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January 22, 2019

Delivered by RESS & Courier

Ms. Kirsten Walli, Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Board File No. EB-2018-0028
Energy+ Inc. – 2019 Cost of Service Application
Response to Technical Conference Questions

Dear Ms Walli:

Please find attached the Responses to Technical Conference Questions received by Energy+ Inc. on January 16, 2019 from Board Staff and Intervenors. Some materials will be filed in confidence as identified in the confidentiality cover letter.

Two hard copies of the Response to Technical Conference Questions, along with a Confidential Filing package, are being couriered to the OEB's offices.

Respectfully submitted,

Sarah Hughes, CPA, CA, C.Dir
Chief Financial Officer

c.c. Borden Ladner Gervais, John A.D. Vellone
Intervenors of Record

Energy+ Inc.

EB-2018-0028

Response to
Technical Conference Questions

Ontario Energy Board
(Board Staff)

January 22, 2019

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Staff TC Question #1

Updated Evidence – Facilities Plan

a) Please explain the basis of Class C estimate i.e. how much of the design has been completed? How about Class A and Class B estimates?

RESPONSE

The Class C estimate is based on the schematic designs contained in the Design Brief (filed in response to TQ SEC-2), decisions that have been made with respect to certain finishes and materials, environmental mitigation solutions, and mechanical system selection. At this stage, the overall design is estimated to be approximately 33% complete.

Class B estimates are based on working and/or construction level drawings that include preliminary mechanical and electrical plans. At this stage the overall design is typically 50% - 66% complete.

Class A estimates can only be prepared once construction documents are 100% complete and ready to be sent out for tender.

Staff TC Question #1

Updated Evidence – Facilities Plan

b) Please provide the architectural fees incurred to date (including the cost to prepare the Design Brief). Please clarify whether or not the architectural fees will be part of the ACM.

RESPONSE

The architectural fees incurred to December 31, 2018 are approximately $232,000. The total expected architectural fees for the project are estimated to be $608,000 and are included as part of the ACM.

Staff TC Question #1

Updated Evidence – Facilities Plan

c) Please clarify whether or not Energy+ will bear any costs for the environmental approvals and building permits. If so, please specify the costs and clarify whether or not such costs will be part of the ACM. If not, why not.

RESPONSE

Energy+ will bear the costs for a peer review of the Record of Site Condition and the proposed mitigation solution. The review is expected to cost approximately $10,000 and has not been specifically included as part of the $8.1 million estimate in the ACM.

Energy+ will bear the cost of building permits for the renovation of its portion of the building. This is estimated to be approximately $10,000 and is included in the $8.1 million estimate in the ACM.

Staff TC Question #1

Updated Evidence – Facilities Plan

d) In responses to 2-Staff-12 k), Energy+ stated that it will engage a project manager to help ensure that the renovations are completed on schedule, within scope and within budget.

   i. Please provide the forecast costs for hiring a project manager.

   ii. Will such costs be part of the ACM?

RESPONSE

i) Energy+ forecasts project management costs of approximately $50,000 for the construction period.

ii) Energy+ expects this cost will be covered as part of the $420,000 Construction Management Fee (line 3.3.2 on the Class C estimate).

Staff TC Question #1

Updated Evidence – Facilities Plan

e) Please provide the cost estimates to engage a third-party environmental firm to conduct a peer review of the Record of Site Condition and the recommended mitigation measures.

RESPONSE

Energy+ has provided direction to the architectural firm, Martin Simmons, to obtain fee proposals from several qualified environmental firms to conduct the peer review. The evaluation of the proposals will be provided at the Technical Conference, if available.

In the interim, Martin Simmons have advised that, based on experience with peer reviews for other clients, the cost should be in the $5,000 - $10,000 range.

The forecasted cost of the recommended mitigation measures are outlined in response to TCQ SEC 1 as $207,000.

Staff TC Question #1

Updated Evidence – Facilities Plan

f) Please provide a bill impact analysis for the Southworks Facility.

RESPONSE

Table 1 below summarizes the estimated bill impacts for the Southworks Facility based on the following assumptions:

(a) Monthly distribution rate impact computed based on the following information/assumptions:

- Estimated annual revenue requirement for the Southworks Facility of $940,685 (please refer to Response to SEC TC #8e for supporting computation);
- Allocation of the annual revenue requirement by rate class, based upon the proportion of revenue by rate class in the Cost Allocation Model filed with the Settlement Proposal;
- Fixed and Variable Rate Split by Class by upon the most recent Rate Design proposal filed with the Settlement Proposal;
- Incremental change in the monthly distribution revenue as a percentage of the 2019 Proposed Monthly Distribution Charge.

(b) Monthly Bill impact computed based on similar assumptions including:

- Incremental change in the monthly distribution revenue as a percentage of the 2019 Proposed Total Bill Impacts.
- Proposed Total Bill Impacts are based on the underlying assumptions and models for cost allocation, rate design, and deferral and variance account dispositions, as filed with the Settlement Proposal.

Energy+ would note that the timing of the incremental distribution revenue is estimated to be 2022 (based on the planned in-service date), and therefore the estimated % Distribution Rate Impacts and Bill Impacts using 2019 information is only a proxy.

Table 1: Estimated Bill Impacts – Southworks Facility

						Estimate of Southworks Bill Impact				
CND Service Territory	kWh	kW		2019 Proposed (Settlement)		Incremental Distribution Rate			Distribution	Bill Impact
				Distribution	Total Bill	Fixed	Variable	$ Change	% Impact	% Impact
Residential	750	-	/kWh	$ 27.61	$ 102.30	$ 0.83	$ -	$ 0.83	3.0%	0.8%
Residential	-	-	/kWh	$ 27.61	$ 59.66	$ 0.83	$ -	$ 0.83	3.0%	1.4%
GS < 50 kW	2,000	-	/kW	$ 46.69	$ 255.37	$ 0.37	0.0004	$ 1.17	2.5%	0.5%
GS >50 to 999 kW	20,000	60	/kW	$ 318.00	$ 3,420.69	$ 2.21	0.0794	$ 6.97	2.2%	0.2%
GS >1,000 to 4,999	800,000	2,000	/kW	$ 8,453.67	$ 126,050.38	$ 21.03	0.0757	$ 172.43	2.0%	0.1%
Large Use	6,600,000	16,000	/kW	$ 46,679.76	$ 1,006,043.72	$ 247.54	0.0629	$ 1,253.94	2.7%	0.1%
Unmetered Scattered Load	100		/kWh	$ 7.24	$ 17.77	$ 0.17	0.0004	$ 0.21	2.9%	1.2%
Street Lighting	400,000	700	/kW	$ 35,339.88	$ 98,037.38	$ 0.05	0.364	$ 254.85	0.7%	0.3%
EMB - WNH	-	8,280	/kW	$ 11,283.98	$ 37,972.43	$ -	0.0356	$ 294.77	2.6%	0.8%
EMB - HONI	1,382,000	2,574	/kW	$ 4,515.57	$ 201,417.93	$ -	0.0461	$ 118.66	2.6%	0.1%

						Estimate of Southworks Bill Impact				
Brant Service Territory	kWh	kW		2019 Proposed (Settlement)		Incremental Distribution Rate			Distribution	Bill Impact
				Distribution	Total Bill	Fixed	Variable	$ Change	% Impact	% Impact
Residential	750	-	/kWh	$ 27.61	$ 102.30	$ 0.83	0.0000	$ 0.83	3.0%	0.8%
Residential	-	-	/kWh	$ 27.61	$ 63.95	$ 0.83	0.0000	$ 0.83	3.0%	1.3%
GS < 50 kW	2,000	-	/kW	$ 46.69	$ 255.37	$ 0.37	0.0004	$ 1.17	2.5%	0.5%
GS >50 to 999 kW Interval <1000	20,000	60	/kW	$ 318.00	$ 3,423.14	$ 2.21	0.0794	$ 6.97	2.2%	0.2%
GS >50 to 999 kW	20,000	60	/kW	$ 318.00	$ 3,420.69	$ 21.03	0.0757	$ 25.57	8.0%	0.7%
GS >1,000 to 4,999	800,000	2,000	/kW	$ 8,453.67	$ 126,050.38	$ 247.54	0.0629	$ 373.34	4.4%	0.3%
Unmetered Scattered Load	100	-	/kWh	$ 7.24	$ 17.78	$ 0.17	0.0004	$ 0.21	2.9%	1.2%
Sentinel Lighting	10,000	29	/kW	$ 1,696.61	$ 2,774.43	$ 0.08	1.2672	$ 36.83	2.2%	1.3%
Street Lighting	600,000	176	/kW	$ 8,230.18	$ 92,813.32	$ 0.05	0.3640	$ 64.11	0.8%	0.1%
EMB - BPI	50,000	27	/kW	$ 317.71	$ 7,229.70	$ -	0.3093	$ 8.35	2.6%	0.1%
EMB - HON #1	1,300,000	2,340	/kW	$ 2,356.44	$ 186,464.55	$ 1.50	0.0257	$ 61.64	2.6%	0.0%
EMB - HON #2	1,990,000	4,050	/kW	$ 57.39	$ 268,125.65	$ 1.61	0.0000	$ 1.61	2.8%	0.0%

Staff TC Question #2

Updated Evidence – DVA Account 1508 Sub-Account Monthly Billing

a) Please provide the detailed calculation to support the estimate of $6,185,566 one-time monthly billing collection benefit.

