ATTACHMENT – 4

ARBORICULTURE REPORT

Crystal pool facility proposed location - Tree resource impact report

Executive Summary

Four versions were reviewed in the present report. It is suggested that Version B +6.5 could allow for the most site trees to be retained. Mature trees could be preserved on all sides of the proposed site. There are, however, mitigation measures that would be required in order to retain trees and determine whether others can or cannot be preserved. These additional costs must be taken into account.

Introduction

The assignment was to conduct potential tree impact assessments for the proposed location of the new Crystal Pool & Fitness Center in Central Park. The information provided below is based on the amended Preliminary tree resource assessment – Crystal pool facility proposed location report issued on May 24, 2017. Two proposed building footprints were reviewed, Version A and Version B. Approximate building heights, overhangs and preliminary servicing discussions were taken into consideration. In addition, a third version is provided in the present report that examines the possible retention of the largest and healthiest trees along the Pembroke frontage. This rendition is presented as Version A +6.5 and Version B +6.5.

Methodology

Tree resource parameters collected for the preliminary report were used to evaluate potential impacts. Proposed building footprints were marked in the field and building heights assessed with respect to tree canopies. Potential impacts were based on 3m of over excavation. Three categories were used to summarize the potential impacts to the tree resource:

- retain – could be retained during and following construction (GREEN)
- remove- roots and/or canopy would be too severely impacted to retain (RED)
- mitigation – retention depends on construction and excavation methods such as alternative excavation, shoring or the use of floating pavers. In some cases, exploratory excavation is required to trace the roots and determine the true impacts for retention prior to any construction activities. (YELLOW)

There are four delineated zones on the site: Pembroke frontage; North side of proposed site; West side of proposed site and Quadra frontage. Potential impacts to trees in each zone is discussed for Version A, Version B, Version A +6.5 and Version B +6.5.

Tree resource

There were 46 trees identified in the proposed location in the preliminary report. The addition of the loading area, on the west side along the Pembroke frontage has potential impacts to 2 additional trees that were not included in the preliminary report. These have been added to the tree resource for a total of 48 trees potentially affected by the proposed project: tree 47 is a 29cm purple leaf plum and tree 48 is an 80cm pine. The alignment of London plane trees adjacent to the baseball field will be subject to extensive pruning and several large limbs will likely have to be removed. Pruning of trees 23, 24 and 25 would be more substantial in Version B which is longer and extends in area. The remaining trees in the alignment are subject to the same pruning requirements for both versions. Below is a brief summary of anticipated pruning impacts to the alignment of London plane trees:

Tree #	Version A	Version B
18	Minor pruning	Minor pruning
19	Minor pruning	Minor pruning
20	~20cm limb removal and minor pruning	~20cm limb removal and minor pruning
21	~25cm limb removal and reduction	~25cm limb removal and reduction
22	Extensive reduction	Extensive reduction
23	~40cm limb removal and reduction	~40cm limb removal and extensive reduction

24	~25cm limb removal and reduction	~25cm limb removal and extensive pruning
25	Minor pruning	3 X ~20cm limbs to be removed and reduction

Two trees can be transplanted on the Pembroke frontage and neither version will allow for the retention of any trees on this frontage. Moreover, it is recommended that tree 2 be removed in both versions to facilitate servicing connections to Quadra. This would provide more space to preserve tree 1 and tree 3 which are in better condition than tree 2.

It was determined that an additional 6.5m would be required in order to preserve large, healthy trees on the Pembroke frontage. The existing berm would need to be preserved and retention of trees would also depend on existing soil conditions and potential blasting requirements. This could allow for the retention of four large elms and potentially 2 more with appropriate mitigation measures. Trees 29, 33, 36 and 37 would require pruning and the most extensive work would remove as much as 25% of the canopy for tree 33. If the loading area was reconfigured, this could allow for the retention of tree 27 and an aerial assessment is recommended to determine whether tree 41 should be retained. A vertical cut would be required to the full depth of the excavation and some form of shoring would need to be used in order to preserve these trees. If shotcrete shoring is considered, the soil and tree roots would need to be protected with geotextile fabric. Many of the smaller trees on the Pembroke frontage present structural or health issues and should not be preserved long-term. However, the smaller trees could be temporarily retained as screening during construction and removed in phases throughout the course of the project.

Furthermore, Immediate planting of new trees on the north side of the proposed site is an option to compensate for canopy loss and provide a few years of growth before construction is complete. This option could be applied in all scenarios.

