Preliminary Load Calculation for 420-468 South Service Road East, Town of Oakville, ON

Site Summary	Block 1	Block 2	Block 3	Block 4	Site Total
Build-out (years)	2–10	10–20	15–25	20–25	
Master-plan towers	4	4	3	3	14
Residential units (client)	1,850	1,850	1,050	1,000	5,750
Scenario A – All-electric (heat pumps, electric DHW)					
Calculated Demand (kW)	**11,766.7**	**11,727.7**	**6,928.1**	**6,610.2**	**37,032.8**
Demand (kVA at assumed PF)	13,074.1	13,030.8	7,697.9	7,344.7	41,147.5
Service Sizing Equipment (kVA) [sum of building services – information only]	15,585.1	15,530.9	9,178.9	8,755.8	49,050.7
Demand per unit (kW/unit)	6.36	6.34	6.60	6.61	6.44
Scenario B – Gas-fired heating, make-up air and DHW					
Calculated Demand (kW)	**10,926.5**	**10,887.5**	**6,451.2**	**6,156.0**	**34,421.2**
Demand (kVA at assumed PF)	12,140.5	12,097.2	7,168.0	6,840.0	38,245.8
Service Sizing Equipment (kVA) [sum of building services – information only]	14,418.0	14,363.9	8,516.5	8,125.0	45,423.5
Demand per unit (kW/unit)	5.91	5.89	6.14	6.16	5.99
Fire pumps (kW) [information only – excluded from demand]	300.0	300.0	225.0	225.0	1,050.0
EV demand – sensitivity (kW) [information only – all spaces EV-ready under EVEMS; replaces EV ports in demand above]	1,480.0	1,480.0	840.0	800.0	4,600.0
EV demand included above (kW) [EV ports at 100%]	233.0	219.6	139.8	126.5	718.8

Site Load Forecast – Scenario A – All-electric (cumulative kVA)	Block 1	Block 2	Block 3	Block 4	Site Total
Year 0	0.0	0.0	0.0	0.0	0.0
Year 5	3,210.6	0.0	0.0	0.0	3,210.6
Year 10	13,074.1	0.0	0.0	0.0	13,074.1
Year 15	13,074.1	6,676.4	0.0	0.0	19,750.6
Year 20	13,074.1	13,030.8	2,583.7	0.0	28,688.6
Year 25	13,074.1	13,030.8	7,697.9	7,344.7	41,147.5

Site Load Forecast – Scenario B – Gas-fired (cumulative kVA)	Block 1	Block 2	Block 3	Block 4	Site Total
Year 0	0.0	0.0	0.0	0.0	0.0
Year 5	2,983.5	0.0	0.0	0.0	2,983.5
Year 10	12,140.5	0.0	0.0	0.0	12,140.5
Year 15	12,140.5	6,197.0	0.0	0.0	18,337.5
Year 20	12,140.5	12,097.2	2,407.0	0.0	26,644.8
Year 25	12,140.5	12,097.2	7,168.0	6,840.0	38,245.8

Notes:

Site Total is the arithmetic sum of block demands (no diversity between buildings or blocks). Tower in-service years are assumptions within the client's build-out windows – see each block sheet.

Block areas per Master Plan (Graziani + Corazza, Aug. 25, 2026): Block 1 22,092 m², Block 2 18,833 m², Block 3 16,431 m², Block 4 13,200 m². Client unit counts: 1,850 / 1,850 / 1,050 / 1,000.

Preliminary loads for Oakville Hydro planning only – not for design or sizing of building services.

For each block, Scenario A represents all-electric – heat pumps sized for full design load, electric DHW. Scenario B: gas-fired heating, make-up air and DHW.

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Preliminary Load Calculation for 420-468 South Service Road East, Town of Oakville, ON

