

ORI Systems Study - **CONTROL ESTIMATE**
Apartment Tower - Tower Only

7/27/2018

Average Unit Size 749 sf
Residential Net 227,783
Unit Count 304

DESCRIPTION	Total Cost	Cost Per Unit
Demolition	excluded - Tower Only	
Asbestos Abatement	excluded - Tower Only	
Earthwork	excluded - Tower Only	
Earth Support System	excluded - Tower Only	
Site Paving	excluded - Tower Only	
Site Utilities	excluded - Tower Only	
Landscape & Irrigation	excluded - Tower Only	
Concrete	2,546,699	\$8,377
Masonry & Precast Façade	3,137,299	\$10,320
Structural Steel	9,360,446	\$30,791
Misc. Metals	1,398,886	\$4,602
Rough Carpentry	382,659	\$1,259
Finish Carpentry	2,394,397	\$7,876
Roofing	1,444,344	\$4,751
Waterproofing and Caulking	531,412	\$1,748
Spray on Fireproofing & Spray Insulation	933,506	\$3,071
Doors, Frames, and Hardware	1,291,650	\$4,249
Storefronts/Curtainwall & Windows	10,331,692	\$33,986
Drywall/Acoustical Ceilings	10,403,765	\$34,223
Flooring	4,894,645	\$16,101
Painting & VWC	1,320,121	\$4,343
Specialties	340,974	\$1,122
Residential Equipment	2,143,200	\$7,050
Residential Cabinets & Tops	2,540,524	\$8,357
Furnishings	350,208	\$1,152

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DESCRIPTION	Total Cost	Cost Per Unit
Special Construction - Pool	550,000	\$1,809
Elevators	1,382,103	\$4,546
Plumbing	8,260,739	\$27,173
Fire Protection	1,751,230	\$5,761
HVAC	9,683,608	\$31,854
Electrical	11,378,995	\$37,431
Hoisting	975,000	\$3,207
Winter Conditions Allowance	637,500	\$2,097
General Requirements	1,753,884	\$5,769
General Conditions	4,882,333	\$16,060
Contingency	2,910,055	\$9,573
Subguard	1,381,792	\$4,545
GLPD insurance	1,114,230	\$3,665
Overhead & Fee	3,072,237	\$10,106
TOTAL CONSTRUCTION - CONTROL ESTIMATE	\$105,480,132	\$346,974

ORI Systems Study - CONTROL ESTIMATE
Estimate Detail - Tower Only

	DESCRIPTION OF WORK	QNTY	UNIT	COST	TOTAL
<u>GENERAL REQUIREMENTS</u>					
1000	Temporary Protection & Safety	280,782	sf	0.50	140,391
1000	Dumpsters	532	pulls	575.00	305,900
1000	Engineering & Layout	52	wks	3,500.00	181,860
1000	Fire Watch				N/A
1000	Police Details	138	wks	1,600.00	220,160
1000	Sidewalk / Street Rental - allow	10,200	sf mos	13.00	132,600
1000	Meter Rental	1	ls	12,000.00	12,000
1000	Sidewalk Pedestrian Bridge				N/A
1000	Temporary Electric Consumption	280,782	sf	0.60	168,469
1000	N Star Temp Service Backcharge	1	ls	75,000.00	75,000
1000	Temporary Toilets (not temp on floors)	16	mos	1,500.00	24,000
1000	Security - Watchmen Service				exclude not required
1000	Interim Cleaning - Non Trade	344	md	700.00	240,800
1000	Final Cleaning	280,782	sf	0.90	252,704
Total General Requirements					1,753,884
<u>DEMOLITION - Building & Foundation</u>					
Total Demolition					excluded
<u>ASBESTOS ABATEMENT/LEAD PAINT</u>					
Total Asbestos Abatement/Lead Paint					excluded
<u>EARTHWORK</u>					
Total Earthwork					excluded
<u>EARTH RETENTION</u>					
Total Earth Retention					excluded
<u>SITE PAVING/HARDSCAPE</u>					
Total Site Paving					excluded
<u>SITE UTILITIES</u>					
Total Site Utilities					excluded
<u>LANDSCAPE & IRRIGATION</u>					
Total Landscape & Irrigation					excluded
<u>CONCRETE</u>					
3300	Foundations - spread & continuous footings				exclude
3300	Elevator Pits	2	ea	10000.00	exclude
3300	One Sided Concrete Wall - 18"				exclude
3300	Ramp Wall P3				exclude
3300	Encase Columns - allow @ loading	10	ea	1200.00	exclude
3300	Slab on Grade				exclude
3300	Slabs on Metal Deck - Podium				exclude
3300	Slabs on Metal Deck -Tower	284,024	sf	6.54	1,858,500
3300	Penthouse Extra Concrete - allow acoustic	7,496	sf	25.00	187,400
3300	Topping slab - allow over setback				exclude