Discussion

Version A

This version will ultimately have more of an impact on the north side of the proposed site. Trees 5, 6, 14, 16 and 17 will need to be removed and trees 9, 10 and 13 will require further assessment. Exploratory excavation is recommended for tree 10 and tree 13 to determine the impacts to roots. Risk assessment is recommended for tree 9 which has a deep cavity at the base. Elms are located on the Quadra frontage and this species can have an extensive root system. Exploratory excavation is recommended for tree 3 and tree 4. This will ultimately determine whether alternative construction measures are required when working around these trees. Tree 1 could arguably be a centerpiece tree located at the front entrance. Careful examination of root architecture and mitigation measures will be required such as the use of floating pavers when working around this tree. In addition, risk assessment as well as an aerial inspection is strongly recommended for tree 1 to evaluate any defects that may not be seen from the ground. Tree assessments with respect to retention/removal are summarized in Appendix A, Version A.

Version B

This version is longer with less of a setback and will further encroach on the critical root zones of trees 1, 3 and 4 along the Quadra frontage. As in Version A, exploratory excavation is recommended for these trees. The use of alternative excavation will likely be required and extensive pruning of tree 1 will be necessary to provide clearance for the building and work zone. On the north end of the proposed site, trees 5, 14, 16 and 17 will potentially need to be removed. Risk assessment of tree 9 is recommended as in Version A. The main difference between this version and Version A along this frontage is the retention of tree 6 and exploratory work is not required. Figure 1 and 2 show the approximate location of the building footprint on the northern end of the site. Tree assessments with respect to retention/removal are summarized in Appendix A, Version B.

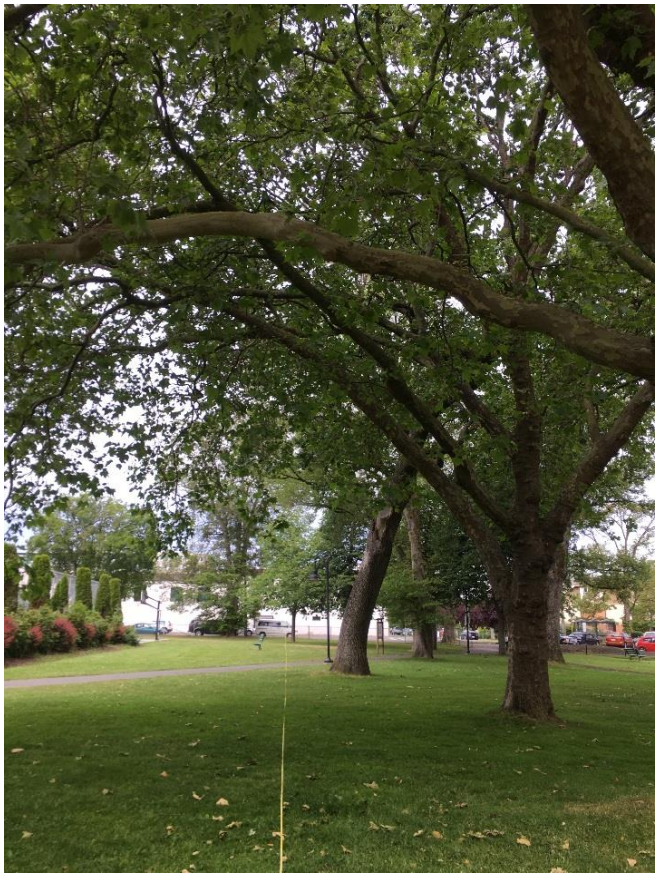

Figure 1. Version A – proposed northern building footprint

Figure 2. Version B – proposed northern building footprint

Version A +6.5

This option would reduce the impacts to tree 1 and shift the main entrance towards the opening between tree 1 and tree 3. Potential impacts to the alignment of London plane trees would be the same as in Version A. Along the north side of the proposed site, trees 5, 6, 10, 13, 14, 16 and 17 would need to be removed. Short term retention might be possible for tree 7. Tree 12 would require extensive mitigation measures such as exploratory digging in order to determine whether it can be retained. Trees that could potentially be retained are 8, 11 and 15 (removal a 35cm limb would be required). Tree assessments with respect to retention/removal are summarized in Appendix A, Version A +6.5.

Version B +6.5

This option would also reduce impacts to tree 1 and pruning requirements would likely be lessened. Although there would be further encroachment on trees 23, 24, and 25 in the alignment of London planes on the west side of the proposed site, the difference in pruning requirements from Version B would be negligible due to available growth points for reduction. Along the north side of the proposed site, trees 5, 6, 14, 16 and 17 would need to be removed. Trees 10 and 13 would require exploratory work to determine retention potential. A vertical cut and shoring would likely be necessary for trees 10 and 13 if these trees are to be preserved. Pruning clearance would require the removal of 2-3 ~30cm limbs. Trees 7, 8, 11, 12 and 15 could likely be retained. Tree assessments with respect to retention/removal are summarized in Appendix A, Version B +6.5.