Block	1				Block 1 Total
Master-plan Towers	1A + 1B	2	3A + 3B	4A + 4B	
Residential units (rounded to nearest 50)	450	450	450	500	1,850
3-bedroom count (20% of total units)	90	90	90	100	370
2-bedroom count (rounded) (35% of total units)	158	158	158	175	649
1-bedroom count (remaining)	202	202	202	225	831
Load per 3-bedroom unit (kW) [Rule 8-202(1)(a): 3.5 kW first 45 m² + 1.5 kW per additional 90 m² or portion (130.06 m²) + 6 kW range + 25% x (5 kW dryer + 2 kW other)]	13.75	13.75	13.75	13.75	
Load per 2-bedroom unit (kW) [same basis, 106.84 m²]	13.75	13.75	13.75	13.75	
Load per 1-bedroom unit (kW) [same basis, 69.68 m²]	12.75	12.75	12.75	12.75	
Associated midrise buildings	1	0	0	1	2
High-rise elevators	4	4	4	4	16
Midrise elevators	2	0	0	2	4
Total elevators	6	4	4	6	20
Undiversified suites excl HVAC (kW) [unit counts x load per unit above]	5,985.5	5,985.5	5,985.5	6,650.0	24,606.5
Heaviest unit excl HVAC (kW) [as per 8-202(3)(a)(i) – largest load per unit of unit types present]	13.75	13.75	13.75	13.75	
First 1 unit at 100% (kW)	13.8	13.8	13.8	13.8	55.0
Next 2 units at 65% (kW) [as per 8-202(3)(a)(ii)-(v)]	17.9	17.9	17.9	17.9	71.5
Next 2 units at 40% (kW) [as per 8-202(3)(a)(ii)-(v)]	11.0	11.0	11.0	11.0	44.0
Next 15 units at 25% (kW) [as per 8-202(3)(a)(ii)-(v)]	51.6	51.6	51.6	51.6	206.3
Remaining units at 10% (kW) [as per 8-202(3)(a)(ii)-(v)]	571.1	571.1	571.1	637.5	2,350.7
Diversified dwelling load (kW)	**665.2**	**665.2**	**665.2**	**731.7**	**2,727.4**
Summer plant + Fan Coil Units allowance (kW) [3.2kW/unit as a conservative estimate/ could be central cooling/pumps circulating chilled water, etc]	1,440.0	1,440.0	1,440.0	1,600.0	5,920.0
Corridor make-up air cooling (kW) [1.2 kg/m³ x airflow (L/s) x 32 kJ/kg enthalpy difference / COP 3]	73.0	60.2	60.2	73.0	266.2
Summer space-conditioning electrical (kW)	1,513.0	1,500.2	1,500.2	1,673.0	6,186.2
Winter space-heating electrical (kW) [from heating calculation below]	1,367.3	1,344.3	1,344.3	1,502.8	5,558.7
Seasonal governing space-conditioning (kW) [larger of summer and winter – non-coincident loads, Rule 8-106]	1,513.0	1,500.2	1,500.2	1,673.0	6,186.2
Mechanical load incl DHW (kW)	**1,717.3**	**1,704.5**	**1,704.5**	**1,900.1**	**7,026.5**
Corridors and house receptacles (kW) [0.5 kW/ unit - Connected allowance, before 75% demand factor]	225.0	225.0	225.0	250.0	925.0
Domestic water/drainage/Domestic Hot Water pumps (kW) [.3 kW/unit - Connected allowance; excludes central heating/cooling pumps in mechanical calculation.]	135.0	135.0	135.0	150.0	555.0
Elevators (kW) [22.5 kW / elevator - Allowance, not motor nameplate or manufacturer selection]	135.0	90.0	90.0	135.0	450.0
Allocated garage footprint (m²) [Block 1 area (22,092 m² per Master Plan) x tower share of units – assumed, confirm with client]	5,373.7	5,373.7	5,373.7	5,970.8	22,092.0
Allocated garage area (m²) [Area (sq m) * 70% coverage * 2 parking levels]	7,523.2	7,523.2	7,523.2	8,359.1	30,928.8
Garage lighting (kW) [0.0025 kW (connected lighting) * Allocated Garage area]	18.8	18.8	18.8	20.9	77.3
Garage ventilation (kW) [0.005 kW * Allocated Garage area]	37.6	37.6	37.6	41.8	154.6
Corridor make-up air unit fans (kW) [1.5 kW per 1,000 L/s of make-up air]	8.6	7.1	7.1	8.6	31.2
Amenity / lobby lighting and power (kW) [30 W/m² of amenity / lobby area]	15.0	15.0	15.0	15.0	60.0
Retail / commercial lighting and power (kW) [30 W/m² placeholder – confirm against Rule 8-210 / Table 14 once uses are known]	0.0	0.0	0.0	0.0	0.0
Garage ramp heating / snow melting (kW) [15 kW allowance per tower]	15.0	15.0	15.0	15.0	60.0
Other house allowance (kW) [15 kW other; fire pump excluded from demand – listed below for information]	15.0	15.0	15.0	15.0	60.0
Common connected load (kW)	605.0	558.5	558.5	651.2	2,373.2
Common demand at 75% (kW)	**453.7**	**418.9**	**418.9**	**488.4**	**1,779.9**
EV equivalent ports allocated (approximate count/ tower)	8	8	8	11	35

EV demand at 100% (kW) [208V * 32A * count] [as per Rule 8-106 / Section 86]	**53.2**	**53.2**	**53.2**	**73.2**	**233.0**
Total suite floor area (m²) [# of 3-bedroom units * 130.06 sq m + # of 2-bedroom units * 106.84 sq m + # of 1-bedroom units * 69.68 sq m]	42,661.5	42,661.5	42,661.5	47,381.0	175,365.4
Amenity / lobby area (m²) [assumed – confirm with client]	500.0	500.0	500.0	500.0	2,000.0
Retail / commercial area (m²) [pending client]	0.0	0.0	0.0	0.0	0.0
Design heating thermal load (kW) [50 W / sq m of suite, amenity and retail area]	2,158.1	2,158.1	2,158.1	2,394.1	8,868.3
Corridor make-up air flow (L/s) [~4,700 L/s per high-rise + 1,000 L/s per midrise – assumed, confirm with mechanical consultant]	5,700	4,700	4,700	5,700	20,800
Corridor make-up air heating thermal load (kW) [1.2 kg/m³ x 1.006 kJ/kg·K x airflow x (20 °C supply – (–18 °C) design)]	261.5	215.6	215.6	261.5	954.2
Heating Air-Supply HP input at design COP (kW) [(space + make-up air heating) / COP 2; heat pumps sized for full design load]	1,209.8	1,186.8	1,186.8	1,327.8	4,911.2
Winter FCU fans + loop pumps (kW) [# of units * .35]	157.5	157.5	157.5	175.0	647.5
Backup Heating (kW) [interlocked standby – not added, Rule 8-106 non-coincident loads]	0.0	0.0	0.0	0.0	0.0
Domestic Hot Water daily energy (kWh/day) [# of units * 7.267 kWh/unit/day]	3,270.2	3,270.2	3,270.2	3,633.5	13,444.0
Domestic Hot Water Air Source Heat Pump recovery input (kW) [daily heat / 8 recovery hours / COP 2]	204.4	204.4	204.4	227.1	840.2
Simultaneous DHW boost (kW) [not added – resistance elements assumed not to run concurrently with full heat pump recovery]	0.0	0.0	0.0	0.0	0.0
DHW electrical total at 100% (kW)	204.4	204.4	204.4	227.1	840.2
Winter space-heating electrical (kW)	1,367.3	1,344.3	1,344.3	1,502.8	5,558.7
Demand excluding EV (kW)	2,836.3	2,788.6	2,788.6	3,120.2	11,533.8
Demand excluding EV (kVA)	3,151.5	3,098.5	3,098.5	3,466.9	12,815.3
Calculated Demand (kW)	**2,889.6**	**2,841.9**	**2,841.9**	**3,193.4**	**11,766.7**
Demand (kVA at assumed PF)	3,210.6	3,157.7	3,157.7	3,548.2	13,074.1
Service Sizing Equipment (kVA) [[Unit demand + (Mechanical + Common + EV demand)/0.8] / 0.9]	**3,828.5**	**3,762.3**	**3,762.3**	**4,232.0**	**15,585.1**
Demand per unit (kW/unit)	6.42	6.32	6.32	6.39	6.36
Fire pump (kW) [information only – emergency load, excluded from demand; 75 kW (100 HP) typical for 30+ storey tower]	75.0	75.0	75.0	75.0	300.0
EV demand – sensitivity (kW) [information only – all spaces EV-ready under EVEMS: 0.8 spaces/unit x 1.0 kW/space, Rule 8-106; confirm Town of Oakville requirement]	360.0	360.0	360.0	400.0	1,480.0

