
685 PACIFIC BOULEVARD - SOUTH TOWER (COMPLETE APPLICATION)
DE416437 - ZONE CD-1

AM/BM/MW/CL/LH

DEVELOPMENT PERMIT STAFF COMMITTEE MEMBERS

Present:

*J. Greer (Chair), Development Services
R. Thé, Engineering Services
L. Gayman, Real Estate Services
D. Naundorf, Social Infrastructure
T. Driessen, Park Board

Also Present:

A. Molaro, Urban Design & Development Planning
B. Mah, Development Services
C. Lau, Development Services
A. Law, Development Services

* March 13, 2013 Development Permit Staff Committee only

APPLICANT:

Francl Architecture Inc.
Attention: Scott C. Mitchell
1684 West 2nd Avenue
Vancouver, BC
V6J 1H4

PROPERTY OWNER:

Aquilini Development
200 - 510 W Hastings Street
Vancouver, BC
V6B 1L8

EXECUTIVE SUMMARY

- **Proposal:** To develop a 31-storey tower (South Tower) south of the Georgia Viaduct over five levels of underground parking, including stairs to level 100 of the arena. This building will also contain parking for the East Tower at the southeast corner of the arena (DE416399 - 800 Griffiths Way).

See Appendix A Standard Conditions

Appendix B Standard Notes and Conditions of Development Permit

Appendix C Processing Centre - Building comments

Appendix D Sustainability

Appendix E Plans and Elevations

Appendix F Applicant's Design Rationale

● **Issues:**

1. Dwelling Units including acoustic and thermal performance criteria
2. Architectural Character
3. Interim and Future Road Alignment and Public Realm

- **Urban Design Panel: SUPPORT**
-

DEVELOPMENT PERMIT STAFF COMMITTEE RECOMMENDATION: APPROVE

THAT the Board APPROVE Development Application No. DE416437 submitted, the plans and information forming a part thereof, thereby permitting the development of a 31-storey tower (South Tower) south of the Georgia Viaduct over five levels of underground parking, including stairs to level 100 of the arena. This building will also contain parking for the tower at the southeast corner of the arena (800 Griffiths Way - DE416399 - East Tower), subject to the following conditions:

1.0 Prior to the issuance of the development permit, revised drawings and information shall be submitted, sealed and signed, to the satisfaction of the Director of Planning, clearly indicating:

1.1 compliance with the pending CD-1 by-law demonstrating:

- i. minimum of 37,319 m² of residential floor area;
- ii. 25% of dwelling units as two bedrooms; and
- iii. minimum unit size of 37 m²;

as distributed across the three proposed buildings including pending DE416258 - 89 West Georgia Street (West Tower) and DE416399 - 800 Griffiths Way (East Tower);

Note to Applicant: A text amendment is required to remove the CD-1 By-law Section 5.4 requiring a minimum unit size of 37 m² in order to consider the smaller units being proposed (26 units @ 30 m² and 27 units @ 35 m²) in the south building. The enactment agreements calls for 614 dwelling units, however the Managing Director of Social Development may vary this amount based on the type, number of units provided. See also Standard Condition A.1.2.

1.2 design development to confirm and demonstrate more fully the detailed design resolution of the curved balcony glazing and railings intended in achieving the undulating and curving building expression;

1.3 provision of detailed (1/4"=1'-0") partial elevations and sections of typical façade components include balconies confirmation high quality material proposed;

Note to Applicant: Additional consideration should be given to passive design principles and thermally breaking the extended external slabs at balcony conditions.

1.4 design development to the planter wall and front entrance of the South Tower in its future configuration at the corner of Pacific Boulevard and Georgia Street to achieve a minimum width of 5.5 m sidewalk;

Note to Applicant: Drawing LDP 1.02 shows the future alignment of Griffiths Way which would narrow the sidewalk between the curb ramp and the planter wall to 2.0 m which is a less than desirable pedestrian space allotment at the intersection.

1.5 provision of a revised acoustic and thermal comfort study confirming that the summertime internal comfort levels are in line with ASHRAE 90.1V.2007 (with windows closed) will be achieved;

Note to Applicant: Detailed specification and glazing recommendations is required. Provision of specification notes on the drawings confirming the glazing type to be provided that will meet the criteria. See also Recommended Condition 1.6.

- 1.6 provision of drawings clearly specifying that the building is to be constructed to meet the City's acoustical performance criteria to mitigate the impact of event noise on residential developments to achieve a target of 40-50dBC for noise levels within dwelling units during events; and

Note to Applicant: For this building, the summary letter (date stamped June 15, 2012) and detailed report (date stamped December 13, 2011) submitted by Brown Strachan Consultants, recommends the utilization of enclosed balconies for facades facing the Rogers Arena roof (with double glazing or operable glazing) to meet the performance criteria. Staff required the detailed specification drawings of the balcony enclosure systems and glazing recommendations, glazing area and glazing specification recommendations for each building to be noted on the Development Permit and Building Permit drawings, and confirmation of the acoustic performance prior to obtaining an Occupancy Permit. The following note to be added to the submitted drawings: "Glazing for all residential windows and doors to be specified by the project acoustic consultant in order to meet the City's 50dBC interior noise design criterion." See also Recommended Condition 1.5.

- 1.7 confirmation that the development proposal meeting LEED Gold has been registered with the Canada Green Building Council (CaGBC).
- 2.0 That the conditions set out in Appendix A be met prior to the issuance of the Development Permit.
- 3.0 That the Notes to Applicant and Conditions of the Development Permit set out in Appendix B be approved by the Board.


PROJECT INFORMATION					
Site Size/Area: irregular/18 700 m ²			Site Type: non-conforming (surrounded by streets)		
CD-1 By-law (pending)	MINIMUM / MAXIMUM	Permit Number DE411483 (West Tower)	Application DE416258 (West Tower - under review)	East Tower (DE416399)	South Tower (DE416437)
Section 4 - Uses	Cultural & Recreational, limited to Arcade, Artist Studio, Billiard Hall, Club, Fitness Centre, Hall, Museum or Archives, Rink, Stadium or Arena, Swimming Pool and Theatre	Arena (existing)	Arena (existing)	Arena (existing)	---
	Manufacturing Uses, limited to Brewing or Distilling	Brewing (existing)	Brewing (existing)	Brewing (existing)	---
	Office Uses	General Offices	General Offices (existing)	General Offices	n/a
	Retail Uses, limited to Farmers Market, Grocery or Drug Store and Retail Store	Retail Store	Retail Store (existing)	Retail Store	n/a
	Residential Uses	n/a	Residential Uses	Residential Uses	Residential Uses
Section 5 - Conditions of Use ¹	Minimum 25% of dwelling units must include 2 bedrooms	n/a	2 - studio 146 - 1 bedroom 43 - 2 bedroom <u>1</u> - 4 bedroom 192 units total 44/192 x 100% = 22.9%	0 - studio 104 - 1 bedroom 30 - 2 bedroom <u>0</u> - 3 bedroom 134 units total 30/134 x 100% = 22.4%	53 - studio 131 - 1 bedroom 82 - 2 bedroom <u>2</u> - 3 bedroom 268 units total 84/268 x 100% = 31.3%
			Total: 44 + 30 + 84 / 192 + 134 + 268 = 158 / 594 x 100% = 26.6%		
	Floor area of each dwelling unit, measured from inside of outer walls, must be at least 37 m ²	n/a	under review	n/a	26 units @ 30 m ² 27 units @ 35 m ²
Section 6 - Floor Area and Density ²	Cultural & Recreational Uses - 38 600 m ²	Arena (existing) 35 745 m ² [DE411185]	Arena (existing) 35 710 m ² (under review)	Arena (existing under DE411939/DE416258) 37 170 m ²	
	Manufacturing Uses, limited to	Brewing (existing) 160 m ²	Brewing (existing) 160 m ²	Brewing (existing)	160 m ²

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	Brewing or Distilling - 160 m ²	[DE411483]			
	Office Uses - 21 000 m ² , except that there must be a minimum of 13 000 m ²	General Office [DE411483] 20 640 m ²	General Office (under review) 9 855 m ²	General Office (West Tower-under review) 9 855 m ² <i>East Tower</i> Total 5 949 m ²	9 855 m ² 5 949 m ² 15 804 m ²
	Retail/Service Uses - 6 560 m ²	Retail Store [DE411483] 6 534 m ²	Retail/Service (under review) 1 335 m ²	Retail Store (West Tower-under review) 1 335 m ² <i>East Tower</i> Total 96 m ²	1 335 m ² 96 m ² 1 431 m ²
	Residential Uses - 37 919 m ²	n/a	Residential (under review) 12 845 m ²	Residential (West Tower - under review) 12 845 m ² <i>East Tower</i> <i>South Tower</i> Total 8 116 m ²	12 845 m ² 8 116 m ² 16 264 m ² 37 225 m ²
Open & Enclosed Balconies ³	Open Balcony Exclusion	n/a	Open Balcony	Open Balcony	
	<i>Sub-Area A</i> 23% (<i>South Tower</i>) 23% x 16 264 m ² = 3 741 m ²			<i>South Tower</i> Open Balcony 2 628 m ² Acoustic Balcony 460 m ² Total 3 088 m ²	
	Sub-Area B 14% (West Tower) 14% x 12 910 m ² = 1 807 m ²		West Tower (under review) Open Balcony 1 510 m ² Acoustic Balcony 300 m ² Total 1 810 m ²		
	<i>Sub-Area C</i> 10% (<i>East Tower</i>) 10% x 8 116 m ² = 812 m ²			<i>East Tower</i> Open Balcony 474 m ² Acoustic Balcony 304 m ² Total 778 m ²	
	Enclosed Balconies - 10% of total residential floor area [10% x 37 290 m ² = 3 729 m ²]	n/a	Enclosed Balcony	Enclosed Balcony	
			West Tower (under review) 650 m ²	<i>South Tower</i> West Tower (under review) 650 m ² <i>East Tower</i> Total 634 m ²	1 467 m ² 650 m ² 634 m ² 2 751 m ²

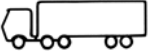

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Amenity Areas ⁴	lesser of 20% of permitted floor area or 1 400 m ² [20% x 37 919 m ² = 7 584 m ²]	n/a	West Tower (under review) 440 m ²	East Tower 146 m ²	South Tower 677 m ² (including balconies)
			440 m ² (under review) + 146 m ² + 677 m ² = 1 263 m ²		
Unenclosed Outdoor Areas at grade level underneath building overhangs ⁵	1% of residential floor area [1% x 37 290 m ² = 373 m ²]	n/a	West Tower (under review) ? m ²	East Tower 182 m ²	South Tower 685 m ²
			? m ² (under review) + 182 m ² + 685 m ² = ? m ²		
Section 7 - Building Height ⁶	<i>Sub-Area A (South Tower)</i> 102.76 m View Cone 101.98 m Sub-Area B (West Tower) 105.04 m View Cone 104.72 m <i>Sub-Area C (East Tower)</i> 105.10 m View Cone 103.86 m	--- Sub-Area B West Tower 90.06 m ---	--- Sub-Area B West Tower (under review) 93.59 m Top of Mech. Room 105.60 m	--- <i>Sub-Area C East Tower</i> *104.64 m	<i>Sub-Area A South Tower</i> 101.87 m
Section 8 - Horizontal Angle of Daylight ⁷	50° or 2 angles with a sum of 70° /24.0 m	n/a	basically complies, some minor relaxations required	basically complies, some minor relaxations required	basically complies, some minor relaxations required
Section 9 - Acoustics ⁸	report required	n/a	see note	see note	see note
<p>¹Note on Conditions of Use: A Housing Agreement will be required to secure residential units (with a total area of 37 319 m²) as rental for the life of the building or 60 years, whichever is longer, including a 'no separate sales' and a 'no stratification' covenant, in addition to other terms and conditions (subject to review of West Tower) while ensuring that the minimum 25% 2-bedroom units are provided. The pending amended CD-1 By-law restricts the minimum size of dwelling units to 37 m². However, for secured rental, Section 10 provisions of the Zoning and Development By-law permits consideration units sizes to a lesser amount of 29.7 m², subject to the design and location of the dwelling units, having regard to the type of occupancy proposed. As secured rental occupancy is part of this consideration, staff support a text amendment to remove this by-law limitation within the pending amended CD-1 By-law. See Recommended Condition 1.1.</p> <p>²Note on Floor Area & Density: Floor areas generally are within the maximum allowed subject to the reinstating of the exclusion clause for mechanical spaces located above base surface as in the original CD-1 By-law. See Standard Condition A.1.3.</p> <p>³Note on Open & Enclosed Balconies: (subject to review of West Tower)</p> <p>⁴Note on Amenity Areas: (subject to review of West Tower)</p> <p>⁵Note on Unenclosed Outdoor Areas: The proposed unenclosed covered area exceeds the pending amended CD-1 By-law maximum. However, the proposal is generally consistent with what was anticipated at the time of rezoning. Staff support a text amendment to the pending amended CD-1 By-law to accommodate the at-grade unenclosed covered area as proposed. See Standard Condition A.1.4</p>					

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⁶ Note on Height: The proposed building is within the permitted height and view cone. ⁷ Note on Horizontal Angle of Daylight: Staff support the minor relaxations requested. ⁸ Note on Acoustics: Recommended Conditions 1.5 and 1.6 seek a revised acoustical consultant's report and provision of specification requirements on drawings to achieve criteria.					

	Standards	Required	Proposed
Section 4.3 Parking 	<p>Parking By-law</p> <p>Section 4.3.1 Non-residential Uses - Downtown</p> <p>Except as provided in section 4.3.2 and except for water based uses which are to be in accordance with section 4.2.4.9, all non-residential uses Downtown shall provide a:</p> <p>(a) minimum of one parking space for each 145 m² of gross floor area; and</p> <p>(b) maximum of one parking space for each 115 m² of gross floor area.</p> <p>Section 4.3.6 Residential Uses including Live-Work - Downtown</p> <p>Except as provided in section 4.3.8, residential uses Downtown shall provide the lesser of:</p> <p>(a) at least one parking space for each 140 m² of gross floor area; and</p> <p>(b) one parking space for every dwelling unit.</p> <p>Section 4.8.4 Required Disability Parking Spaces</p> <p>Residential: 1 space/7 units + 0.034 space/unit</p> <p>Non-Residential: 1 space/500 m² + 0.4 space/additional 1 000 m²</p>	<p>Arena (Rogers) 170 spaces Stadium (BC Place) 150 spaces Brewing 1 space</p> <p><i>South Tower</i> Residential: lesser of 16 264 m² x 1 sp./140 m² = 116 spaces 268 units x 1 unit/space = 268 spaces</p> <p>Disability Spaces Residential: 268 units - 7 units = 261 units x 0.034 space/unit = 8.9 ~ 9 1 + 9 = 10 spaces</p> <p>Visitor Spaces: 268 units x 1 space/20 units = 13 spaces</p> <p>West Tower (under review) Non-Residential: 11 350 m² x 1 space/145 m² = 78 spaces Residential: lesser of 12 845 m² x 1 space/140 m² = 92 spaces 192 units x 1 space/unit = 192 spaces Total: 78 spaces + 92 spaces = 170 spaces</p> <p>Visitor Spaces: 192 units x 1 space/20 units = 10 spaces</p> <p><i>East Tower</i> Non-Residential: 5 949 m² + 96 m² = 6 045 m² minimum: 6 045 m² x 1 space/145 m² = 42 spaces maximum: 6 045 m² x 1 space/115 m² = 53 spaces</p>	<p>Arena (Rogers) 170 spaces Stadium (BC Place) 150 spaces</p> <p><i>South Tower</i> Standard 86 spaces Small Car 28 spaces Disability 10 spaces Car Share 4 spaces Total 128 spaces</p> <p>Visitor Spaces (under Arena) 13 spaces</p> <p>West Tower (under review) Non-Residential: (under Arena) ? spaces Residential: ? spaces Total ? spaces</p> <p>Visitor Spaces (under Arena) 10 spaces</p> <p><i>East Tower</i> Non-Residential (under Arena) 42 spaces Residential: Standard 43 spaces Small Car 15 spaces</p>

	Standards	Required	Proposed																				
	<p>***** Schedule C: CD-1 District Parking Requirements Parking, loading and bicycle spaces in accordance with by-law requirements on July 19, 2012 (date of Public Hearing), except that:</p> <ul style="list-style-type: none"> • a minimum of 170 parking stalls must be provided for arena use; • a minimum of one visitor parking space must be provided for each 20 residential units; and • the Director of Planning or General Manager of Engineering Services may allow for substitution of shared vehicles and shared vehicle parking spaces for required parking spaces at a ratio of 1:5, on conditions satisfactory to that City official. <p>Rezoning Report/Parking Study</p> <table border="0"> <tr><td>Existing Arena</td><td>170 spaces</td></tr> <tr><td>Office/Retail - West & East Towers</td><td>134 spaces</td></tr> <tr><td>Residential - West Tower</td><td>104 spaces</td></tr> <tr><td>Residential - East & South Towers</td><td>200 spaces</td></tr> <tr><td>Residential - Visitor Parking</td><td>31 spaces</td></tr> <tr><td>Stadium Parking</td><td><u>150</u> spaces</td></tr> <tr><td>Total</td><td>789 spaces</td></tr> </table> <p>***** CD-1 (311) <i>150 Pacific Boulevard North</i> <i>By-law No. 7201</i></p> <p>Off-Street Parking</p> <p>A minimum of 412 off-street parking spaces shall be provided, developed and maintained in accordance with the applicable provisions of the Parking By-law.</p> <p>A minimum of 8 off-street loading spaces shall be provided, developed and maintained in accordance with the applicable provisions of the Parking By-law.</p>	Existing Arena	170 spaces	Office/Retail - West & East Towers	134 spaces	Residential - West Tower	104 spaces	Residential - East & South Towers	200 spaces	Residential - Visitor Parking	31 spaces	Stadium Parking	<u>150</u> spaces	Total	789 spaces	<p>Residential: lesser of $8\,116\text{ m}^2 \times 1\text{ space}/140\text{ m}^2 = 58\text{ spaces}$ $134\text{ units} \times 1\text{ space}/\text{unit} = 134\text{ spaces}$</p> <p>maximum: 53 + 58 = 111 spaces</p> <p>Disability Spaces Residential: 134 units - 7 units = 127 units x 0.034 space/unit = 4.3 $1 + 4 = 5\text{ spaces}$ Non-Residential: $5\,949\text{ m}^2 + 96\text{ m}^2 = 6\,045\text{ m}^2$ $6\,045\text{ m}^2 - 500\text{ m}^2 = 5\,545\text{ m}^2 \times 1\text{ space}/1\,000\text{ m}^2 = 5.5 \sim 6$ $1 + 6 = 7\text{ spaces}$</p> <p>Visitor Spaces: 134 units x 1 space/20 units = 7 spaces</p> <p>South & East Towers South Tower - Residential 116 spaces East Tower - Residential <u>58</u> spaces Subtotal 174 spaces East Tower - Non-Residential (min.) <u>42</u> spaces Total 216 spaces</p> <p>South & East Towers South Tower - Residential 116 spaces East Tower - Residential <u>58</u> spaces Subtotal 174 spaces East Tower - Non-Residential (max.) <u>53</u> spaces Total 227 spaces</p> <p>Visitor Spaces: South Tower 13 spaces West Tower 10 spaces East Tower <u>7</u> spaces Total 30 spaces</p> <p>Arena 170 spaces Stadium 150 spaces South Tower 116 spaces West Tower 170 spaces</p>	<table border="0"> <tr><td>Disability</td><td>4 spaces</td></tr> <tr><td>Car Share</td><td><u>1</u> spaces</td></tr> <tr><td>Total</td><td>105 spaces</td></tr> </table> <p>(located in South Tower parking levels)</p> <p>Visitor Spaces (under Arena) 7 spaces</p> <p>South & East Towers South Tower (Residential) 128 spaces East Tower (Residential) <u>63</u> spaces Subtotal 191 spaces East Tower (Non- Residential) <u>42</u> spaces Total 233 spaces</p> <p>Arena 170 spaces Stadium 150 spaces South Tower 128 spaces West Tower 197 spaces East Tower <u>105</u> spaces Subtotal 750 spaces Visitor <u>30</u> spaces Total 780 spaces</p>	Disability	4 spaces	Car Share	<u>1</u> spaces	Total	105 spaces
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	***** <i>South Tower</i> maximum 25% small car 225 spaces x 25% = 56 spaces <i>East Tower</i> Small Car - maximum 25% Residential 63 spaces x 25% = 15 spaces	East Tower Total 100 spaces 706 spaces																																																																																																									
Section 5.2 Loading 	Dwelling Uses: Class A n/r Class B 1 space/100 - 299 units; 1 space/300 - 499 units Office Uses: 18 588 m ² Class A 1 space/1 000 - 7 500 m ² 2 spaces >7 500 m ² - 15 000 m ² Class B 2 space/500 m ² - 5 000 m ² 3 spaces >10 000 m ² - 28 000 m ² Retail Uses: 6 436 m ² Class A n/r Class B 1 space/465 m ² ; 1 space/any portion of next 1 860 m ² ; 1 space/additional 2 325 m ² <i>Manufacturing Uses: existing</i>	<table border="0"> <tr> <td></td> <td>Class A</td> <td>Class B</td> <td></td> </tr> <tr> <td><i>South Tower</i></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dwelling Uses (268 units)</td> <td>n/r</td> <td>1</td> <td></td> </tr> <tr> <td>West Tower (under review)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dwelling Uses (192 units)</td> <td>n/r</td> <td>1</td> <td></td> </tr> <tr> <td>Office Uses (10 245 m²)</td> <td>2</td> <td>3</td> <td></td> </tr> <tr> <td>Retail Uses (1 330 m²)</td> <td><u>n/r</u></td> <td><u>2</u></td> <td></td> </tr> <tr> <td>Total</td> <td>2</td> <td>6</td> <td></td> </tr> <tr> <td><i>East Tower</i></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dwelling Uses (134 units)</td> <td>n/r</td> <td>1</td> <td></td> </tr> <tr> <td>Office Uses (5 949 m²)</td> <td>1</td> <td>2</td> <td></td> </tr> <tr> <td>Retail Uses (96 m²)</td> <td><u>n/r</u></td> <td><u>n/r</u></td> <td></td> </tr> <tr> <td>Total</td> <td>1</td> <td>3</td> <td></td> </tr> </table>		Class A	Class B		<i>South Tower</i>				Dwelling Uses (268 units)	n/r	1		West Tower (under review)				Dwelling Uses (192 units)	n/r	1		Office Uses (10 245 m ²)	2	3		Retail Uses (1 330 m ²)	<u>n/r</u>	<u>2</u>		Total	2	6		<i>East Tower</i>				Dwelling Uses (134 units)	n/r	1		Office Uses (5 949 m ²)	1	2		Retail Uses (96 m ²)	<u>n/r</u>	<u>n/r</u>		Total	1	3		<table border="0"> <tr> <td></td> <td>Class A</td> <td>Class B</td> <td></td> </tr> <tr> <td><i>South Tower</i></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dwelling Uses</td> <td>0</td> <td>3</td> <td></td> </tr> <tr> <td>West Tower (under review)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dwelling Uses</td> <td>2</td> <td>0</td> <td></td> </tr> <tr> <td>Office Uses</td> <td>?</td> <td>?</td> <td></td> </tr> <tr> <td>Retail Uses</td> <td><u>n/r</u></td> <td><u>?</u></td> <td></td> </tr> <tr> <td>Total</td> <td>2</td> <td>?</td> <td></td> </tr> <tr> <td><i>East Tower</i></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dwelling Uses</td> <td>n/r</td> <td>1?</td> <td></td> </tr> <tr> <td>Office Uses</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Retail Uses</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td></td> </tr> </table>		Class A	Class B		<i>South Tower</i>				Dwelling Uses	0	3		West Tower (under review)				Dwelling Uses	2	0		Office Uses	?	?		Retail Uses	<u>n/r</u>	<u>?</u>		Total	2	?		<i>East Tower</i>				Dwelling Uses	n/r	1?		Office Uses				Retail Uses				Total			
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	Standards	Required		Proposed			
		Total	249	12	Total	249	12
		<i>East Tower</i>		<i>East Tower</i>			
		Dwelling Uses	168	6	Dwelling Uses	168	6
		Office/Retail Uses	<u>12</u>	<u>6</u>	Office/Retail Uses	<u>12</u>	<u>6</u>
		Total	180	12	Total	180	12
		Horizontal (minimum) - 70% x 168 = 118 spaces			Horizontal	98	
		Vertical (maximum) - 30% x 168 = 50 spaces			Vertical	82	
		Lockers (minimum) - 20% x 168 = 34 lockers			Locker	0	
		Electrical Outlet - 1 outlet/2 Class A spaces x 168 = 84 outlets			Electrical Outlet		0
		Clothing Lockers (non-dwelling uses) 0.7 x 12 spaces = 8.4 - 9 lockers per gender			Clothing Lockers (<i>East Tower</i>)		0
		Shower and Change Facilities (Section 3.7.4.10 of Building By-law) when number of required Class A bicycle spaces exceeds 3			Shower and Change Facilities - 1 shower (L01)		
		<i>South & East Towers</i>		<i>South & East Towers</i>			
		South Tower	335	6	South Tower	495	6
		East Tower	<u>180</u>	<u>12</u>	East Tower	<u>20</u>	<u>12</u>
		Total	515	18	Total	515	18

Note on Parking: Although parking for residential use is the lesser of two standards, Engineering Services advises that there is no maximum. Statistics for West Tower are transferred from DE416258 (under review)

Note on Loading: Standard Condition A.1.7 seeks clarification of the allocation of loading spaces for the arena, stadium and three towers. Statistics for West Tower are transferred from DE416258 (under review)

Note on Bicycle Parking: Standard Condition A.1.6 seeks the provision of electrical outlets for Class A bicycle spaces, clothing lockers for non-dwelling uses, and shower/change facilities (as required under the Building By-law). Class B spaces for commercial use in East Tower are located on City property. Statistics for West Tower are transferred from DE416258 (under review).