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	DESCRIPTION OF WORK	QNTY	UNIT	COST	TOTAL
3300	Metal Pan Stair Fill - Parking				exclude
3300	Metal Pan Stair Fill - Residential	509	rsrs	90.00	45,776
3300	Misc Concrete	280,782	sf	0.25	70,196
3300	Crane Mat Allow	1	ls	95000.00	95,000
3300	Field Engineering & Layout	30	wks	3700.00	111,000
3300	Façade Transition Curbs - Allow	0	lf	50.00	0
3300	Equipment Pads/Curbs	1	ls	25000.00	25,000
3300	Trade Cleanup	1,709	hrs	90.00	153,827
Total Concrete					2,546,699
<u>MASONRY/PRECAST</u>					
4400	Stone at Grade level	0	sf	100.00	exclude
4400	Precast Panels - Net SF	28,291	sf	60.00	1,697,460
4400	Premium - Brick Faced	15,763	sf	15.00	236,445
4400	Install Precast Panels -	570	ea	1800.00	1,026,000
4400	Night Lighting - Precast	1	ls	85000.00	85,000
4400	Police Details - Precast Night	14	weeks	1650.00	23,513
4400	UHPC - High Performance Concrete	0	sf	90.00	exclude
4400	Precast treads at exterior ornamental stairs				exclude
4400	Exterior CMU @ Ramp/Vault	3,620	sf	28.00	exclude
4400	CMU Partitions - Loading Dock Areas	5,280	sf	24.00	exclude
4400	Trade Cleanup	810	hrs	85.00	68,881
Total Masonry					3,137,299
<u>STRUCTURAL STEEL</u>					
5100	Steel F&I - Residential	1,747	tons	3750.00	6,550,292
5100	Metal Deck 3" - Residential	284,024	sf	3.70	1,050,887
5100	Metal Deck 3" - Soffits Not In Above	13,847	sf	3.70	51,234
5100	Precast Connections	1,425	ea	250.00	356,250
5100	Crane Rental for Precast/UHPC	122	days	4000.00	488,000
5100	Screen Wall Support Assumed Not In Steel Allowance	25	tns	6000.00	151,200
5100	Allow Penetrations R	304	units	450.00	136,800
5100	Window washing anchors only	1	ls	40000.00	40,000
5100	Trade Cleanup	6,303	hrs	85.00	535,783
Total Steel					9,360,446
<u>MISC. METALS</u>					
5500	Misc Metals - Residential	284,024	sf	1.20	340,828
5500	Misc. Railings	1	ls	20000.00	20,000
5500	Exterior Glass guardrails/ stairrails at ornamental stair	176	lf	425.00	exclude
5500	Railings at roof deck	417	lf	450.00	187,650
5500	Glass Balcony Rails	672	lf	450.00	302,400
5500	Balcony Privacy divider - 10th floor terrace	32	lf	450.00	14,175
5500	Elev guide rails support	4	ldgs	5500.00	22,000
5500	Elev Pit Ladders	4	ea	1100.00	4,400
5500	Stairs - Residential	509	rsrs	755.00	384,009
5500	Fire Pump Rm Platform & Stair	1	ls	19500.00	exclude
5500	Fuel Room Platform & Stair	1	ls	19500.00	exclude
8500	Canopy Allowance - Turnkey	1	ls	100000.00	exclude
5500	Areaway Grating	541	sf	85.00	45,985
5500	Trade Cleanup	911	hrs	85.00	77,439
Total Misc.Metals					1,398,886