Scenario B – Gas-fired heating, make-up air and DHW

Mechanical load – gas scenario (kW) [larger of summer cooling and winter FCU fans + loop pumps; boilers, gas-fired make-up air and DHW]	**1,513.0**	**1,500.2**	**1,500.2**	**1,673.0**	**6,186.2**
Calculated Demand (kW)	**2,685.2**	**2,637.5**	**2,637.5**	**2,966.3**	**10,926.5**
Demand (kVA at assumed PF)	2,983.5	2,930.6	2,930.6	3,295.9	12,140.5
Service Sizing Equipment (kVA) [[Unit demand + (Mechanical + Common + EV demand)/0.8] / 0.9]	**3,544.6**	**3,478.4**	**3,478.4**	**3,916.6**	**14,418.0**
Demand per unit (kW/unit)	5.97	5.86	5.86	5.93	5.91

Block 1 Load Forecast (cumulative kVA)

In-service year [assumed within client's 2–10 year window – confirm with client]	4	6	8	10	

Year	**Scenario A (kVA)**	**Scenario B (kVA)**
Year 2	0.0	0.0
Year 4	3,210.6	2,983.5
Year 6	6,368.3	5,914.1
Year 8	9,525.9	8,844.6
Year 10	13,074.1	12,140.5

Notes:

Block 1 Total is the arithmetic sum of tower demands (no diversity between buildings). Tower unit split per team. Townhouses 3B assumed included in Tower 3A unit count.

Preliminary loads for Oakville Hydro planning only – not for design or sizing of building services.

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Preliminary Load Calculation for 420-468 South Service Road East, Town of Oakville, ON

Block	2				Block 2 Total
Master-plan Towers	5A + 5B	6	7	8A + 8B + 8C	
Residential units (rounded to nearest 50)	500	450	450	450	1,850
3-bedroom count (20% of total units)	100	90	90	90	370
2-bedroom count (rounded) (35% of total units)	175	158	158	158	649
1-bedroom count (remaining)	225	202	202	202	831
Load per 3-bedroom unit (kW) [Rule 8-202(1)(a): 3.5 kW first 45 m² + 1.5 kW per additional 90 m² or portion (130.06 m²) + 6 kW range + 25% x (5 kW dryer + 2 kW other)]	13.75	13.75	13.75	13.75	
Load per 2-bedroom unit (kW) [same basis, 106.84 m²]	13.75	13.75	13.75	13.75	
Load per 1-bedroom unit (kW) [same basis, 69.68 m²]	12.75	12.75	12.75	12.75	
Associated midrise buildings	1	0	0	1	2
High-rise elevators	4	4	4	4	16
Midrise elevators	2	0	0	2	4
Total elevators	6	4	4	6	20
Undiversified suites excl HVAC (kW) [unit counts x load per unit above]	6,650.0	5,985.5	5,985.5	5,985.5	24,606.5
Heaviest unit excl HVAC (kW) [as per 8-202(3)(a)(i) – largest load per unit of unit types present]	13.75	13.75	13.75	13.75	
First 1 unit at 100% (kW)	13.8	13.8	13.8	13.8	55.0
Next 2 units at 65% (kW) [as per 8-202(3)(a)(ii)-(v)]	17.9	17.9	17.9	17.9	71.5
Next 2 units at 40% (kW) [as per 8-202(3)(a)(ii)-(v)]	11.0	11.0	11.0	11.0	44.0
Next 15 units at 25% (kW) [as per 8-202(3)(a)(ii)-(v)]	51.6	51.6	51.6	51.6	206.3
Remaining units at 10% (kW) [as per 8-202(3)(a)(ii)-(v)]	637.5	571.1	571.1	571.1	2,350.7
Diversified dwelling load (kW)	**731.7**	**665.2**	**665.2**	**665.2**	**2,727.4**
Summer plant + Fan Coil Units allowance (kW) [3.2kW/unit as a conservative estimate/ could be central cooling/pumps circulating chilled water, etc]	1,600.0	1,440.0	1,440.0	1,440.0	5,920.0
Corridor make-up air cooling (kW) [1.2 kg/m³ x airflow (L/s) x 32 kJ/kg enthalpy difference / COP 3]	73.0	60.2	60.2	73.0	266.2
Summer space-conditioning electrical (kW)	1,673.0	1,500.2	1,500.2	1,513.0	6,186.2
Winter space-heating electrical (kW) [from heating calculation below]	1,502.8	1,344.3	1,344.3	1,367.3	5,558.7
Seasonal governing space-conditioning (kW) [larger of summer and winter – non-coincident loads, Rule 8-106]	1,673.0	1,500.2	1,500.2	1,513.0	6,186.2
Mechanical load incl DHW (kW)	**1,900.1**	**1,704.5**	**1,704.5**	**1,717.3**	**7,026.5**
Corridors and house receptacles (kW) [0.5 kW/ unit - Connected allowance, before 75% demand factor]	250.0	225.0	225.0	225.0	925.0
Domestic water/drainage/Domestic Hot Water pumps (kW) [.3 kW/unit - Connected allowance; excludes central heating/cooling pumps in mechanical calculation.]	150.0	135.0	135.0	135.0	555.0
Elevators (kW) [22.5 kW / elevator - Allowance, not motor nameplate or manufacturer selection]	135.0	90.0	90.0	135.0	450.0
Allocated garage footprint (m²) [Block 2 area (18,833 m² per Master Plan) x tower share of units – assumed, confirm with client]	5,090.0	4,581.0	4,581.0	4,581.0	18,833.0
Allocated garage area (m²) [Area (sq m) * 70% coverage * 2 parking levels]	7,126.0	6,413.4	6,413.4	6,413.4	26,366.2
Garage lighting (kW) [0.0025 kW (connected lighting) * Allocated Garage area]	17.8	16.0	16.0	16.0	65.9
Garage ventilation (kW) [0.005 kW * Allocated Garage area]	35.6	32.1	32.1	32.1	131.8
Corridor make-up air unit fans (kW) [1.5 kW per 1,000 L/s of make-up air]	8.6	7.1	7.1	8.6	31.2
Amenity / lobby lighting and power (kW) [30 W/m² of amenity / lobby area]	15.0	15.0	15.0	15.0	60.0
Retail / commercial lighting and power (kW) [30 W/m² placeholder – confirm against Rule 8-210 / Table 14 once uses are known]	0.0	0.0	0.0	0.0	0.0
Garage ramp heating / snow melting (kW) [15 kW allowance per tower]	15.0	15.0	15.0	15.0	60.0
Other house allowance (kW) [15 kW other; fire pump excluded from demand – listed below for information]	15.0	15.0	15.0	15.0	60.0
Common connected load (kW)	642.0	550.2	550.2	596.7	2,338.9
Common demand at 75% (kW)	**481.5**	**412.6**	**412.6**	**447.5**	**1,754.2**