• **Legal Description**

Lot 221
False Creek
Plan LMP12038

Note: Lot 221 will be subdivided into lots 348 & 349
(This development site being lot 349)

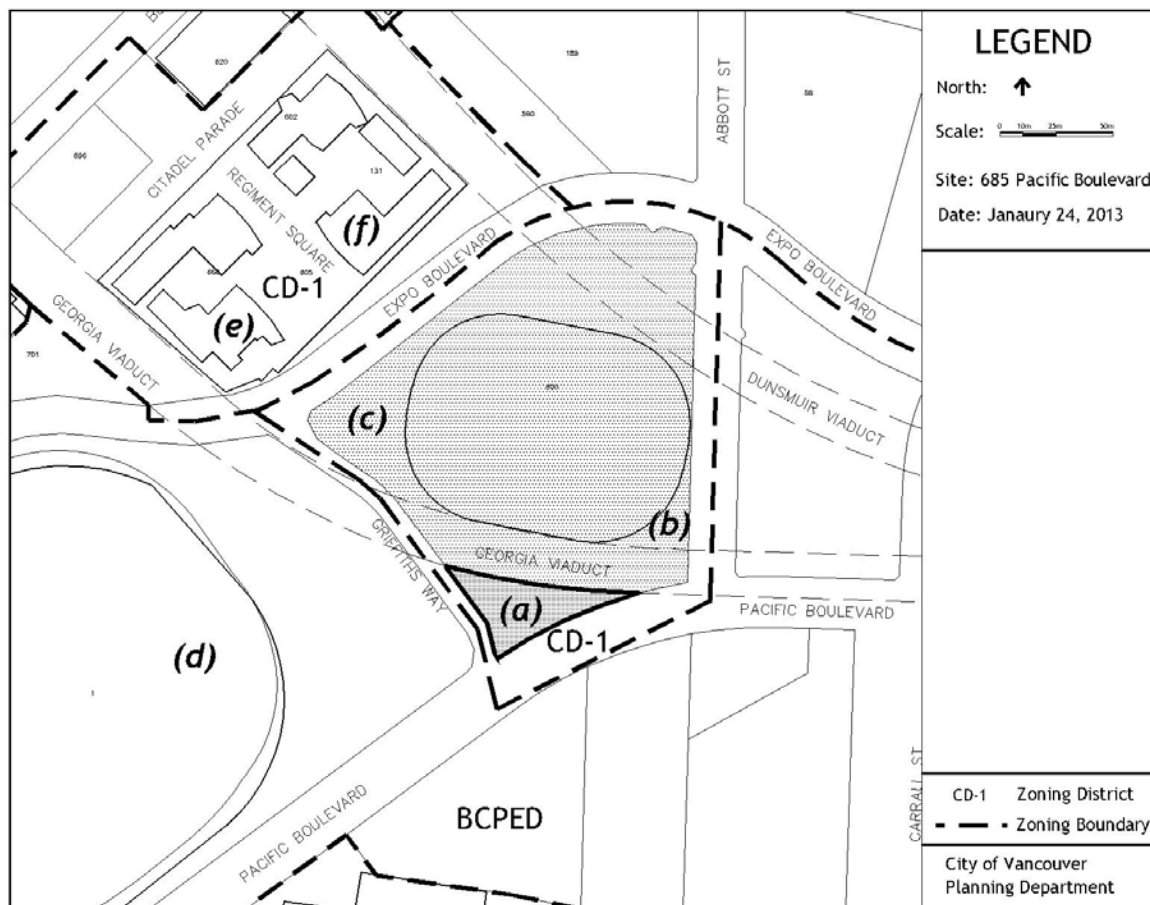
• **History of Application:**

12 12 03 Complete DE submitted
13 01 30 Urban Design Panel
13 03 13 Development Permit Staff Committee
27 03 13 Development Permit Staff Committee

• **Site:** The site is bounded by Expo Boulevard, Abbott Street, Pacific Boulevard and Griffiths Way. This site contains Rogers Arena and is to also accommodate three residential towers. North of the site are high density residential towers, and the Stadium/Chinatown SkyTrain station. South of the site is vacant land and the Plaza of Nations, west of the site is BC Place Stadium and east of the site is vacant land. The Georgia and Dunsmuir Viaducts and the SkyTrain guideway transverse the site.

• **Context:** Significant adjacent development includes:

- (a) 685 Pacific Boulevard - South Tower - proposed tower and site
- (b) 800 Griffiths Way - East Tower - proposed under separate DE416399
- (c) 89 West Georgia Street - West Tower - office/residential tower under construction and review under DE416258
- (d) BC Place Stadium
- (e) 668 Citadel Parade - 27-storey residential tower
- (f) 131 Regiment Square - 30-storey residential tower



• **Background:** This site was originally rezoned in 1993 to accommodate the arena, a training/fitness centre, a media centre and commercial uses on Abbott Street, and a 22-storey office building at the corner of Expo and Griffiths Way (West Tower). The site underwent a rezoning in 2012 and to accommodate residential uses in the West Tower and two additional towers located at the east corner of the site at Abbott Street and Pacific Boulevard (East Tower) and the South Tower at Griffiths Way and Pacific Boulevard.

Each of the three towers within this site are being processed as separate development applications. The West Tower, originally approved as an office building and under construction was, as part of the rezoning, granted residential use. The change of use to residential under development application DE416258 - 89 West Georgia Street was recently approved on March 28, 2013, subject to prior to conditions, some conditions of which are linked to this application. The East Tower, DE416399 - 800 Griffiths Way is currently being reviewed concurrently with this application. Some of the recommended conditions of this application are linked with the two other applications.

This application consists of a 31-storey residential tower sited at the corner of Griffiths Way and Pacific Boulevard (South Tower) and includes the plaza area along these street frontages and the connecting stairs up to the pedestrian route linking with to the Georgia Viaduct alongside the south face of the arena.

There are a number of conditions of affecting the tower design, particularly at the grade (plaza) level. The submission includes a ground plane strategy that responds to current road alignments and grades and includes the Georgia Viaduct. However, in response to possible removal of the Georgia Viaduct, which also will require a realignment of Pacific Boulevard and modification to the building grades, the applicant has included a future condition plan of how this will be achieved.

On March 12, 2013, Council recently approved a lease to Pacific Coast Arena Inc. to use the land below the Georgia Viaduct (instead of land under Griffiths Way) allow for a change to the parkade design which provides improvements to access and loading and allows services in Griffiths Way to be undisturbed.

• **Response to CD-1 By-law (pending):**

Uses: The proposed residential use conforms to the provision of the pending CD-1 By-law.

Dwelling units and Density: The residential use on this site are governed by the Rezoning Conditions of Enactment for a Housing Agreement securing the residential units as rental for the life of the building or 60 years, whichever is longer, including a 'no separate sales' and a 'no stratification' covenant. The Housing Agreement condition identified 614 dwelling units were to be provided with a required residential floor area of 37,319 m². However the Managing Director of Social Development may vary the number of dwelling units if the mix of units provide more family units. The application indicates the provision of 594 units (residential floor area of 37,290 m²) distributed across the three towers on the site, 20 units less than the identified amount and a shortfall of 29 m² of required residential floor area.

The pending CD-1 By-law restricts the minimum size of dwelling units to 37 m². The west and east towers comply with this minimum unit size but the south tower proposes 53 units (26 units @ 30 m² and 27 units @ 35 m²) that do not meet this pending CD-1 By-law requirement. However, for secured rental, Section 10.21 of the Zoning and Development By-law allows the Director of Planning to consider units sizes of a lesser amount to 29.7 m², subject to the design and location of the dwelling units, having regard to the type of occupancy proposed. As secured rental occupancy is part of this consideration, staff recommend a text amendment to remove this by-law limitation within the pending CD-1 By-law in order to be able to accommodate the smaller units being proposed as it also represents less than 10% of the total number of units ultimately being provided.

The pending CD-1 By-law also requires a minimum of 25% of dwelling units to be two bedrooms. This building proposes 31.3% of the dwelling units as two bedrooms, however, combined with the other towers on this site a total of 26.6% of the units are two bedrooms. While the requirement has been achieved with the three buildings being developed on the site, the percentage requirement may be affected by the increase in the number of dwelling units provided.

Recommended Condition 1.1 and Standard Condition A.1.2 seeks compliance to achieve the required amount of residential floor area, the minimum 25% of dwelling units as two bedrooms, and minimum unit size (subject to approval of a text amendment) with the number of dwelling units and type to the satisfaction of the Managing Director of Social Development as distributed across the three proposed residential buildings.

Density: The application proposes unenclosed covered area that exceeds the CD-1 By-law maximum. However the proposal is generally consistent with what was anticipated at the time of rezoning. Staff support a text amendment to the CD-1 By-law to accommodate the at-grade unenclosed covered area as proposed. See Standard Condition A.1.4.

● **Response to Rezoning Conditions of Approval (South Tower)**

Rezoning Condition 1: South Plaza: Design development to improve pedestrian space and desire lines on the south plaza; delete the residential bridge and water feature wrapping the south sides of the lobby adjacent to the street corner, and reduce the width of the water feature on the east side of the lobby. Provide a 3 ft. maximum width planter or other privacy buffer outside the lobby glass walls. This results in the hardscape area remaining equal to existing.

Applicant's response: The south plaza has been substantially designed to improve pedestrian space. There are now two working schemes for the landscape of the south plaza given the necessity to future proof the possible removal of the Georgia Viaduct and expansion of Pacific Boulevard. The removal of the at-grade (Pacific Boulevard to Arena) loading and parking access ramp, is a great improvement to the plaza. The design development of the water features, stairs and minimal Tower lobby footprint maintain as much usable hardscape as possible.

Staff assessment: The water area adjacent to the tower has been deleted. To accommodate the change in grade between the plaza and the South Tower entry floor elevation a disabled ramp has been provided. Under the future condition, this ramp and adjacent stairs and planters will not be required as the building grade of Pacific Boulevard will be raised. Overall the proposed plaza will be a significant improvement to the public realm environment of Pacific Boulevard. Staff are seeking further design development as part of the future road alignment configuration to ensure adequate sidewalk width of 5.5 m at the corner of Pacific Boulevard and Griffiths Way. See Recommended Condition 1.4.

Rezoning Condition 2: South Plaza: Recess the parking exit stair glass box further north into the proposed planter, to minimize its visual and physical intrusion into the plaza.

Applicant's response: With the redesign of the underground parking to include space below the viaducts, we have relocated the exit stair and combined it with existing Arena exiting necessary from the now covered former loading ramp.

Staff assessment: This exit stair has been relocated to a less obtrusive location alongside the pedestrian stairs adjacent to the East Tower. This condition has been satisfied.

Rezoning Condition 5: South Tower: design development to maintain all tower support columns as small and slender as possible, to not increase in number and remain rounded (as shown) to not become pedestrian obstacles. This is critical to allow the plaza function, and the cost of these special columns and other structural implications must be carried throughout the project.

Applicant's response: The South Tower structure (column size and number) is consistent with the previous rezoning submission. Further design development and detail will take place prior to our submission for Building Permit in order to maintain column slenderness and to avoid their becoming obstacles to pedestrians.

Staff assessment: Staff are satisfied that with design strategy undertaken to maintain the columns and their qualitative aspects has been addressed.

Rezoning Condition 6: South Tower: design development to maintain the 9.5 m minimum clear height to the first soffit above the plaza, to ensure a comfortable scale and adequate sunlight reaches the public plaza.

Applicant's response: We have maintained and enhanced the clearance below the South Tower.

Staff assessment: The applicant has achieved a 9.2 m clear height between the plaza elevation and the underside of the soffit with the interim proposal. The clear height to the underside of the soffit, if the viaducts are removed will be 8.9 m. Staff are satisfied that the intent of this condition has been met.

Rezoning Condition 7: South Tower: design development to maintain and enhance the undulating form, three-part floor plans, and colorful ground plane elements as shown, at this strategic and highly visible location.

Applicant's response: We have maintained and enhanced the undulating form and other design elements for this strategic and highly visible location.

Staff assessment: The Urban Design Panel and staff commend the applicant on the building's architectural expression and form. Generally this condition has been satisfied, however staff are seeking further information fully demonstrating the detailed design intended in achieving the undulating and curving building expression. See Recommended Conditions 1.2 and 1.3.

Rezoning Condition 8: South Tower: design development to relocate the South Tower to accommodate the future road dedications/options to purchase as required by Engineering

Applicant's response: This has been done.

Staff assessment: The tower siting has been adjusted to accommodate the future road dedications/options to purchase. The applicant has very successfully resolved and staff support both the interim (existing road alignment and grades) and future site plan (revised road alignment, grades and removal of the Georgia viaduct). This condition has been satisfactorily addressed. See also Standard Condition A.2.19.

Rezoning Condition 13: All 3 Towers: design development to maintain the sustainable features conceptually shown (roof gardens, urban agriculture, parapet turbines, full-height green walls, etc.) or equivalent features of same or better value. Integrate these features into the architectural expression so that each tower has a distinct identity and character, even if designed by the same firm(s).

Applicant's response: The design of the East Tower outlined in this Development Application maintains the integrated sustainable features including green roof, urban agriculture, solar shading, district energy strategies, hydronic heat distribution and water management strategies.

Staff assessment: This condition has been satisfied. Staff are seeking provision of detail elevations and sections including further consideration of passive design treatments. See Recommended Condition 1.3.

Rezoning Condition 14: All 3 Towers: design development to maintain and enhance the noise mitigation features shown (enclosed balconies, special double glass balconies, etc.), especially on the facades facing the arena noise source. The south and west façade of the South Tower must comply with noise criteria towards the noise source of BC Place Stadium.

Applicant's response: The west façade, of the East Tower overlooking the Arena addresses the acoustic recommendations outlined by Brown Strachan & Associates (BS&A) in the enclosed report. The application of enclosed balconies with operable windows & open balconies with operable enclosures complies with these requirements and has been confirmed by BS&A. Similarly, the north façade, of the South Tower overlooking the Arena and Viaduct addresses the acoustic recommendations with the use of enclosed balconies with operable windows & open balconies with operable enclosures and triple glazing limited to 1/3 of wall area where necessary.

Staff assessment: See commentary below under Rezoning Condition 33.

Rezoning Condition 33: Provide a report prepared by professionals in acoustic and mechanical engineering that demonstrates how using noise isolation design strategies and passive and/or mechanical cooling, the building will meet the following performance criteria:

- a) *Mitigate event noise to achieve noise levels between 40 dBC and 50 dBC within the units during event periods; and*
- b) *Ensure summertime internal thermal comfort levels in line with ASHRAE 90.1V.2007 (with windows closed).*

Applicant Response: Refer to acoustic reports from Brown Strachan & Associates previously submitted.

Staff Assessment: A report has been received and reviewed which outlines an approach to the building design to utilize enclosed balconies for the facades facing Rogers Arena roof in order to meet the City's interior noise design criterion. Staff are seeking detailed specification drawings of the balcony enclosure systems, glazing area and glazing specification recommendations for each building, to be noted on the Development Application and Building Application drawings, and confirmation of the acoustic performance prior to obtaining an occupancy permit. See Recommended Condition 1.6.

A thermal comfort study has been provided but has not yet been accepted. It suggests the building does not need to be air conditioned. The report contains an assumption that an internal temperature of 28 degrees Celsius in the summertime is a comfortable temperature and the applicant has been asked to clarify this assumption as it is not a value identified in ASHRAE. See Recommended Condition 1.5.

• **Sustainability:** This re-zoned site is subject to the Rezoning Policy for Greener Buildings and the Rezoning Policy for Greener Larger Sites. This site also falls under the Northeast False Creek (NEFC) Directions which calls for higher sustainability standards including being subject to an inner-City Local Employment and Procurement Agreement to ensure 10% of employment is sourced from inner-city neighborhoods.

This application is required to meet LEED Gold and to register with the Canada Green Building Council (CaGBC). The applicant has submitted a LEED checklist indicating that they will achieve LEED Gold. Staff are seeking confirmation that registration has been undertaken. See Recommended Condition 1.7.

This site is subject to the Rezoning Policy for Greener Larger Sites. The policy is designed to achieve higher sustainability outcomes on large site development through the exploration and implementation of district and renewable energy opportunities, sustainable site design, green mobility and clean vehicle strategies, sustainable rainwater management, solid waste diversion strategies and strategies to achieve sustainable housing affordability and housing mix. Some of the outcomes of the Rezoning Policy for Greener Larger Sites have been secured through the conditions of enactment, assessment and delivery of the rezoning sustainability conditions cannot in some cases, be confirmed at the development permit stage but rather will be assessed and secured through the Building Application stage, Occupancy stage and Post-Occupancy phases of development. The continuums of these rezoning objectives, as part of the detailed design are summarized in Appendix D.

NEFC Directions call for higher sustainability standards than previous large scale developments as an essential component of large site development through the exploration of District Energy feasibility, sustainable Site Design, Green Mobility and Clean Vehicles, rainwater management, Solid Waste Diversion, Sustainable Housing Affordability and Housing mix. These matters have been addressed either through the design of the development, or will be provided for through required plans or strategies.

For staff assessment of the response to the sustainability rezoning conditions, see Appendix D.

• **Interim and Future Road Alignment including possible removal of the Georgia Street Viaduct:**

The application includes an interim and future plans illustrating acceptable solutions for addressing the existing and future road alignment and grade changes if the removal of the Georgia Viaduct occurs. The road alignment and grade changes are significant within the proximity of this building. The anticipated grade changes at the corner of Pacific Boulevard and Griffiths Way is as much as 1.5 m. The applicant has successfully resolved how to respond to grade change with access for to the building accommodate with stairs and ramp that can be eliminated if the road alignment and grade changes occur at some later date. However, staff are seeking further design development to the future alignment condition to provide a minimum sidewalk width at the corner of Pacific Boulevard and Griffiths Way through a reduction in the proposed planter area. See Recommended Condition 1.4.

The application proposes a parking and loading structure underneath the plaza and Viaduct above. Staff are recommending a number of conditions to ensure the structural integrity of the Viaduct structure but also to accommodate the removal of the Viaduct, if required. See Standard Conditions A.2.5 through A.2.11.

Public Realm Treatments: The application incorporates a high quality public realm treatments that includes varied concrete textures, marble and granite pavers with basalt accents. Adjacent to the pedestrian stairs provision of stepped seating opportunities and the inclusion of water features also enhance the public realm quality of the space. Staff are seeking clarification of the existing permanent sculptural and commemorative features will be located. See Standard Conditions A.1.14 and A.1.15.

Architectural Character and Materials: The proposed undulating character is highly engaging architectural expression which staff and the UDP endorse. The success of such expression is challenged by the execution of detailing to ensure that the quality of the building components continue to support the intended architecture. Staff are seeking design development to demonstrate more fully the detailed design resolution intended. Aspects that need to be confirmed is the curved glazing including balcony railings as well as the slab edge expression. Staff are seeking design development to more fully demonstrate that these important architectural aspects are provided. See Recommended Condition 1.2.

- **Material Treatment:** The material treatment proposed, metal panel, window wall systems and curtain wall systems are generally of high quality. Staff are seeking detailed sections and elevations confirming the composition of the high quality materials being proposed. See Recommended Condition 1.3.

- **Conclusion:** Staff commend the applicant in continuing to strengthen the intended architectural character to achieve a high quality robust design for this highly visible location with evolving and challenging site conditions. Staff believe that the application has responded positively to the conditions of rezoning approval, noting that further detailed design and technical resolution in various areas, acoustic and thermal performance clarifications are needed. Staff recommend approval with a series of conditions to address these outstanding items.

URBAN DESIGN PANEL

The Urban Design Panel reviewed this application on January 30, 2013, and provided the following comments:

EVALUATION: SUPPORT (9-0)

- **Introduction:** Anita Molaro, Development Planner, introduced the proposal for a tower at the corner of Griffiths Way and Pacific Boulevard. This building will be entirely market residential with a height of 31-stories. Parking and loading will be accommodated off of Griffiths Way.