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<u>ROUGH CARPENTRY</u>					
6100	Allow Blocking/Backboards - BOH/Misc	12	floors	2100.00	25,200
6100	Allow Blocking - Units	304	ea	465.00	141,360
6100	Roof blocking	27,135	sf	3.00	81,405
6100	Window blocking - R	22,558	lf	5.00	112,791
5500	Trade Cleanup	258	hrs	85.00	21,903
Total Rough Carpentry					382,659
<u>FINISH CARPENTRY</u>					
6200	Main Lobby Desk	1	ls	50000.00	exclude
6200	Main Lobby - Elevator Millwork upgrades	1	Allow	100000.00	exclude
6200	Fitness Center	1	Allow	20000.00	exclude
6200	Mail/Package	1	Allow	5000.00	exclude
6200	Theater	1	Allow	2500.00	exclude
6200	Business Center	1	Allow	15000.00	exclude
6200	Clubhouse	1	Allow	100000.00	exclude
6200	Public Bathroom Countertops	1	Allow	3500.00	exclude
6200	Upper Elevator Lobbies	11	Allow	3000.00	33,000
6200	Wood Base at lobby,clubhouse, business center, mail, fitness	698	lf	10.00	6,980
6200	MDF Base at Leasting, offices, theater,	949	lf	10.00	9,490
6200	MDF Base at Corridors	8,000	lf	9.00	72,000
6200	Door Casings @ Unit Entry	12,768	lf	8.00	102,144
6200	Window Sills with Apron	6,178	lf	30.00	185,346
6200	MDF Base - Units	56,946	lf	8.00	455,566
6200	Closet - Wire Shelf	4,623	lf	35.00	161,815
6200	Half Height Linen Closet	468	lf	200.00	93,600
6200	Full Height Linen Closet	190	lf	350.00	66,500
6200	Install Cabinets	304	ea	1,800.00	547,200
6200	Install unit doors and hardware - interior unit	1,519	ea	290.00	440,510
6200	Install public doors and hardware - public & unit entry	410	ea	310.00	127,100
6200	Trade Cleanup	1,096	hrs	85.00	93,146
Total Finish Carpentry					2,394,397
<u>ROOFING</u>					
7530	Membrane roofing - Level 12	28,674	sf	32.00	917,568
7530	Membrane roofing at balconies	3,242	sf	40.00	129,660
7530	Membrane roofing at Restaurant Terrace				deleted
7530	Hydrotech Roofing at Plaza (level 1)				w Plaza
7530	Membrane Roofing at Plaza (level 2)				w Plaza
7530	Roof Accessories	1	ls	10,000.00	10,000
7530	Roof Patches/Penetrations	1	ls	8,000.00	8,000
7530	Premium for pavers at Reidential Balconies/Terraces				deleted
7530	Amenity Level Roof Deck	5,600	sf	60.00	336,000
7530	Trade Cleanup	507	hrs	85.00	43,116
Total Roofing					1,444,344
<u>WATERPROOFING AND CAULKING</u>					
7900	Interior	304	units	450.00	136,800
7900	Exterior Caulking/Insulation/AVB - Metal Panel	10,282	sf	12.00	123,384
7900	Exterior Caulking/Insulation/AVB - Metal Panel Soffits	5,736	sf	12.00	68,832
7900	Exterior Caulking Precast & Punched	66,081	sf	2.75	181,723
7900	Exterior Caulking Windows / CW				in system pricing under glass
7900	Waterproofing - Concrete Wall				exclude
7900	Waterproof Elevator Pits	3	ea	3500.00	exclude
7900	N Star Vault	2,000	sf	6.00	exclude
7900	Trade Cleanup	243	hrs	85.00	20,673
Total Waterproofing and Caulking					531,412