EV equivalent ports allocated (approximate count/ tower – pro-rated from Block 1 at 8 per 450 units, assumed)	9	8	8	8	33
EV demand at 100% (kW) [208V * 32A * count] [as per Rule 8-106 / Section 86]	**59.9**	**53.2**	**53.2**	**53.2**	**219.6**
Total suite floor area (m²) [# of 3-bedroom units * 130.06 sq m + # of 2-bedroom units * 106.84 sq m + # of 1-bedroom units * 69.68 sq m]	47,381.0	42,661.5	42,661.5	42,661.5	175,365.4
Amenity / lobby area (m²) [assumed – confirm with client]	500.0	500.0	500.0	500.0	2,000.0
Retail / commercial area (m²) [pending client]	0.0	0.0	0.0	0.0	0.0
Design heating thermal load (kW) [50 W / sq m of suite, amenity and retail area]	2,394.1	2,158.1	2,158.1	2,158.1	8,868.3
Corridor make-up air flow (L/s) [~4,700 L/s per high-rise + 1,000 L/s per midrise – assumed, confirm with mechanical consultant]	5,700	4,700	4,700	5,700	20,800
Corridor make-up air heating thermal load (kW) [1.2 kg/m³ x 1.006 kJ/kg·K x airflow x (20 °C supply – (–18 °C) design)]	261.5	215.6	215.6	261.5	954.2
Heating Air-Supply HP input at design COP (kW) [(space + make-up air heating) / COP 2; heat pumps sized for full design load]	1,327.8	1,186.8	1,186.8	1,209.8	4,911.2
Winter FCU fans + loop pumps (kW) [# of units * .35]	175.0	157.5	157.5	157.5	647.5
Backup Heating (kW) [interlocked standby – not added, Rule 8-106 non-coincident loads]	0.0	0.0	0.0	0.0	0.0
Domestic Hot Water daily energy (kWh/day) [# of units * 7.267 kWh/unit/day]	3,633.5	3,270.2	3,270.2	3,270.2	13,444.0
Domestic Hot Water Air Source Heat Pump recovery input (kW) [daily heat / 8 recovery hours / COP 2]	227.1	204.4	204.4	204.4	840.2
Simultaneous DHW boost (kW) [not added – resistance elements assumed not to run concurrently with full heat pump recovery]	0.0	0.0	0.0	0.0	0.0
DHW electrical total at 100% (kW)	227.1	204.4	204.4	204.4	840.2
Winter space-heating electrical (kW)	1,502.8	1,344.3	1,344.3	1,367.3	5,558.7
Demand excluding EV (kW)	3,113.2	2,782.4	2,782.4	2,830.1	11,508.1
Demand excluding EV (kVA)	3,459.2	3,091.5	3,091.5	3,144.5	12,786.8
Calculated Demand (kW)	**3,173.1**	**2,835.6**	**2,835.6**	**2,883.3**	**11,727.7**
Demand (kVA at assumed PF)	3,525.7	3,150.7	3,150.7	3,203.7	13,030.8
Service Sizing Equipment (kVA) [[Unit demand + (Mechanical + Common + EV demand)/0.8] / 0.9]	**4,203.9**	**3,753.6**	**3,753.6**	**3,819.8**	**15,530.9**
Demand per unit (kW/unit)	6.35	6.30	6.30	6.41	6.34
Fire pump (kW) [information only – emergency load, excluded from demand; 75 kW (100 HP) typical for 30+ storey tower]	75.0	75.0	75.0	75.0	300.0
EV demand – sensitivity (kW) [information only – all spaces EV-ready under EVEMS: 0.8 spaces/unit x 1.0 kW/space, Rule 8-106; confirm Town of Oakville requirement]	400.0	360.0	360.0	360.0	1,480.0