Mitigation

Once the building design is available for consultation, exploratory digging is recommended to determine the exact location of tree roots with respect to the building footprint. Only once a formal building and servicing plan is consulted can the true impact to trees be evaluated. It should be known upfront, before construction which trees can be retained and which ones cannot so this information can be conveyed to council and to the public.

Retention of existing infrastructure can also help to reduce impacts to trees, their root zones and reduce overall site impacts. For example, reusing the existing parking lot in the same location and reusing sections of the existing walkway.

Successful tree retention will depend on the extent of work that takes place within the critical root zone of trees and the amount of pruning that may be required across the entire site. Careful consideration in the design process should be given to the following:

- changes in site hydrology
- grade changes in critical root zones
- use of shoring when working in critical root zones
- addition of impermeable surfaces with respect to root zones
- any blasting that may be required close to trees
- over excavation/cut slope in critical root zones
- any building projections (ex. roof line, balcony, staircase) with respect to tree canopies
- landscaping/irrigation installation within critical root zones
- site access during construction with respect to critical root zones and tree canopies
- materials storage areas with respect to critical root zones
- servicing (above and below ground)
- pre-construction pruning requirements
- location of the outflow ducts of the pool ventilation system with respect to tree canopies
- placement of potential solar panels with respect to tree canopies
- tree protection fencing requirements
- maintenance requirements of trees during construction (ex. watering, mulching)
- regular site inspections by the project Arborist during construction

Report compiled by Gregg Staniforth, City of Victoria Parks, June 29, 2017.

Matheny, N., Clark, J., Trees and Development; A technical guide to preservation of trees during land development, 1st edn, International Society of Arboriculture, Champaign, Illinois.

Appendix A

Version A - Summary of tree resource by Zone

Quadra frontage			North side of proposed site			West side of proposed site			Pembroke frontage			Pembroke frontage		
Tag #	Species	DBH	Tag #	Species	DBH	Tag #	Species	DBH	Tag #	Species	DBH	Tag #	Species	DBH
1	American elm	96	5	Horsechestnut	33	18	London plane	89	26	Big Leaf maple	39	39	Sycamore maple	33
2	Field elm	86	6	Horsechestnut	43	19	London plane	58	27	Field elm	86	40	American elm	78
3	Field elm	72	7	Horsechestnut	37	20	London plane	86	28	Black oak	31	41	American elm	90
4	American elm	113	8	Field elm	81	21	London plane	110	29	Field elm	79	42	Big Leaf maple	63
			9	Field elm	63	22	London plane	100	30	Black walnut	25	43	Big Leaf maple	46
			10	Field elm	64	23	London plane	79	31	Purple leaf plum	48	44	Big Leaf maple	76
			11	Horsechestnut	40	24	London plane	69	32	Black walnut	33	45	Sycamore maple	34
			12	Garry oak	108	25	London plane	68	33	Field elm	66	46	Florida Dogwood	4
			13	Field elm	74				34	Florida Dogwood	5	47	Purple leaf plum	29
			14	Garry oak	92				35	Purple leaf plum	41	48	Pine spp.	80
			15	London plane	90				36	Field elm	77			
			16	London plane	106				37	Field elm	61			
			17	London plane	73				38	Sycamore maple	25			

- retain – could be retained during and following construction (GREEN)
- remove- roots and/or canopy would be too severely impacted to retain (RED)
- mitigation – retention depends on construction and excavation methods such as alternative excavation or the use of floating pavers. In some cases, exploratory excavation is required to trace the roots and determine the true impacts for retention prior to any construction activities. (YELLOW)

Version B - Summary of tree resource by Zone

Quadra frontage			North side of proposed site			West side of proposed site			Pembroke frontage			Pembroke frontage		
Tag #	Species	DBH	Tag #	Species	DBH	Tag #	Species	DBH	Tag #	Species	DBH	Tag #	Species	DBH
1	American elm	96	5	Horsechestnut	33	18	London plane	89	26	Big Leaf maple	39	39	Sycamore maple	33
2	Field elm	86	6	Horsechestnut	43	19	London plane	58	27	Field elm	86	40	American elm	78
3	Field elm	72	7	Horsechestnut	37	20	London plane	86	28	Black oak	31	41	American elm	90
4	American elm	113	8	Field elm	81	21	London plane	110	29	Field elm	79	42	Big Leaf maple	63
			9	Field elm	63	22	London plane	100	30	Black walnut	25	43	Big Leaf maple	46
			10	Field elm	64	23	London plane	79	31	Purple leaf plum	48	44	Big Leaf maple	76
			11	Horsechestnut	40	24	London plane	69	32	Black walnut	33	45	Sycamore maple	34
			12	Garry oak	108	25	London plane	68	33	Field elm	66	46	Florida Dogwood	4
			13	Field elm	74				34	Florida Dogwood	5	47	Purple leaf plum	29
			14	Garry oak	92				35	Purple leaf plum	41	48	Pine spp.	80
			15	London plane	90				36	Field elm	77			
			16	London plane	106				37	Field elm	61			
			17	London plane	73				38	Sycamore maple	25			