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	<u>SPRAY ON FIREPROOFING</u>				
7800	Spray Beams & Columns @ Residential	297,871	sf	1.95	580,847
7800	Patch Days @ Residential	24	ea	1600.00	38,400
7800	Spray Insulate Precast Panels	28,291	sf	5.25	148,528
7800	Spray Insulate Deck at underside of 2nd floor terrace	19,000	sf	5.00	95,000
7800	Spray Insulate Deck - Soffits	5,736	sf	6.00	34,416
7800	Trade Cleanup	427	hrs	85.00	36,315
	Total SOFP				933,506
	<u>DOORS, FRAMES, AND HARDWARE</u>				
8100	HM Doors, & Frames & Hardware - Public/BOH	106	ea	1,250.00	132,500
8700	Unit Entry - Door, Frame & Hardware	304	ea	1,250.00	380,000
8700	Interior Prehung Doors	705	ea	350.00	246,750
8700	Sliding Doors	411	ea	900.00	369,900
8700	Sliding Bedroom Doors	99	ea	1,500.00	148,500
8700	Overhead Coiling Doors	1	ea	14,000.00	14,000
	Total Doors, Frames, Hardware				1,291,650
	<u>WINDOWS/GLASS/STOREFRONT</u>				
8500	Metal Panel	10,282	sf	90.00	925,380
8500	Storefront/Curtainwall	9,732	sf	125.00	1,216,515
8500	Punched Windows/Window Wall	37,790	sf	95.00	3,590,050
8500	Window Wall system	26,662	sf	95.00	2,532,871
8500	Metal Panel Soffit - Entry Drive / Under Plaza				in plaza
8500	Metal Panel 3rd Soffits and Balcony ceilings	5,736	sf	90.00	516,240
8500	Operable Lites				in glass pricing above
8500	Metal Panel at PH screen Wall	2,520	sf	85.00	214,200
8500	Unit Mirrors	371	ea	250.00	92,750
8500	Shower Doors - 1 per unit	304	ea	1300.00	N/A
8500	Balcony Doors	30	ea	5500.00	165,000
8500	Terrace Doors	36	ea	4500.00	162,000
8500	Louvers at Electrical Vault	389	sf	95.00	exclude
8500	Premium for Louvers - PH/Grd	5,003	sf	65.00	325,163
8500	Doors Retail - includes 2nd lvl	10	lfs	5000.00	50,000
8500	G floor - SF doors @ Public Lobby entrance	10	lfs	8000.00	80,000
8500	G floor - SF doors assumed to Innovation space	1	lfs	5000.00	5,000
8500	G floor - SF int vestibule door	6	lfs	4500.00	27,000
8500	Exterior Metal Panel / Column Cover - Main Column	897	sf	100.00	89,700
8500	Aqua Fence at Perimeter of Resid'l Portion of project - Allow	610	lf	500.00	exclude
8500	Trade Cleanup	3,997	hrs	85.00	339,727
	Total Windows and Storefront				10,331,692
	<u>DRYWALL AND ACOUSTICAL CEILINGS</u>				
9250	Exterior Wall @ Metal Panel / Precast	82,503	sf	18.00	1,485,054
9250	Exterior Wall @ Curtain Wall / Window Wall	36,394	sf	5.00	181,970
9250	Exterior Soffits - Frame For MP - Entry Drive				in plaza
9250	Exterior Soffits - 3rd Lvl & Balconies	5,736	sf	30.00	172,080
9250	Shaft wall at Stairwell and Elevator Shafts	56,943	sf	16.00	911,082
9250	Rated Walls at Trash/Elect/Tel/Data	11,653	sf	9.00	104,877
9250	Ground Floor Walls - Non CMU	6,880	sf	12.00	exclude
9250	Premium for Mold Resistant Drywall	56,943	sf	2.00	113,885
9250	Amenity / Lobby Partitions	exclude	sf	15.00	0
9250	Penthouse/Mech Space	7,496	sf	15.00	112,440
9250	Misc Drywall/Set Frames	277,735	sf	0.60	166,641