The building utilizes a triangular form with round corners and oversized balconies. The first floor of the building is raised above the plaza to allow for sun access while also maximizing pedestrian circulation space.

As a market residential building, one of the key concerns is the associated noise impacts from the arena. As a result there was an accommodation in the CD-1 By-law regarding the amount of open balconies and in particular a new type of balcony called unenclosed balconies, which are different from an enclosed balcony in that it is a flexible design. Ms. Molaro noted that enhanced acoustical performance is also a requirement of the rezoning.

Advice from the Panel on this application is sought on the following:

- Overall architectural expression including:
 - the detailed articulated resolution of the building, particularly its undulating form given this strategic and highly visible location
 - proposed materials
 - architectural resolution of the proposed "unenclosed" balconies to address the additional acoustic performance requirements
- Sustainability attributes (LEED Gold proposed)
- Detailed landscape treatment including:
 - public realm (plaza) treatment for both the interim and future plaza design given future road configuration and grade changes
 - roof treatments

Ms. Molaro took questions from the Panel.

- **Applicant's Introductory Comments:** Walter Francl, Architect, further described the proposal noting that the South Tower occupies part of the plaza and is designed to give as much space to the surge public that will move in and out of the arena. He added that they decided to have less lobby space to leave more open space under the tower. The building itself has a series of projecting balcony enclosures that undulate on each of the three pods of the building so that there is an implied movement and animation that gives a lively prominence to the building. Mr. Francl said that public art has been a component and they are currently looking for an artist. The art will relate to the plaza space but should work if the viaduct is removed. The amenity spaces are on two levels so there is a south facing and east facing outdoor amenity space with attached indoor space. Mr. Francl described the material palette noting that it will have a wood grain finish. They will be using some of the same acoustical features that the East Tower has including the use of double layers of walls on the north façade.

Margot Long, Landscape Architect, further described the landscape plans noting the plaza stairs have been widened along with a terraced setting. They are planning to have the public art address the terraced seats or some lighting underneath the tower. They are looking at water to diminish the sounds of traffic along Pacific Boulevard. With the seating they are looking at the idea of adding some playfulness that expresses that the arena is the home of the Vancouver Canucks. There are two different terraces on the tower. Urban agriculture along with a barbeque area and children's play area are proposed.

The applicant team took questions from the Panel.

- **Panel's Consensus on Key Aspects Needing Improvement:**
 - Design development to improve the termination of the tower;
 - Consider a stronger colour palette for the tower.
- **Related Commentary:** The Panel supported the proposal and thought the tower would have a big impact on the city's skyline.

The Panel liked the undulating balconies and thought they added strength to the building and encouraged the applicant to keep the design simple. One Panel member thought there could be an element of fun using coloured balustrades on the balconies. A couple of Panel members thought the applicant might want to relook at how the tower terminates at the top as they felt it was a bit heavy and didn't relate well to the base of the tower. A couple of Panel members thought the colour palette should be stronger and proposed considering adding more colour to the columns.

It was noted by a number of Panel members that the detailing of the tower will be important in order to make it successful. One Panel member wanted the applicant to consider how the slab edges will show. Another Panel member mentioned that the glazing appears to be in front of the floor plate and may read as a more massive element than intended. The panelist also expressed concern that the inability to curve the glass might compromise the curved expression.

Most of the Panel supported the stilt expression under the tower with a couple of Panel members suggesting they be the same thickness. One Panel member suggested the applicant play with them as art masquerading as structure and structure masquerading as art. As well, one panelist suggested that the columns could be conceptualized to mimic a forest and they could be dressed up with wood. The Panel member thought the applicant should set a vision for the artist so they have some direction. Another Panel member thought the applicant needed to decide what the relationship of the circular element at the base should be to the plaza. As well, another Panel member thought the plaza would benefit from more light under the building.

The Panel supported the landscape plans and thought the solution for the plaza was well done. Some Panel members noted that once the viaduct was removed it will make for better circulation space in the plaza. They liked the water element with one Panel member suggesting it should have a story. It was also suggested that the applicant rethink having pea gravel on the roof as it could be a hazard if it falls off the roof.

It was suggested that the applicant watch the glass and glazing to meet their sustainability strategy and suggested using triple glazing for energy and acoustical needs.

- **Applicant's Response:** Mr. Francl said the Panel gave a very thorough review which he felt was helpful for the design team.

ENGINEERING SERVICES

The development site is currently one legal parcel with hooked lots separated by portions of Georgia and Dunsmuir Streets that contain the Viaducts above. Subdivision is required resulting in a hooked Lot 348, a separate Lot 349 and dedications of portions for road purposes. See Standard Condition A.2.1

On March 12, 2013, Council supported the recommendation to raise title to a portion of Georgia Street under the Georgia Viaduct and authorize the Director of Real Estate Services to enter into a 99-year lease with Pacific Coast Arena Inc. for the purposes of an underground parking structure that will serve the development site. Execution of these arrangements satisfactory to the General Manager of Engineering Services and the Director of Legal Services is required. See Standard Condition A.2.4. Furthermore, structural conditions relating to the underground parking structure such as the provision of detailed demolition shoring plans and monitoring plans including agreements are required by Standard Conditions A.2.5 through A.2.11.

An updated parking study is required to confirm the proposed allocation of all required parking spaces for the development site. The study must consider all three towers and arena as well as the arrangements with BC Place Stadium and show on a plan where the commercial, residential, and visitor parking spaces are being provided and how they will be accessed. See Standard Condition A.2.12.

The South Tower proposes portions of its parking, loading and bicycle parking to provide for the East Tower and its Parking by-law requirements. The required parking study will confirm accessibility and allocation of spaces however agreements will ultimately be required to formalize the rights and access for the approved plan. See Standard Condition A.2.14.

The Georgia Viaduct may be re-configured and re-aligned to meet Pacific Boulevard just west of where Griffiths Way and Pacific Boulevard currently intersect. Although this future re-configuration may not occur, the development has been designed to respond to such a change in the future. Entryways to the South Tower and the surrounding plaza area have been designed to accommodate a higher road elevation. Future coordination between the development site and the City will be required to construct the seamless transition, as designed for today. Arrangements are required as per Standard Condition A.2.19.

The recommendations of Engineering Services are contained in the prior-to conditions noted in Appendix A attached to this report.

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

The recommendations for CPTED are contained in the conditions noted in Appendix A attached to this report.

LANDSCAPE

The recommendations for landscape are contained in the conditions noted in Appendix A attached to this report.

SOCIAL DEVELOPMENT

AMENITY ROOMS AND PLAY AREAS

The proposed 31 storey South Tower includes a total of 84 units with two or more bedrooms (31.3 % of total units) which may be suitable for families with children. The High Density Housing for Families with Children Guidelines are therefore applicable to the plans for this tower.

Consistent with these guidelines, a multi-purpose amenity room with storage closet and washroom is proposed on level 30 adjacent to an outdoor common amenity area. Design development is required to the proposed amenity room to add a kitchenette with sink and counter space. See Standard Condition A.1.24. Design development is required to the proposed washroom to add a baby change area and to confirm that it is universally accessible. See Standard Condition A.1.25. Consistent with the Guidelines the common outdoor amenity area includes an area suitable for a range of children's play activity including a lawn area and creative landscape/play features (balancing logs and boulders) which provide a myriad of creative play opportunities for a range of ages. The outdoor common amenity area also includes a communal dining table and BBQ.

URBAN AGRICULTURE

The City of Vancouver Food Policy identifies environmental and social benefits associated with urban agriculture and seeks to encourage opportunities to grow food in the city. The "Urban Agriculture Guidelines for the Private Realm" encourage edible landscaping and shared gardening opportunities in private developments, and seek the necessary supporting infrastructure.

Consistent with these Guidelines, plans for the South Tower include garden plots, tool storage, a potting bench. Design development is needed to include a compost bin for yard waste, and to clarify hose bib locations. See Standard Condition A.1.18.

ENVIRONMENTAL PROTECTION BRANCH

The subject site was part of the Pacific Place Lands remediation project and was known as parcel 7. A "Confirmation of Compliance (CoC)" was issued on December 16, 1993 for the site.

The "Confirmation of Compliance" was issued on a risk based assessment of the site, and areas of potential environmental concerns triggered by the development process of the new structures include:

- invalidation of the existing risk management plan during the subsurface work for the new development; and
- Invalidation of the conditions of the existing "Confirmation of Compliance" during the subsurface work for the new developments.

See Standard Conditions A.3.

PROCESSING CENTRE - BUILDING

This Development Application submission has not been fully reviewed for compliance with the Building By-law. The applicant is responsible for ensuring that the design of the building meets the Building By-law requirements. The options available to assure Building By-law compliance at an early stage of development should be considered by the applicant in consultation with Processing Centre-Building staff.

To ensure that the project does not conflict in any substantial manner with the Building By-law, the designer should know and take into account, at the Development Application stage, the Building By-law requirements which may affect the building design and internal layout. These would generally include: spatial separation, fire separation, exiting, access for physically disabled persons, type of construction materials used, firefighting access and energy utilization requirements.

Further comments regarding Building By-law requirements are contained in Appendix C attached to this report.

NOTIFICATION

On January 24, 2013, three site signs were erected on site describing the application, and offering additional information on the city's website. No comments from the public were received.

DEVELOPMENT PERMIT STAFF COMMITTEE COMMENTS:

The Staff Committee has considered the approval sought by this application and concluded that with respect to the Zoning and Development By-law it requires decisions by both the Development Permit Board and the Director of Planning.

With respect to the decision by the Development Permit Board, the application requires the Development Permit Board to exercise discretionary authority as delegated to the Board by Council.

Development Permit Staff Committee has considered this application and supports the proposal with the conditions contained in this report.

J. Greer
Chair, Development Permit Staff Committee

A. Molaro Architect AIBC
Senior Development Planner

B. Mah
Project Coordinator

Project Facilitator: C. Lau

DEVELOPMENT PERMIT STAFF COMMITTEE RECOMMENDATIONS

The following is a list of conditions that must also be met prior to issuance of the Development Permit.

A.1 Standard Conditions

- A.1.1 provision of all relevant project data and statistics, including identifying all approved (existing) and proposed new uses as listed in the pending amended CD-1 By-law and described under Section 2 (Definitions) of the Zoning and Development By-law on the floor plans, and coordination of all project information (summaries/tables) for the site (arena and 3 towers);

Note to Applicant: All project information to show compliance with the pending amended CD-1 By-law and subsequent text amendments as necessary.

- A.1.2 compliance with Section 5.4 (Conditions of Use) of the pending CD-1 By-law;

Note to Applicant: The floor area of each unit in the South Tower, measured from the inside of the outer walls, must be at least 37 m². Provide a unit summary that includes the number, type and floor area of all units. Where units are less than the required minimum floor area of 37 m², a text amendment is required to remove this condition. Section 10.21 (Dwelling Units) of the Zoning and Development By-law grants the Director of Planning the discretion to consider a unit with a lesser floor area where the design and location of the unit provides satisfactory living accommodation.

- A.1.3 compliance with Section 6 (Floor Area and Density) of the pending CD-1 By-law;

Note to Applicant: Floors or portions of floor used for heating and mechanical equipment above base surface are not excluded from the maximum floor area under the pending CD-1 By-law. A text amendment is required to allow such floor areas to be excluded.

- A.1.4 compliance with Section 6.5(e) [Unenclosed Outdoor Areas] of the pending CD-1 By-law;

Note to Applicant: Unenclosed outdoor areas exceed the maximum 1% allowed. A text amendment is required to either increase the maximum allowed or remove the maximum limit.

- A.1.5 compliance with Section 8 (Horizontal Angle of Daylight) of the pending CD-1 By-law;

Note to Applicant: Demonstrate that all habitable rooms meet the horizontal angle of daylight requirements and clearly identify any habitable room that does not comply. Delete "den" from unit types as there are no dens.

- A.1.6 compliance with Section 6 (Off-Street Bicycle Space regulations) of the Parking By-law;

Note to Applicant: The number of vertical bicycle spaces has exceeded the maximum of 30%. Provide a minimum of 20% of the Class A bicycle spaces as bicycle lockers, and provide one electrical outlet for every two Class A bicycle spaces (a note on the drawing will suffice). Bicycle rooms, compounds or lockers shall be located no lower than the first complete parking level below grade and shall have direct access to outside. Add dimensions to bicycle spaces and maneuvering aisles.

- A.1.7 submission of parking level plans (under Rogers Arena and towers) with summaries clearly showing all parking spaces, loading spaces and bicycle spaces allocated and designated for BC Place Stadium (150 spaces), Rogers Arena (170 spaces), West Tower, East Tower and South Tower, including access to the parking spaces, parking space dimensions, maneuvering, vertical

clearance (particularly for disability spaces and ingress/egress) and security for each building and its uses;

Note to Applicant: A color-coded format with tabulated summaries at each level and a total summary is recommended. The summaries should include the number and types of parking spaces, loading spaces and bicycle spaces. Care share spaces should also include a vehicle in the parking space. Provide wheel stops for parking spaces located perpendicular to adjacent parking spaces.

- A.1.8 clarification of the use of all amenity spaces, and access into the DEU room on parking level P1;

Note to Applicant: Provide a layout of all amenity spaces, including equipment and/or furnishings.

- A.1.9 addition of dimensions on all floor plans, setbacks of buildings from the property lines and clarification of all existing and new floor areas and uses;

Note to Applicant: Dimensions should also be added to all exclusions (such as storage rooms, open and enclosed balconies, amenity spaces, etc.) from the total floor area. Clarify the floor areas and balcony areas of the towers where the floors are contoured as illustrated on drawing A3 002.

- A.1.10 details of balcony enclosures;

Note to Applicant: To qualify for an exclusion from floor area calculations, an enclosed balcony must be a distinct space separated from the remainder of the dwelling unit by walls, glass, and glazed doors [hinged or sliding], have an impervious floor surface (tile or stone), a flush threshold at the bottom of the door [for disabled access], large, openable windows for ventilation, and distinct exterior architectural expression. Floors should show the tile or stone pattern. Clarify access to and windows on all enclosed balconies. Delete all furniture inside the enclosed balconies. In addition, each dwelling unit should have no more than one enclosed balcony, and all balconies, both open and enclosed, should be clearly identified on the floor plans. Notation should also be made on the plans stating: "All enclosed balconies shall be designed and constructed in accordance with the Council-approved Balcony Enclosure Guidelines." Limitations on the amount of exclusions and enclosures permitted are described within the regulations of the respective District Schedule or Official Development Plan that apply to the specific site. For further details and specifications on enclosure requirements, refer to the Council-approved Balcony Enclosure Guidelines.

- A.1.11 notations on plans stating:

"The design of the parking structure regarding safety and security measures shall be in accordance with Section 4.13 of the Parking By-law."; and

"The design of the bicycle spaces (including bicycle rooms, compounds, lockers and/or racks) regarding safety and security measures shall be in accordance with the relevant provisions of Section 6 of the Parking By-law.";

- A.1.12 design development to locate, integrate and fully screen any emergency generator, exhaust or intake ventilation, electrical substation and gas meters in a manner that minimizes their visual and acoustic impacts on the building's open space and the Public Realm;
-

A.1.13 notation on plans stating:

"The acoustical measures will be incorporated into the final design and construction based on the consultant's recommendations"; and

"Mechanical (ventilators, generators, compactors and exhaust systems) will be designed and located to minimize the noise impact on the neighbourhood and to comply with Noise By-law #6555.";

Standard Landscape Conditions

A.1.14 clarification of where the existing permanent features in the plaza (public art and commemorative sculptures) will be located;

A.1.15 provision of high quality furnishings and finish materials in the south plaza and other public realm locations to match the style and quality of the architectural features. Additional large scale detail drawings of the south plaza finishes are required for items such as hand rails, seating and benches, paving and any proposed facing materials for the retaining walls of planters;

A.1.16 provision of adequate soil volumes in the south plaza planters to sustain healthy and long lasting growth for the proposed Douglas Fir trees. These very large trees will require a greater soil depth and expanse of planter width and length in order to thrive and remain stable when full grown;

Note to applicant: The BCSLA Landscape Standard recommends 36 to 48 in. of soil depth for large trees. The eastern planter containing two Douglas Firs appears to be too confined a space and should be reconfigured to provide a greater expanse of rooting area.

A.1.17 provision of a detailed large scale section (1/4"=1' or 1:50) of the plaza planters containing the Douglas Fir trees. The section should include the location of the underground slab as well as any drainage layers;

A.1.18 provision of infrastructure on the Level 30 roof deck to support urban agricultural activity such as on site composting, tool storage, hose bibs and potting benches as per the "Urban Agriculture Guidelines for the Private Realm;"

A.1.19 provision of a high efficiency irrigation system for all planting on slab, including the roof decks and the grade level plaza. Hose bibs should be added to each of the roof decks containing urban agriculture plots. Notations to that effect should be added to the drawings;

Note to Applicant: The irrigation system design and installation system shall be in accordance with the Irrigation Industry of B.C. Standards and Guidelines.

A.1.20 provision of a separate lighting plan for the south plaza;

A.1.21 provision of the following notation on the Landscape Plan for new street trees:

"Final spacing, quantity, tree species to the satisfaction of the General Manager of Engineering services New trees must be of good standard, minimum 6cm caliper, and installed with approved root barriers, tree guards and appropriate soil. Root barriers shall be 8 feet long and 18 inches in deep. Planting depth of root ball must be below sidewalk grade. New street trees to be provided adjacent to the development site, to be confirmed prior to the issuance of the building permit. Call Park Board for inspection after tree planting completion";

Note to Applicant: Contact Eileen Curran, Streets Engineering (604.871.6131) to confirm tree planting locations and Park Board (604.257.8587) for tree species selection and planting requirements.

- A.1.22 provision of a notation on the Landscape Plan, "All public realm details and installation to the approval of the General Manager of Engineering";

Standard Crime Prevention Through Environmental Design (CPTED)

- A.1.23 design development to respond to CPTED principles, having particular regard for:

- i. theft in the underground parking;
- ii. residential break and enter;
- iii. mail theft; and
- iv. mischief in alcoves and vandalism, such as graffiti;

Standard Social Development Conditions

- A.1.24 design development to the proposed amenity room to add a kitchenette with sink and counter space; and

- A.1.25 design development to the proposed washroom to add a baby change and to confirm that it is universally accessible.

A.2 Standard Engineering Conditions

- A.2.1 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services and Director of Legal Services, for the registration of a subdivision plan of the site resulting in a hooked Lot 348, a separate Lot 349 and dedications of portions for road purposes;

- A.2.2 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, for the modification or replacement of the following charges on title:

- i. Easement & Indemnity Agreement BG375438: To allow the numerous features proposed within the unopened street (under the viaduct) and at other locations within the easement area; and
- ii. Statutory Rights-of-Way (SRW) BG375404 to BG375407, BG375441 to BG375442, BH343593, and R92170 to R92173: To allow portions of the building within the rights-of-way;

- A.2.3 deletion of the portions of balconies shown encroaching over the area of the site to be dedicated for road;

Note to Applicant: Plans A0 102 and A0 103 show the "outline of maximum balcony overhang" over portions of the site to be dedicated for road along Griffiths Way.

- A.2.4 arrangements, including legal agreements, shall be made, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, for proposed encroachments onto Pacific Boulevard, to include the retaining wall and planter structures;

Note to Applicant: An application to the City Surveyor is required. For general information, see the Encroachment Guide (http://vancouver.ca/files/cov/building_encroachment_guide.pdf).

- A.2.4 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, for a volumetric lease of portions of the road under the Georgia Viaduct for the underground parking/loading facilities, and the relocation of any affected utilities;

- A.2.5 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services, to permit conduit lines within the Parkade Structure for the existing fibre lines or other utility attachments currently attached to the underside of the Georgia Viaduct;

- A.2.6 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, for the City's right of entry to the Lease Premises to allow for temporary shoring within the Parkade Structure during the Georgia Viaduct demolition;

Note to Applicant: This will need to be supplemented with a detailed demolition shoring plan (if loads are to exceed the CL-625 load case), and an associated safety plan.

- A.2.7 provision of a detailed monitoring plan for shoring during the excavation of the site of the Georgia Viaduct, to the satisfaction of the General Manager of Engineering Services;

- A.2.8 provision of a letter of agreement from the owner, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, acknowledging and accepting all risks, liability and costs including seismic risk exposure from the Georgia Viaduct related to the proposed underground parking and loading;

- A.2.9 provision of a detailed design, to the satisfaction of the General Manager of Engineering Services and the Chief Building Official, stamped and sealed by a Professional Engineer, for the portions of the proposed parking facility under the Georgia Viaduct;

Note to Applicant: The proposed parkade roof, associated walls and foundations are to be designed to accommodate a CL-625 load case. Walls adjacent to the viaduct piers/piles are to be designed to provide lateral stability (standard and earthquake load conditions) to the viaduct structure at no cost to the City. The existing fibre lines or other utilities currently attached to the underside of the Georgia Viaduct must be rebuilt within the proposed parkade.

- A.2.10 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, for a Support Agreement in favour of the City for the surrounding roads and viaduct structure;

- A.2.11 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, for the design and development of a Bridge Monitoring Strategy;

Note to Applicant: The applicant is to develop a monitoring strategy for the Georgia Viaduct to track movements during excavation and construction, establish reporting thresholds and stop work thresholds. A \$10,000 deposit will be required for the City to retain the Engineer of Record to review the monitoring strategy and the results of the monitoring during critical phases of construction. A shoring plan from the Geotechnical Engineer detailing how the bridge

footings will be protected during excavation and construction is required. A post construction report / survey will be also be required.

- A.2.12 provision of an updated parking study for the Rogers Arena site outlining where the parking spaces for the three new towers are located and how the spaces will operate for residential and commercial uses;

Note to Applicant: The parking study must show on a plan where the commercial and residential parking spaces are being provided and how they will be accessed. The study should ensure that the visitor parking being provided under Rogers Arena is accessible from all of the residential towers. The study should include a detailed summary of the overall parking for BC Place Stadium and Rogers Arena in the surrounding area and the parking plan for Rogers Arena showing the proposed parking breakdown for the three towers.

- A.2.13 provision of a Loading Management Plan (LMP) and a shared-use agreement for any loading shared between commercial and residential uses and between the East and South Towers;

Note to Applicant: It appears that the three Class B loading spaces in the South Tower are also available for the East Tower's use. The LMP should specify how the location of the loading spaces and access off of Griffiths Way will be messaged to residents and delivery drivers. Way-finding and directional signs may be necessary.

- A.2.14 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, for provision of off-site parking and loading;

Note to Applicant: Upon approval of the required parking study and Loading Management Plan, arrangements must be made to provide the necessary rights and access to the parking, loading, and bicycle parking spaces as intended to be shared amongst all three towers and the arena.