Scenario B – Gas-fired heating, make-up air and DHW					
Mechanical load – gas scenario (kW) [larger of summer cooling and winter FCU fans + loop pumps; boilers, gas-fired make-up air and DHW]	**1,673.0**	**1,500.2**	**1,500.2**	**1,513.0**	**6,186.2**
Calculated Demand (kW)	**2,946.0**	**2,631.3**	**2,631.3**	**2,678.9**	**10,887.5**
Demand (kVA at assumed PF)	3,273.4	2,923.6	2,923.6	2,976.6	12,097.2
Service Sizing Equipment (kVA) [[Unit demand + (Mechanical + Common + EV demand)/0.8] / 0.9]	**3,888.5**	**3,469.7**	**3,469.7**	**3,536.0**	**14,363.9**
Demand per unit (kW/unit)	5.89	5.85	5.85	5.95	5.89

Block 2 Load Forecast (cumulative kVA)					
In-service year [assumed within client's 10–20 year window – confirm with client]	12	14	17	20	

Year	**Scenario A (kVA)**	**Scenario B (kVA)**
Year 10	0.0	0.0
Year 12	3,525.7	3,273.4
Year 14	6,676.4	6,197.0
Year 16	6,676.4	6,197.0
Year 18	9,827.1	9,120.6
Year 20	13,030.8	12,097.2

Notes:

Block 2 Total is the arithmetic sum of tower demands (no diversity between buildings). Tower unit split pro-rated to Master Plan tower heights (38/35/32/34 storeys), rounded to nearest 50 and adjusted to the client total – confirm with client. Townhouses 8C assumed included in Tower 8A unit count.

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Preliminary Load Calculation for 420-468 South Service Road East, Town of Oakville, ON

Block	3			Block 3 Total
Master-plan Towers	9A + 9B + 9C	10	11A + 11B + 11C	
Residential units (rounded to nearest 50)	350	400	300	1,050
3-bedroom count (20% of total units)	70	80	60	210
2-bedroom count (rounded) (35% of total units)	123	140	105	368
1-bedroom count (remaining)	157	180	135	472
Load per 3-bedroom unit (kW) [Rule 8-202(1)(a): 3.5 kW first 45 m² + 1.5 kW per additional 90 m² or portion (130.06 m²) + 6 kW range + 25% x (5 kW dryer + 2 kW other)]	13.75	13.75	13.75	
Load per 2-bedroom unit (kW) [same basis, 106.84 m²]	13.75	13.75	13.75	
Load per 1-bedroom unit (kW) [same basis, 69.68 m²]	12.75	12.75	12.75	
Associated midrise buildings	1	0	1	2
High-rise elevators	4	4	4	12
Midrise elevators	2	0	2	4
Total elevators	6	4	6	16
Undiversified suites excl HVAC (kW) [unit counts x load per unit above]	4,655.5	5,320.0	3,990.0	13,965.5
Heaviest unit excl HVAC (kW) [as per 8-202(3)(a)(i) – largest load per unit of unit types present]	13.75	13.75	13.75	
First 1 unit at 100% (kW)	13.8	13.8	13.8	41.3
Next 2 units at 65% (kW) [as per 8-202(3)(a)(ii)-(v)]	17.9	17.9	17.9	53.6
Next 2 units at 40% (kW) [as per 8-202(3)(a)(ii)-(v)]	11.0	11.0	11.0	33.0
Next 15 units at 25% (kW) [as per 8-202(3)(a)(ii)-(v)]	51.6	51.6	51.6	154.7
Remaining units at 10% (kW) [as per 8-202(3)(a)(ii)-(v)]	438.1	504.5	371.5	1,314.1
Diversified dwelling load (kW)	**532.2**	**598.7**	**465.7**	**1,596.6**
Summer plant + Fan Coil Units allowance (kW) [3.2kW/unit as a conservative estimate/ could be central cooling/pumps circulating chilled water, etc]	1,120.0	1,280.0	960.0	3,360.0
Corridor make-up air cooling (kW) [1.2 kg/m³ x airflow (L/s) x 32 kJ/kg enthalpy difference / COP 3]	73.0	60.2	73.0	206.1
Summer space-conditioning electrical (kW)	1,193.0	1,340.2	1,033.0	3,566.1
Winter space-heating electrical (kW) [from heating calculation below]	1,095.4	1,207.9	959.0	3,262.2
Seasonal governing space-conditioning (kW) [larger of summer and winter – non-coincident loads, Rule 8-106]	1,193.0	1,340.2	1,033.0	3,566.1
Mechanical load incl DHW (kW)	**1,351.9**	**1,521.8**	**1,169.2**	**4,043.0**
Corridors and house receptacles (kW) [0.5 kW/ unit - Connected allowance, before 75% demand factor]	175.0	200.0	150.0	525.0
Domestic water/drainage/Domestic Hot Water pumps (kW) [.3 kW/unit - Connected allowance; excludes central heating/cooling pumps in mechanical calculation.]	105.0	120.0	90.0	315.0
Elevators (kW) [22.5 kW / elevator - Allowance, not motor nameplate or manufacturer selection]	135.0	90.0	135.0	360.0
Allocated garage footprint (m²) [Block 3 area (16,431 m² per Master Plan) x tower share of units – assumed, confirm with client]	5,477.0	6,259.4	4,694.6	16,431.0
Allocated garage area (m²) [Area (sq m) * 70% coverage * 2 parking levels]	7,667.8	8,763.2	6,572.4	23,003.4
Garage lighting (kW) [0.0025 kW (connected lighting) * Allocated Garage area]	19.2	21.9	16.4	57.5
Garage ventilation (kW) [0.005 kW * Allocated Garage area]	38.3	43.8	32.9	115.0
Corridor make-up air unit fans (kW) [1.5 kW per 1,000 L/s of make-up air]	8.6	7.1	8.6	24.2
Amenity / lobby lighting and power (kW) [30 W/m² of amenity / lobby area]	15.0	15.0	15.0	45.0
Retail / commercial lighting and power (kW) [30 W/m² placeholder – confirm against Rule 8-210 / Table 14 once uses are known]	0.0	0.0	0.0	0.0