RESPONSE

Energy+ has estimated the one-time monthly billing collection benefit by calculating the average monthly gross revenue for residential customers in the CND rate zone in 2016. The basis of this estimate and assumption was premised on CND billing one month sooner at the time of the transition to monthly billing.

CND Residential Gross Revenue	**2016**
Energy Sales & RTSR	62,719,213
Distribution Services	13,587,137
DVA & Other	(2,079,556)
Total	74,226,794
Monthly Average	6,185,566

Energy+ notes that the one-time monthly billing collection benefit was calculated using the average of the entire gross revenue balance attributable to CND residential customers, which based on this methodology included those residential customers that were already on an equal monthly payment plan.

Collections under the equal payment plan occur on a monthly basis. Energy+ estimates that if the monthly collections for those residential customers were excluded, the one-time monthly billing collection benefit would be $5,706,566, and the cash flow benefit computed would be $15,693 and $68,749 for 2016 and 2017 respectively or a reduction of $7,065 from the amount included in the D&V balance as part of the updated evidence.

Staff TC Question #2

Updated Evidence – DVA Account 1508 Sub-Account Monthly Billing

b) Please estimate the cash flow benefit resulting from the monthly billing for GS<50 kW customers in the CND rate zone.

RESPONSE

The following table outlines the estimated cash flow benefit resulting from the conversion to monthly billing for GS<50kW customers.

	2016	2017	Total
One-time Monthly Billing Collection Benefit	623,340	623,340	
Prescribed DVA Interest Rates	1.10%	1.20%	
Proportion of Year	25.00%	100.00%	
Estimated Cash Flow Benefit	1,714	7,480	9,194

The one-time monthly billing collection benefit was determined by calculating the average monthly gross revenue for GS<50kW customers in the CND rate zone in 2016 and prorating the amount based on the proportion of revenue that was billed on a bi-monthly basis prior to conversion to monthly billing.

CND GS<50kW Gross Revenue	2016
Energy Sales	16,482,604
Distribution Services	3,108,245
DVA & Other	(192,106)
Total	19,398,743
Monthly Average	1,616,562
Proportion of Revenue Billed Bi-monthly	39%
Monthly Average for Bi-monthly Billed	623,340

Staff TC Question #3

Ref: Cost Allocation, 7-Staff-79

Energy+ estimated that "between the years 2012 and 2017, the value of service drops in the CND service territory was $3,564,000." It stated that accounts 1830, 1835, 1840, 1845, and 1850 have been used to track these costs. Energy+ also estimated average costs of $655 and $1,750 for overhead and underground residential service drops respectively.

a) Of the $3,564,000 in service drops in the CND territory, please indicate approximately how much would have been tracked in each USoA account.

RESPONSE

The following is a breakdown of the approximate amounts by USoA account:

1830	$2,303
1835	$133,192
1840	$319,983
1845	$3,073,400
1850	$35,145
Total	$3,564,023

Energy+ notes that the estimate of $3,564,000 provided in the initial response included an estimate of $221,000 for each of the 2018 Bridge Year and 2019 Test Year.

Staff TC Question #3

Cost Allocation, 7-Staff-79

b) Please estimate what proportion of Residential customers are provided with overhead services versus underground services.

RESPONSE

Energy+ estimates that 38% of Residential customers are provided with overhead services and 62% of Residential customers are provided with underground services.

Staff TC Question #4

Ref: LRAMVA, 4-Staff-68

OEB staff would like to request further information on the demand savings claimed for the CHP project in the CND rate zone. This CHP project was implemented in 2015, and the persistence of monthly peak demand savings in 2016 and 2017 are included as lost revenues as part of the LRAMVA.

In response to part a, Energy+ confirmed that this was a project undertaken as part of the Process and Systems Upgrades Initiatives (PSUI), and Energy+ is seeking to claim demand savings from the CHP project only. Energy+ confirmed that it has been working with the IESO to identify a modelling approach that would estimate statistically significant savings for the chiller project. As such, demand savings from the chiller project have not been included in the LRAMVA.

a) How is Energy+ defining peak demand of the facility? Are the estimated monthly peaks based on an analysis of highest peak usage in all months of the year? If not, please explain the approach to determine the monthly peak.

RESPONSE

For the purposes of the LRAMVA computation, two monthly peaks were computed:

1. The hour in the month when the facility had the highest peak demand. This peak is the peak solely attributable to the Energy+ supply.
2. The hour in the month when the facility would have had the highest peak demand, in the absence of the cogeneration facility. This peak is based on the highest peak with the Energy+ supply and the co-generation combined.

The estimated monthly peaks for the purposes of LRAMVA were computed on a monthly basis.

Staff TC Question #4

Ref: LRAMVA, 4-Staff-68

OEB staff would like to request further information on the demand savings claimed for the CHP project in the CND rate zone. This CHP project was implemented in 2015, and the persistence of monthly peak demand savings in 2016 and 2017 are included as lost revenues as part of the LRAMVA.

In response to part a, Energy+ confirmed that this was a project undertaken as part of the Process and Systems Upgrades Initiatives (PSUI), and Energy+ is seeking to claim demand savings from the CHP project only. Energy+ confirmed that it has been working with the IESO to identify a modelling approach that would estimate statistically significant savings for the chiller project. As such, demand savings from the chiller project have not been included in the LRAMVA.

b) Please provide the peak hours in each month of 2016 and 2017 when:
   i. The facility was at its peak with the CHP
   ii. The facility would have been at its peak in the absence of the CHP

RESPONSE

The table below provides the peak hour information for 2016 and 2017. The facility at its peak with the CHP is presented as Net Load, and the facility at its peak in the absence of the CHP is presented as Gross Load.

2016

Peak Hour (Gross Load)		Peak Hour (Net Load)	
1/6/2016	24:00	1/7/2016	13:00
2/18/2016	8:00	2/3/2016	11:00
3/8/2016	15:00	3/2/2016	2:00
4/1/2016	9:00	4/22/2016	12:00
5/27/2016	22:00	5/16/2016	10:00
6/20/2016	12:00	6/20/2016	12:00
7/25/2016	10:00	7/7/2016	23:00
8/5/2016	10:00	8/5/2016	10:00
9/8/2016	14:00	9/8/2016	14:00
10/6/2016	20:00	10/6/2016	14:00
11/23/2016	21:00	11/2/2016	12:00
12/20/2016	11:00	12/15/2016	15:00

2017

Peak Hour (Gross Load)		Peak Hour (Net Load)	
1/4/2017	19:00	1/26/2017	21:00
2/27/2017	21:00	2/22/2017	21:00
3/27/2017	18:00	3/27/2017	18:00
4/27/2017	10:00	4/21/2017	10:00
5/18/2017	18:00	5/25/2017	14:00
6/22/2017	20:00	6/12/2017	12:00
7/12/2017	18:00	7/12/2017	18:00
8/22/2017	10:00	8/22/2017	10:00
9/26/2017	14:00	9/26/2017	14:00
10/3/2017	18:00	10/23/2017	7:00
11/10/2017	20:00	11/8/2017	8:00
12/13/2017	11:00	12/5/2017	8:00

Staff TC Question #4

Ref: LRAMVA, 4-Staff-68

OEB staff would like to request further information on the demand savings claimed for the CHP project in the CND rate zone. This CHP project was implemented in 2015, and the persistence of monthly peak demand savings in 2016 and 2017 are included as lost revenues as part of the LRAMVA.