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	DESCRIPTION OF WORK	QNTY	UNIT	COST	TOTAL
9250	Perimeter Firesafing/Smoke Seal	9,482	lf	13.00	123,263
9250	Acoustic Ceilings - BOH	7,862	sf	4.00	31,448
9250	Acoustic Ceilings - Public Spaces - \$5/sf L&M Per Spec	exclude	sf	5.00	0
	Unit Resi Floors:				
9250	Corridor / Elev Lobby Ceilings	25,230	sf	10.00	252,300
9250	Unit Corridor Walls	78,010	sf	13.50	1,053,135
9250	Unit: Demising Walls	94,240	sf	18.00	1,696,320
9250	Unit: Drywall - Interior	36,061	sf	9.50	342,577
9250	Unit: Premium @ Wall Tile	45,240	sf	2.25	101,789
9250	Unit: Shaft Walls	25,536	sf	16.00	408,576
9250	Unit: Ceilings	227,783	sf	10.00	2,277,830
9250	Unit: Soffits	22,778	sf	32.00	728,906
	Retail / office				
9250	Misc Wall at 1st level office/retail	0	sf	11.00	exclude
9250	Shaft Walls - office/retail	2,625	sf	15.00	exclude
9250	ACT @ Ceiling Innovation Office	16,300	sf	4.00	exclude
9250	Gyp Ceiling at Public Lobby space	exclude	sf	15.00	exclude
9250	Trade Cleanup	1,642	hrs	85.00	139,593
	Total Drywall and Acoustical				10,403,765
	<u>FLOORINGS/TILE/STONEWORK</u>				
9680	Sealed Concrete and Vinyl Base - BOH Spaces 1st & 2nd Floors				exclude
9680	Sealed Concrete and Vinyl Base - Elect rooms each floor	1,080	sf	5.00	5,400
9680	VCT and Vinyl Base - Service Elevator lobbies/ Trash room	2,142	sf	5.00	10,710
9680	LVT Wood Look Floating Floor	204,513	sf	9.50	1,942,874
9680	Carpeting -Corridor at \$25./yd mat'l	3,084	sy	55.00	169,602
9680	Tile Shower Surround	30,400	sf	26.45	804,080
9680	Tile Tub Surround	4,690	sf	26.45	124,051
9680	Tile - Bath Floor	23,270	sf	23.00	535,210
9680	Tile - Bath Base	12,100	lf	26.00	314,610
9680	Kitchen Backsplash	5,280	sf	46.00	242,859
9680	Accent Wall Tile	10,150	sf	46.00	466,883
9680	Bath - Stone Thresholds	371	ea	75.00	27,825
6200	Laminate at lobby,clubhouse, fitness Allowance	4,190	sf	15.00	exclude
9680	Flooring Allowance - Leasing office,Mail	1	ls	50000.00	exclude
9680	Liquid Applied Flooring in PH	7,496	sf	9.00	67,464
9680	Allow Flooring at Public Lobby	4,113	sf	60.00	exclude
9680	Retail / office				
9680	Sealed concrete at Restaurants	13,072	sf	2.00	exclude
9680	Trade Cleanup	2,154	hrs	85.00	183,078
	Total Floorings				4,894,645
	<u>PAINTING/WALLCOVERING</u>				
9900	Lobby /Amenity	exclude	sf	10.00	exclude
9900	General Painting - Resi	277,735	sf	0.35	97,207
9900	Corridor Paint - Walls	103,240	sf	0.80	82,592
9900	Unit Painting Walls	745,698	sf	0.80	596,559
9900	Unit Painting Ceilings	227,783	sf	0.80	182,226
9900	Doors/Frames/Casing	1,115	ea	95.00	105,925
9900	Trim	83,892	lf	2.10	176,173
9900	Stairs	509	rsrs	95.00	48,319
9900	CMU	10,560	sf	2.00	21,120
9900	Misc Painting - Roof	1	ls	10000.00	10,000
	Retail/ Office:				
9900	General Painting - Retail	exclude	sf		exclude
9900	Allow Office	exclude	sf	1.00	exclude
	Total Painting				1,320,121