- retain – could be retained during and following construction (GREEN)
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Version A +6.5 - Summary of tree resource by Zone

Quadra frontage

Tag #	Species	DBH
1	American elm	96
2	Field elm	86
3	Field elm	72
4	American elm	113

North side of proposed site

Tag #	Species	DBH
5	Horsechestnut	33
6	Horsechestnut	43
7	Horsechestnut	37
8	Field elm	81
9	Field elm	63
10	Field elm	64
11	Horsechestnut	40
12	Garry oak	108
13	Field elm	74
14	Garry oak	92
15	London plane	90
16	London plane	106
17	London plane	73

West side of proposed site

Tag #	Species	DBH
18	London plane	89
19	London plane	58
20	London plane	86
21	London plane	110
22	London plane	100
23	London plane	79
24	London plane	69
25	London plane	68

Pembroke frontage

Tag #	Species	DBH
26	Big Leaf maple	39
27	Field elm	86
28	Black oak	31
29	Field elm	79
30	Black walnut	25
31	Purple leaf plum	48
32	Black walnut	33
33	Field elm	66
34	Florida Dogwood	5
35	Purple leaf plum	41
36	Field elm	77
37	Field elm	61
38	Sycamore maple	25

Pembroke frontage

Tag #	Species	DBH
39	Sycamore maple	33
40	American elm	78
41	American elm	90
42	Big Leaf maple	63
43	Big Leaf maple	46
44	Big Leaf maple	76
45	Sycamore maple	34
46	Florida Dogwood	4
47	Purple leaf plum	29
48	Pine spp.	80

- retain – could be retained during and following construction (GREEN)
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- mitigation – retention depends on construction and excavation methods such as alternative excavation or the use of floating pavers. In some cases, exploratory excavation is required to trace the roots and determine the true impacts for retention prior to any construction activities. (YELLOW)

Version B +6.5 - Summary of tree resource by Zone

Quadra frontage			North side of proposed site			West side of proposed site			Pembroke frontage			Pembroke frontage		
Tag #	Species	DBH	Tag #	Species	DBH	Tag #	Species	DBH	Tag #	Species	DBH	Tag #	Species	DBH
1	American elm	96	5	Horsechestnut	33	18	London plane	89	26	Big Leaf maple	39	39	Sycamore maple	33
2	Field elm	86	6	Horsechestnut	43	19	London plane	58	27	Field elm	86	40	American elm	78
3	Field elm	72	7	Horsechestnut	37	20	London plane	86	28	Black oak	31	41	American elm	90
4	American elm	113	8	Field elm	81	21	London plane	110	29	Field elm	79	42	Big Leaf maple	63
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			13	Field elm	74				34	Florida Dogwood	5	47	Purple leaf plum	29
			14	Garry oak	92				35	Purple leaf plum	41	48	Pine spp.	80
			15	London plane	90				36	Field elm	77			
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			17	London plane	73				38	Sycamore maple	25			

- retain – could be retained during and following construction (GREEN)
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Location and condition of trees at the proposed site of the new facility

Legend

Green = suitable for retention

Yellow = poor vigor or significant structural defect

Red = suggested removal

Blue = possible transplant and relocate

Central Park, Victora
Tree Resource Spreadsheet

Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations
1	American Elm	*Ulmus americana*	97.0	21.0	9.5	Good	Good	Fair	Codominant union at 4m
2	Field Elm	*Ulmus minor*	87.0	10.0	8.5	Good	Fair/poor	Fair	Branch dieback throughout canopy
3	American Elm	*Ulmus americana*	72.0	12.0	7.0	Good	Fair/poor	Fair	Dieback at branch tips. Stunted growth
4	Field Elm	*Ulmus minor*	113.0	16.0	11.5	Good	Fair	Fair	
5	Horsechestnut	*Aesculus hippocastanum*	34.0	7.0	3.5	Good	Good	Fair	
6	Horsechestnut	*Aesculus hippocastanum*	44.0	9.0	4.5	Good	Good	Fair	
7	Horsechestnut	*Aesculus hippocastanum*	37.0	8.0	3.5	Good	Good	Fair	
8	Field Elm	*Ulmus minor*	82.0	17.0	8.0	Good	Fair	Fair	Codominant union at 4m
9	Field Elm	*Ulmus minor*	63.0	12.0	6.5	Good	Fair	Fair/poor	30cm long cavity opening at base
10	Field Elm	*Ulmus minor*	64.0	14.0	6.5	Good	Fair	Fair	
11	Horsechestnut	*Aesculus hippocastanum*	40.0	9.0	4.0	Good	Good	Fair	
12	Garry Oak	*Quercus garryana*	107.0	18.0	10.5	Good	Fair	Fair	3 large (40cm+ diameter) pruning wounds with decay on main trunk. Leaning north.
13	Field Elm	*Ulmus minor*	74.0	12.0	7.5	Good	Fair	Fair	
14	Garry Oak	*Quercus garryana*	92.0	18.0	9.0	Good	Fair	Fair	80cm by 40cm tearout wound on main trunk. Leaning. Bark flaking opposite lean
15	London Plane	*Platanus x acerifolia*	90.0	21.0	9.0	Good	Good	Fair	