In response to part a, Energy+ confirmed that this was a project undertaken as part of the Process and Systems Upgrades Initiatives (PSUI), and Energy+ is seeking to claim demand savings from the CHP project only. Energy+ confirmed that it has been working with the IESO to identify a modelling approach that would estimate statistically significant savings for the chiller project. As such, demand savings from the chiller project have not been included in the LRAMVA.

c) Please explain why it would be appropriate to capture lost revenues based on what was billed (with and without the CHP) as opposed to comparing lost load from the peak at the same hour of the day.

RESPONSE

It is Energy+'s view that the approach of utilizing the monthly gross load peak demand, inclusive of CHP, represents a verifiable proxy for the demand the customer would have been billed for in the absence of the CHP project. The actual peak demand on a combined basis can be calculated as both the peak of the load and the CHP are measured. The difference between the monthly peak demand, including the CHP, less the peak demand billed to the customer, would represent the amount of lost revenue specifically attributable to the CHP project.

It is Energy+'s view that using the peak of the CHP at the same hour of the day as the peak demand used for billing would not necessarily be coincident with the overall peak that the customer would have been billed for in the absence of the CHP.

Staff TC Question #4

Ref: LRAMVA, 4-Staff-68

OEB staff would like to request further information on the demand savings claimed for the CHP project in the CND rate zone. This CHP project was implemented in 2015, and the persistence of monthly peak demand savings in 2016 and 2017 are included as lost revenues as part of the LRAMVA.

In response to part a, Energy+ confirmed that this was a project undertaken as part of the Process and Systems Upgrades Initiatives (PSUI), and Energy+ is seeking to claim demand savings from the CHP project only. Energy+ confirmed that it has been working with the IESO to identify a modelling approach that would estimate statistically significant savings for the chiller project. As such, demand savings from the chiller project have not been included in the LRAMVA.

d) Please provide the detailed calculations for the table in tab 8 of the LRAMVA workform, including monthly inputs and assumptions to support the demand reductions from the CHP project for both 2016 and 2017. Please show calculations in excel format.

RESPONSE

Please see tab "4. LRAMVA impact" of the following Excel model, filed confidentially, for the supporting calculations.

- 2019 EnergyPlus PSUI 2016 and 2017 Load and Gen analysis - Staff TC 4.xlsx [CONFIDENTIAL FILE]

The following tables summarize the calculation of the demand reductions from the CHP project for both 2016 and 2017.

Month in 2016	Monthly hourly peak demand at facility (kW)	Monthly hourly peak demand from grid (kW)	Difference for LRAMVA (kW)
1	[redacted]	[redacted]	[redacted]
2	[redacted]	[redacted]	[redacted]
3	[redacted]	[redacted]	[redacted]
4	[redacted]	[redacted]	[redacted]
5	[redacted]	[redacted]	[redacted]
6	[redacted]	[redacted]	[redacted]
7	[redacted]	[redacted]	[redacted]
8	[redacted]	[redacted]	[redacted]
9	[redacted]	[redacted]	[redacted]
10	[redacted]	[redacted]	[redacted]
11	[redacted]	[redacted]	[redacted]
12	[redacted]	[redacted]	[redacted]

Month in 2017	Monthly hourly peak demand at facility (kW)	Monthly hourly peak demand from grid (kW)	Difference for LRAMVA (kW)
1	[redacted]	[redacted]	[redacted]
2	[redacted]	[redacted]	[redacted]
3	[redacted]	[redacted]	[redacted]
4	[redacted]	[redacted]	[redacted]
5	[redacted]	[redacted]	[redacted]
6	[redacted]	[redacted]	[redacted]
7	[redacted]	[redacted]	[redacted]
8	[redacted]	[redacted]	[redacted]
9	[redacted]	[redacted]	[redacted]
10	[redacted]	[redacted]	[redacted]
11	[redacted]	[redacted]	[redacted]
12	[redacted]	[redacted]	[redacted]

Staff TC Question #4

Ref: LRAMVA, 4-Staff-68

OEB staff would like to request further information on the demand savings claimed for the CHP project in the CND rate zone. This CHP project was implemented in 2015, and the persistence of monthly peak demand savings in 2016 and 2017 are included as lost revenues as part of the LRAMVA.

In response to part a, Energy+ confirmed that this was a project undertaken as part of the Process and Systems Upgrades Initiatives (PSUI), and Energy+ is seeking to claim demand savings from the CHP project only. Energy+ confirmed that it has been working with the IESO to identify a modelling approach that would estimate statistically significant savings for the chiller project. As such, demand savings from the chiller project have not been included in the LRAMVA.

e) Please provide the correspondence from the IESO indicating any conclusions or determinations that the methodology to calculate CHP savings is appropriate.

RESPONSE

Energy+ contacted the IESO to obtain confirmation from the IESO as to the amount of annual net verified annual peak savings that should have been reported as part of the 2016 and 2017 Final Verified Annual CDM LDC Program Results with respect to the CHP project.

Please refer to Appendix-Staff TC Question #4 d) "PSUP Application 600165 – Peak Demand Savings – Memo – 20190117" representing correspondence provided by the IESO with respect to the CHP Project, including confirmation of the amount of annual verified results.

In the correspondence, the IESO notes that the 2015 annual net verified summer peak demand savings for the project is [redacted] kW. This amount was based on the Summer Peak Demand Savings of [redacted] kW reported in the M&V 1st Annual Report: December 31, 2015 to December 30, 2016, and adjusted for a 104% realization rate, and an NTG of 100.1%.

The IESO also confirmed that they will include the amount of 2015 annual net verified savings of [redacted] kW in the 2018 Final Verified Annual CDM LDC Program Results.

Energy+ notes that the Net Verified Annual Peak Demand Savings (kW) of [redacted] is higher than the Demand kW used for purposes of the LRAMVA computation.

Staff TC Question #4

Ref: LRAMVA, 4-Staff-68

OEB staff would like to request further information on the demand savings claimed for the CHP project in the CND rate zone. This CHP project was implemented in 2015, and the persistence of monthly peak demand savings in 2016 and 2017 are included as lost revenues as part of the LRAMVA.

In response to part a, Energy+ confirmed that this was a project undertaken as part of the Process and Systems Upgrades Initiatives (PSUI), and Energy+ is seeking to claim demand savings from the CHP project only. Energy+ confirmed that it has been working with the IESO to identify a modelling approach that would estimate statistically significant savings for the chiller project. As such, demand savings from the chiller project have not been included in the LRAMVA.

f) Please confirm the amount of the project cost funded by the IESO through Energy+'s participation in the PSUI.

RESPONSE

The amount of the project cost funded by the IESO through Energy+'s participation in the PSUI was [redacted].

APPENDIX-STAFF TC QUESTION #4 D)

“PSUP Application 600165 – Peak Demand Savings – Memo – 20190117”

REDACTED

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Memorandum

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To: Ed Glasbergen
Vice-President, Business Development
Energy+ Inc.

Cc: Heater Tripp, Energy+ Inc.
Nik Schruder, IESO
Tina Nicholson, IESO
Alice Herrera, IESO
Bryan Timm, IESO

From: Phil Bosco, IESO

Date: January 18, 2019

Re: Summer Peak Demand Savings for PSUP Application #600165

In response to your request for the annual verified summer peak demand savings for Application #600165 (Toyota CHP project), it was found from Technical Reviewer's Y1 project report, dated February 15, 2017 covering the period December 31, 2015 to December 30, 2016, that this project generated [redacted] kW demand savings. With a realization rate of 104% and an NTG of 100.1% applied by the evaluator, the 2015 annual net verified summer peak demand savings for this project is [redacted] **kW.** This value is aligned with the energy savings (kWh) values from this project that count against the LDCs 2020 Conservation and Demand Management target.

This summer peak demand savings of [redacted] **kW** for Application #600165 will be included in the 2018 Final Verified Annual CDM LDC Program Results as an adjustment to the 2015 verified results.

Regards,

Phil Bosco
Sr. Manager, Portfolio Operations
Independent Electricity System Operator

Staff TC Question #5

Ref: LRAMVA, 4-Staff-69

OEB staff would like to request more information on the calculation of streetlight demand savings in the Brant County rate zone. OEB staff would like to see the analysis underpinning the calculation of the baseline and demand from the energy efficient upgrade.

a) Please explain detailed calculations, including inputs and assumptions (for example, # of lightbulbs replaced, corresponding kW of the lightbulbs replaced), to confirm baseline savings of 397.54 kW.

RESPONSE

The 397.54 kW shown on Tab 8 of the Brant County rate zone LRAMVA work form are not the baseline savings, but the pre-project amount billed by Brant County Power for streetlighting.