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	DESCRIPTION OF WORK	QNTY	UNIT	COST	TOTAL
<u>SPECIALTIES</u>					
10160	Toilet Accessories	371	bath	300.00	111,300
10000	Postal Specialties - Allow R	304	units	240.00	exclude
10000	Loading Dock Equipment	1	ea	15000.00	exclude
10000	Chain Link Storage Units - allow 15%				exclude
10440	Signage - Code - R	280,782	sf	0.25	70,196
10500	Fire Ext Cabinets	280,782	sf	0.10	28,078
12000	Bike Storage	304	ea	250.00	exclude
12000	Trash Chute	12	flrs	10950.00	131,400
Total Specialties					340,974
<u>RESIDENTIAL APPLIANCES</u>					
11000	Allowance - Range/DW/Micro/Fridge	304	ea	4600.00	1,398,400
11000	Allowance - W/D Stacked / Ventless	304	ea	2000.00	608,000
11000	Composite Union Crew Install	304	units	450.00	136,800
Total Residential Appliances					2,143,200
<u>RESIDENTIAL CABINETS & TOPS</u>					
11500	Mobile Island	95	ea	500.00	4,580
11500	Fixed Island	44	ea	550.00	24,200
11500	Lower Cabinets	3,520	lf	200.00	703,938
11500	Uppers Cabinets	3,738	lf	165.00	616,714
11500	30" Bath Vanity	121	vanities	300.00	36,300
11500	36" Bath Vanity	128	vanities	315.00	40,320
11500	48" Bath Vanity	48	vanities	350.00	16,800
11500	60" Bath Vanity	74	vanities	400.00	29,600
11500	Install Cabinets and Vanities				w/ Finish Carpentry
11500	Granite Counters w/ 4" backsplash	7,039	sf	110.00	774,332
11500	Bathroom Counter top with integral bowl FOB				incl w vanity
11500	Install Tops	304	units	810.00	246,240
Total Residential Cabinets & Tops					2,540,524
<u>Furnishings</u>					
12500	Window Treatments - R	304	allow	1,100.00	334,400
12500	Window Treatments - R	304	ea	52.00	15,808
12500	Entrance Mats	1	ls	5,500.00	exclude
12500	Compactor				exclude
Total Furnishings					350,208
<u>SPECIAL CONSTRUCTION</u>					
13000	Pool	1	ea	550,000.00	550,000
Total Special Construction					550,000
<u>ELEVATORS</u>					
14200	Elevators - Passenger - 2 ea/500 fpm / MRL / 3,500 lb	2	ea	414000.00	828,000
14200	Elevators - Service - 1 ea/400 fpm / MRL / 4,000 lb	1	ea	456000.00	456,000
14200	Elevators - Passenger Cab Allowance	3	ea	25000.00	75,000
14200	Trade Cleanup	272	hrs	85.00	23,103
Total Elevators					1,382,103
<u>PLUMBING</u>					
15400	Retail Areas / Office Future Services	3,047	sf	6.00	exclude
15400	Temporary Bathrooms/Heat Trace	4	ea	3500.00	14,000
15400	Gas To Roof	350	lf	175.00	61,250

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15400	Roof Drainage System / Distribution	277,735	sf	2.25	624,904
15400	Allow Amenity	16	ea	4800.00	76,800
15400	Unit Tub / Shower	67	ea	4800.00	321,600
15400	Unit Shower	304	ea	4800.00	1,459,200
15400	Unit Vanity, Full Bath	371	ea	4300.00	1,595,300
15400	Unit Water Closet	371	ea	4800.00	1,780,800
15400	Unit Kitchen Sink	304	ea	4800.00	1,459,200
15400	Unit Laundry Hookups	304	ea	1500.00	456,000
15400	Unit Refridge/Dishwasher Hookups	304	ea	900.00	273,600
15400	Allow Premium - Metering				NA - not in base
15400	Trade Cleanup	1,625	hrs	85.00	138,085
	Total Plumbing				8,260,739
	<u>FIRE PROTECTION</u>				
15500	Residential	277,735	sf	6.20	1,721,957
15500	Retail / Office	3,047	sf	5.25	exclude
15500	Trade Cleanup	344	hrs	85.00	29,273
	Total Fire Protection				1,751,230
	<u>HEATING, VENTILATING, & AIR CONDITIONING</u>				
15600	Infrastructure, Condenser Water Plant - Residential Only'	700	ton	1500.00	1,050,000
15600	Infrastructure, Boiler Plant	15,000	mbth	50.00	750,000
15600	Infrastructure, Fuel Oil Storage & Distribution System	1	ls	106,875	106,875
15600	Infrastructure, Penthouse Ventilation/Combustion Air	7,496	sf	8.00	59,968
15600	Infrastructure, Elevator Pressurization				exclude - assume doors on hold opens
15600	Infrastructure, Stairway Pressurization	24	ldgs	3000.00	72,000
15600	Infrastructure, Smoke Vestibule Supply & Exhaust - R				not required with 8th edition
15600	Infrastructure, NSTAR Vault Ventilation/Exhaust	1	ls	35000.00	35,000
15600	Infrastructure, Main Switchgear Room Ventilation	1	ls	15000.00	15,000
15600	Infrastructure, Fuel Oil Storage Room Exhaust	1	ls	5000.00	5,000
15600	Infrastructure, DDC Temperature Controls	280,782	sf	1.30	365,017
15600	2hr Fire Wrap - allow	1	ls	75,000.00	75,000
15600	Retail, Condenser Water Future S&R	179	lf	108.00	19,305
15600	Retail, Welded Black Iron Future Cook Hood Exhaust per riser	275	lf	265.00	72,875
15600	Retail, Future Aluminum Dishwasher Exhaust per riser	275	lf	135.00	37,125
15600	Misc. Unit Heaters	1	ls	20,000.00	20,000
15600	Units, Secondary Condenser Water Distribution	277,735	sf	2.60	722,111
15600	Units, Vertical Stacked Heat Pumps	413	ea	8,000.00	3,304,000
15600	Lobby / Amenity Heat Pumps	exclude	ea	8,500.00	exclude
15600	Units, Toilet Exhaust	371	ea	2,100.00	779,100
15600	Units, Kitchen Exhaust				N.I.C.
15600	Units, Laundry Exhaust;	-	ea		NA - assume ventless dryer
15600	Units, BTU Metering	304	ea	2,000.00	608,000
15600	ERU-s - Rooftop w/ Energy Recovery	20,000	cfm	12.50	250,000
15600	Duct				
15600	Corridor - Supply Risers Serving Corridors/Units	4,027	lbs	13.00	52,355
15600	Toilet Exhaust Collection Duct to ERU	6,671	lbs	13.00	86,720
15600	Unit Feed From Corridor Supply	9,120	lbs	13.00	118,560
15600	Corridor Horizontal Supply For Unit Feeds	38,913	lbs	13.00	505,869
15600	Units, Trash Chute Rooms Exhaust System	12	ea	2,400.00	28,800
15600	Units, Electric & Tel-Data Room Transfer Air	24	ea	2,400.00	57,600
15600	Units, Temperature Controls - assume unit mounted T Stats	413	ea	200.00	82,600
15600	Main Lobby/Amenity Distribution	exclude	sf	22.00	0
15600	Innovation Office Allowance	10,789	sf	8.00	86,312
15600	Trade Cleanup	3,746	hrs	85.00	318,417
	Total HVAC				9,683,608

