration to the primary function area.

RELEVANT ENERGY CODE SECTIONS

- 101.4.2 Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply.
- 101.4.3 Change in space conditioning. Any nonconditioned space that is altered to become *conditioned space* shall be required to be brought into full compliance with this code.
- 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.*

APPENDIX

10/12/12 **Message from Building Code Official**
Steve Krieg (503) 980-2430

Steve is not familiar with this building, so his input is limited. He thinks a kids playground could be a 'special amusement' classification per 411, depending on the types of equipment and setup. He thinks the occupancy would be either A-2, A-3 or a mix of both. He believes A-2 is a higher hazard class than A-1. A daycare would be classed as an E occupancy. Occupant loads could vary from 7-50. Steve thinks there is a possibility of a seismic upgrade, but he doesn't know enough about the existing building or proposed changes.

10/17/12 **Meeting with Steve Krieg and Paul Iverson (Fire Marshall)**

Steve thinks the established legal occupancy would be M, based on the fact that the building was most recently used as a furniture store. He feels that A-1 and A-3 are similar hazard levels, but A-2 is most hazardous. Table 1604.5 outlines the various occupancy categories and their relationship to occupant load – if the building is converted to A occupancy with more than 300 occupants, a seismic upgrade is required.

Steve thought that a complex play structure may qualify as a 'special amusement' occupancy, but would need to review it firsthand to determine. Same goes for play structure occupant loads.

Paul is concerned about the amount of combustible materials that might be housed within a 'play date' type use. The limits are dictated by fire code, and regular fire inspections would be performed to assess the quantity.