As streetlights are not metered, this amount is determined in consultation with the municipality based on the number and type of light standards. That amount was determined in advance of implementation of the streetlighting project and is drawn from actual bills. As shown on Tab 8 of the Brant County rate zone LRAMVA work form, the demand for billing purposes was reduced beginning in July 2016.

The load for LRAMVA purposes is the difference between the billed load after the streetlighting retrofit project implementation and what would have been billed in the absence of the project (the pre-July 2016 amount). This difference represents Energy+'s estimate of the actual lost revenue impact resulting from the project. As noted, an adjustment was made in 2017 for street lights that were transferred to the City of Brantford.

Staff TC Question #5

Ref: LRAMVA, 4-Staff-69

OEB staff would like to request more information on the calculation of streetlight demand savings in the Brant County rate zone. OEB staff would like to see the analysis underpinning the calculation of the baseline and demand from the energy efficient upgrade.

b) If 397.54 kW is not the baseline, please explain the appropriateness of the lost revenue calculation based on the change in demand at the time of new conversion (i.e. July 2016, November 2016 and February 2017) and initial billed demand in January 2016.

RESPONSE

Please see Staff TC Question #5a.

Staff TC Question #5

Ref: LRAMVA, 4-Staff-69

OEB staff would like to request more information on the calculation of streetlight demand savings in the Brant County rate zone. OEB staff would like to see the analysis underpinning the calculation of the baseline and demand from the energy efficient upgrade.

c) Please explain the detailed calculations, including inputs and assumptions (for example, # of new LEDs installed, corresponding kW of the lightbulbs installed) to determine the monthly billed demand kW from June to December 2016.

RESPONSE

The following spreadsheet shows the number of lamps of each wattage and the corresponding kilowatt for the periods when the numbers changed due to the LED retrofit program.

- Streetlight technology - Staff TC 5.xlsx

Staff TC Question #5

Ref: LRAMVA, 4-Staff-69

OEB staff would like to request more information on the calculation of streetlight demand savings in the Brant County rate zone. OEB staff would like to see the analysis underpinning the calculation of the baseline and demand from the energy efficient upgrade.

d) Please confirm whether you have received reports from municipalities that confirm the number of lightbulbs replaced.

RESPONSE

Energy+ confirms that it has received reports from municipalities that confirm the number of lightbulbs replaced.

Staff TC Question #5

Ref: LRAMVA, 4-Staff-69

OEB staff would like to request more information on the calculation of streetlight demand savings in the Brant County rate zone. OEB staff would like to see the analysis underpinning the calculation of the baseline and demand from the energy efficient upgrade.

e) In excel format, please provide the monthly calculations of baseline and demand from the energy efficient upgrade in 2016 and 2017.

RESPONSE

The following spreadsheet shows the monthly calculations of baseline and demand from the energy efficient upgrades in 2016 and 2017.

- Streetlight technology - Staff TC 5.xlsx

Energy+ Inc.

EB-2018-0028

Response to Technical Conference Questions

Consumers Council of Canada (CCC)

January 22, 2019

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CCC 1

Technical Conference Question

P.7, Updated Evidence

The evidence states that the plans for the Southworks Facility are not final and are subject to proper environmental due diligence. HIP Developments will provide a copy of the Record of Site Condition from the Ministry of Environment as soon as it is available. Please provide that document. What is the current status of the peer review referred to?

RESPONSE

A copy of the Record of Site Condition is attached to VECC-TCQ-63 (c).

Energy+ is currently going through a process to select a qualified environmental firm to conduct a peer review. It is anticipated that this review will be completed by the end of March 2019.

CCC 2

Technical Conference Question

P.7

Additional Energy Plus Board of Directors approval will be required specifically with respect to Class B and Class A cost estimates. Please explain what the OEB can approve with respect to costs in the absence of that approval. Is Energy Plus seeking approval at this time of the $8.1 million? If the cost estimates change will Energy Plus still be seeking to recover in rates the revenue requirement impact of the $8.1 million in 2022? What is the revenue requirement impact of the $8.1 million in 2022?

RESPONSE

As part of the ACM, Energy+ is requesting the review and approval of its business case for the incremental capital associated with the Southworks project that is expected to be in-service during the IRM term following the Cost of Service Application, and currently estimated at $8.1MM. Specifically, Energy+ is seeking the review and approval of the need and prudency of the investment, based on the Board's defined materiality threshold.

Based on a planned in-service date of 2022, Energy+ would seek a funding rate rider as part of its 2022 IRM Application.

In accordance with the Report of the Board "New Policy Options for the Funding of Capital Investments: The Advanced Capital Module", Energy+ understands that the review and approval process of the rate riders intended to implement cost recovery of the approved ACM project would be done as part of the IR Application process. In addition, Energy+ would be required to confirm that the project is on schedule to be completed as planned, and that the costs of the project have not significantly changed from the original forecast, and to provide justification for changes in costs.

Energy+ has estimated the annual revenue requirement of the Southworks investment to be approximately $941,000. Please refer to Response to Staff-TC-1 f) for the estimated bill impacts.

CCC 3

Technical Conference Question

P.7

What would be the impact on 2022 rates if the OEB denies the inclusion of the ACM related to the Southworks Facility? If the OEB denies the ACM relief sought will Energy Plus proceed with the purchase of the facility?

RESPONSE

Please refer to Response to Staff TC-Q1(f) for the impact to rates related to the Southworks facility.

Energy+ is seeking ACM relief based on a facilities requirement that has been well documented in this Application. The requirement will still exist regardless of the outcome of this Application. It is not possible at this time to speculate on what course of action Energy+ will take with respect to the investment in the Southworks project until such time as the OEB renders a Decision on the need and prudency of the facility, as contemplated in the ACM.

CCC 4

Technical Conference Question

P.4

One of the objectives of the Facilities Plan is to "meet the needs of a growing utility" allowing for administrative space to be expanded in the case of mergers and acquisitions. In the absence of any further mergers or acquisitions by 2022, how much of the Southworks Facility will be underutilized. What is the projected number of employees expected to be working in the facility in 2022 and what is the overall projected capacity of the facility in terms of employees?

RESPONSE

Energy+ notes that the objective was stated as "to meet the needs of a growing utility in the future and maintain future flexibility by separating operational space from administrative space, allowing for: (a) administrative space to be expanded in the case of mergers or acquisitions or (b) greater options in the case of a merger or sale that involved consolidating administrative functions in another city."

Energy+ has sized the Southworks facility to meet its current needs while allowing for a modest amount of future growth. As such, Energy+ expects the facility to be completely utilized upon occupancy in 2022.

Energy+ worked with its architects to design functional office space for approximately 70 employees. There are currently 67 identifiable employees that will work in the Southworks facility in 2022.

The design allows for future growth within two areas of the facility:

1. A storage area on the first floor could be converted to accommodate up to 8 additional workstations at minimal cost.

2. The building could be expanded to accommodate an additional 15 – 20 workstations. This option would require further construction (the cost of which has not been estimated).

Energy+ Inc.

EB-2018-0028

Response to

Technical Conference Questions

School Energy Coalition (SEC)

January 22, 2019

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SEC 1

Technical Conference Question

P.6; 2-Staff-12 I, Appendix

Please explain the material changes between the Class C and Class D estimates.

RESPONSE

The Class D estimate filed with Energy+'s COS application on April 30, 2018 was developed in March 2017 based largely on a conceptual drawing of approximately 21,500 s.f. of office space. This estimate was completed prior to the completion of environmental due diligence and a structural analysis of the existing building.

In Response to Technical Question SEC-2, Energy+ has provided the Design Brief. Included in the Design Brief is an updated Class C estimate. The updated Class C estimate incorporates the results of environmental and structural due diligence. It also reflects some initial design change decisions that were made to keep the overall budget for the project at $8.1 million.

The following is a reconciliation of the updated Class C estimate, with the total project cost of $8.1MM:

Updated Class C Estimate, as per Design Brief	**$**	**6,753,020**
Additional Costs not included in Estimate		
Professional Fees: Architectural, structural, mechanical, electrical, civil	$	607,772
Firewall	$	254,000
Furniture / stations	$	400,000
Building Permit Fees	$	10,000
Increase contingency	$	75,000
	$	1,346,772
Total	**$**	**8,099,792**

The following table summarizes the material changes between the Class D and Class C estimate:

West main entrance façade (to replace brick/stone wall)	$548,000
Mechanical system (based on selected design)	$465,000
Construction management / insurance / temporary services	$337,000
Electrical & Lighting (based on current design)	$320,000
Structural roof reinforcing (to meet current code)	$260,000
Professional Fees (increased to reflect updated cost estimate)	$234,000
Additional cost for sub-floor vapor management system	$207,000
Drywall & Acoustics (based on current design)	$164,000
Replace existing windows (due to condition/efficiency)	$150,000
Masonry and Stonework repair (inside & outside walls)	$76,000
Elevator (increase cost over original estimate)	$40,000
Contingency (increased to reflect project risk)	$175,000
Other (inflation, etc.)	$124,000
Total	$3,100,000

SEC 2

Technical Conference Question

P.6

Please provide a copy of the Martin Simmons Design Brief.