Garage ramp heating / snow melting (kW) [15 kW allowance per tower]	15.0	15.0	15.0	45.0
Other house allowance (kW) [15 kW other; fire pump excluded from demand – listed below for information]	15.0	15.0	15.0	45.0
Common connected load (kW)	526.1	527.8	477.8	1,531.7
Common demand at 75% (kW)	**394.5**	**395.8**	**358.4**	**1,148.8**
EV equivalent ports allocated (approximate count/ tower – pro-rated from Block 1 at 8 per 450 units, assumed)	7	8	6	21
EV demand at 100% (kW) [208V * 32A * count] [as per Rule 8-106 / Section 86]	**46.6**	**53.2**	**39.9**	**139.8**
Total suite floor area (m²) [# of 3-bedroom units * 130.06 sq m + # of 2-bedroom units * 106.84 sq m + # of 1-bedroom units * 69.68 sq m]	33,185.3	37,904.8	28,428.6	99,518.7
Amenity / lobby area (m²) [assumed – confirm with client]	500.0	500.0	500.0	1,500.0
Retail / commercial area (m²) [pending client]	0.0	0.0	0.0	0.0
Design heating thermal load (kW) [50 W / sq m of suite, amenity and retail area]	1,684.3	1,920.2	1,446.4	5,050.9
Corridor make-up air flow (L/s) [~4,700 L/s per high-rise + 1,000 L/s per midrise – assumed, confirm with mechanical consultant]	5,700	4,700	5,700	16,100
Corridor make-up air heating thermal load (kW) [1.2 kg/m³ x 1.006 kJ/kg·K x airflow x (20 °C supply – (–18 °C) design)]	261.5	215.6	261.5	738.6
Heating Air-Supply HP input at design COP (kW) [(space + make-up air heating) / COP 2; heat pumps sized for full design load]	972.9	1,067.9	854.0	2,894.7
Winter FCU fans + loop pumps (kW) [# of units * .35]	122.5	140.0	105.0	367.5
Backup Heating (kW) [interlocked standby – not added, Rule 8-106 non-coincident loads]	0.0	0.0	0.0	0.0
Domestic Hot Water daily energy (kWh/day) [# of units * 7.267 kWh/unit/day]	2,543.5	2,906.8	2,180.1	7,630.4
Domestic Hot Water Air Source Heat Pump recovery input (kW) [daily heat / 8 recovery hours / COP 2]	159.0	181.7	136.3	476.9
Simultaneous DHW boost (kW) [not added – resistance elements assumed not to run concurrently with full heat pump recovery]	0.0	0.0	0.0	0.0
DHW electrical total at 100% (kW)	159.0	181.7	136.3	476.9
Winter space-heating electrical (kW)	1,095.4	1,207.9	959.0	3,262.2
Demand excluding EV (kW)	2,278.7	2,516.4	1,993.3	6,788.3
Demand excluding EV (kVA)	2,531.9	2,795.9	2,214.8	7,542.6
Calculated Demand (kW)	**2,325.3**	**2,569.6**	**2,033.2**	**6,928.1**
Demand (kVA at assumed PF)	2,583.7	2,855.1	2,259.1	7,697.9
Service Sizing Equipment (kVA) [[Unit demand + (Mechanical + Common + EV demand)/0.8] / 0.9]	**3,081.7**	**3,402.6**	**2,694.6**	**9,178.9**
Demand per unit (kW/unit)	6.64	6.42	6.78	6.60
Fire pump (kW) [information only – emergency load, excluded from demand; 75 kW (100 HP) typical for 30+ storey tower]	75.0	75.0	75.0	225.0
EV demand – sensitivity (kW) [information only – all spaces EV-ready under EVEMS: 0.8 spaces/unit x 1.0 kW/space, Rule 8-106; confirm Town of Oakville requirement]	280.0	320.0	240.0	840.0
Scenario B – Gas-fired heating, make-up air and DHW				
Mechanical load – gas scenario (kW) [larger of summer cooling and winter FCU fans + loop pumps; boilers, gas-fired make-up air and DHW]	**1,193.0**	**1,340.2**	**1,033.0**	**3,566.1**
Calculated Demand (kW)	**2,166.3**	**2,387.9**	**1,897.0**	**6,451.2**
Demand (kVA at assumed PF)	2,407.0	2,653.3	2,107.7	7,168.0
Service Sizing Equipment (kVA) [[Unit demand + (Mechanical + Common + EV demand)/0.8] / 0.9]	**2,861.0**	**3,150.3**	**2,505.3**	**8,516.5**
Demand per unit (kW/unit)	6.19	5.97	6.32	6.14
Block 3 Load Forecast (cumulative kVA)				
In-service year [assumed within client's 15–25 year window – confirm with client]	17	21	25	
Year	**Scenario A (kVA)**	**Scenario B (kVA)**		

Year 15	0.0	0.0
Year 17	2,583.7	2,407.0
Year 19	2,583.7	2,407.0
Year 21	5,438.8	5,060.3
Year 23	5,438.8	5,060.3
Year 25	7,697.9	7,168.0

Notes:

Block 3 Total is the arithmetic sum of tower demands (no diversity between buildings). Tower unit split pro-rated to Master Plan tower heights (22/28/20 storeys), rounded to nearest 50 – confirm with client. Townhouses 9C and 11C assumed included in Tower 9A and 11A unit counts.