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Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations
16	London Plane	*Platanus x acerifolia*	108.0	27.0	11.0	Good	Good	Fair	
17	London Plane	*Platanus x acerifolia*	74.0	24.0	7.5	Good	Good	Fair	
18	London Plane	*Platanus x acerifolia*	92.0	24.0	9.0	Good	Good	Fair	
19	London Plane	*Platanus x acerifolia*	59.0	18.0	6.0	Good	Good	Fair	Leaning
20	London Plane	*Platanus x acerifolia*	86.0	22.0	8.5	Good	Good	Fair	
21	London Plane	*Platanus x acerifolia*	112.0	24.0	11.0	Good	Good	Fair	Leaf litter gathering at main branch union at 3m.
22	London Plane	*Platanus x acerifolia*	98.0	26.0	10.0	Good	Good	Fair	30cm wide pruning wound at 3m
23	London Plane	*Platanus x acerifolia*	80.0	20.0	8.0	Good	Good	Fair	Asymmetric and compartmentalized pruning wounds from field lights clearance pruning
24	London Plane	*Platanus x acerifolia*	69.0	18.0	7.0	Good	Fair	Fair	Asymmetric with old and recent pruning wounds (30cm +) on field side of tree and waterspout growth
25	London Plane	*Platanus x acerifolia*	69.0	22.0	7.0	Good	Good	Fair	
26	Big Leaf Maple	*Acer macrophyllum*	40.0	9.0	5.0	Moderate	Fair	Poor	Severely asymmetric with 20cm wide pruning wound at main branch union at 2m
27	Field Elm	*Ulmus minor*	87.0	20.0	8.5	Good	Good	Fair/poor	Codominant union at 3m with included bark and reaction wood
28	Oak	*Quercus spp*	32.0	9.0	4.0	Moderate	Fair	Good	Competing for light. Girdling root
29	Field Elm	*Ulmus minor*	79.0	21.0	8.0	Good	Good	Fair	Codominant union at 3m. Girdling root
30	Black Walnut	*Juglans nigra*	25.0	6.0	3.0	Moderate	Fair	Fair	Competing for light

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Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations
31	Purple Leaf Plum	*Prunus cerasifera*	32, 31, 19	10.0	7.5	Moderate	Fair	Fair	
32	Black Walnut	*Juglans nigra*	33.0	7.0	4.0	Moderate	Fair/poor	Fair	Some branch dieback
33	Field Elm	*Ulmus minor*	66.0	21.0	6.5	Good	Good	Fair	
34	Florida Dogwood	*Cornus florida*	5.0	2.0	1.0	Poor	Good	Good	
35	Purple Leaf Plum	*Prunus cerasifera*	31, 20, 20	9.0	6.5	Moderate	Fair	Fair	
36	Field Elm	*Ulmus minor*	77.0	19.0	7.5	Good	Fair	Fair	Small amount of dieback on some branch tips
37	Field Elm	*Ulmus minor*	62.0	13.0	6.0	Good	Good	Fair	
38	Sycamore Maple	*Acer pseudoplatanus*	25.0	7.0	3.0	Moderate	Fair	Fair	
39	Sycamore Maple	*Acer pseudoplatanus*	34.0	7.0	4.0	Moderate	Fair	Fair	Leaning
40	American Elm	*Ulmus americana*	78.0	13.0	8.0	Good	Fair	Fair	
41	Field Elm	*Ulmus minor*	92.0	17.0	9.0	Good	Fair	Fair	40cm wide wound at 2m, possible canker infection
42	Big Leaf Maple	*Acer macrophyllum*	62.0	13.0	7.5	Moderate	Fair	Fair	
43	Big Leaf Maple	*Acer macrophyllum*	46.0	13.0	5.5	Moderate	Fair	Fair	Competing for light
44	Big Leaf Maple	*Acer macrophyllum*	76.0	17.0	9.0	Moderate	Fair	Poor	Large cavity in main trunk at 2m. Codominant unions
45	Sycamore Maple	*Acer pseudoplatanus*	34.0	7.0	4.0	Moderate	Fair	Fair	Potential decay in old pruning wound at 3m