RESPONSE

A copy of the Design Brief is attached as Appendix SEC-2.

APPENDIX SEC-2

DESIGN BRIEF (SOUTHWORKS)

Energy + Administration Offices

Gaslight District, Cambridge, Ontario

Design Brief

January 14, 2019

Prepared For:

Energy+ ENERGY+ INC.

Prepared By:

MARTIN SIMMONS ARCHITECTS

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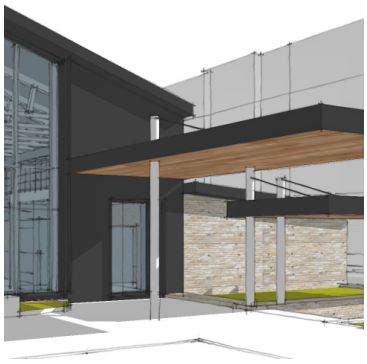


Design Brief

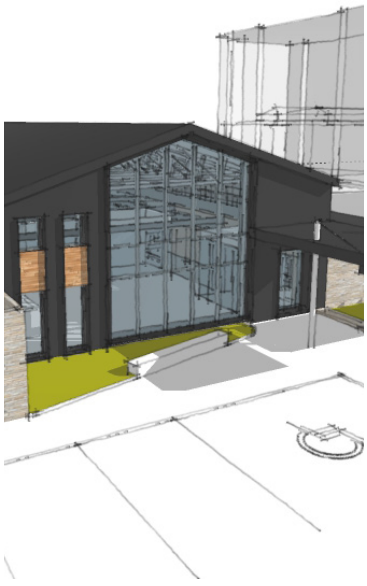
Executive Summary

This Design Brief outlines the comprehensive design, timing and cost of the new administration offices for Energy + at the Gaslight DIstrict in Galt. Approval of the detailed scope outlined, as well as the associated cost estimate, will be required prior to the commencement of the next phase of the project - the preparation of Construction Drawings.

The proposed offices are located in a portion of an old stone foundry building at 64 Grand Avenue South, Cambridge. The south building on this property has been divided into two separate buildings through the erection of a firewall. The resulting South-West building will be conveyed from HIP Developments to the Energy + corporation once severance of the properties is complete.

As part of the proposed renovation scope, upgrades to the existing building envelope will be completed (windows, walls and roof), and a new facade facing Glebe Street will be constructed. There is a small portion of land at the western edge of the site. Landscape for this area has been designed and costed as part of this proposal.

The proposed interior fit-up includes the addition of a second storey within the generous height of the existing single storey space, new mechanical and electrical systems, and build out of open and enclosed spaces for the varying administrative functions. Additionally, environmental requirements for vapour mitigation will be addressed, and includes the installation of a sub-floor vapour extraction system.



The Energy + offices will be an important part of the greater 'Gaslight District' proposed by HIP developments, and the parking for Energy + staff will be located in the adjacent residential parking podium 'F'. As such, the Energy + schedule is dependant on the construction schedule and occupancy dates for the remaining Gaslight District buildings and components.

The Construction Manager - Melloul-Blamey - has produced a cost estimate for the proposed design which totals $6,753,020. This estimate has been reduced from an earlier ~$7,500,000 estimate through design revisions.

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A. Design Brief

Purpose of this Design Brief

A design brief is a key project planning document that specifies what the project aims to achieve, by what means and within what time frame. Critical considerations are the scope and quality of work (from both a consulting and construction standpoint), cost targets, as well as scheduling objectives.

This design brief is intended to communicate a variety of issues to decision makers. These issues include the design concepts for all the key disciplines from architecture through to the various engineering and specialist sub-consultants. This brief will describe these concepts in written and illustrated form as appropriate. The brief will describe the process by outlining the steps necessary to complete the project from design to approvals, bidding, construction and occupancy as well as the time frame for each phase. A critical component of the design brief is the cost estimate. At this stage the estimate will put cost figures to the scope of work described by each discipline. It will also take into account external factors such as inflation, market conditions, and possible changes during design and construction.

Project Overview

The 64 Grand Avenue site was originally the site of Dumfries Foundry. Beginning in 1847, steam engines, turbines and safe doors were all manufactured at this location. The foundry continued operations under several different names and owners until 1987, including Jas Crombie, Goldie McCulloch Limited and Babcock & Wilcox. The buildings were then redeveloped as South Works Antique Mall, which maintained the name of the old 'South Works' factory building. It has functioned as a multi-tenant mall for several decades, with relatively minor maintenance of the existing structures. The 64 Grand Avenue site has two existing stone foundry buildings. Energy + will be purchasing the West portion of the South building, which has a site area of 1,966.86 sq.m. (approximately 65m x 30.5m), and a building footprint area of 1,375.85 sqm.

MartinSimmons Architects has been contracted to design the entire 64 Grand Ave South site, as well as the restoration of the existing buildings. This site will be known as the 'Gaslight District', and will be a mixed use development with residential apartments, restaurants, commercial uses, an event space, and retail functions. There will also be a public square which will have patios and community programming. MartinSimmons Architects have also been contracted for architectural services of the portion of 64 Grand Ave. South property that will be conveyed to Energy + for administration offices. Over the past several months, the team has been surveying the building, collecting background material and developing preliminary drawings. They have also been working with Energy + staff, and the other members of the consulting team, to define the scope of work

necessary to convert the building into a comfortable and functional office building.

Through this process, a basic outline of the project scope has emerged. The building program will include open and enclosed offices, meeting rooms, washrooms, lunch room and training areas, as well as storage for varying programmatic services. The basic envelope will remain as-is, however the west facade will need to be rebuilt. As this facade will be the public entrance and street presence, it will require a more upgraded design and aesthetic than the back-of-house loading and storage condition it has served for several decades.
New mechanical and electrical systems will be required, as well as upgrading of some structural components to approximate current code conditions. Windows, doors and roof will all need to be replaced. Design of the envelope will be coordinated with selections made elsewhere in the Gaslight District.

Site Development and Site Services

The Site Plan process for 64 Grand Ave South is under a single agreement with the City of Cambridge, through the site specific rezoning that was granted in August 2018. As such, HIP Developments (and MartinSimmons Architects) is undertaking much of the work associated with heritage designation, environmental, and site servicing. HIP Developments will also construct a firewall to bisect the existing south building into two separate buildings. Energy + will then be conveyed the West portion of the site, and will undertake a renovation of the existing building. There is also a small amount of open land that will be owned by Energy +, at the corner of Glebe and Fraser Streets. This will be convenience short term parking, as well as landscaped area.

See Appendix A for Site Plan and Severance Plan, and Appendix B for Landscape package submitted for Site Plan September 14, 2018.

As with the renovation of the existing building, site development will be done in coordination with HIP Developments, so that the entire Gaslight site reads as one cohesive district.

Scope of work for site development includes:

- Addition of a pedestrian access from Fraser Street to the main entrance (increasing access to Energy +).
- Providing light standard and soffit lighting to meet site photometrics.
- Providing landscaping (paving materials and details, planters, plantings, and bike storage). Refer to Appendix B for landscape design for Gaslight District.

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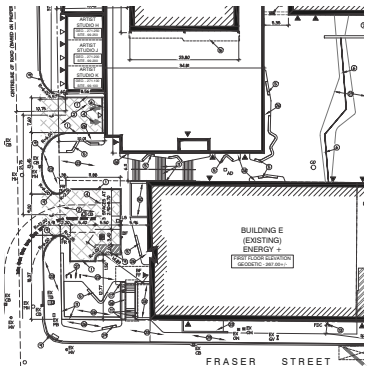
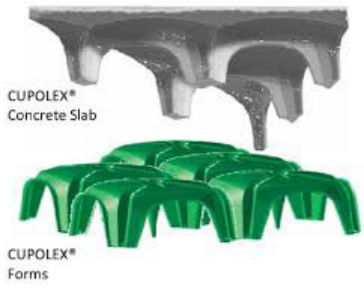


- Upgrading site services through the addition of new connections for water, gas and sanitary.
- Electrical transformer (installation and shared costs with HIP Developments).
- Addition of covered canopy.
- Construction of outdoor patio and seating accessed from proposed kitchen/lunchroom.
- Structural reinforcement of the existing stone wall wrapping the South West corner of the property.