- A.2.15 compliance with Parking and Loading Supplement, to the satisfaction of the General Manager of Engineering Services, for the modification of the ramp design to address the following:

- i. provision of an improved plan showing the design elevations on both sides of the ramp at all breakpoints and within the parking areas to be able to calculate slopes and cross falls. Provide elevations on sections drawings;

Note to Applicant: Drawing A2 101 shows numerous building grades along the property line. The building grades shown must be the final approved building grades from the City. If there is a current and future design for the street, provide two separate drawings.

- ii. provision of a setback of the parkade ramp on Griffiths Way so that it is clear of the sidewalk on either side. The parking ramp should (outside of the SRW and walkable area) begin 10 ft. (3 m) past the property line;

- iii. excessive slope on the first 20 ft. of the parking ramp from the property line. The slope on the east side of the ramp calculates at 15.4% and the maximum permitted slope is 10%;

- iv. Reduce any change in slope from + to - by a maximum of 12.5%.

Note to Applicant: The change in ramp slope on the east side of the ramp calculates to 18.2% at 83 ft. from the property line.

- v. lengthen transition ramps to a minimum of 13 ft. (4 m) as 10 ft. length is shown;
-

- vi. provision of heat tracing on the 15% slope section of the ramp if exposed to the weather;
- vii. excessive slope on the internal ramp from P1 to P5. Sections of the ramp have a slope of 27% as the maximum permitted is 15%;
- viii. relocate building support column encroachments from the parking ramps;

Note to Applicant: Columns are encroaching from the bike rooms on P1 onto the ramps on drawing A2 205.

- A.2.16 provision of a section drawing along the centreline of the ramp and maneuvering aisle showing the minimum 12.5 ft. (3.8 m) of vertical clearance from the street to the three Class B loading spaces;

Note to Applicant: Ensure that the 12.5 ft. (3.8 m) of vertical clearance is still provided with any future change in the ramp slope and design. Remove notation on drawing A2 205 indicated approximately 9.8 ft. (3 m) of clearance is being provided. Consider installing a bang bar at the top of the ramp to limit trucks to the 3.8 m of vertical clearance.

- A.2.17 provision of an improved plan showing the required truck maneuvering to and from the 3 Class B loading spaces within the South Tower;

- A.2.18 modification of the Class B loading spaces to include the following:

- i. provision of additional width for the second Class B loading space where two Class B spaces are located side by side; and
- ii. provision of loading throats for the Class B loading spaces. Double throats may be required to accommodate all required manoeuvring. Recommend relocating column at elevation 1.00, 13 ft. (4 m) back to improve maneuvering for the Class B loading spaces or provide a 28 ft. (8.5 m) manoeuvring aisle in front of the loading spaces. With a 28 ft. manoeuvring aisle, no throat or additional bay width is required;

Note to Applicant: Refer to the Parking and Loading Design Guidelines at the following link: (<http://former.vancouver.ca/engsvcs/parking/admin/developers.htm>)

- A.2.19 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, for the modification of the site including, but not limited to, the plaza area, parking ramp, and building entrance to meet the future grades required to connect to the street if the Georgia Viaduct is removed;

- A.2.20 provision of City building grades and design elevations at all entrances, to the satisfaction of the General Manager of Engineering Services;

Note to Applicant: An Out-of-Grade Agreement may be required to accommodate any resulting cross property line drainage.

- A.2.21 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services, for a Right-of-Way for the provision of space to accommodate a Public Bike Share Station (PBS);
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Note to Applicant: The PBS space is to be a minimum of 15 m x 4 m in size and is to be near the intersection of Expo Blvd and Abbott Street. Placement must consider strong solar exposure and power must be supplied to the PBS.

A.2.22 provision of a shared vehicle agreement for the shared vehicles and spaces, to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services;

A.2.23 provisions for a suitable space not less than 93 sq. m within parkade level P1 to be used for energy system operations equipment which may include, but is not limited to, a steam to hot water converter station, and/or boiler equipment as deemed necessary by the General Manager of Engineering Services;

Note to Applicant: Additional space for neighbourhood service provisions is required pursuant to conditions of rezoning (see also Appendix D). This is in addition to the provision of a district energy room that has already been provided.

A.2.24 provision of a Green Mobility and Clean Vehicles Strategy that includes how more sustainable travel will be achieved and includes the requisite infrastructure where appropriate to prioritize sustainable transportation modes including walking, cycling, public transit, and provisions for low carbon vehicles (e.g., electric vehicles), completed, to the satisfaction of the General Manager of Engineering Services, and prior to Development Permit issuance the completion of any agreements required by this Strategy on terms and conditions acceptable to the General Manager of Engineering Services and the Director of Legal Services;

A.2.25 provision of a Sustainable Rainwater Management Plan that utilizes sustainable strategies to allow for infiltration, retention, treatment and utilization of rainwater where applicable and appropriate on site;

A.2.26 provision of a Solid Waste Diversion Strategy that addresses waste diversion in all solid waste generating activities within the complex;

Note to Applicant: The Strategy must identify/provide space, infrastructure and an operational approach to divert organics and recyclables from the waste stream, and minimize the vehicle trips required for collection, to the satisfaction of the General Manager of Engineering Services, and prior to Development Permit issuance the completion of any agreements required by this Strategy on terms and conditions acceptable to the General Manager of Engineering Services and the Director of Legal Services.

A.2.27 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services, for a crossing application;

Note to Applicant: Design and location of all crossings is required.

A.2.28 arrangements shall be made, to the satisfaction of the General Manager of Engineering Services, for a separate application for street trees and/or sidewalk improvements;

A.2.29 clarification and confirmation of the garbage pick-up operations and adequacy of all garbage storage rooms for all uses is required;

Note to Applicant: Consultation with a waste hauler and confirmation that they can pick up from the location shown is required. The loading operation for garbage should not rely on any storage of bins on public property or in locations that would impede vehicular access to and from the site. The City's preference is for the waste storage facility to be located at grade and not any lower than P1.

A.2.30 provision of the following requirements prior-to issuance of the Development Permit, to the satisfaction of the General Manager of Engineering Services, pursuant to the site's servicing agreement:

- i. a letter of credit to secure required works and services obligations;
- ii. a letter of credit to secure the car share provisions;
- iii. registration of a car share agreement; and
- iv. off-site parking and loading arrangements including access arrangements are required as East Tower parking is under the South Tower and visitor parking is under Rogers Arena;

Note to Applicant: See also Condition A.2.14 and A.2.23

A.2.31 provision of plans, to the satisfaction of the General Manager of Engineering Services, showing site servicing pursuant to the site's rezoning requirements, including but not limited to:

- i. an upgraded sewer on Pacific Boulevard;
- ii. revised curb, sidewalk and street trees around the site;
- iii. public drinking water fountains; and
- iv. street lighting design including the provision of street lighting and traffic signal kiosks and related Hydro infrastructure; and

A.2.32 undergrounding of all utility services;

Note to Applicant: The General Manager of Engineering Services will require all utility services to be underground for this "conditional" development. All electrical services to the site must be primary with all electrical plant, which include but not limited to, junction boxes, switchgear, pad mounted transformers and kiosks (including non-BC Hydro kiosks) are to be located on private property.

It is presumed with your consultation so far with BC Hydro that area has been defined within the development footprint to accommodate such electrical plant. Please confirm that this space has been allocated and agreement between both parties has been met.

In addition, there will be no reliance on secondary voltage from the existing overhead electrical network on the street right of way. Any alterations to the existing overhead/underground utility network to accommodate this development will require approval by the Utilities Management Branch.

A.3 Standard Licenses & Inspections (Environmental Protection Branch) Conditions:

A.3.1 provision of an environmental media assessment report(s);

A.3.2 a qualified environmental consultant or approved professional will require to address the above environmental concerns and ascertain that subsurface work will not invalidate the conditions of the existing "Confirmation of Compliance", the risk management plan and the area where the "tower " will be developed meets the applicable land use standards;

- A.3.3 hold development permit issuance until a confirmation letter from the qualified environmental consultant or approved professional addresses the above mentioned concerns; and
 - A.3.4 that the property owner shall, as required by the Manager of Environmental Protection and Director of Legal Services in their discretion, do all things and/or enter into such agreements deemed necessary to fulfill the requirements of Section 571(B) of the Vancouver Charter.
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B.1 Standard Notes to Applicant

- B.2.1 All approved off-street vehicle parking, loading and unloading spaces, and bicycle parking spaces shall be provided in accordance with the relevant requirements of the Parking By-law prior to the issuance of any required occupancy permit or any use or occupancy of the proposed development not requiring an occupancy permit and thereafter permanently maintained in good condition.
- B.2.2 All landscaping and treatment of the open portions of the site shall be completed in accordance with the approved drawings prior to the issuance of any required occupancy permit or any use or occupancy of the proposed development not requiring an occupancy permit and thereafter permanently maintained in good condition.
- B.2.3 All approved street trees shall be planted in accordance with the approved drawings within six (6) months of the date of issuance of any required occupancy permit, or any use or occupancy of the proposed development not requiring an occupancy permit, and thereafter permanently maintained in good condition.
- B.2.4 All services, including telephone, television cables and electricity, shall be completely underground.
- B.2.5 The site shall be maintained in a neat and tidy condition.
- B.2.6 Amenity spaces of 146 m² (East Tower) and 677 m² (South Tower), excluded from the computation of floor space ratio, shall not be put to any other use, except as described in the approved application for the exclusion. Access and availability of the use of all amenity facilities located in this project shall be made to all residents and occupants of the building;

AND

Further, the amenity spaces and facilities approved as part of this Development Permit shall be provided and thereafter be permanently maintained for use by residents and users of this building complex.

- B.2.7 The enclosed balconies are to be maintained at all times in accordance with the balcony enclosure details on the approved plans and are not to be used as an integral part of the interior space of the building.
- B.2.8 Any phasing of the development, other than that specifically approved, that results in an interruption of continuous construction to completion of the development, will require application to amend the development to determine the interim treatment of the incomplete portions of the site to ensure that the phased development functions are as set out in the approved plans, all to the satisfaction of the Director of Planning.
- B.2.9 The issuance of this permit does not warrant compliance with the relevant provisions of the Provincial Health and Community Care and Assisted Living Acts. The owner is responsible for obtaining any approvals required under the Health Acts. For more information on required approvals and how to obtain these, please contact Vancouver Coastal Health at 604-675-3800 or visit their offices located on the 12th floor of 601 West Broadway. Should compliance with the health Acts necessitate changes to this permit and/or approved plans, the owner is responsible for obtaining approval for the changes prior to commencement of any work under this permit. Additional fees may be required to change the plans.
-

Processing Centre - Building comments

Additional commentary may be forthcoming with reference to the 2007 Vancouver Building By-law No. 9419 (VBBL) following a review by the Processing Centre - Building Department. The applicant should consider engaging a code consultant and Certified Professional to review Building Applications associated with this development.

SUSTAINABILITY

This re-zoned site is subject to both the Rezoning Policy for Greener Buildings and the Rezoning Policy for Greener Larger Sites. This site also falls under the Northeast False Creek (NEFC) Directions which calls for higher sustainability standards including being subject to a n inner-City Local Employment and Procurement Agreement to ensure 10% of employment is sourced from inner-city neighborhoods.

The Rezoning Policy for Green Buildings, based on the time of the Rezoning application, requires that the building achieve a minimum of LEED Gold, with target points for energy performance, water efficiency and storm water management. The rezoning application was made in October 2010 and is required to register with Canada Green Building Council, but not make an application for certification. The applicant has submitted a LEED checklist indicating that they will achieve LEED Gold. Staff are seeking confirmation that registration has been undertaken. See Recommended Condition 1.7.

NEFC Directions call for higher sustainability standards than previous large scale developments as an essential component of large site development through the exploration of District Energy feasibility, sustainable Site Design, Green Mobility and Clean Vehicles, rainwater management, Solid Waste Diversion, Sustainable Housing Affordability and Housing mix. These matters have addressed either through the design of the development, or will be provided for through required plans or strategies, will all to be implemented through the requirements contained with the recommended Conditions of Approval set out in Appendix A.

The NEFC Directions require that local energy planning assessments be completed for NEFC, with a view to implementing feasible campus or district energy systems that reduce carbon dependency. A district energy approach enables significant Greenhouse Gas (GHG) reductions for entire neighbourhoods that could not be cost effectively achieved by individual buildings. As this approach is dependent upon economies of scale, it is important that all buildings in the neighbourhood connect to the district system. A screening level assessment of the feasibility of a renewable district energy system in NEFC was completed in the spring of 2010 with involvement of the five property owners in NEFC and BC Hydro. The results of this assessment showed that a renewable district energy system for NEFC would result in significant carbon reductions and that it is economically viable.

A subsequent detailed feasibility study completed late in 2010 confirms the cost competitiveness and environmental benefits of renewable district energy for NEFC, and provides an approach to implementation of measures resulting in neighbourhood GHG reductions of 65% over business as usual.

This project shall be required to connect to the future district energy system for heating and hot water, as set out in the Conditions of Approval in Appendix A.

This site is subject to the Rezoning Policy for Greener Larger Sites. The policy is designed to achieve higher sustainability outcomes on large site development through the exploration and implementation of district and renewable energy opportunities, sustainable site design, green mobility and clean vehicle strategies, sustainable rainwater management, solid waste diversion strategies and strategies to achieve sustainable housing affordability and housing mix. The continuums of these rezoning objectives, as part of the detailed design are summarized below.

Sustainable Site Design: This aspect has been satisfied through the provision of the green roofs.

Green Mobility and Clean Vehicle Strategies: The project has not provided a plan. See Standard Condition A.2.24.

Sustainable Rainwater Management: The project has not provided a plan. See Standard Condition A.2.25.

Solid Waste Diversion Strategies: The project has not provided a plan. See Standard Condition A.2.26.

District and Renewable Energy Opportunities: Both the East and South Towers need to be designed to be compatible with the hot water neighbourhood energy system for Northeast False Creek. The developer should make mechanical HVAC design information available to Fortis BC, as they are developing the neighbourhood energy system. It is important that the HVAC systems integrate properly with the neighbourhood system. A dedicated room for the NEU is not supplied in the East Tower, similar to that of the South Tower. Furthermore, this site is to provide space for neighbourhood serving provisions pursuant to conditions of rezoning. See Standard Condition A.2.23 and response to Rezoning Condition 27.

Some of the outcomes of the Rezoning Policy for Greener Larger Sites have been secured through the conditions of enactment, assessment and delivery of the rezoning sustainability conditions cannot in some cases, be confirmed at the development permit stage but rather will be assessed and secured through the building permit stage, occupancy stage and post occupancy phases of development.

Response to Rezoning Conditions of Approval

Sustainability

Rezoning Condition 25: The heating and domestic hot water system for the East and South Towers shall be designed to be compatible with a hot-water distribution district energy system in order to connect to the City of Vancouver's Retail Franchise holder for Northeast False Creek Low Carbon Heating Services for supply of all heating and domestic hot water requirements of the buildings as required under the Northeast False Creek Official Development Plan. Design provisions related to district energy compatibility must be to the satisfaction of the General Manager of Engineering Services.

Note to Applicant: The applicant shall refer to the District Energy Connectivity Standards for specific design requirements, which include provisions related to the location of the mechanical room, centralization of mechanical equipment, pumping and control strategy, and other hydronic heating and domestic hot water system minimum requirements. The applicant is encouraged to work closely with Staff to ensure adequate provisions for District Energy compatibility are provided for in the mechanical design. A declaration signed by the registered professional of record certifying that the district energy connectivity requirements have been satisfied will be required as a pre-condition to building permit.

Applicant's response: Noted. Provisions related to district energy compatibility will be to the satisfaction of the General Manager of Engineering Services.

Staff assessment: This condition has been satisfied.

Rezoning Condition 27: Building designs shall include adequate space and design provisions to support connection to the district energy system to the satisfaction of the General Manager of Engineering Services.

Note to applicant: Design shall provide suitable space for the installation of the district energy system equipment with adequate provisions for connection to outside district energy system distribution piping and communications conduit. District energy equipment may include, but is not limited to, energy transfer stations (ETS), a steam to hot water converter station sized for neighbourhood service provision, and/or boiler equipment. At the building permit stage, the applicant will be required to submit final detailed drawings, signed and sealed by a professional engineer where necessary, for review by Engineering Services to confirm final room dimensions, sleeve details, and servicing needs. The developer shall make available use of sewer and potable water piping. The space provided for district energy system equipment shall be ventilated as required by the Vancouver Building By-law and heated during the winter to minimum 15°C. As required, the developer must provide dedicated electrical services required to service the district energy system equipment, to the satisfaction of the General Manager of Engineering Services.

Applicant's response: An aprox. 1000 sf net District Energy Utility Room (DEU Room) has been provided in the NW corner of the P1 Level of the South Tower. This room along with mechanical and electrical requirements will be further coordinated with construction documents prior to building permit submission to the satisfaction of the General Manager of Engineering Services.

Staff assessment: At the Development Application stage, a building required to be DEU connectable is required to provide an adequately sized room on the P1 or P2 level dedicated for the DEU equipment for immediate building connection. The South Tower has a dedicated neighbourhood energy room, and it is adequately sized and located however the East Tower does not appear to have a dedicated neighbourhood energy room. In the absence of further information, the developer will need to provide a DEU room of adequate size in the East Tower as well.

Additional space for neighbourhood service provisions is required on this site to include, but not limited to, space for a steam to hot water converter station, and/or boiler equipment as deemed necessary by the General Manager of Engineering Services. See Standard Condition A.2.23.

Rezoning Condition 28: No heat producing fireplaces are to be installed within buildings.

Applicant's response: We confirm there are no heat producing fireplaces proposed.

Staff assessment: This condition has been satisfied.

Rezoning Condition 29: Provision of a Green Mobility and Clean Vehicles Strategy that includes how more sustainable travel will be achieved and includes the requisite infrastructure where appropriate to prioritize sustainable transportation modes including walking, cycling, public transit and provisions for low carbon vehicles (e.g. electric vehicles) completed to the satisfaction of the General Manager of Engineering Services and prior to Development Permit issuance the completion of any agreements required by this Strategy on terms and conditions acceptable to the General Manager of Engineering Services and the Director of Legal Services.

Applicant's response: Project is located within 800m (walking distance) to Stadium Skytrain station. Existing Arena parkade will be retrofit with EV charging stations to comply with VBBL requirement for provision of 20% EV charging infrastructure. Likewise the u/g parking below the South Tower will have required charging infrastructure. Bicycle parking and storage is provided for both residential and commercial occupants including showers and changing rooms for commercial tenants.

Staff assessment: The project has not provided a plan. See Standard Condition A.2.25.

Rezoning Condition 30: Provision of a Sustainable Rainwater Management Plan that utilizes sustainable strategies to allow for infiltration, retention, treatment and utilization of rainwater where applicable and appropriate onsite.

Applicant's response: Stormwater treatment is achieved through the incorporation of the Jellyfish filtration system for stormwater treatment. The Jellyfish Filter is an engineered stormwater quality treatment technology featuring unique membrane filtration in a compact stand alone treatment system that removes a high level and wide variety of stormwater pollutants.

Staff assessment: The project has not provided a plan. See Standard Condition A.2.26.


Rezoning Condition 31: Provision of a Solid Waste Diversion Strategy that addresses waste diversion in all solid waste generating activities within the development.

Applicant's response: Building has been designed to meet LEED prerequisite for storage and collection of recyclables. Please refer to the letter (dated October 16th, 2012) from Aquilini Development and Construction Inc. regarding their Solid Waste Strategy for West Tower at 89 West Georgia (Rogers Arena)

Staff assessment: The project has not provided a plan. See Standard Condition A.2.27.

Rezoning Condition 32: Identification on the plans and elevation of the built elements contributing to the building's sustainability performance in achieving LEED® Silver equivalency, including at least three optimize energy performance points, one water efficiency point, and one storm water point.

Applicant's response: Project is targeting LEED Gold. Please refer to the attached LEED Checklist for the targeted credits. Energy model is currently being reviewed to incorporate a design that yields a minimum of 25% savings over the baseline building as defined by ASHRAE 90.1-2007 Appendix G (With Errata, but not Addenda).

- Architectural energy conservation measures include: roof R40, wall R20, solarshading, residential balconies will not be heated and are enclosed by double pane low-e operable windows.
- Electrical energy conservation measures include: 15% lighting power density reduction and the use of daylight sensors on perimeter spaces on office levels.
- Mechanical energy conservation measures: low-flow water fixtures, heat recovery for office space, heat pump selection for residential units, CO2 sensors in office space, domestic hot water pre-heat through heat recovery from cooling tower loop. 

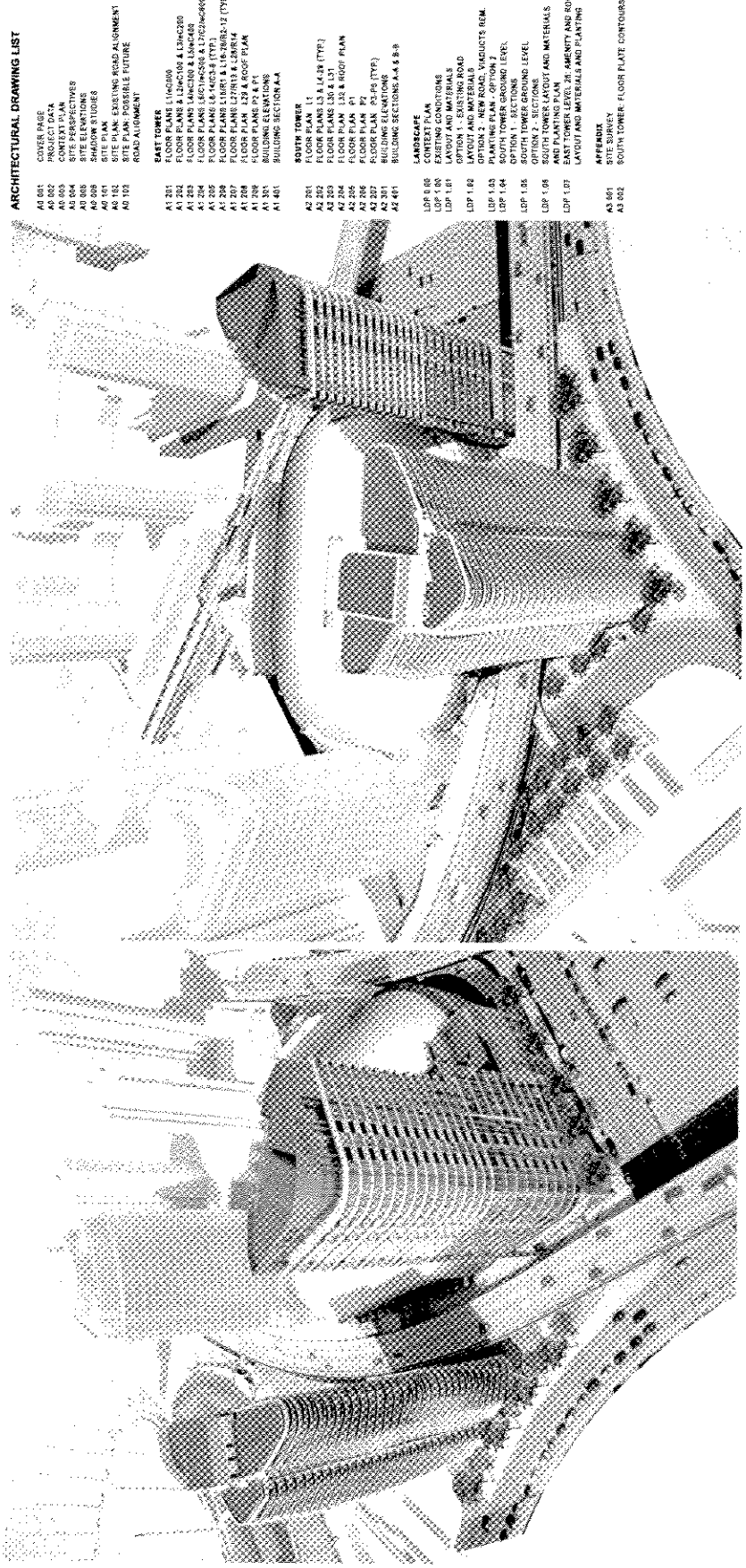
Staff response: This application is required to meet LEED Gold and to register with the Canada Green Building Council (CaGBC). The applicant has submitted a LEED checklist indicating that they will achieve LEED Gold. Staff are seeking confirmation that registration has been undertaken. See Recommended Condition 1.7.