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Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations
46	Florida Dogwood	*Cornus florida*	4.0	2.0	0.5	Poor	Fair	Fair	
47	Purple Leaf Plum	*Prunus cerasifera*	28.0	8.0	3.5	Moderate	Good	Fair/poor	Decay at tearout wound at 4m
48	Ponderosa Pine	*Pinus ponderosa*	84.0	12.0	10.0	Moderate	Good	Good	
49	Purple Leaf Plum	*Prunus cerasifera*	31.0	6.0	3.5	Moderate	Good	Fair/poor	Decay in trunk
50	Ponderosa Pine	*Pinus ponderosa*	80.0	12.0	9.5	Moderate	Good	Good	
51	Red Maple	*Acer rubrum*	41.0	10.0	6.0	Poor	Fair		Some branch dieback. Codominant at 3m
52	Hawthorn	*Crataegus laevigata*	36, 27, 26	12.0	7.0	Good	Fair	Fair/poor	Endweighted limb over sidewalk . Wound on largest stem
53	Norway Maple	*Acer platanoides*	44.0	12.0	4.5	Good	Fair	Fair	
54	Lawson Cypress	*Chamaecyparis lawsonia*	21.0	5.0	3.0	Poor	Good	Fair	Competing for light.
55	Horsechestnut	*Aesculus hippocastanum*	64.0	12.0	6.5	Good	Good	Fair	30cm pruning wound. Rib indicating crack in one main limb
56	Norway Maple	*Acer platanoides*	48.0	12.0	5.0	Good	Fair	Fair	
57	Garry Oak	*Quercus garryana*	133.0	26.0	13.5	Good	Fair	Fair	3 cables. Ganoderma fruiting bodies on east and west sides of tree. Large deadwood and some dieback at branch tips
58	Red Maple	*Acer rubrum*	7.0	2.0	1.0	Poor	Good	Fair	
59	Field Elm	*Ulmus minor*	74.0	17.0	7.5	Good	Good	Fair	

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Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations
60	London Plane	*Platanus x acerifolia*	115.0	20.0	11.5	Good	Good	Fair	Codominant at 3m
61	Black Locust	*Robinia pseudoacacia*	50.0	10.0	5.0	Good	Fair	Fair	Potential decay at 5m
62	Red Maple	*Acer rubrum*	5.0	2.0	1.0	Poor	Good	Good	
63	Field Elm	*Ulmus minor*	117.0	18.0	11.5	Good	Fair	Fair	15cm long cavity opening on east side at base.
64	London Plane	*Platanus x acerifolia*	113.0	20.0	11.5	Good	Good	Fair	Small 4cm hanger at 5m
65	Horsechestnut	*Aesculus hippocastanum*	79.0	14.0	8.0	Good	Fair	Fair/poor	Tridominant branch union at 3m. 3 small cavity openings from 3-6m at old pruning wounds
66	Sycamore Maple	*Acer pseudoplatanus*	25.0	7.0	3.0	Moderate	Fair	Poor	Large wounds at base, no cambium on 60% of circumference. 4 codominant branches at 2m. 1.5m long wound on one of main branches
67	London Plane	*Platanus x acerifolia*	143.0	20.0	14.5	Good	Good	Fair	Cavity at 2m
68	Horsechestnut	*Aesculus hippocastanum*	89.0	16.0	9.0	Good	Good	Fair/poor	Large extended codominant limbs at 4m
69	Red Maple	*Acer rubrum*	5.0	1.0	1.0	Poor	Good	Good	
70	Field Elm	*Ulmus minor*	92.0	20.0	9.0	Good	Good	Fair	Codominant at 3m. Deadwood
71	London Plane	*Platanus x acerifolia*	81.0	20.0	8.0	Good	Good	Fair	
72	Horsechestnut	*Aesculus hippocastanum*	70.0	16.0	7.0	Good	Good	Poor	20cm wide cavity opening at 3m and another small cavity opening above within branch union. Extended codominant limbs
73	Field Elm	*Ulmus minor*	111.0	22.0	11.0	Good	Fair	Fair	Deadwood