Environmental Remediation

The existing building was constructed prior to the widespread adoption of environmental standards for design and construction. The use of what are now considered hazardous building materials was common, and the implementation of environmental standards for safety in industrial activities was unheard of, as environmental and health effects were unknown. Some hazardous material has been identified at 64 Grand Ave South, and if located in Energy + portion of the existing south building, will be removed as part of this project. MTE consultants have prepared a Designated Substance Audit Report as part of evaluating the existing site conditions, this has already been provided to the owner.

In addition to hazardous substances found in the building, there are also adverse environmental conditions on the site which are due to contaminated ground water in this area of town (ie. the contamination issues are not generated from the 64 Grand Ave. South site itself). The environmental recommendation is for vapour mitigation measures within the existing buildings in perpetuity. The landscaped areas also have specific requirements for cover and membrane barriers for plantings. Please see Appendix C for further details. The Risk Assessment has been accepted by the Ministry of Environment (September 2018). A Record of Site Condition has also recently been acknowledged by the MOECC, and addresses implementation of a vapour mitigation system that can draw all air out from under the ground floor slab and exhaust it. HIP Developments has been investigating the Cupolex system for vapour extraction to meet the requirements of the Record of Site Condition. The application of this system in the Energy + space is still being discussed. A similar system has been designed for building D (East portion of the South building). This design includes a plastic form that creates a continuous air space under a new concrete slab. The form can be placed on clear stone gravel or on an existing concrete slab, and comes in several different depths. Based on initial discussions we thought we would be raising the FFE by 10", however we may be able to accomplish the required vapour extraction with a slimmer profile. The environmentla consultant - EXP - will dictate what is acceptable to meet the requirements of the Record of Site Condition.



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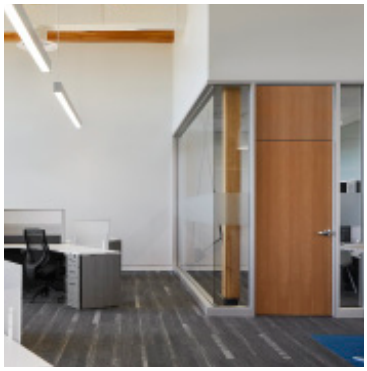
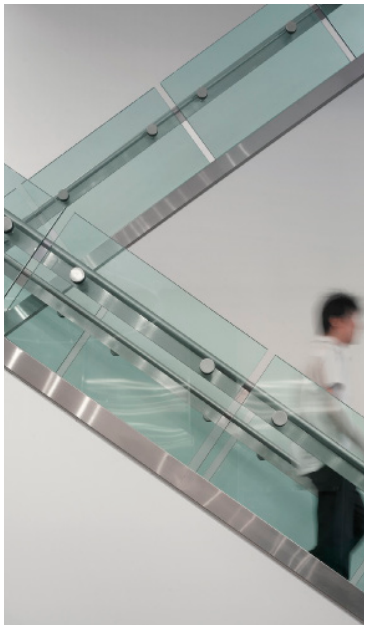




Accessibility

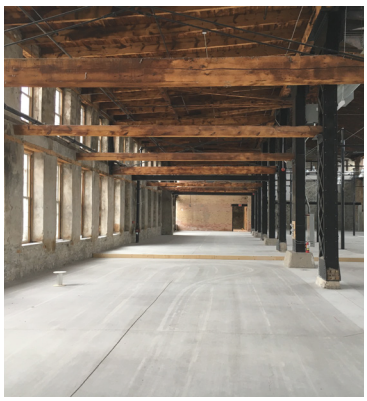
Energy + provides a vital community service, and is committed to ensuring that all programs and services meet customers' needs. Part of this is ensuring that their facility and services are accessible to everyone. Policies and programs are designed to respect the dignity, independence, integration and equal opportunity for all members of the community. To that end, this project is designed to meet the Accessibility for Ontarians with Disabilities Act, 2005 (AODA). This is provincial legislation designed to ensure that Ontario is fully accessible by the year 2025. Through the legislation, accessibility standards are developed for the private and public sectors to ensure high-quality service delivery in the areas of customer service, information & communication, transportation, employment, and the built environment.

Retrofitting existing buildings to meet contemporary accessibility standards can be challenging. A list of modifications required to meet the AODA has been developed. These modifications have been priced as part of the cost report. The project team will work with the owner to determined which options will be part of the project and which, if any, will be excluded for reasons of cost or because they are impractical.

Pedestrian walkability is at the forefront of the proposed site design for the entire Gaslight District. The landscaped realm reflects this pedestrian priority through the use of materials and curb details to slow down any traffic that enters the site. Pedestrian walkways make up the majority of the site, and through regrading, every effort has been made to maintain exterior sloped walkways at 5% or lower. The existing site poses many challenges to accessibility, as there is a grade change of 4m from East to West across the site (with the largest grade change being across the future Energy + property). This condition - caused by rising bedrock - is an impediment to providing barrier free access across the site. Indeed, Fraser Street and adjacent pedestrian walkways south of the porposed site have slopes exceeding the allowable barrier free range for exterior walkways. A large staircase traverses this grade change between the proposed Energy + property and parking podium F to the North. Despite these adjacent conditions, the proposed design for Energy + is completely barrier free. Visitors or staff arrive at the site from Glebe street, on the upper level. Parking is located in the parking podium to the North (staff and visitors), or immediately adjacent to the main entrance (short term/visitors). Access to the Energy + building is entirely barrier free between both podium and surface parking and the main entrance. An elevator allows visitors and staff to traverse the vertical grade change inside to access the lower level.

Architectural Design Concept

Design scope is often more limited in renovation projects, particularly in a property with heritage attributes and physical limitations. There is minimal opportunity for additions changes to the exterior of this building, except on



the West facade. Design scope is focussed on the West facade and interior fit up. Reflecting the program goals of Energy +, the primary objective is to provide safe, comfortable and efficient office accommodation for the administration staff of the Energy + organization. With this in mind, the envelope will be upgraded with new roof, windows and doors. The vapour mitigation system required to address contaminated groundwater issues will be implemented, and a new second floor area will be constructed to provide the floor area required by the Energy + space needs assessment document. Accessibility is to be prioritized on upper and lower levels. Life safety and structural systems are to be reviewed for code compliance and upgraded as necessary. As well, new mechanical (plumbing and HVAC) and electrical systems are to be constructed with occupant comfort and energy efficiency as priorities. Enclosure of office and meeting space is to be constructed as per functional needs of the end users. Refer to Appendix D for Schematic Design.

Internal Layout

Preliminary space program information has been obtained from prospective building users.

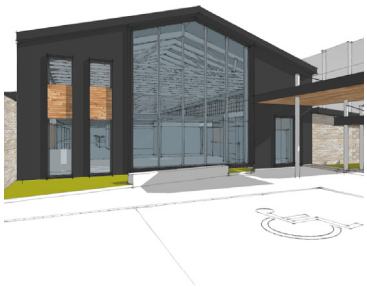
- Meeting Rooms
- Enclosed Offices
- Open Office Space
- Lunchroom
- Training Room
- Changerooms
- Boardroom
- Lobby
- Storage and Service Space

This information has been utilized to prepare layouts on each floor. As is typical for a modern office building, much of the required space is open office landscape. Floor plans in office buildings should provide flexible space – the ability to change layouts on a regular basis is an advantage. This is particularly pertinent in the Energy + organization, where changes in Provincial governance and regulation have the ability to introduce new programs that require space and personnel to implement. By providing opportunities for expansion and maintaining flexibility, the space can adapt to changing staff, upgraded furniture and evolving needs of the organization.

This building is over 150 years old and, due to its former industrial use, modern office conventions such as structural grids, window modules and overall floor dimensions are not present. For these reasons, the efficiencies of modern office floor plans are difficult to achieve. On the other hand, the double height central roof structure and clerestory windows provide excellent opportunity for daylight through both levels. The new upper floor level to be constructed will also provide adequate floor area for office enclosure on the

lower level. The original materials of stone and wood provide architectural interest and character.

The building has been emptied of partitions and stairs, leaving only the stone wall envelope, and existing structure. The strategy for maximizing daylight and creating the most efficient office layout given the existing building height, involves stacking a partial upper level down the central double height space, and having full height spaces to the underside of the low roofs. This will minimize the impact of vertical partitions interacting with existing structure/ roof, maximize natural light, and highlight the existing architectural features of the historic building in all spaces. Acoustics will require special attention in this space, as interconnected floor areas with open plans could require noise reduction measures.