ROGERS ARENA TOWERS

150 PACIFIC BOULEVARD NORTH
LEGAL ADDRESS: LOT 221, D.L. FC, LMP 12038



AQUILINI



ARCHITECTURAL DRAWING LIST

- A0 001 COVER PAGE
- A0 002 PROJECT DATA
- A0 003 CONTEXT PLAN
- A0 004 SITE PLAN
- A0 005 SITE ELEVATIONS
- A0 006 SHADOW STUDIES
- A0 007 SITE PLAN - EXISTING ROAD ALIGNMENT
- A0 101 SITE PLAN - POSSIBLE FUTURE ROAD ALIGNMENT
- A0 102 ROAD ALIGNMENT
- A1 201 EAST TOWER
- A1 202 FLOOR PLANS 11-14C/100
- A1 203 FLOOR PLANS 15-18C/100 & LANCEDOS
- A1 204 FLOOR PLANS 19-22C/100 & LANCEDOS
- A1 205 FLOOR PLANS 23-26C/100 (TYPE 1)
- A1 206 FLOOR PLANS 27-30C/100 & LANCEDOS
- A1 207 FLOOR PLANS 31-34C/100 & LANCEDOS
- A1 208 FLOOR PLANS 35-38C/100 & LANCEDOS
- A1 209 FLOOR PLANS 39-42C/100 & LANCEDOS
- A1 301 SOUTH TOWER
- A1 302 FLOOR PLANS 11
- A1 303 FLOOR PLANS 12-14B (TYPE 1)
- A1 304 FLOOR PLANS 15-18B (TYPE 1)
- A1 305 FLOOR PLANS 19-22B (TYPE 1)
- A1 306 FLOOR PLANS 23-26B (TYPE 1)
- A1 307 FLOOR PLANS 27-30B (TYPE 1)
- A1 308 FLOOR PLANS 31-34B (TYPE 1)
- A1 309 FLOOR PLANS 35-38B (TYPE 1)
- A1 310 FLOOR PLANS 39-42B (TYPE 1)
- A1 401 BUILDING ELEVATIONS
- A2 201 LANDSCAPE
- A2 202 CONTEXT PLAN
- A2 203 EXISTING CONDITIONS
- A2 204 LAYOUT AND MATERIALS
- A2 205 LAYOUT AND MATERIALS
- A2 206 OPTION 1 - NEW ROAD, VARIANTS REAL
- A2 207 PLANTING PLAN - OPTION 1
- A2 208 OPTION 1 - SECTIONS
- A2 209 SOUTH TOWER GRADING LEVEL
- A2 210 OPTION 2 - SECTIONS
- A2 211 OPTION 2 - SECTIONS
- A2 212 OPTION 2 - SECTIONS
- A2 213 SOUTH TOWER GRADING LEVEL
- A2 214 OPTION 2 - SECTIONS
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- A2 216 SOUTH TOWER GRADING LEVEL
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Rogers Arena
Towers

COVER PAGE

DATE: 11/11/11
SCALE: 1/8" = 1'-0"

PROJECT NO: 11-001

CLIENT: LMP

ARCHITECT: AQUILINI

NO: A0 001

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PROJECT INFORMATION

PROJECT NAME: ROGERS ARENA SOUTH AND EAST TOWER
CIVIL ADDRESS: 150 PACIFIC BULLWATER NORTH, WASHINGTON, NC
LEGAL ADDRESS: 150 PACIFIC BL. N. CLAP 10000
LAND USE ZONING: C-2
SITE AREA: 10,000 SQ. FT.
BUILDING HEIGHT: 100 FT.
MAX. HEIGHT: 100 FT.
MAX. GROUND TO TOP OF TOWER: 100 FT.

Table with columns for various project details and specifications, including site area, building height, and zoning information.

Table showing project information, including project name, address, zoning, and various technical specifications and notes.

Table with columns for 'EXISTING USE OF SITE' and 'PROJECT DESCRIPTION', detailing site conditions and proposed building features.

EXISTING USE OF SITE

THE EXISTING APPROVED USE FOR THE SITE, AS OBTAINED IN CD-1 (P1) BY LAMP TRACT SECTION 3 AND...
ON EXISTING RESIDENTIAL LOTS...
ON EXISTING LOTS...
ON EXISTING LOTS...
ON EXISTING LOTS...

PROJECT DESCRIPTION

EAST TOWER
32 STORIES ABOVE GROUND
LEVEL 1 INCLUDES LIFTING UNOCCUPIED EXISTING ARENA ANNEX (FOOTPRINT)
LEVEL 2 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 3 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 4 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 5 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 6 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 7 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 8 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 9 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 10 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 11 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 12 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 13 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 14 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 15 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 16 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 17 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 18 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 19 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 20 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 21 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 22 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 23 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 24 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 25 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 26 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 27 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 28 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 29 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 30 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 31 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER
LEVEL 32 IS AN UNOCCUPIED LOBBY & VERTICAL ACCESS TO RESIDENTIAL TOWER

SOUTH PLAZA

THE PLAZA IS COMPOSED OF SEVERAL LAYERS INCLUDING NEW ARENA ACCESS STAIRS AND WALKWAYS...
THE PLAZA IS COMPOSED OF SEVERAL LAYERS INCLUDING NEW ARENA ACCESS STAIRS AND WALKWAYS...
THE PLAZA IS COMPOSED OF SEVERAL LAYERS INCLUDING NEW ARENA ACCESS STAIRS AND WALKWAYS...
THE PLAZA IS COMPOSED OF SEVERAL LAYERS INCLUDING NEW ARENA ACCESS STAIRS AND WALKWAYS...

Rogers Arena - South and West Towers

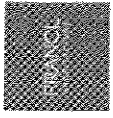
LEED Canada NC 2009 Summary Scorecard

Table showing LEED Canada NC 2009 Summary Scorecard with columns for various categories and scores.

Rogers Arena Towers

LEED Accredited Performance

Table showing LEED Accredited Performance with columns for various categories and scores.



Rogers Arena
Towers

CONTEXT PLAN

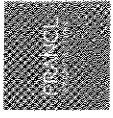
PROJECT NO. 1000000000
DATE 01/11/11
SCALE 1/8" = 1'-0"



A0 003

1 CONTEXT PLAN
Scale: 1/8" = 1'-0"



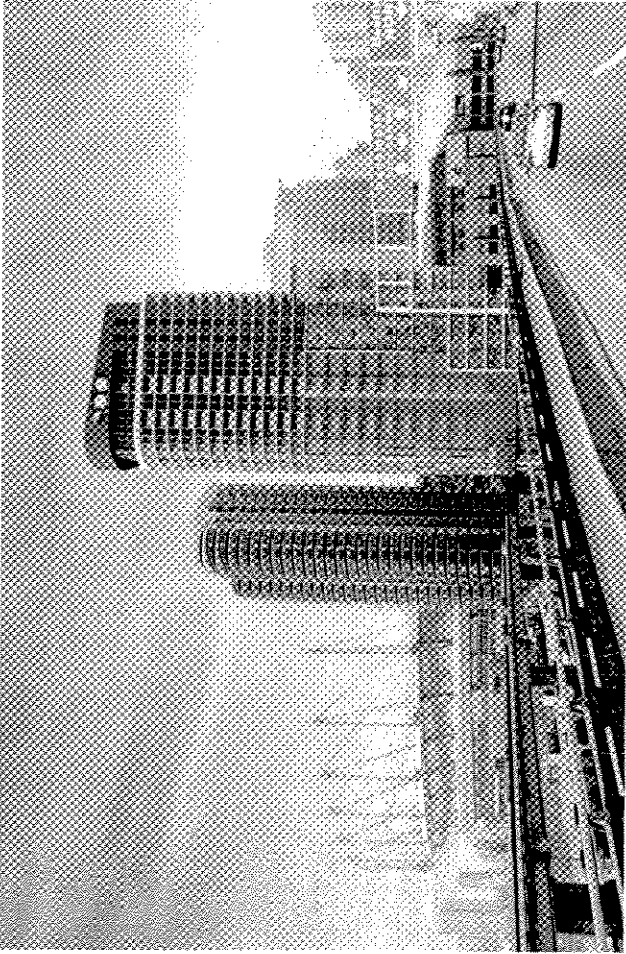


Rogers Arena
Towers

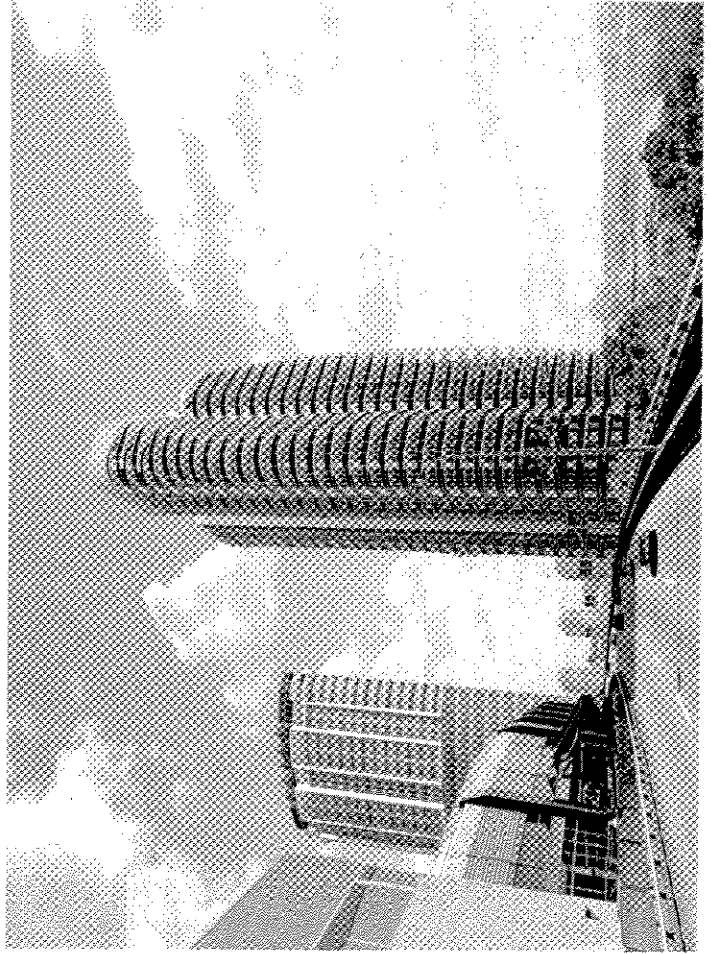
NOTE: PERMITS REQUIRED

Project No. AD 004
Date: 01/11/2016
Scale: 1:100

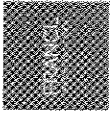
AD 004



① Site Perspective From Market



② Site Perspective From Market

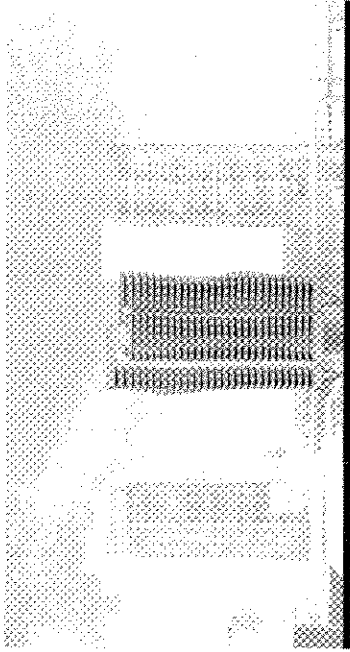


Rogers Arena Towers

W/E ELEVATIONS

Project Name	Rogers Arena Towers
Project No.	1114
Scale	1/8" = 1'-0"
Date	11/12/12
Drawn By	J. [Name]
Checked By	[Name]
Approved By	[Name]

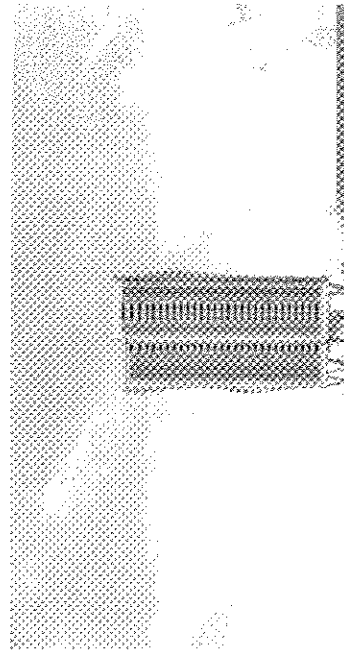
A0 005



④ SOUTH TOWER, South Elevation
Scale: 1/8" = 1'-0"



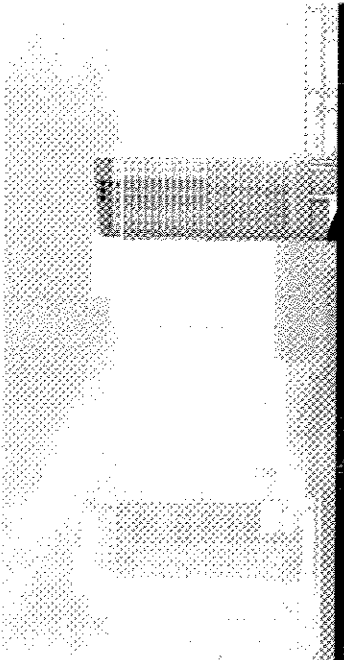
⑤ SOUTH TOWER, West Elevation
Scale: 1/8" = 1'-0"



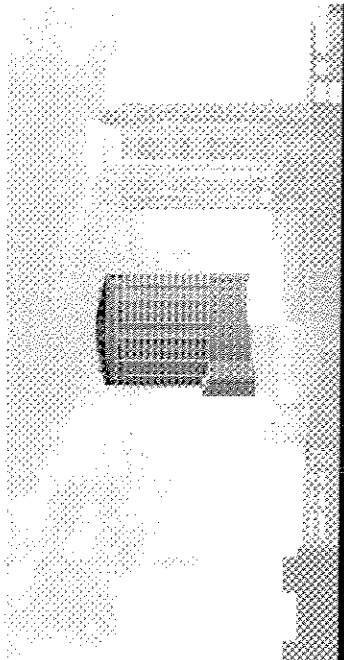
⑥ SOUTH TOWER, North Elevation
Scale: 1/8" = 1'-0"



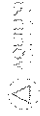
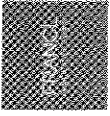
① EAST TOWER, East Elevation
Scale: 1/8" = 1'-0"



② EAST TOWER, South Elevation
Scale: 1/8" = 1'-0"



③ EAST TOWER, North-West Elevation
Scale: 1/8" = 1'-0"

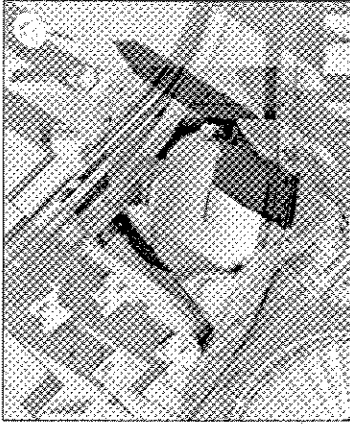


Rogers Arena
Towers

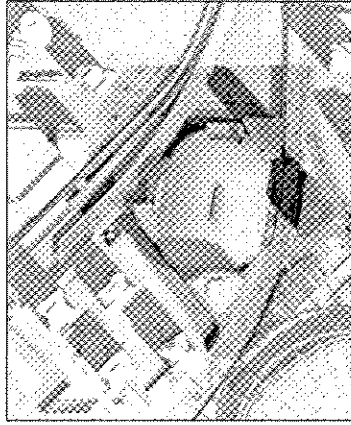
Project Name

Project No.
Project Date
Project Location
Project Status
Project Manager
Project Engineer
Project Designer
Project Checker
Project Approver

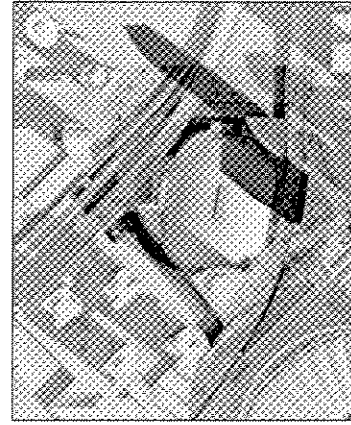
A0 006



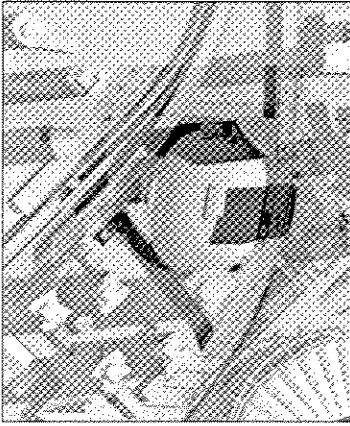
March 20 - 2:00 pm
PT



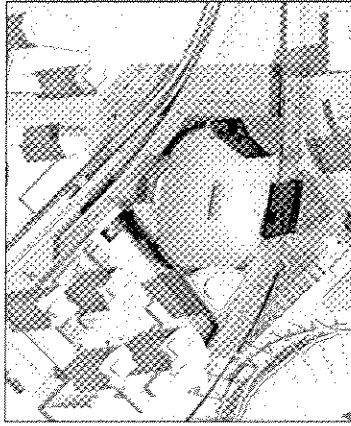
March 20 - 2:00 pm
PT



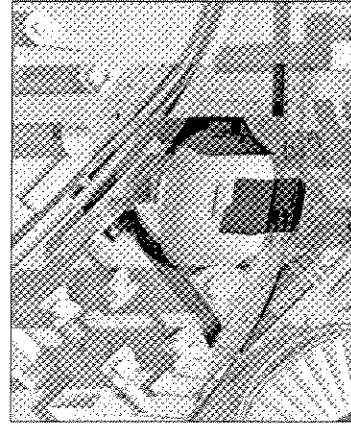
September 22 - 2:00 pm
PT



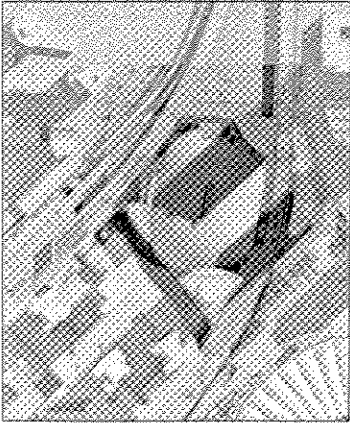
March 20 - 12:00 pm
PT



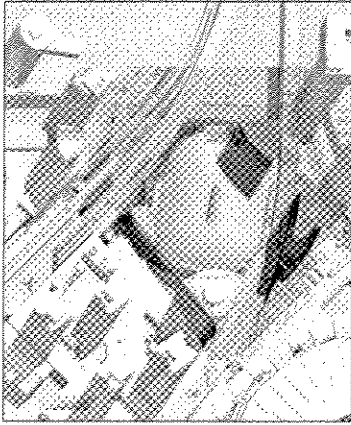
June 20 - 12:00 pm
PT



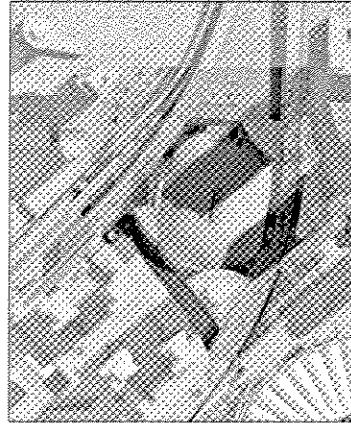
September 22 - 12:00 pm
PT



March 20 - 10:00 am
PT

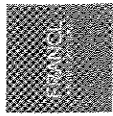


June 20 - 10:00 am
PT



September 22 - 10:00 am
PT

Appendix E ; page 6 of 20



Rogers Arena
Towers

SITE PLAN

DATE: 11/14/11

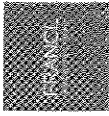
PROJECT: ROGERS ARENA TOWERS

SCALE: AS SHOWN

AD 101



Appendix E; page 7 of 20

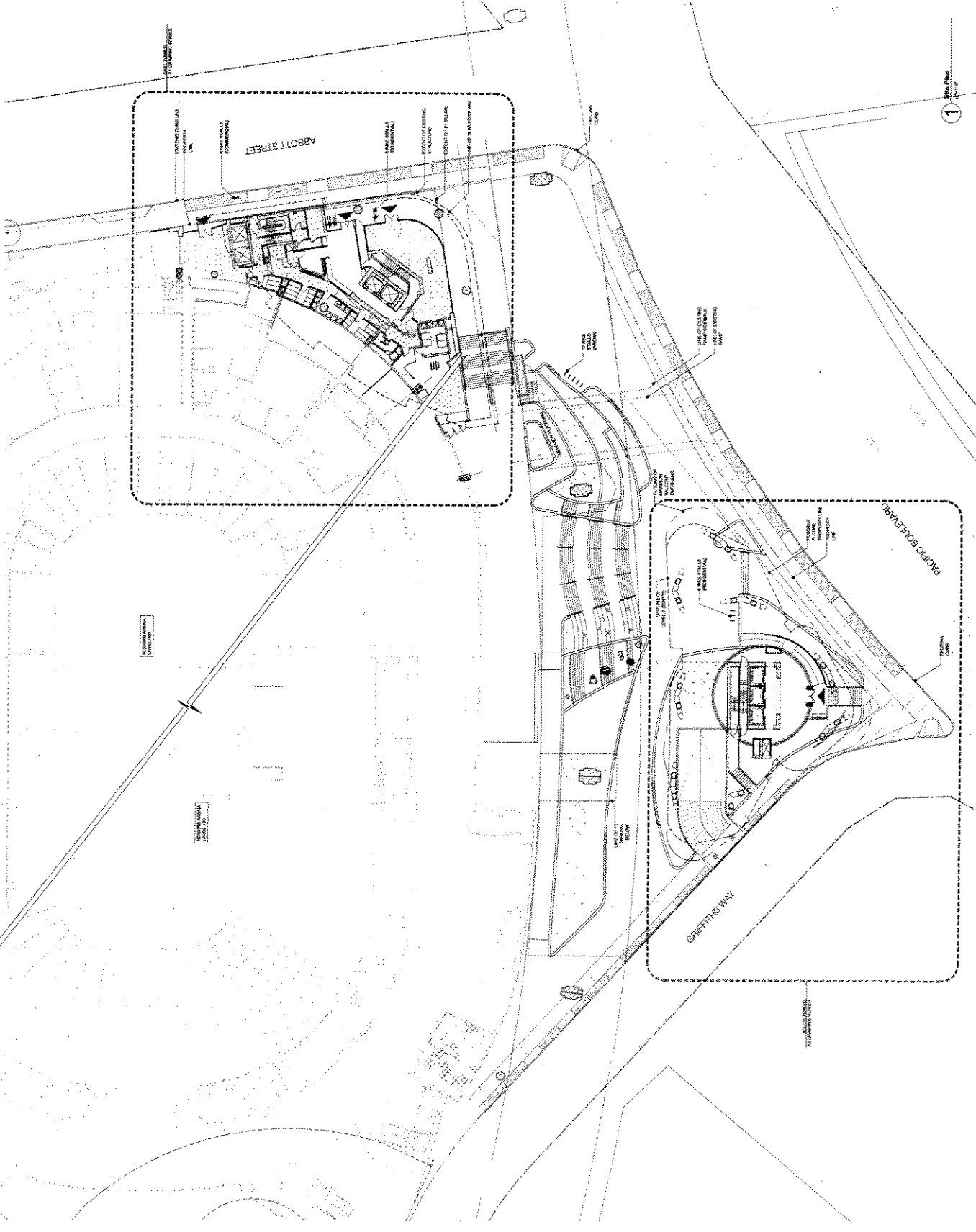


Rogers Arena Towers

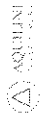
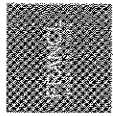
DATE PLAN
CURRENT ROAD ALIGNMENT