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Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations
74	London Plane	*Platanus x acerifolia*	74.0	16.0	7.5	Good	Good	Fair	Girdling roots, some small enough to prune
75	Horsechestnut	*Aesculus hippocastanum*	65.0	16.0	6.5	Good	Fair	Fair	Clearance pruned for hydro lines above. Cavity at 2m. Two 15cm wide wounds on trunk
76	Horsechestnut	*Aesculus hippocastanum*	67.0	16.0	6.5	Good	Fair	Fair	Significantly clearance pruned for hydro lines above.
77	Horsechestnut	*Aesculus hippocastanum*	62.0	14.0	6.0	Good	Fair	Fair	Significantly clearance pruned for hydro lines above.
78	Horsechestnut	*Aesculus hippocastanum*	87.0	16.0	8.5	Good	Fair	Fair/poor	Multiple extended codominant limbs at 2m with included bark . Small girdling root. Significantly clearance pruned for hydro lines above
79	Horsechestnut	*Aesculus hippocastanum*	72.0	16.0	7.0	Good	Fair	Fair/poor	Significantly clearance pruned for hydro lines above. Soil within codominant branch union with reaction wood. Cavities at pruning wounds
80	Ponderosa Pine	*Pinus ponderosa*	88.0	11.0	10.5	Moderate	Good	Good	Small girdling root, can likely be root pruned
81	Lawson Cypress	*Chamaecyparis lawsonia*	28, 22, 12	3.0	7.0	Poor	Poor	Fair/poor	Significant dieback on both leaders
82	Ponderosa Pine	*Pinus ponderosa*	99.0	14.0	12.0	Moderate	Good	Good	Codominant limb has been subordinated.
83	Purple Leaf Plum	*Prunus cerasifera*	47.0	6.0	5.5	Moderate	Fair/poor	Poor	Large 1m tearout wound and 20cm pruning wound.
84	Lawson Cypress	*Chamaecyparis lawsonia*	36, 15	6.0	6.5	Poor	Poor	Fair	Sparse canopy and dieback on leaders
85	Ponderosa Pine	*Pinus ponderosa*	82.0	10.0	10.0	Moderate	Fair	Good	Deadwood
86	Purple Leaf Plum	*Prunus cerasifera*	55.0	8.0	6.5	Moderate	Fair	Poor	Weak codominant branch unions. 20cm pruning wound on main trunk. Leaning.
87	Ponderosa Pine	*Pinus ponderosa*	88.0	13.0	10.5	Moderate	Good	Fair	Many codominant branches

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88	Lawson Cypress	*Chamaecyparis lawsonia*	28.0	4.0	4.0	Poor	Poor	Poor	Almost dead
89	Purple Leaf Plum	*Prunus cerasifera*	30.0	6.0	3.5	Moderate	Good	Fair	
90	Ponderosa Pine	*Pinus ponderosa*	78.0	12.0	9.5	Moderate	Good	Fair	
91	Ponderosa Pine	*Pinus ponderosa*	66.0	14.0	8.0	Moderate	Good	Fair/poor	Codominant at 8m
92	Garry Oak	*Quercus garryana*	97.0	20.0	9.5	Good	Fair	Fair	Extended endweighted limbs. Decayed pruning wound at 4m. Ganoderma fruiting bodies on west and south sides at base
93	European White Birch	*Betula pendula*	39.0	11.0	6.0	Poor	Fair	Fair	Clearance pruned for hydro lines on one side
94	Flowering Cherry	*Prunus spp*	72.0	11.0	8.5	Moderate	Good	Fair	Large surface roots
95	Purple Leaf Plum	*Prunus cerasifera*	59.0	12.0	7.0	Moderate	Good	Fair	Top of surface root lawnmower damage. Codominant at 2m
96	Horsechestnut	*Aesculus hippocastanum*	76.0	17.0	7.5	Good	Fair	Fair/poor	Significantly pruned due to hydro lines directly above. Extended endweighted limbs. Small cavity opening at 3m
97	Horsechestnut	*Aesculus hippocastanum*	75.0	11.0	7.5	Good	Good	Fair	Tridominant branch union at 2m . Utility pole anchor wire against limb
98	Horsechestnut	*Aesculus hippocastanum*	69.0	16.0	7.0	Good	Good	Fair/poor	Codominant at 1.5m
99	Sweetgum	*Liquidambar styraciflua*	32.0	7.0	5.0	Poor	Good	Fair/poor	Codominant at 3m and 5m. Small girdling root
100	Sycamore Maple	*Acer pseudoplatanus*	19.0	6.0	2.5	Moderate	Fair	Fair/poor	Branch tearout wound. Stunted growth.
151	Field Elm	*Ulmus minor*	85.0	11.0	8.5	Good	Fair	Fair	Some dieback at branch tips. Some pruning due to hydro wires on one side.
152	Field Elm	*Ulmus minor*	74.0	14.0	7.5	Good	Fair/poor	Fair/poor	Some branch dieback. Codominant at 2m with included bark

