

<b>Bayside Village Student Apartments</b>		<b>CWS Architects</b>		
Marginal Way, Portland, Maine				<b>24-Jul-07</b>
<b>International Building Code 2003 - Code Calculation:</b>				
Floor Plate - Floors 1-2 (Building Area)		46,960		
Second Floor Courtyard		11,261		
Floor Plate - Floors 3-5		35,699		
<b>Section 302.3.2 Separated Uses</b>				
S-2 (Parking) to R2 (Residential Apartments)		2 Hours		
		Floors 1	Floor 1	Floor 2
		Floors 2-5		
<b>Building Use Summary</b>		Parking S2	Mercantile M	Assemebly A-3 (e)
Number of Floors (Proposed)		1	1	2
Level 1		43,127	3,833	
Level 2				11,261
Level 3				35,699
Level 4				35,699
Level 5				35,699
Total floor area per use (SF)		43,127	3,833	11,261
2 Hour Separated Use Areas 302.3.2		46,960		154,057
Total Building Area		201,017		
<b>Allowable Height and Building Areas Table 503</b>		Parking S-2	Mercantile M	Assemebly A-3
<b>Type of Construction</b>		IA (a)	IA (a)	VA
Number of Floors		11	11	3
Building Height (Feet)		160	160	65
Area (Square Feet)		79,000	UL	15,500
				Exterior Plaza
<b>Frontage Calculations 506.2</b>		North	East	South
Frontage		0	101.83	348.00
Width		N/A	>30	>30
Total Frontage		627.42	627.42	627.42
Perimeter		1030.75	1030.75	1030.75
Frontage increase I(f) = 100[F/P-0.25]W/30		35.87%	35.87%	35.87%
<b>Area Modifications 506</b>				
Allowable tabular area		100%	100%	100%
Increase for frontage		35.87%	35.87%	35.87%
Increase for sprinklers (NFPA 13 system)		200%	200%	200%
Total percentage factor		336%	336%	336%
Conversion factor		3.36	3.36	3.36
Adjusted Allowable Building Area		265,337	UL	52,060
Actual building area		43,127	3,833	11,261
If Actual building area < Adjusted, then OK		OK	OK	OK
Requide Fire Wall Separation per 506.4 (c)		0	0	0
<b>Section 504 Height Modifications</b>		S-2 Use Group		R-2 Use Group

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	Feet	Stories	Feet	Stories
Actual building height	13.25	1	63.42	5
Tabular building height - Type IB		11		
Tabular building height - Type VA			50	3
Increase for sprinklers (NFPA 13 system)	N/A	N/A	20	1
Allowable building height (b)	0	11	70	4
<b>Section 506.4 Area determinations</b>				
Total floor area (all stories)	43,127	3,833	11,261	142,796
A. Allowable area per floor (SF)	265,337	UL	52,060	40,304
B. Number of Applicable Floors	1	1	1	3
C. Tabular area A x B	265,337	UL	52,060	120,913
If C > Total Building Floor Area, then OK	OK	OK	OK	Not OK (c)
<b>Section 508 Special Provisions</b>				
508.2 Parking beneath Group A, B, M or R as separate buildings, number of stories measured from second floor.				
Separation between S2 and R uses	3 Hours	provided		
<b>Table 601 Fire Resistance Ratings (hours)</b>				
	S-2 Use	Provided	R-2 Use	Provided
	1A	1A	VA	VA
Structural Frame including Columns	3	3	1	1
Bearing Walls - Exterior	3	3	1	1
Bearing Walls - Interior	3	3	1	1
Nonbearing Walls - Exterior >10' (d)	1	1	1	1
Nonbearing Walls - Exterior >30'	0	0	0	0
Nonbearing Walls - Interior	0	0	0	0
Floor Construction including Beams	2	3	1	1
Roof Construction including Beams	1.5	3	1	1
Notes:				
a) Supporting Members of Residential use (VA) that penetrate garage shall maintain VA rating.				
b) Number or stories measured from floor space above parking as per 508.4.				
c) 2 Hour USG Shaft Wall Fire Wall required to reduce Total Floor Area into 2 Buildings on same lot.				
d) Rated from the inside only unless under 5'				
e) Courtyard is designated as an Assembly A-3 use for egress purposes only.				
<b>704.3 Buildings on the same lot</b>				
Assume to have an imaginary (property) line between them				
Provided: between 9' and 20' at Courtyard				
<b>704.5 Fire-resistance ratings</b>				
Exterior Wall, Rated from inside only if greater than 5', both sides if less than 5'.				
<b>704.8 Allowable area of openings</b>				
Table 704.8				
Between 5-10' - Unprotected 10% Max, Protected 25% Max				
Between 15-20' - Unprotected 25% Max, Protected 75% Max				
Between 10-15' - Unprotected 15% Max, Protected 45% Max				

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Provided: "Protected" with NFPA 13 Sprinkler System at Table 704.8 (Max existing openings = 24.1%)				
<b>704.12 Opening Protection</b>				
Provide water curtain using NFPA 13 Sprinkler System at exterior walls required to be protected.				
<b>Section 707 Shaft Enclosures</b>				
Required fire rating	2 hours			
Provided	2 hours			
<b>Section 708 Fire Partitions</b>				
Required fire rating - dwelling unit separation - NFPA 13 sprinkler system	1/2 hour			
Provided	1 hour			
<b>Section 903.2.10.3 Buildings over 55 feet in height</b>				
Automatic Sprinkler System Required, Exception 2: Open Parking Structures.				
<b>Section 1004 Occupant Load</b>				
	Parking S-2	Mercantile M	Assembly A-3	Residential R-2
Floor area allowance - persons/SF	200	60	7	200
Largest Floor area (SF)	43,127	3,833	6,900	35,699
Occupancy load per floor	216	64	986	178
			Landscaped Areas	
			Excluded *	
* By agreement between the City of Portland and Fire Marshal, State of Maine, occupancy in the Courtyard A-3 Assembly space to be limited to 500 occupants and posted accordingly.				
<b>Section 1206 Yards or Courts</b>				
4 Stories in Height - Required Width 6' + 1' for each story above 2 stories			Required 8'	Provided 16' +
<b>Section 1005 Required Egress Width</b>				
Total Stairway Width - 0.3"/person	64.7	19.2	295.7	53.5
Provided (Clear 50" Interior, 146" Exterior Stairs)	N/A	N/A	296	150
Egress Doors - 0.2"/person	43.1	12.8	197.1	35.7
Provided - minimum @ doorways	68	102	204	102
Provided 34" Clear Door Leafs	2	3	3	3
Provided 48" Clear Gate Leafs			2	
<b>Section 1018 Number of Exits</b>				
Required	2	2	3	3
Provided	2	2	3	3