Preliminary loads for Oakville Hydro planning only – not for design or sizing of building services.

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Preliminary Load Calculation for 420-468 South Service Road East, Town of Oakville, ON

Block	4			Block 4 Total
Master-plan Towers	12A + 12B–12E	13	14	
Residential units (rounded to nearest 50)	250	450	300	1,000
3-bedroom count (20% of total units)	50	90	60	200
2-bedroom count (rounded) (35% of total units)	88	158	105	351
1-bedroom count (remaining)	112	202	135	449
Load per 3-bedroom unit (kW) [Rule 8-202(1)(a): 3.5 kW first 45 m² + 1.5 kW per additional 90 m² or portion (130.06 m²) + 6 kW range + 25% x (5 kW dryer + 2 kW other)]	13.75	13.75	13.75	
Load per 2-bedroom unit (kW) [same basis, 106.84 m²]	13.75	13.75	13.75	
Load per 1-bedroom unit (kW) [same basis, 69.68 m²]	12.75	12.75	12.75	
Associated midrise buildings	2	0	0	2
High-rise elevators	4	4	4	12
Midrise elevators	4	0	0	4
Total elevators	8	4	4	16
Undiversified suites excl HVAC (kW) [unit counts x load per unit above]	3,325.5	5,985.5	3,990.0	13,301.0
Heaviest unit excl HVAC (kW) [as per 8-202(3)(a)(i) – largest load per unit of unit types present]	13.75	13.75	13.75	
First 1 unit at 100% (kW)	13.8	13.8	13.8	41.3
Next 2 units at 65% (kW) [as per 8-202(3)(a)(ii)-(v)]	17.9	17.9	17.9	53.6
Next 2 units at 40% (kW) [as per 8-202(3)(a)(ii)-(v)]	11.0	11.0	11.0	33.0
Next 15 units at 25% (kW) [as per 8-202(3)(a)(ii)-(v)]	51.6	51.6	51.6	154.7
Remaining units at 10% (kW) [as per 8-202(3)(a)(ii)-(v)]	305.1	571.1	371.5	1,247.6
Diversified dwelling load (kW)	**399.2**	**665.2**	**465.7**	**1,530.2**
Summer plant + Fan Coil Units allowance (kW) [3.2kW/unit as a conservative estimate/ could be central cooling/pumps circulating chilled water, etc]	800.0	1,440.0	960.0	3,200.0
Corridor make-up air cooling (kW) [1.2 kg/m³ x airflow (L/s) x 32 kJ/kg enthalpy difference / COP 3]	85.8	60.2	60.2	206.1
Summer space-conditioning electrical (kW)	885.8	1,500.2	1,020.2	3,406.1
Winter space-heating electrical (kW) [from heating calculation below]	846.4	1,344.3	936.0	3,126.8
Seasonal governing space-conditioning (kW) [larger of summer and winter – non-coincident loads, Rule 8-106]	885.8	1,500.2	1,020.2	3,406.1
Mechanical load incl DHW (kW)	**999.3**	**1,704.5**	**1,156.4**	**3,860.3**
Corridors and house receptacles (kW) [0.5 kW/ unit - Connected allowance, before 75% demand factor]	125.0	225.0	150.0	500.0
Domestic water/drainage/Domestic Hot Water pumps (kW) [.3 kW/unit - Connected allowance; excludes central heating/cooling pumps in mechanical calculation.]	75.0	135.0	90.0	300.0
Elevators (kW) [22.5 kW / elevator - Allowance, not motor nameplate or manufacturer selection]	180.0	90.0	90.0	360.0
Allocated garage footprint (m²) [Block 4 area (13,200 m² per Master Plan) x tower share of units – assumed, confirm with client]	3,300.0	5,940.0	3,960.0	13,200.0
Allocated garage area (m²) [Area (sq m) * 70% coverage * 2 parking levels]	4,620.0	8,316.0	5,544.0	18,480.0
Garage lighting (kW) [0.0025 kW (connected lighting) * Allocated Garage area]	11.6	20.8	13.9	46.2
Garage ventilation (kW) [0.005 kW * Allocated Garage area]	23.1	41.6	27.7	92.4
Corridor make-up air unit fans (kW) [1.5 kW per 1,000 L/s of make-up air]	10.1	7.1	7.1	24.2
Amenity / lobby lighting and power (kW) [30 W/m² of amenity / lobby area]	15.0	15.0	15.0	45.0
Retail / commercial lighting and power (kW) [30 W/m² placeholder – confirm against Rule 8-210 / Table 14 once uses are known]	0.0	0.0	0.0	0.0