West Facade

The front entrance, located on the West facade, will require significant facade repair or reconstruction due to the past treatment of this facade as a back-of-house. Canopies protecting the entrance and stairs from the elements, as well as allowing visitors to easily locate the entrance, are part of the proposed design. Improving natural light penetration through this facade is also a priority, as this will significantly improve the spatial qualities of the proposed lobby, which is the main space experienced by the public.

Stone Repointing

Repairs will be required on the inside and outside to ensure the stone wall is preserved. This is problematic from an aesthetic, building envelope and structural point of view.

Roof Replacement

This building has a large expanse of roof, as it is a long, low one storey structure. The current roof has no insulation, and is combination of vinyl and modified bitumen roofing systems. The current code for new buildings requires insulation that provides R30 insulative value. That is 150mm (6") of insulation. The code, however, does not apply to replacement of a roof on an existing building. Decisions regarding the thickness of roof insulation provided will be based on cost and energy savings. A metal roof will be constructed for long term functioning of the space, in a profile that is appropriate for a low slope roof application.

Architectural Finishes

Through our previous work it has been established that the objectives for interior finishes involve finding a balance between materials that provide an appropriate degree of environmental and aesthetic comfort, while at the same time meeting long term maintenance objectives. New flooring choices include carpet, carpet tile, and vinyl tile, together with small areas of ceramic tile in washrooms and other wet areas. Careful consideration must be given

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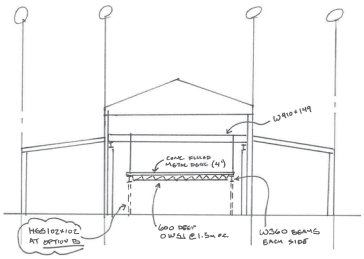
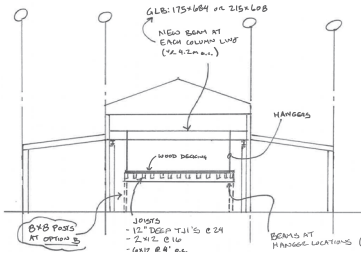




to materials selected and their impact on acoustics. Walls are to be painted drywall in most cases, doors to be wood or glass, and door frames to be aluminum or hollow metal. In some instances, offices and meeting rooms will have one glazed wall, constructed of aluminum or frameless structural glazing. Long lengths of the upper level require glass railings.

Window and Door Upgrades

Significant advances have been made in the technical performance standards of glazing systems since this building was constructed. A critical component of improving the energy characteristics of the project is the window replacement program. Windows comprise approximately 30-40 percent of the exterior envelope, and have the ability to contribute greatly to future energy savings and thermal comfort of occupants. The window frames will be vinyl, the glazing clear, and whether operability is important is currently under discussion. In areas where a window will not be functional (e.g. a bathroom), custom wood shutters will provide privacy and maintain the historic look of the facade.

The existing buildings are not designated as heritage buildings, therefore there are no requirements to provide historic type windows. Indeed, the existing windows are vinyl windows. The doors and glazing in existing arched openings will also require replacement, as several are boarded up currently. The window aesthetic is largely determined by the selection for the rest of the Gaslight District.

Miscellaneous Structural Renovations

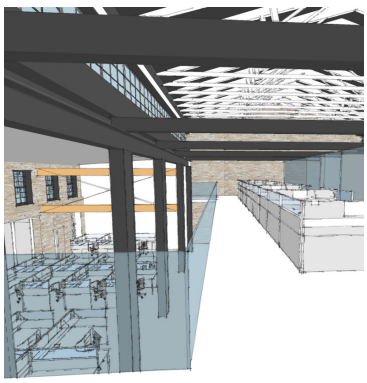
The structural review revealed shortcomings that can be rectified within the project scope. Several structural improvements have been suggested after a thorough assessment of existing structural members and their ability to withstand new loads. Additionally, the new upper floor area will be constructed. The proposed structure for the new second floor area is structural steel with steel deck and concrete topping. The steel does not need to be rated, as it is non-combustible construction.

The existing building contains no shear load capacity, a fundamental component of all modern structures. In joint discussions with Energy + and the structural consultant, a level of safety for structures and loading will be decided based on a consensus by Energy +, the structural engineer, and the design team.

Please also refer to Appendix E for Structural report.

Washrooms

The renovations to the building provide an opportunity to equip the facility with clean, bright and comfortable washrooms that meet contemporary



measures of performance, accessibility and sustainability. The building floor areas are not large by current office building standards and the plumbing requirements do not require large amounts of floor area.

The entire office floor area requires an equal number of plumbing facilities for each sex. To meet building code standards, 6 single washrooms are provided, and one washroom for each sex is provided in combination with a locker room and shower. A universal washroom must be available on one floor, and can be unisex. We have located the universal washroom by the public lobby. To save space, provide the most flexibility and respond to increasingly broad cultural norms, most washrooms have been set up as suites of "water closets" or single rooms containing a toilet and sink, grouped together on each wing, close to the elevator. Fixtures will be low flow, water-conserving models, floor and wall finishes will be tile.

Lunch Room Design

The lunchroom is to be located in the existing brick structure situated in the South West corner of the existing building. The finishes of this space will be minimal, however adequate access and views in/out will be required, as well as a connection to the training room space which would provide a large room with capacity for all-staff meetings.

Staff Training Room

Design of the staff training room is based on the need for large capacity, as well as flexibility. A partition will allow for further subdivision into smaller spaces for more frequent use.

Board Room Design

The board room is located on the upper level, where visitors will first enter, and will have natural light from the above clerestory. Boardroom furnishings, services and accessories will reflect the executive function of the space. An adjacent servery is also required. Ceiling enclosure will be important for the boardroom, as sensitive information may discussed.

Mechanical Design

The existing mechanical equipment is in disrepair, and has not been maintained for several decades. It is in place only to maintain the existing shell during the winter months. As such, the mechanical systems will require complete replacement. Working closely with Energy +, the project team has developed an HVAC system using electricity as a power source. This system is intended to minimize energy consumption, operating costs and the consumption of fossil fuels.

The building has a sprinkler system and it is proposed that this will remain the case. As part of the demolition work and construction of the firewall, the sprinkler system will be divided and function maintained. Sprinkler updates

will be required as part of the renovation, as more floor area and enclosure is being proposed. Fraser Street is currently under construction, and as such the services are being built in preparation for the Energy + renovation. Current water supply is adequate for the intended use, as is the sewer outlet.

The North West corner is the location for much of the building's proposed mechanical equipment. New equipment for the proposed HVAC system will be located here. The condensers will be located outside in a mechanical/ electrical enclosure.
Hydronic in-floor heating is also proposed to maintain occupant comfort in the colder months, as the exterior walls do not have insulation. Perimeter hydronic heating will counteract drafts.

Please also see Appendix F for mechanical report.

Electrical Design

A new transformer is proposed for the entire south building at 64 Grand Ave South. It will be located in an enclosure at the North West corner of the Energy + building. All new electrical systems are required for the renovation, as well as fire alarm.

Please also see Appendix F for electrical report.

Heritage Issues

The South Building has not been designated under the Ontario Heritage Act but is listed on the Municipal Heritage Register as a non-designated property of cultural heritage value of interest. A heritage permit is not required to make alterations to the existing buildings.

The Region of Waterloo Official Plan states that:

> *"Heritage resources are the inheritance of natural and cultural assets that give people a sense of place, community and personal identity. Continuity with the past promotes creativity and cultural diversity. The region has a rich and diverse heritage, including distinctive cultures, traditions, festivals, artisans and craftspeople, landmarks, landscapes, properties, structures, burial sites, natural features, and archaeological resources. These resources provide an important means of defining and confirming a regional identity, enhancing the quality of life of the community, supporting social development and promoting economic prosperity. The Region is committed to the conservation of its cultural heritage."*

The Region and the consulting team acknowledge that 64 Grand Ave South is a property with significant heritage value. As part of the rezoning committment, HIP Developments has agreed to designate the buildings as

heritage once the renovations are complete. At that time, the property will likely have been severed and conveyed to Energy +, who will inherit the requirement to designate their portion of the site.

Schedule

The schedule for occupancy of newly renovated Energy + offices is tied to the work being done in the greater Gaslight District. HIP Developments have not yet confirmed occupancy date of parking Podium F, which is a requirement for Energy + occupancy. The schedule for Energy + provided thus far is therefore a draft schedule, which will be updated as more information becomes available.