A0 102

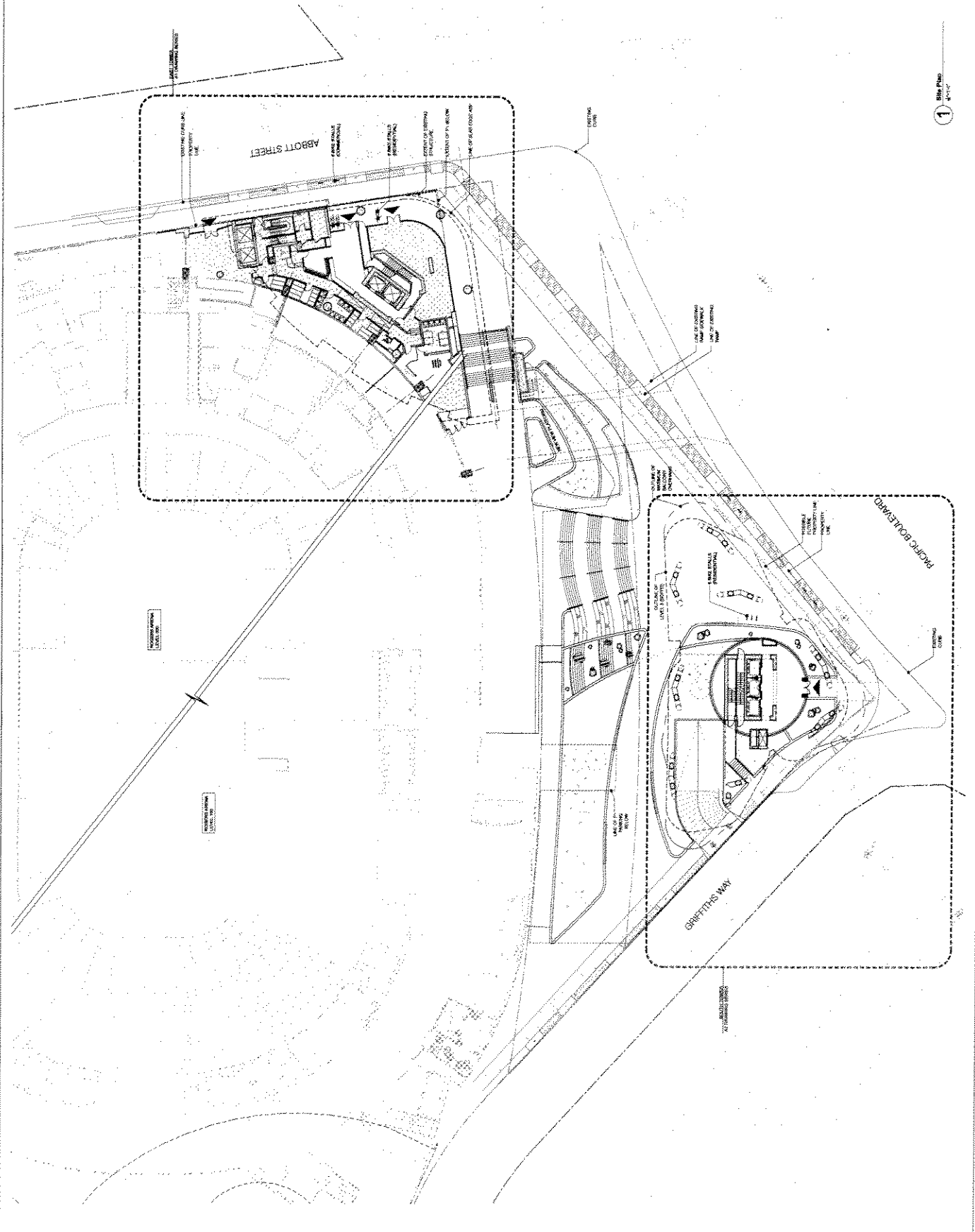


Appendix e ; page 8 of 20



Rogers Arena Towers

SITE PLAN PROPOSED FUTURE HOUSING ALLOCATION	
DATE: 2014	SCALE: 1:1000
PROJECT NO: AD 103	CLIENT: [illegible]
DESIGNER: [illegible]	APPROVED: [illegible]



1 SITE PLAN
4" x 10"



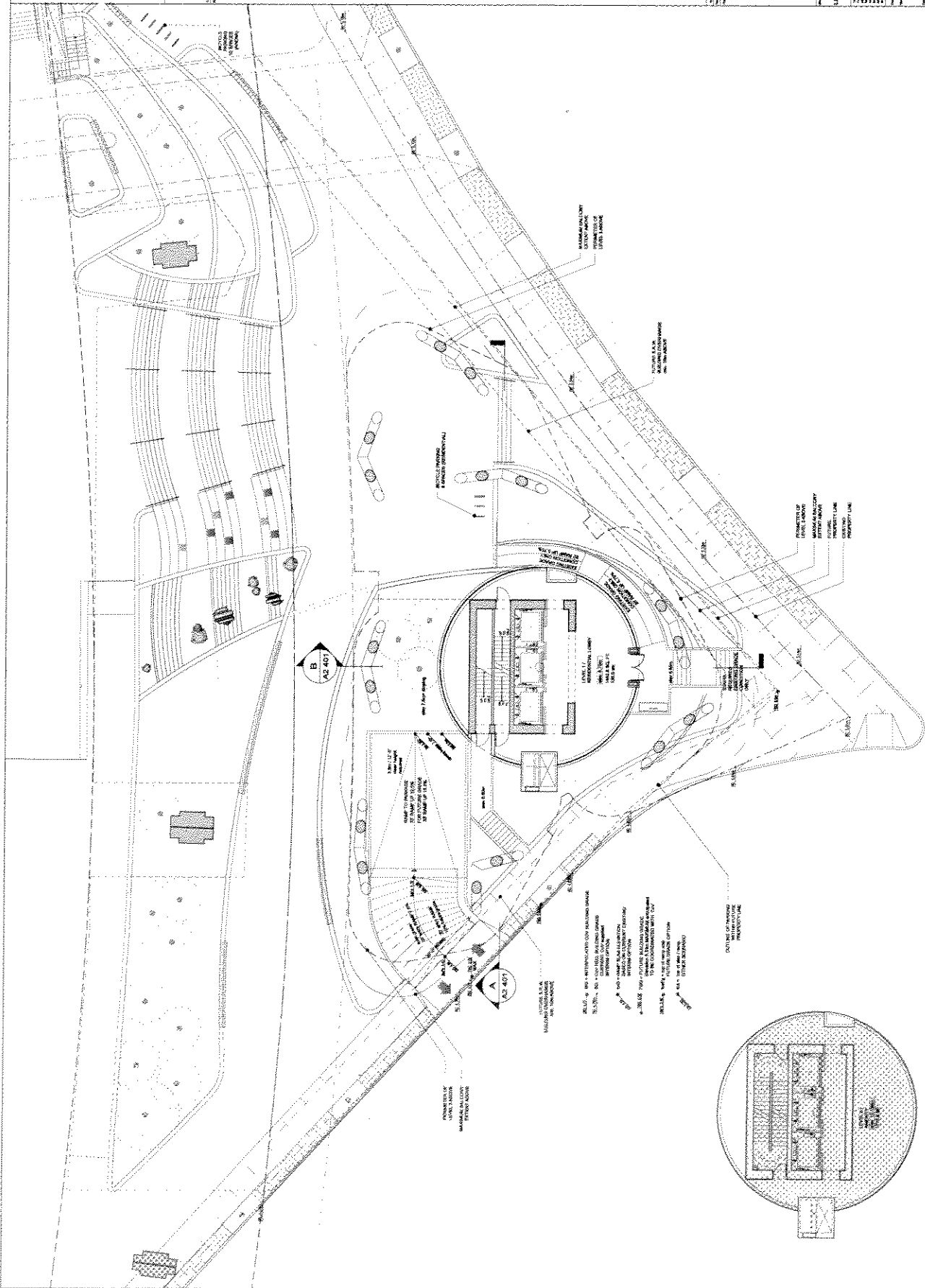
Rogers Arena
Towers
SOUTH TOWER

FLOOR PLAN
LEVEL 101 - RECREATION LOBBY

DATE: 01/20/2017
PROJECT: ROGERS ARENA
DRAWING NO: A2 201
SCALE: AS SHOWN

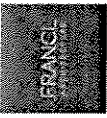


A2 201



1 Level 101 - RECREATION LOBBY

2 Level 102 - AMENITY

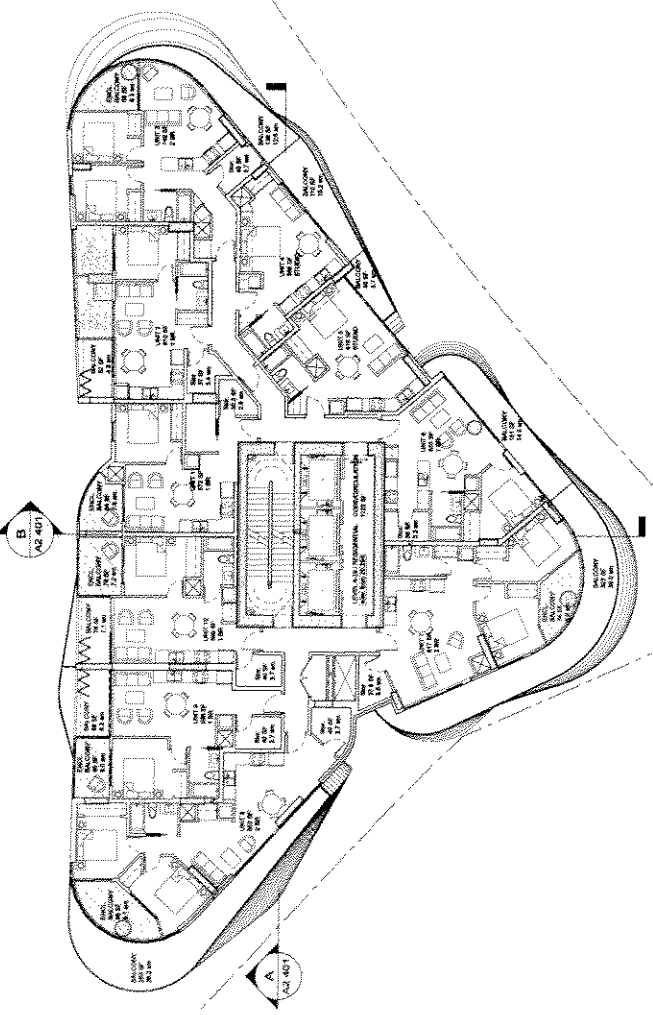


Rogers Arena
Towers
SOUTH TOWER

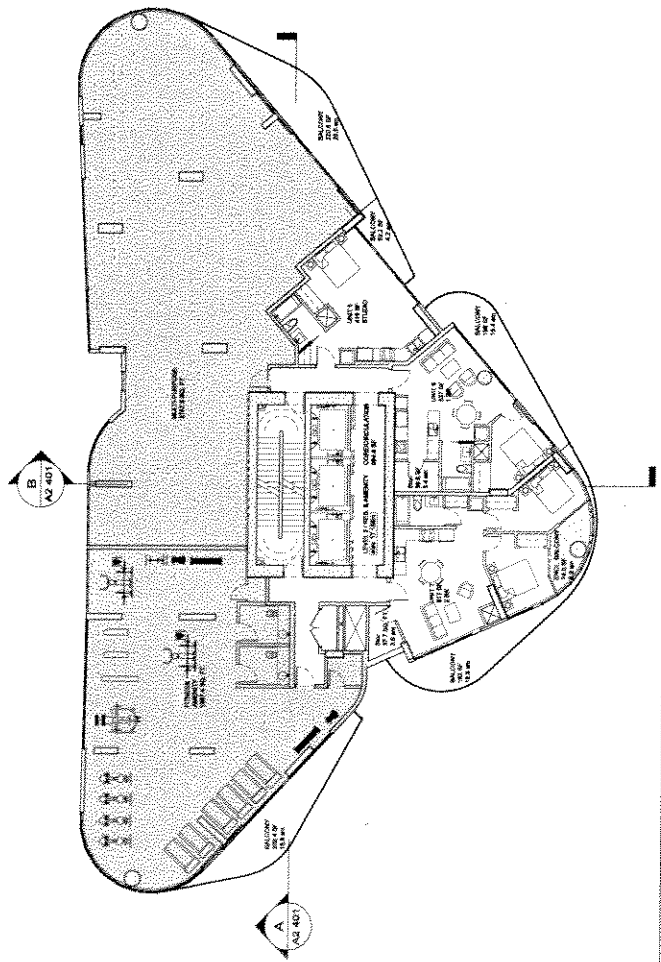
FLOOR PLAN
LEVEL 3.0 & 3.25 (TYP)



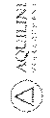
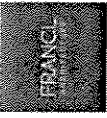
A2 202



2 Level 3.0 & 3.25 (TYP)

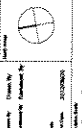


1 Level 3.0 & 3.25 (TYP)



Rogers Arena
Towers
SOUTH TOWER

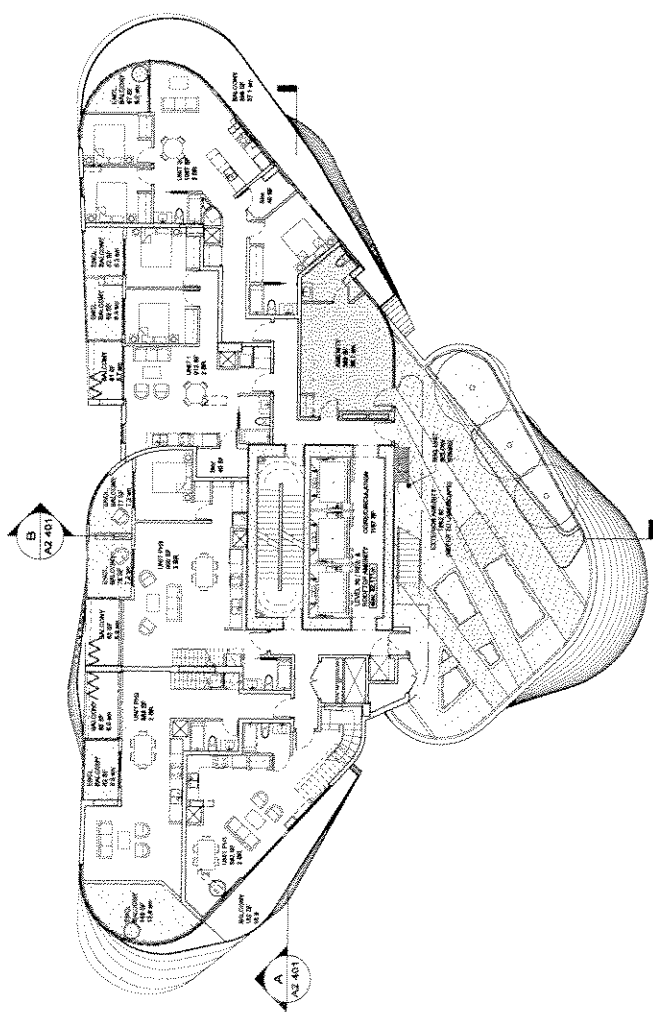
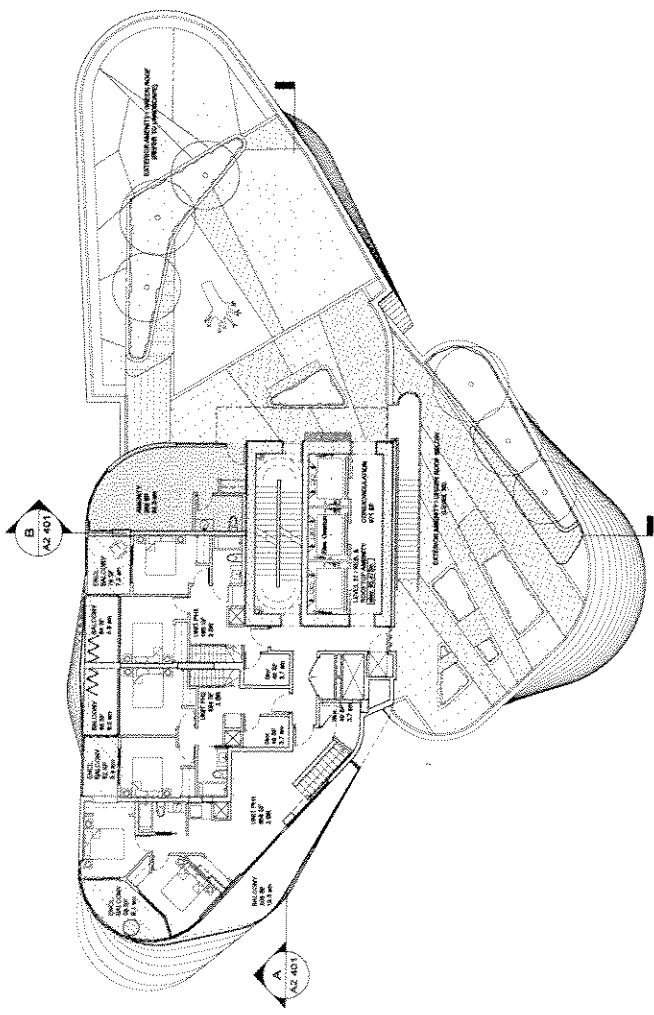
PROJECT NO. 1000000000
DATE 10/15/10

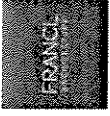


Sheet No. AZ 203

2 Level L2K
Part 1

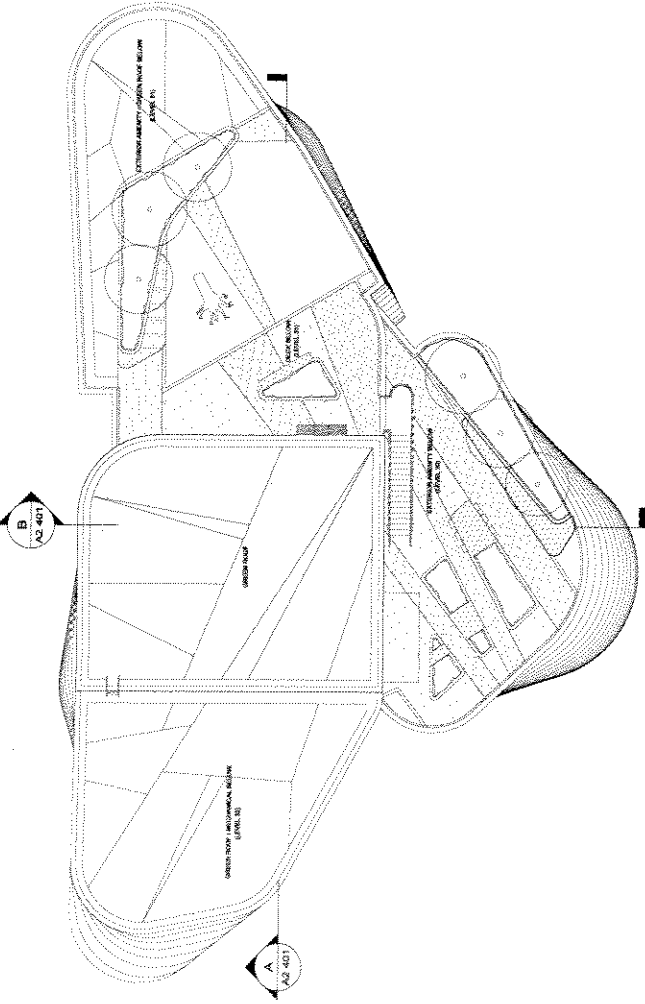
1 Level L2K
Part 2



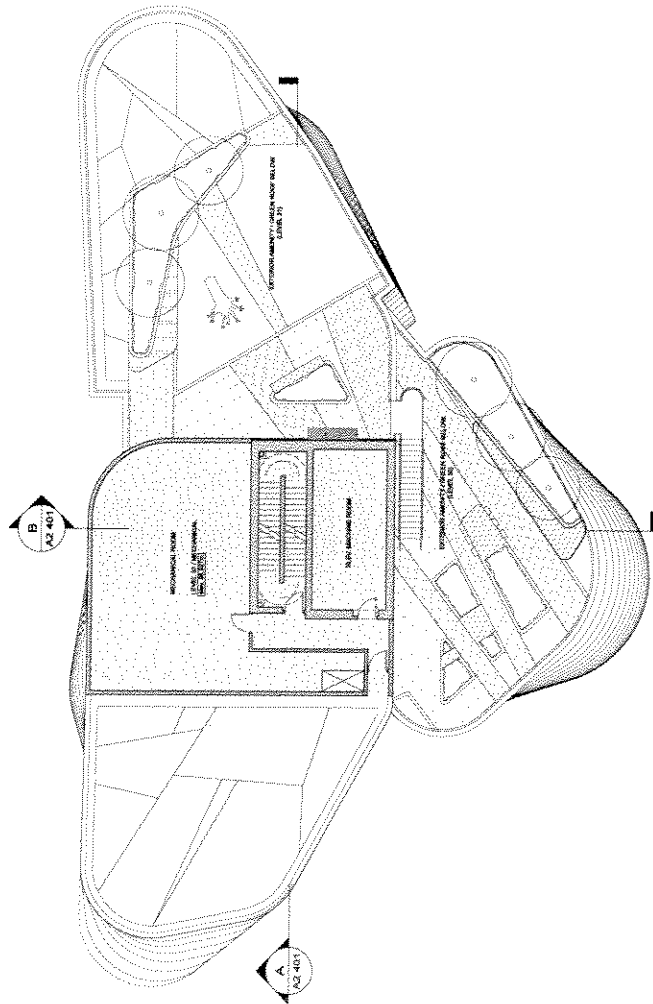


Rogers Arena
Towers
SOUTH TOWER

Project Name	Rogers Arena Towers South Tower
Project No.	A2 204
Scale	1/4" = 1'-0"
Sheet No.	1
Revision	
Author	
Checked	
Drawn	
Approved	
Date	