Garage ramp heating / snow melting (kW) [15 kW allowance per tower]	15.0	15.0	15.0	45.0
Other house allowance (kW) [15 kW other; fire pump excluded from demand – listed below for information]	15.0	15.0	15.0	45.0
Common connected load (kW)	469.7	564.4	423.6	1,457.8
Common demand at 75% (kW)	**352.3**	**423.3**	**317.7**	**1,093.3**
EV equivalent ports allocated (approximate count/ tower – pro-rated from Block 1 at 8 per 450 units, assumed)	5	8	6	19
EV demand at 100% (kW) [208V * 32A * count] [as per Rule 8-106 / Section 86]	**33.3**	**53.2**	**39.9**	**126.5**
Total suite floor area (m²) [# of 3-bedroom units * 130.06 sq m + # of 2-bedroom units * 106.84 sq m + # of 1-bedroom units * 69.68 sq m]	23,709.1	42,661.5	28,428.6	94,799.2
Amenity / lobby area (m²) [assumed – confirm with client]	500.0	500.0	500.0	1,500.0
Retail / commercial area (m²) [pending client]	0.0	0.0	0.0	0.0
Design heating thermal load (kW) [50 W / sq m of suite, amenity and retail area]	1,210.5	2,158.1	1,446.4	4,815.0
Corridor make-up air flow (L/s) [~4,700 L/s per high-rise + 1,000 L/s per midrise – assumed, confirm with mechanical consultant]	6,700	4,700	4,700	16,100
Corridor make-up air heating thermal load (kW) [1.2 kg/m³ x 1.006 kJ/kg·K x airflow x (20 °C supply – (–18 °C) design)]	307.4	215.6	215.6	738.6
Heating Air-Supply HP input at design COP (kW) [(space + make-up air heating) / COP 2; heat pumps sized for full design load]	758.9	1,186.8	831.0	2,776.8
Winter FCU fans + loop pumps (kW) [# of units * .35]	87.5	157.5	105.0	350.0
Backup Heating (kW) [interlocked standby – not added, Rule 8-106 non-coincident loads]	0.0	0.0	0.0	0.0
Domestic Hot Water daily energy (kWh/day) [# of units * 7.267 kWh/unit/day]	1,816.8	3,270.2	2,180.1	7,267.0
Domestic Hot Water Air Source Heat Pump recovery input (kW) [daily heat / 8 recovery hours / COP 2]	113.5	204.4	136.3	454.2
Simultaneous DHW boost (kW) [not added – resistance elements assumed not to run concurrently with full heat pump recovery]	0.0	0.0	0.0	0.0
DHW electrical total at 100% (kW)	113.5	204.4	136.3	454.2
Winter space-heating electrical (kW)	846.4	1,344.3	936.0	3,126.8
Demand excluding EV (kW)	1,750.8	2,793.1	1,939.8	6,483.7
Demand excluding EV (kVA)	1,945.4	3,103.4	2,155.4	7,204.2
Calculated Demand (kW)	**1,784.1**	**2,846.3**	**1,979.8**	**6,610.2**
Demand (kVA at assumed PF)	1,982.3	3,162.6	2,199.7	7,344.7
Service Sizing Equipment (kVA) [[Unit demand + (Mechanical + Common + EV demand)/0.8] / 0.9]	**2,367.0**	**3,768.5**	**2,620.3**	**8,755.8**
Demand per unit (kW/unit)	7.14	6.33	6.60	6.61
Fire pump (kW) [information only – emergency load, excluded from demand; 75 kW (100 HP) typical for 30+ storey tower]	75.0	75.0	75.0	225.0
EV demand – sensitivity (kW) [information only – all spaces EV-ready under EVEMS: 0.8 spaces/unit x 1.0 kW/space, Rule 8-106; confirm Town of Oakville requirement]	200.0	360.0	240.0	800.0
Scenario B – Gas-fired heating, make-up air and DHW				
Mechanical load – gas scenario (kW) [larger of summer cooling and winter FCU fans + loop pumps; boilers, gas-fired make-up air and DHW]	**885.8**	**1,500.2**	**1,020.2**	**3,406.1**
Calculated Demand (kW)	**1,670.6**	**2,642.0**	**1,843.5**	**6,156.0**
Demand (kVA at assumed PF)	1,856.2	2,935.5	2,048.3	6,840.0
Service Sizing Equipment (kVA) [[Unit demand + (Mechanical + Common + EV demand)/0.8] / 0.9]	**2,209.3**	**3,484.6**	**2,431.1**	**8,125.0**
Demand per unit (kW/unit)	6.68	5.87	6.15	6.16
Block 4 Load Forecast (cumulative kVA)				
In-service year [assumed within client's 20–25 year window – confirm with client]	21	23	25	
Year	**Scenario A (kVA)**	**Scenario B (kVA)**		

Year 20	0.0	0.0
Year 21	1,982.3	1,856.2
Year 22	1,982.3	1,856.2
Year 23	5,144.9	4,791.7
Year 24	5,144.9	4,791.7
Year 25	7,344.7	6,840.0

Notes:

Block 4 Total is the arithmetic sum of tower demands (no diversity between buildings). Tower unit split pro-rated to Master Plan tower heights (20/33/23 storeys), rounded to nearest 50 – confirm with client. Mid-rises 12B and 12C and townhouses 12D and 12E assumed included in Tower 12A unit count.

Preliminary loads for Oakville Hydro planning only – not for design or sizing of building services.

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Block	Transformer IDs	Transformer size	Towers/buildings served	PDF demand (kVA)
1	TR-01, TR-02	2 × 2,000 kVA	1A + 1B	3,210.60
1	TR-03, TR-04	2 × 2,000 kVA	Tower 2	3,157.70
1	TR-05, TR-06	2 × 2,000 kVA	3A + 3B	3,157.70
1	TR-07, TR-08	2 × 2,500 kVA	4A + 4B	3,548.20
2	TR-09, TR-10	2 × 2,500 kVA	5A + 5B	3,525.70
2	TR-11, TR-12	2 × 2,000 kVA	Tower 6	3,150.70
2	TR-13, TR-14	2 × 2,000 kVA	Tower 7	3,150.70
2	TR-15, TR-16	2 × 2,000 kVA	8A + 8B + 8C	3,203.70
3	TR-17, TR-18	2 × 2,000 kVA	9A + 9B + 9C	2,583.70
3	TR-19, TR-20	2 × 2,000 kVA	Tower 10	2,855.10
3	TR-21	1 × 3,000 kVA	11A + 11B + 11C	2,259.10
4	TR-22	1 × 2,500 kVA	12A + 12B–12E	1,982.30
4	TR-23, TR-24	2 × 2,000 kVA	Tower 13	3,162.60
4	TR-25	1 × 3,000 kVA	Tower 14	2,199.70

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