

APPENDIX H: DETAILED WATER BALANCE - Phase 1 Development - 3275/3201 Trafalgar Road, Oakville

1. Climate Information

Precipitation (collected from Env. Canada data)	897.1 mm/a
Evapotranspiration (calculated by Thornthwaite method)	629.58 mm/a
Water Surplus	267.52 mm/a

2. Infiltration Rates

Infiltration Factors (Table 2)

Rolling Land (average slope from 2.8 m to 3.8 m per km)	0.2
Medium combinations of clay and loam	0.2
Cultivated Lands	0.1
TOTAL	0.5
Infiltration	134 mm/a
Run-off	134 mm/a

Clayey Silt 100 mm/a
 [*] MOE Table 2 and Table 3 approach in the Technical Information Requirements for Land Development Applications (MOE, 1995).

Site development area is underlain by glaciolacustrine material (clayey silt/silty clay material).

Based on the above, the recharge rate is approximately 100 mm/a
 with runoff of 167.5 mm/a

3. Site Statistics

Phase 1 Area Development which impacts the Water Balance of the entire Site

Pre-Development:

Impervious Area	0.46 ha	4,635 m ²
Roof Top Area	0.00 ha	0 m ²
Landcape Area + Core Area	7.33 ha	73,311 m ²
TOTAL	7.79 ha	77,946 m ²

Post-Development:

Impervious Area	0.76 ha	7,633 m ²
Roof Top Area	0.33 ha	3,316 m ²
Landcape Area + Core Area	6.70 ha	66,996 m ²
TOTAL	7.79 ha	77,946 m ²

Post Development

Impervious Area (4.26 %)	0.76 ha	7,633 m ²
Roof Top Area (9.79 %)	0.33 ha	3,316 m ²
Landscape Area + Core Area (85.95 %)	6.70 ha	66,996 m ²

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4. Annual Pre-Development Water Balance

Land Use	Area (m ²)	Precipitation (m ³)	Evapotranspiration (m ³)	Infiltration (m ³)	Run-Off (m ³)
Building Roofs	0	0	-	-	0
Landscape + Core Area	73,311	65,767	46,155	7,331	12,281
Impevous Area	4,635	4,158	-	-	4,158
TOTAL	77,946	69,925	46,155	7,331	16,439

5. Annual Post-Development Water Balance

Land Use	Area (m ²)	Precipitation (m ³)	Evapotranspiration (m ³)	Infiltration (m ³)	Run-Off (m ³)
Building Roofs	3,316	2,975	-	-	2,975
Impevous Area	7,633	6,848	-	-	6,848
Landscape + Core Area	66,996	60,103	42,180	6,700	11,223
TOTAL	77,946	69,925	42,180	6,700	21,046

6. Comparison of Pre-Development and Post-Development

	Precipitation (m ³)	Evapotranspiration (m ³)	Infiltration (m ³)	Run-Off (m ³)
Pre-Development	69,925	46,155	7,331	16,439
Post-Development	69,925	42,180	6,700	21,046

7. Post development infiltration measures

Post-development infiltration volume	6,700 m ³
Pre-development infiltration volume	7,331 m ³
Deficit from pre to post-development infiltration	631 m ³
Percentage of water collected from roof area required to match pre-development infiltration	21 %
Roof Runoff	2,975 m ³
Deficit from pre to post-development infiltration	631 m ³
Water Surplus	2,344 m ³