ORI Systems Study - CONTROL ESTIMATE
Estimate Detail - Tower Only



	DESCRIPTION OF WORK	QNTY	UNIT	COST	TOTAL
	<u>ELECTRICAL</u>				
16000	Infrastructure, Primary Power Cabling & Gear				by utility
16000	Infrastructure, Primary Power Ductbank w.Pullstring	250	lf	300.00	75,000
16000	Infrastructure, Secondary Distribution	280,782	sf	3.50	982,737
16000	Infrastructure, Primary Power Vault Secondaries	1	ls	55,000.00	55,000
16000	Infrastructure, Emergency Generator System	1,000	kw	450.00	450,000
16000	Infrastructure, Lightning Protection	1	ls	75,000	75,000
16000	Infrastructure, Mechanical Equipment	280,782	sf	0.80	224,626
16000	Infrastructure, Elevators	3	ls	25,000.00	75,000
16000	Infrastructure, Façade Lighting Allowance	1	ls	110,000.00	110,000
16000	Infrastructure, Tele-Data Closet Sleeves	60	ea	250.00	15,000
16000	Infrastructure, Telecommunication Grounding & Bonding	1	ls	14,400.00	14,400
16000	Infrastructure, Fire Alarm	280,782	sf	2.50	701,955
16000	N Star Backcharge - Temp Service Only				in GR's
16000	Temporary Electric Consumption	280,782	sf	0.60	168,469
16000	Electrical - Retail Conduit / Primary Gear	3,047	sf	5.00	exclude
16000	<u>RESIDENTIAL ONLY</u>				
16000	Units, Distribution Equipment	227,783	sf	3.50	797,241
16000	Units, Normal & Emergency Feeders	227,783	sf	2.75	626,403
16000	Units; Lighting, Panalettes, & Wiring Devices	304	units	18,000.00	5,472,000
16000	Units, Telecommunication Allowance				assumed to be in CCTV
16000	Units, CCTV Allowance	304	units	2,200.00	668,800
16000	Corridors; Lighting Premiums	10	flrs	25,000.00	250,000
16000	Security Allowance	304	units	800.00	243,200
16000	Main Lobby / Amenity	exclude	sf	60.00	0
16000	Innovation Office Allowance	10,789	sf	6.00	exclude
16000	Trade Cleanup	4,402	hrs	85.00	374,164
	Total Electrical				11,378,995