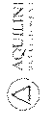
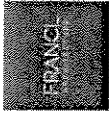


2 Level 204
Part 2



1 Level 204
Part 1

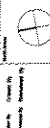
Appendix E; page 13 of 20



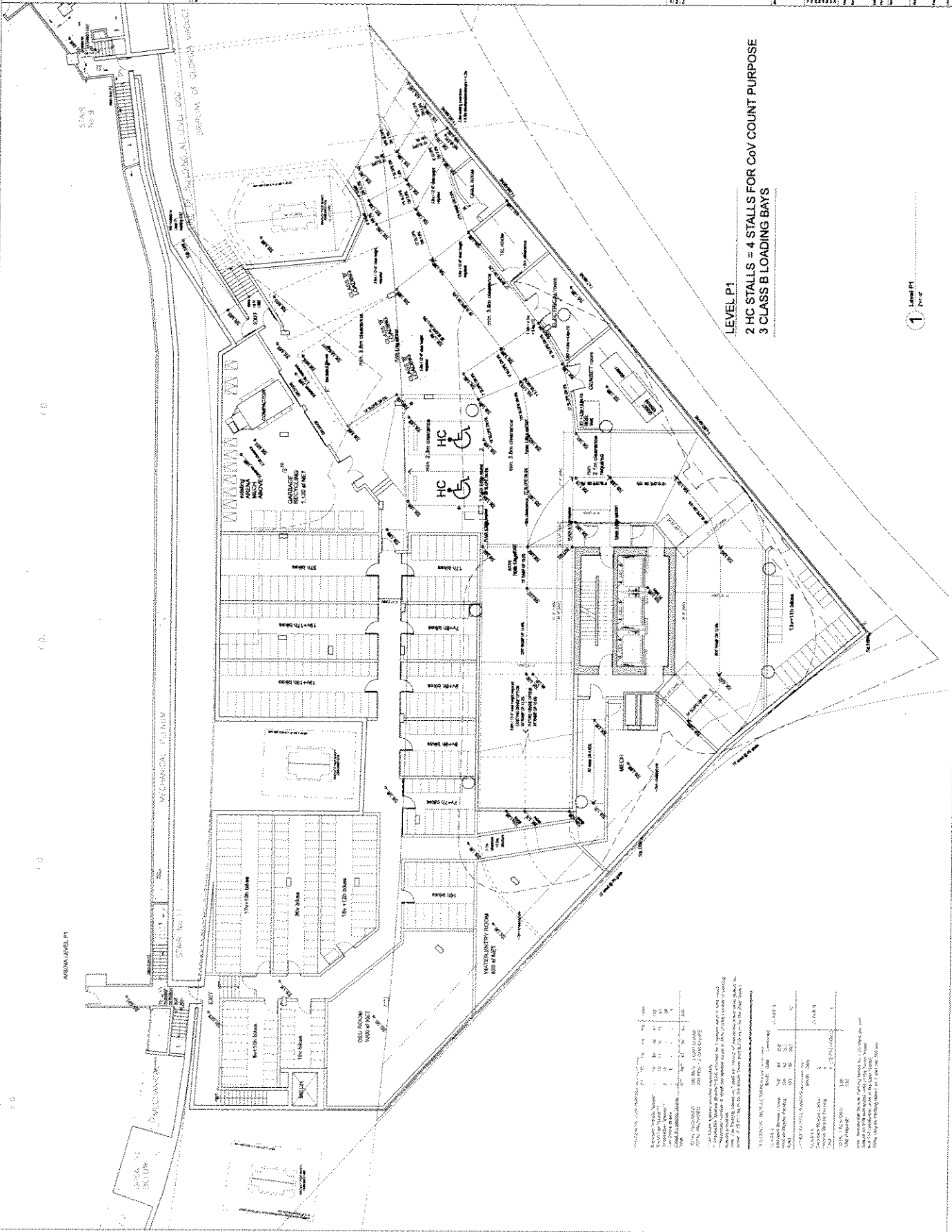
Rogers Arena
Towers
SOUTH TOWER

CLASS PLAN
LEVEL P1

Scale: 1/8" = 1'-0"
Date: 10/15/2019
Project: Rogers Arena Towers South Tower



Sheet: A2 205
Total Sheets: 205

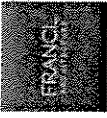


LEVEL P1
2 HC STALLS = 4 STALLS FOR COY COUNT PURPOSE
3 CLASS B LOADING BAYS

1 Level P1

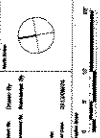
MECHANICAL ROOMS

Room No.	Area (sq ft)	Volume (cu ft)	Notes
MECH 101	100	1000	MECHANICAL ROOM
MECH 102	100	1000	MECHANICAL ROOM
MECH 103	100	1000	MECHANICAL ROOM
MECH 104	100	1000	MECHANICAL ROOM
MECH 105	100	1000	MECHANICAL ROOM
MECH 106	100	1000	MECHANICAL ROOM
MECH 107	100	1000	MECHANICAL ROOM
MECH 108	100	1000	MECHANICAL ROOM
MECH 109	100	1000	MECHANICAL ROOM
MECH 110	100	1000	MECHANICAL ROOM
MECH 111	100	1000	MECHANICAL ROOM
MECH 112	100	1000	MECHANICAL ROOM
MECH 113	100	1000	MECHANICAL ROOM
MECH 114	100	1000	MECHANICAL ROOM
MECH 115	100	1000	MECHANICAL ROOM
MECH 116	100	1000	MECHANICAL ROOM
MECH 117	100	1000	MECHANICAL ROOM
MECH 118	100	1000	MECHANICAL ROOM
MECH 119	100	1000	MECHANICAL ROOM
MECH 120	100	1000	MECHANICAL ROOM
MECH 121	100	1000	MECHANICAL ROOM
MECH 122	100	1000	MECHANICAL ROOM
MECH 123	100	1000	MECHANICAL ROOM
MECH 124	100	1000	MECHANICAL ROOM
MECH 125	100	1000	MECHANICAL ROOM
MECH 126	100	1000	MECHANICAL ROOM
MECH 127	100	1000	MECHANICAL ROOM
MECH 128	100	1000	MECHANICAL ROOM
MECH 129	100	1000	MECHANICAL ROOM
MECH 130	100	1000	MECHANICAL ROOM
MECH 131	100	1000	MECHANICAL ROOM
MECH 132	100	1000	MECHANICAL ROOM
MECH 133	100	1000	MECHANICAL ROOM
MECH 134	100	1000	MECHANICAL ROOM
MECH 135	100	1000	MECHANICAL ROOM
MECH 136	100	1000	MECHANICAL ROOM
MECH 137	100	1000	MECHANICAL ROOM
MECH 138	100	1000	MECHANICAL ROOM
MECH 139	100	1000	MECHANICAL ROOM
MECH 140	100	1000	MECHANICAL ROOM
MECH 141	100	1000	MECHANICAL ROOM
MECH 142	100	1000	MECHANICAL ROOM
MECH 143	100	1000	MECHANICAL ROOM
MECH 144	100	1000	MECHANICAL ROOM
MECH 145	100	1000	MECHANICAL ROOM
MECH 146	100	1000	MECHANICAL ROOM
MECH 147	100	1000	MECHANICAL ROOM
MECH 148	100	1000	MECHANICAL ROOM
MECH 149	100	1000	MECHANICAL ROOM
MECH 150	100	1000	MECHANICAL ROOM
MECH 151	100	1000	MECHANICAL ROOM
MECH 152	100	1000	MECHANICAL ROOM
MECH 153	100	1000	MECHANICAL ROOM
MECH 154	100	1000	MECHANICAL ROOM
MECH 155	100	1000	MECHANICAL ROOM
MECH 156	100	1000	MECHANICAL ROOM
MECH 157	100	1000	MECHANICAL ROOM
MECH 158	100	1000	MECHANICAL ROOM
MECH 159	100	1000	MECHANICAL ROOM
MECH 160	100	1000	MECHANICAL ROOM
MECH 161	100	1000	MECHANICAL ROOM
MECH 162	100	1000	MECHANICAL ROOM
MECH 163	100	1000	MECHANICAL ROOM
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MECH 165	100	1000	MECHANICAL ROOM
MECH 166	100	1000	MECHANICAL ROOM
MECH 167	100	1000	MECHANICAL ROOM
MECH 168	100	1000	MECHANICAL ROOM
MECH 169	100	1000	MECHANICAL ROOM
MECH 170	100	1000	MECHANICAL ROOM
MECH 171	100	1000	MECHANICAL ROOM
MECH 172	100	1000	MECHANICAL ROOM
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MECH 174	100	1000	MECHANICAL ROOM
MECH 175	100	1000	MECHANICAL ROOM
MECH 176	100	1000	MECHANICAL ROOM
MECH 177	100	1000	MECHANICAL ROOM
MECH 178	100	1000	MECHANICAL ROOM
MECH 179	100	1000	MECHANICAL ROOM
MECH 180	100	1000	MECHANICAL ROOM
MECH 181	100	1000	MECHANICAL ROOM
MECH 182	100	1000	MECHANICAL ROOM
MECH 183	100	1000	MECHANICAL ROOM
MECH 184	100	1000	MECHANICAL ROOM
MECH 185	100	1000	MECHANICAL ROOM
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MECH 188	100	1000	MECHANICAL ROOM
MECH 189	100	1000	MECHANICAL ROOM
MECH 190	100	1000	MECHANICAL ROOM
MECH 191	100	1000	MECHANICAL ROOM
MECH 192	100	1000	MECHANICAL ROOM
MECH 193	100	1000	MECHANICAL ROOM
MECH 194	100	1000	MECHANICAL ROOM
MECH 195	100	1000	MECHANICAL ROOM
MECH 196	100	1000	MECHANICAL ROOM
MECH 197	100	1000	MECHANICAL ROOM
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MECH 199	100	1000	MECHANICAL ROOM
MECH 200	100	1000	MECHANICAL ROOM

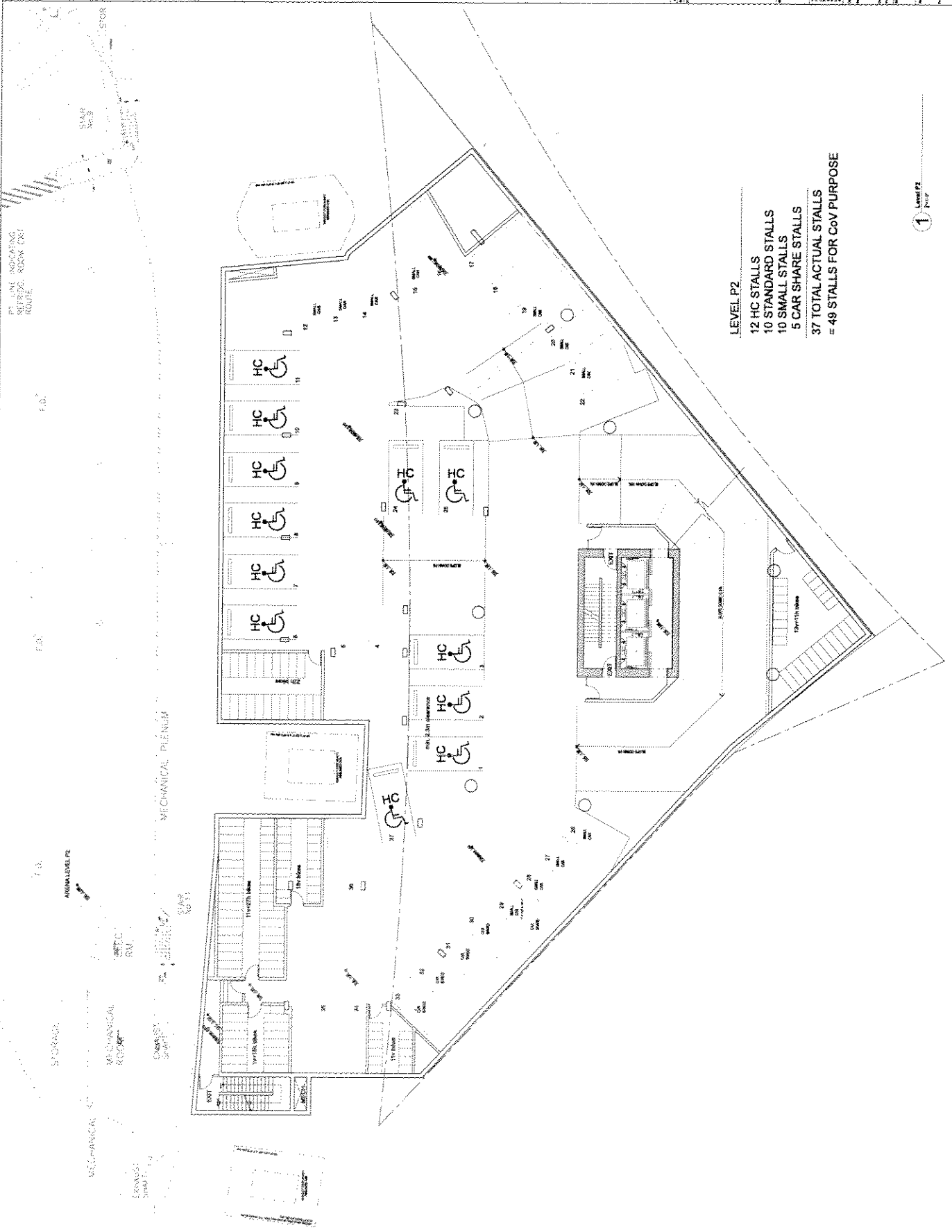


Rogers Arena
Towers
SOUTH TOWER

FLOOR PLAN
LEVEL P2

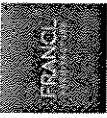


Project No. AZ 206



LEVEL P2
 12 HC STALLS
 10 STANDARD STALLS
 10 SMALL STALLS
 5 CAR SHARE STALLS
 37 TOTAL ACTUAL STALLS
 = 49 STALLS FOR COV PURPOSE

1 Level P2
Part

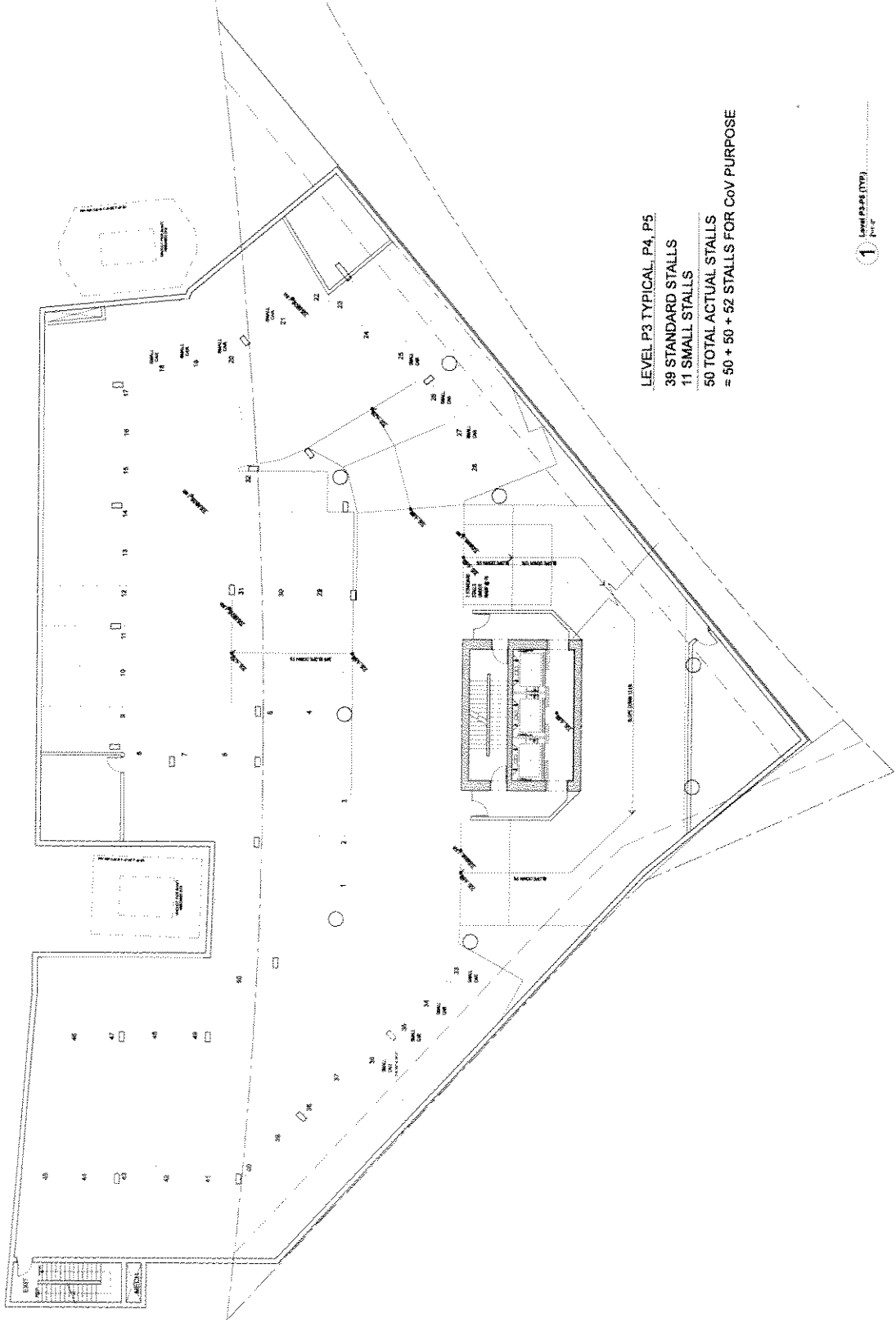


Rogers Arena
Towers
SOUTH TOWER

LEVEL P3-P5 (TYP)
LEVEL P3-P5 (TYP)

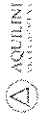
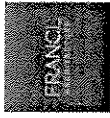


A2 207



LEVEL P3 TYPICAL, P4, P5
38 STANDARD STALLS
11 SMALL STALLS
50 TOTAL ACTUAL STALLS
= 50 + 50 + 52 STALLS FOR COV PURPOSE

1 Level P3-P5 (TYP)
1/8" = 1'-0"

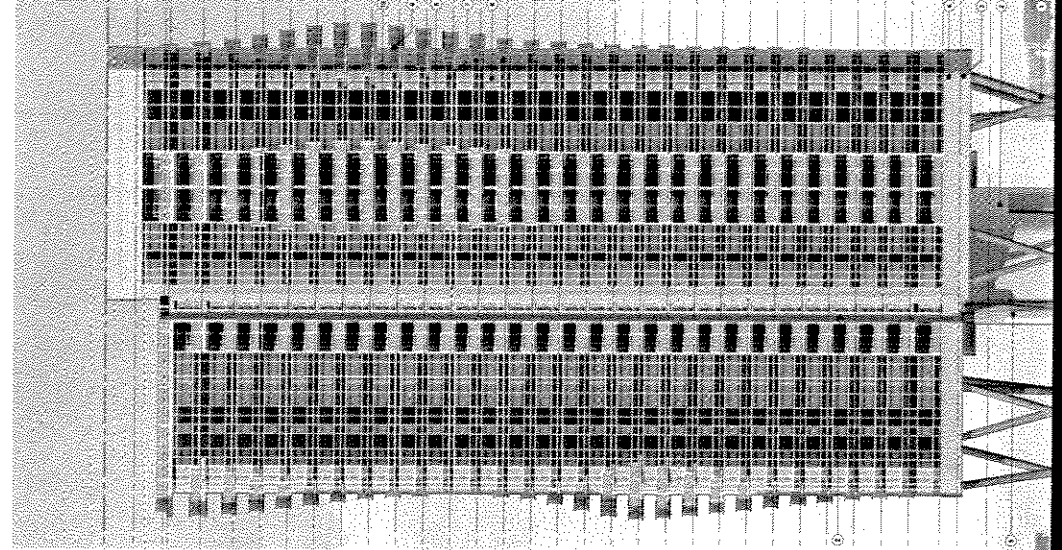
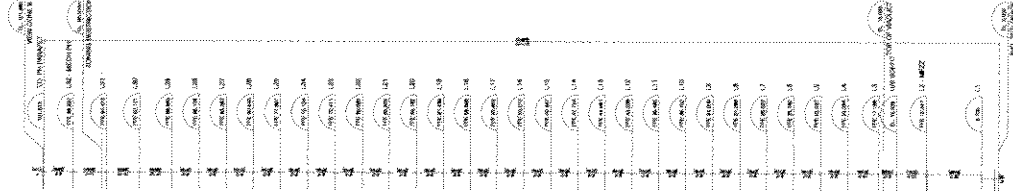


NATIONAL LEGAL OPINION
 PROJECT APPROVED BY
 THE ITALIAN ARCHITECTURAL BOARD
 FOR THE PROFESSION OF ARCHITECTS
 IN THE PROVINCE OF MILANO
 PROJECT NUMBER