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Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations
153	Field Elm	*Ulmus minor*	59.0	11.0	6.0	Good	Fair/poor	Fair	Some dieback at branch tips, sparse canopy . Small cavity opening at 6m
154	Field Elm	*Ulmus minor*	60.0	9.0	6.0	Good	Fair/poor	Fair	Some dieback at branch tips.
155	Chusan Palm	*Trachycarpus fortunei*	18.0	2.0	2.0	Moderate	Good	Good	
156	Chusan Palm	*Trachycarpus fortunei*	16.0	2.0	2.0	Moderate	Good	Good	
NT 01	Chusan Palm	*Trachycarpus fortunei*	~15	2.0	2.0	Moderate	Good	Good	

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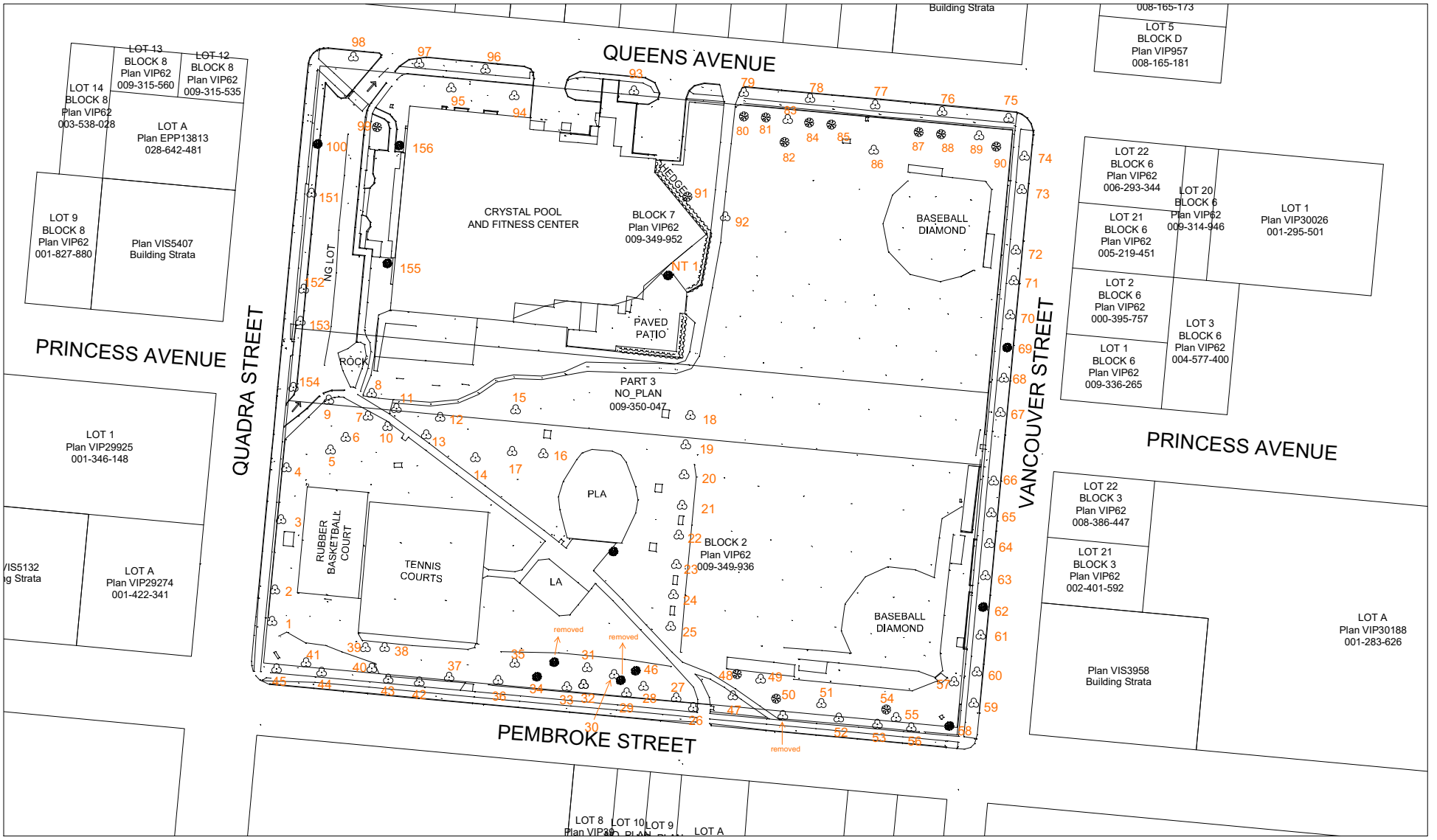

Rev	Date	Description	Surv	Drawn	Appd
PA1	180201	preliminary only	JT	VE	-

ORIGINAL DWG SIZE: ANSI D (22" x 34")
ALL DIMENSIONS ARE IN METRES

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Approved Sealed

CITY OF VICTORIA

CENTRAL PARK
PRELIMINARY
SITE PLAN

Tree Tags Labelled

Drawing No.
3490-0-V-0-PA1

Project Number	Rev.
####	####