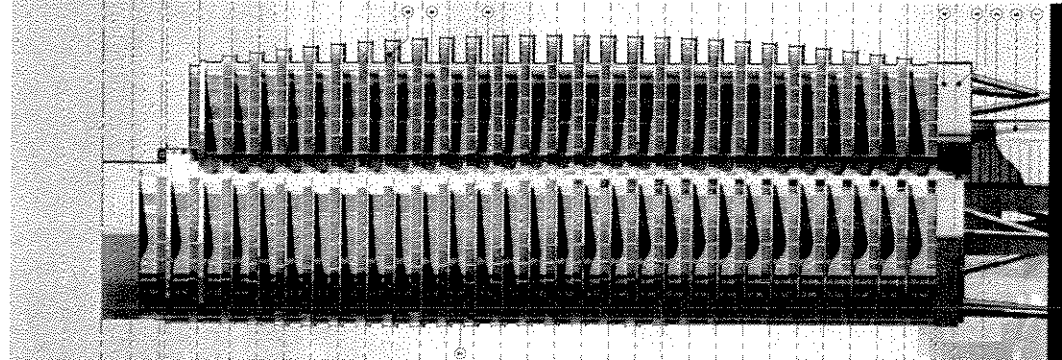
Rogers Arena
 Towers
 SOUTH TOWER

BUILDING ELEVATIONS
 Scale: 1:100
 Date: 2014

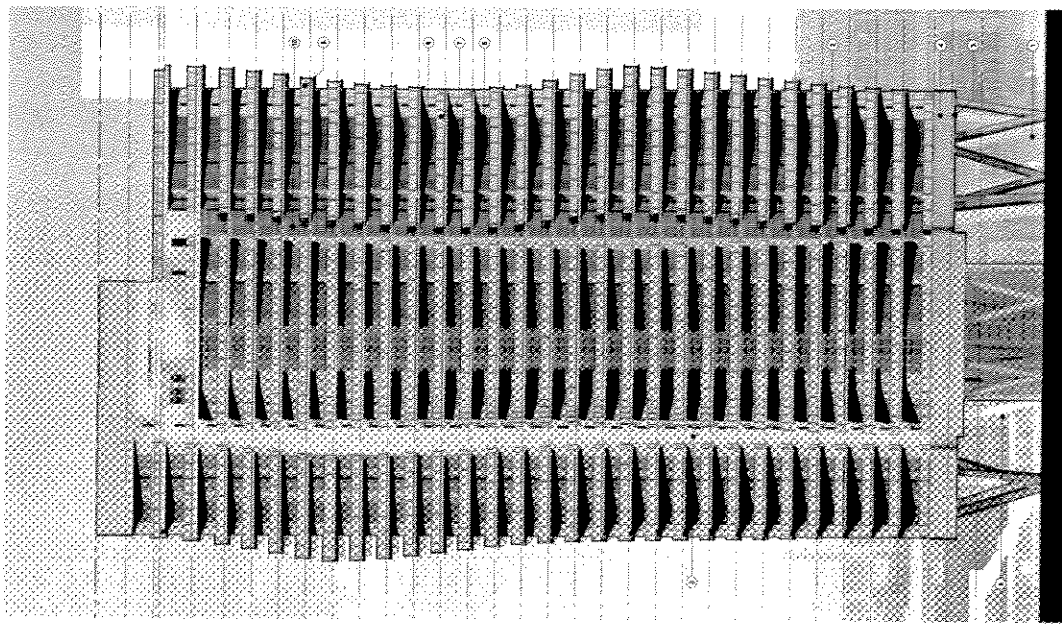
A2 301



1 North Elevation
1:100

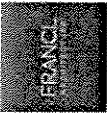


2 West Elevation
1:100



3 South Elevation
1:100

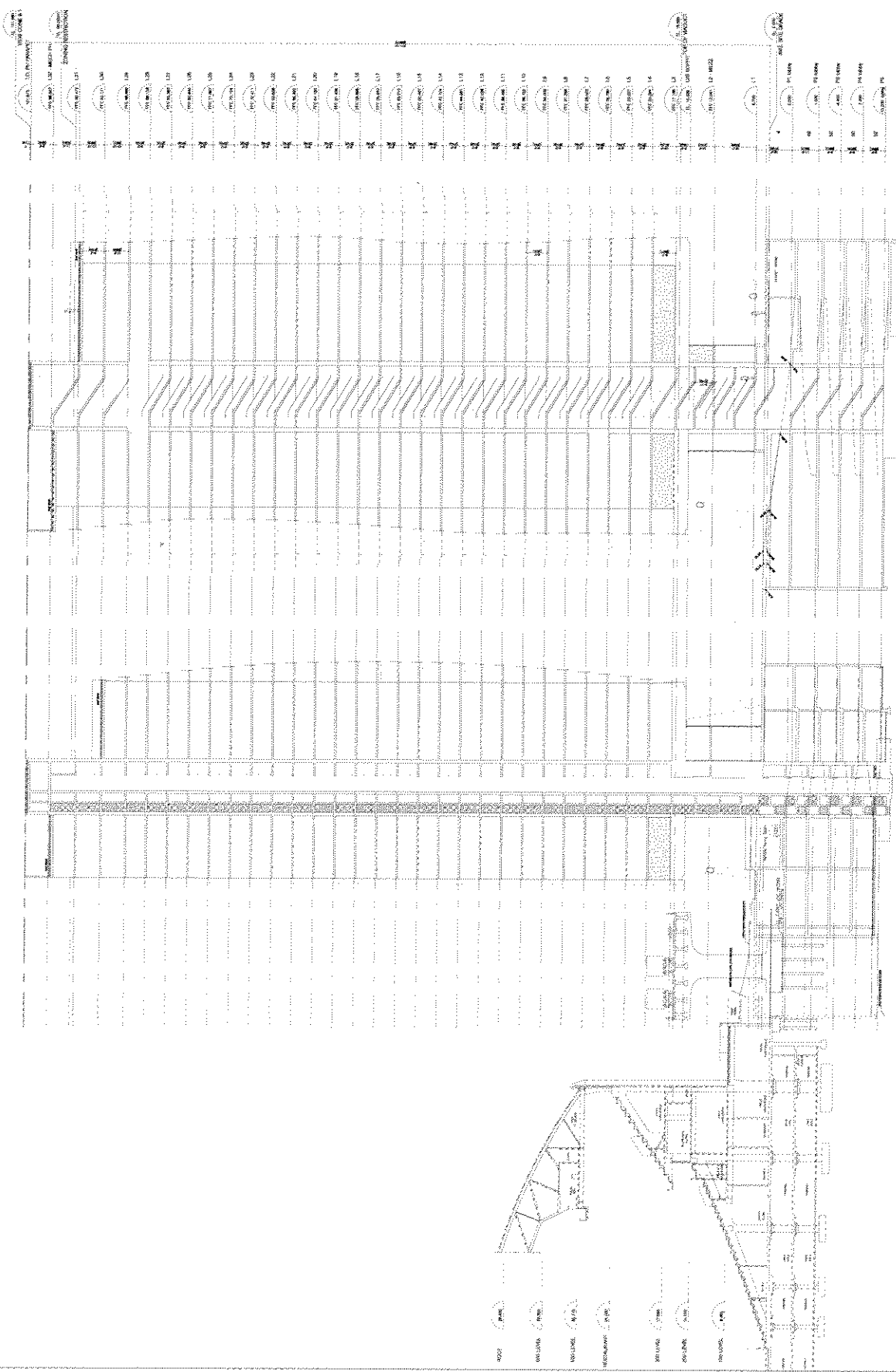
Appendix E; page n of n



Rogers Arena
Towers
SOUTH TOWER

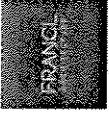
PLASTER CLAD
LEVEL: 01

A2 401



1 Building Section A-A
3/16"

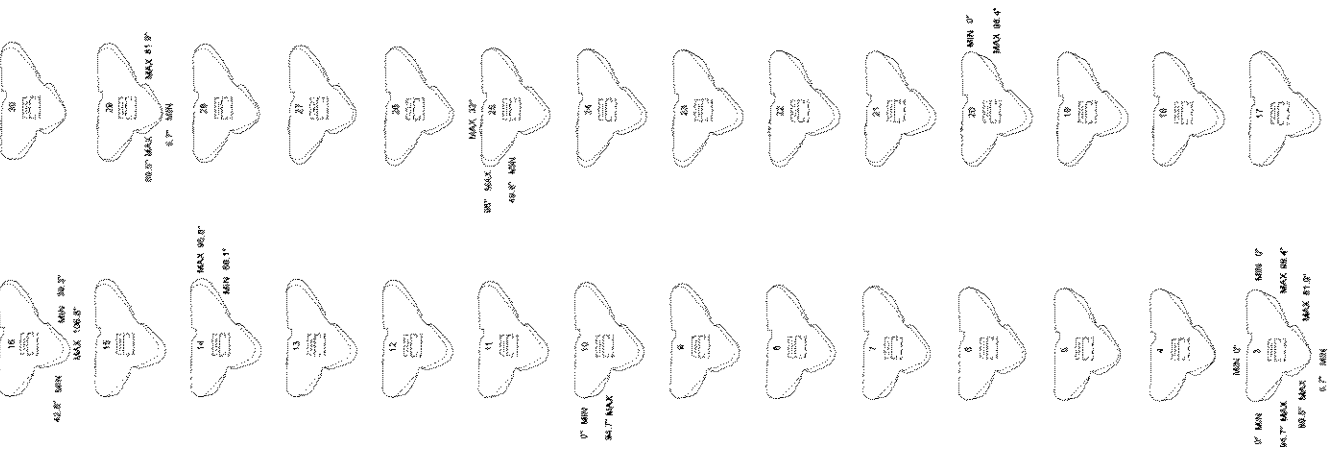
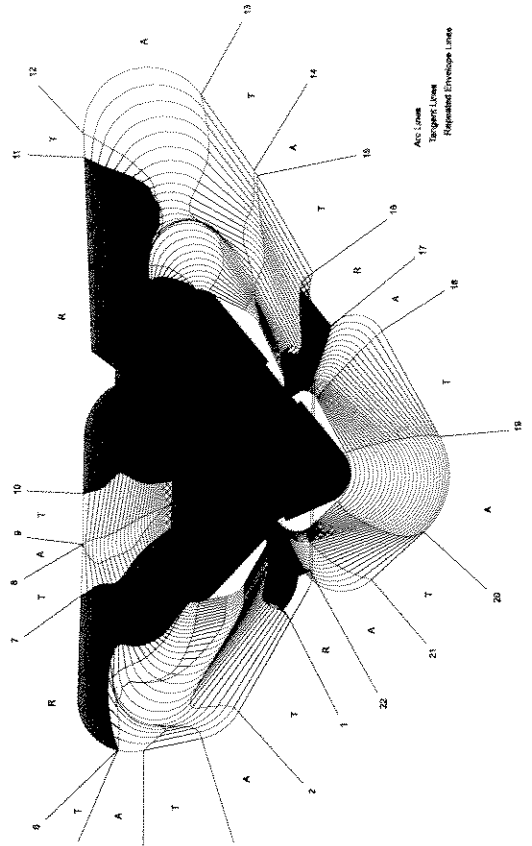
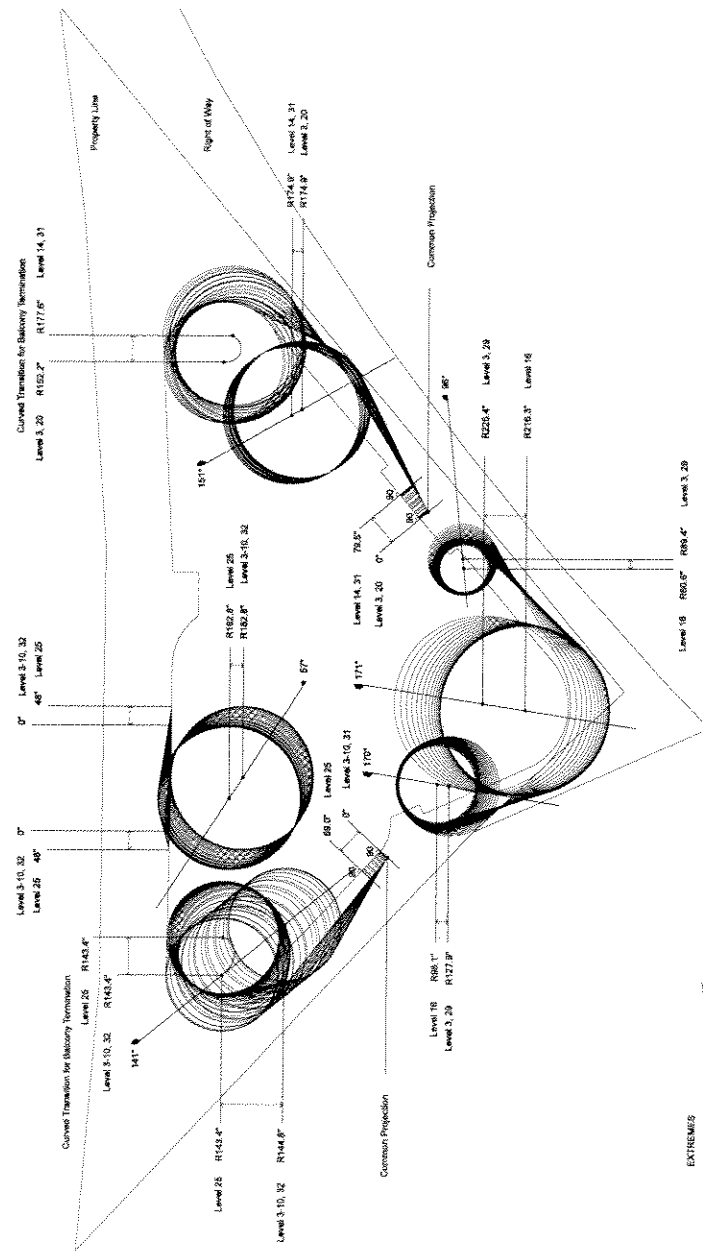
1 Building Section B-B
3/16"



Rogers Arena
Towers

FLOOR PLAN CONTIGUOUS

AS 002





Rogers Arena Towers

DATE	12/10/10
PROJECT	Rogers Arena Towers
CLIENT	City of Regina
SCALE	1:250
DRAWN BY	...
CHECKED BY	...
DATE	12/10/10

A3 001



SCALE: 1:250 DISTANCES ARE METERS

- ▲ EXISTING ELECTRICAL RACK
- EXISTING CABLE TRAY
- EXISTING MECHANICAL ROOM
- ✱ EXISTING LAMP STANDARD
- ✱ EXISTING TRAFFIC SIGNAL POLE
- ▲ EXISTING SIGNAGE POST

① Site Survey
1:1000

1.1 PROJECT PROPOSAL

Proposal

The rezoning of the Rogers Arena Site revised the Comprehensive District (CD-1) to include an increase in density, an increase in maximum building height and most importantly to allow residential use. Three towers are proposed featuring sustainable design and living at the heart of Vancouver's sports and entertainment district, where the proposed additional density will enhance activity throughout the day and bridge the significant gap between the downtown and the False Creek North Neighbourhood. This submission deals with the East and South Towers. The East Tower will be mixed use and the South Tower will be Residential only. All of the residential suites will be secured market rental owned and operated by Aquilini Development.

The proposed towers offer a mix of highly desirable suites, targeting professionals and people on the go, who seek an exciting opportunity to live near Downtown, Chinatown, rapid transit and the amenity of the NEFC district. The success of the Rogers Arena Towers will also be measured by the improvements the proposal makes toward an increase in animation and enhanced public space, while mitigating traffic flows to and from the district. The project will provide continuity to future developments along the False Creek waterfront.

Project Brief

Located on the property around Rogers Arena these proposed buildings are part of the planning and redevelopment process for Northeast False Creek. This ongoing process, which has progressed through a number of meetings with both City Staff and Neighbourhood Stakeholders, will complete the development of the last of the Expo Lands and the surrounding sites. The new buildings on the Rogers Arena site will add a diverse range of uses to this new neighbourhood.

The East Tower, above the existing Team Store at the corner of Pacific Boulevard and Abbott Street, will be a mixed-use building. The lower floors will continue to serve Retail and Rogers Arena event uses, while the floors immediately above will provide office space. The 14 storeys of the upper portion of the tower will be secured market rental residential space. This will result in a 28 storey mixed-use building with commercial space and 134 market rental units.

The South Tower, at the corner of Griffiths Way and Pacific Boulevard, will be a secured market rental residential tower, with 288 units proposed and a height of 31 storeys. This site will be excavated to a depth of 5 levels to provide a total of approx. 205 parking stalls that will serve both East and South towers. This excavation will also provide an opportunity to remove any contaminants from this remaining area of the site. This building occupies a significant site in terms of urban design. This tower frames the view as one travels north-east along Pacific Boulevard and it also banks the south-east view down Georgia Street towards Science World.

Urban Design Response and Massing

Rogers Arena and its immediate surroundings are a very particular urban context. The term arterial thoroughfares of Pacific and Expo Boulevards bound the site. The highly travelled Georgia and Dunsmuir Viaducts and the Skytrain Rapid Transit Line cross the site. Residential towers such as Spectrum, Esplanade and Firenze, as well as future towers yet to come on adjacent properties, flank the site. As with the BC Place Stadium, Rogers Arena is the dominant building form on the site. Large buildings such as this are not easily absorbed into the finer grain of an urban context. The proposed new towers and the reshaped ground plane are seen as an opportunity to craft a finer scale of building form around the arena perimeter, thereby allowing the arena volume to transition into the surrounding context of residential towers. The placement and massing of these additional structures, articulate their response in reference to Rogers Arena. For this reason, the massing of the towers have been developed with a similar triangular plan form: broad faces oriented towards the stadium, framing it within their taller forms and mediating between the arena and the surrounding urban tower context. The West and East towers are attached to the Arena. The three towers roughly triangulate the Stadium structure within their three volumes. The nearest any tower comes to another on the Rogers Arena site is the 98'-5" between the East and South towers.

The shadows cast by the proposed towers are shown for the 16:00, 12:00 and 7:00 on both equinoxes and for the summer solstice. The East tower is built over the existing stadium structure and casts much of its shadow onto the Stadium bowl. The South tower is elevated some 22 ft. into the air, allowing sun and daylight deep into the plaza space.

Architectural Character

The towers on the West and East Corners of Rogers Arena share a similar massing scheme and building form. The exterior of the East tower is similar to the taut skin of the office tower, but more finely scaled to reflect their residential character. Variations in balcony depth and a variegated pattern of vertical glass sunscreens, further animates the facades and responds to their various solar orientations.

The South tower and plaza take on an additional role. A building on this site frames one side of the view from Georgia Street looking southeast towards Science World, while also terminating the view of those traveling northeast along Pacific Boulevard. The site is surrounded by pedestrian and vehicular movement and gives physical expression to this movement. The three corners of this tower are rounded and the oversized balcony overhangs are allowed to vary as the rise up the building, setting the building into a gentle visual oscillation. Here again, the combination of extensive balconies and rail details are designed to ameliorate solar gain.

Connections

The proposed new additions to the Rogers Arena site will serve as a catalyst for the redevelopment of remaining sites in the NEFC neighborhood. Building on the pedestrian connections to both the Georgia Street Viaduct and Expo Boulevard, the proposed development will help knit both Rogers Arena and neighboring sites to the downtown city fabric, as well as to major elements of the Vancouver transportation infrastructure.

The character of pedestrian movement on the ground plane is recognized as being strongly shaped by the events that take place in and around Rogers Arena and BC Place. Both of these venues generate large volumes of traffic on event days. It is therefore important to keep the ground plane as open as possible around the major portals into and out of these venues. For this reason, the South tower is raised three stories above the plaza level, with minimal lobby spaces at grade. The open plaza area at the South entry to Rogers Arena will be completely upgraded. The new landscape design is intended to soften the impact of the large existing concrete ground and wall surfaces and to animate them for the urban pedestrian with or without scheduled Arena events.

Parking for the East and South Towers is provided underground below the South Plaza. One of the existing Arena parking and loading access points is removed from Pacific and combined with the South Tower parking and loading access ramp off the less travelled Griffiths Way.

Careful attention has been focused on the possible removal of the Georgia Viaduct and reconfiguration of the Georgia and Pacific intersection. Allowance in the building siting and Landscape design has been made for this potential future scenario.

Sustainable Building Design

The proposed redevelopment of the Rogers Arena Site seeks to achieve a LEED Gold standard of sustainability. The mix of commercial and residential uses, linked to transit, a district energy utility and other amenities in the neighborhood, will provide an ideal framework for an exemplary sustainable development.

Horizontal and vertical solar and acoustic control elements are proposed to mitigate heat gain through the glazing systems and building envelope and reduce event noise to acceptable levels.

Efficient energy systems and hydronic heating will be used throughout all the buildings, with connections to the district heat source. The buildings will also share in the use of heat generated by the ice making refrigeration equipment in Rogers Arena.

A site-wide storm water and wastewater management plan will be implemented using green roofs, green walls, urban agriculture, and rainwater harvesting for irrigation. Careful construction waste management, the use of recycled, regional, and low VOC emitting materials and an attention to the thermal comfort of the occupants will be integrated.

The resulting sustainable design strategies translate to a LEED NC Gold level, as well as a Certified level under LEED for Neighbourhood Developments.

Landscape Design Rationale

The public realm landscape design for the Rogers Arena site needs to impart a high energy and dynamic quality befitting this major entertainment and cultural district. The design responds in a substantial yet practical manner to the modified spaces at the ground and subgrade levels, creating well formed plaza, gathering, and transitional spaces that function well during major events as well as other times of the day and night. At the terrace and roof top level, green roofs, sky gardens, and outdoor amenity courts will provide an environment that expands and engages the indoor amenity spaces.

The overall landscape development will have a more European feel and character with quality materials and contemporary and innovative landscape features overlaid on simple plaza spaces.

The plaza spaces respond to pedestrian movement through and to the site as well as providing new bridge connections to surrounding amenities and features such as the Skytrain and the BC Place redevelopment. These spaces are more for gathering and moving through than passive use so they have been designed with robust quality materials and larger scale green planted features. Elements such as stormwater water features, green walls and green roofs provide elements of sustainability in this highly urban and active environment.

South Plaza / Terrace To Rogers Arena

This plaza space provides an entry court for the residential tower and serves as a transition corridor for people to move through if they are going to an event at either BC Place or Rogers Arena. The upper terrace has been enlarged so it provides more of an overlook to the lower plaza space. A cascading water feature utilizing captured rainwater provides a sound buffer to the viaduct above and surrounding streets. Terraced planters provide green relief to the heavy concrete walls of Rogers Arena, while low walls around the planting and water features, as well as large curved benches, provide ample seating opportunities.

The plaza can also handle a large gathering where people could congregate at both levels as well as on the wide stair feature. Seating walls are built into the pool edges providing many opportunities for sitting in the sunny areas of the plaza.

The Rick Hansen tribute and plaza feature has been relocated from a back corner to front and centre at the main stair to the upper Rogers Arena entry terrace. It will be visible from Pacific Boulevard and Abbot Street.

Roof Decks / Green Roofs / Roof Terraces

All the new towers will either be designed with landscaped amenity spaces or green roofs ensuring all roof spaces are utilized for the environment and the residents. Urban Agriculture plots are provided on all towers along with other roof top amenities. Wherever possible interior amenity areas extend onto roof terraces, expanding the amenity areas. Private roof terraces and green roofs are provided at the penthouse level where no public access is available.

Sustainable Landscape Design

Sustainable landscape features include the use of green roofs on all buildings, green walls, capturing rainwater for reuse in water features and for irrigation, and the provision of urban agriculture plots and amenity spaces for resident use.