Please see Appendix G for Draft Schedule.

Other key milestones:

Site Plan: Site Plan Approval for the project is currently underway as part of the greater Gaslight Site Plan Application Process. Site Plan Approval is expected by the end of February 2019.

Environmental: Record of SIte Condition was received January 2019.

Schematic Design Submission: The hope is that this report provides Energy + and the project team with the information needed to make decisions about scope of work, budget and schedule. Before we can finalize the design and move forward, more information is required regarding costing and budget. It is possible some redesign may be required.

Design Development Submission: Work continues of detailed aspects of the design and feedback on the design brief will be expected in the coming weeks. A fully resolved design submission will be in place in the coming months. The final date for this submission is to be set at the next project team meeting.

Cost Summary

The cost summary aims to identify any budgetary discrepancies between the Class C estimate and the initial costing exercise that established the renovation budget.

Please also refer to Appendix H for further costing information completed by Melloul-Blamey. The initial class 'C' estimate was for $7.5 million, which greatly exceeded the initial budget. We have met with Construction Manager Melloul-Blamey to understand what was priced, and to understand which design changes will have the most impact on reducing the overall price. We then had Melloul-Blamey revise their cost estimate to try to achieve an estimate closer to the initial budget. The cost estimate provided in Appendix H considers removal of some original design components, in an effort to reduce cost. The items removed include: one canopy along Fraser Street, stone finish on the Firewall, and a change from the hanging timber mezzanine structure originally proposed, to a more conventional steel structure supported from below.

Not included in the cost estimate is 50% of all costs related to the division of the south building into 2 separate buildings, which Energy + has agreed to pay to HIP Developments. This includes: additional utility meters required, work on existing sprinkler system to maintain fire protection of the building, and construction of the firewall itself. The cost estimate also does not include cost escalation for work and materials for a future construction start date. Melloul-Blamey indicated that a 3-5% price escalation is common for this value.

General Renovations Summary

The total estimated construction cost:	$6,753,020.
This includes:	
Site Work:	$305,525
Building Costs:	$4,580,203
General Conditions, Allowance, Fees:	$1,867,293

It is important to note that this estimate also inlcudes a contingency fee of $300,000.

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Code Analysis

Part 3

Building Area: 1,375.85 m^2
Gross Floor Area: 2,069.5 m^2
Number of Floors: 2 storey
Building Height: ~6.5m (u/s of low roof deck), ~9.4m (u/s steel rod of roof truss)
Change of Occupancy: Group E to D
Major Occupancies:

Ground Floor	D	Offices, Second Floor	D	Offices

3.1.3.1 Separations of Major Occupancies
N/A - 4 Hour fire wall exists between Group E in building C/D
3.2.2.56 Classification: Group D, up to 2 storeys, sprinklered
Construction Requirements: Comb. or Non-comb., Floors, Roof & Mez. 45 min F.R.R., if combustible construction
3.2.4. Fire alarm System: Yes. Interconnected floor space.
3.2.9. Standpipe System: Not required
3.1.17.1. Occupant Load (based 1/9.3m2):

All floor Areas	222 persons	

3.7.4.2 Water Closets : based on 14 m2/person

All floor Areas	8 req.	8 prov.

3.8.2.3 A Universal Water Closets : 1 Required
3.4.3.2. Exit Width (6.1mm/person):
3.4.2.5.(1).(b). Travel Distance: 40m max.

Unprotected Openings:

Area of Exposing Building Façade Building E	152.8 m^2
Area of Openings Existing:	47.22 m^2
% Area of UPO	31%

OBC Reference: 3.2.3.1.D Distance between buildings = 6.17-6.3m.
For up to 40% UPO, require 5m LD, therefore building E gets 5m LD and 40% UPO.

Part 11

11.3.1.1 Material Alteration or Repair of a Building System
Alteration or repair will be equal or better in performance level.
11.3.1.2 New Building Systems and Extension of Existing Building Systems:
New construction and building systems will comply with other parts.
11.3.3.2 Extensive Renovation:
Yes
11.4.2. Reduction in Performance Level
11.4.2.1. Structural
None
11.4.2.2. Increase in Occupant Load
Yes
11.4.2.3. Change in Major Occupancy Yes.
Hazard Index: None

Existing E Occupancy	6
New D Business and Personal Services Occupancy	5

Construction Index: None

Existing E Occupancy	5
New D Business and Personal Services Occupancy	5

11.4.2.4. Plumbing
None
11.4.2.5. Sewage System
None

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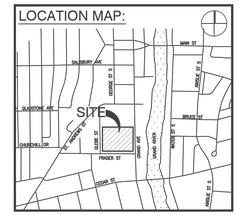
Appendix A

Site Plan and Severance Plan



WARNING – EXISTING OVERHEAD POWER LINES ARE ENERGIZED AT 27600 VOLTS, 600 VOLTS AND 240 VOLTS. CONTACT ENERGY+ AT LEAST ONE MONTH IN ADVANCE OF ANY WORK NEAR THESE POWERLINES. WORKERS MUST ADHERE TO THE CURRENT OCCUPATIONAL HEALTH AND SAFETY ACT CLEARANCE STANDARDS WHEN WORKING OR MAINTAINING ANYTHING NEAR THE OVERHEAD POWERLINES BOTH DURING CONSTRUCTION AND MAINTENANCE. OWNER IS TO PROVIDE TEMPORARY GENERATION TO OTHER ENERGY+ CUSTOMERS FOR ANY OUTAGES THAT ARE REQUIRED IN ORDER TO PERFORM WORK AT THIS LOCATION.

WINDOWS SHALL BE NON–OPERABLE AND NOT PROTRUDE FURTHER INTO THE REQUIRED ELECTRICAL SAFETY AUTHORITY CLEARANCE AREAS, ADJACENT TO THE EXISTING OVERHEAD POWERLINES, AND ALL METALLIC PARTS OF THE BUILDING SHALL BE EFFECTIVELY GROUNDED.

ACCESS TO ENERGY+ 3ø PADMOUNT TRANSFORMER MUST BE ABLE TO SUPPORT ENERGY+ MAINTENANCE VEHICLES UP TO 27,000kg IN WEIGHT, TO WITHIN 3m OF EXISTING ENERGY+ OWNED PADMOUNT TRANSFORMER

PLOT DATE: 2018-12-18 TIME: 4:08:01 PM FILE PATH: C:\Users\User\Documents\1892 Gaslight District\20181213 Revised Gaslight Parkland\1892-A101 SITE with Parkland and Property Divisions.dwg

SITE DATA:

	SITE AREA:	20,833.5 m²
	CONVEYANCE FOR ROAD WIDENING:	56.7 m²
	ACTUAL SITE AREA:	20,776.8 m²
⬜	RESIDENTIAL AREA:	7,990 m²
▩	COMMERCIAL/RETAIL AREA (incl. patio provision area):	8,805.89 m²
▨	PATIO PROVISION AREA:	1016.81 m²
🟩	PARKLAND AREA:	3,981.91 m²

CONSENT APPLICATION STATISTICS:

PARCEL	AREA	DEPTH	FRONTAGE	
A	1,966.8627m²	East–West 65.03m/64.34m North–South 30.38m/30.51m	GLEBE STREET FRASER STREET GRAND AVE	30.38m 64.34m n/a
B	9,603.1769m²	East–West 74.63m/94.74m North–South 75.11m/106.27m	GLEBE STREET FRASER STREET GRAND AVE	n/a 79.24m 106.27m
C	9,263.4604m²	East–West 142.98m/47.28m North–South 75.11m/109.05m 42.78m/9.44m	GLEBE STREET FRASER STREET GRAND AVE	109.05m n/a n/a

NOTE:

Dimensions and areas are for information purposes - a proper survey and reference plan will need to be a condition of the severance.

HIP DEVELOPMENTS
700 Rupert Street, Unit A
Waterloo, Ont. N2V 2B5
Phone 519-886-8850
Fax 519-886-8898
www.melloul.com

LOCATION MAP:

SCOPE OF RESPONSIBILITY

▨	MARTIN SIMMONS ARCHITECTS
▨	ABA ARCHITECTS INC.

Nº	DATE	ISSUE
1	04/13/18	ISSUED FOR SPA SUBMISSION

113 BREITHAUPT STREET, SUITE 200
KITCHENER, ONTARIO. N2H 5G9
TEL. 519-745-4754 FAX. 519-745-0061

PROJECT NORTH

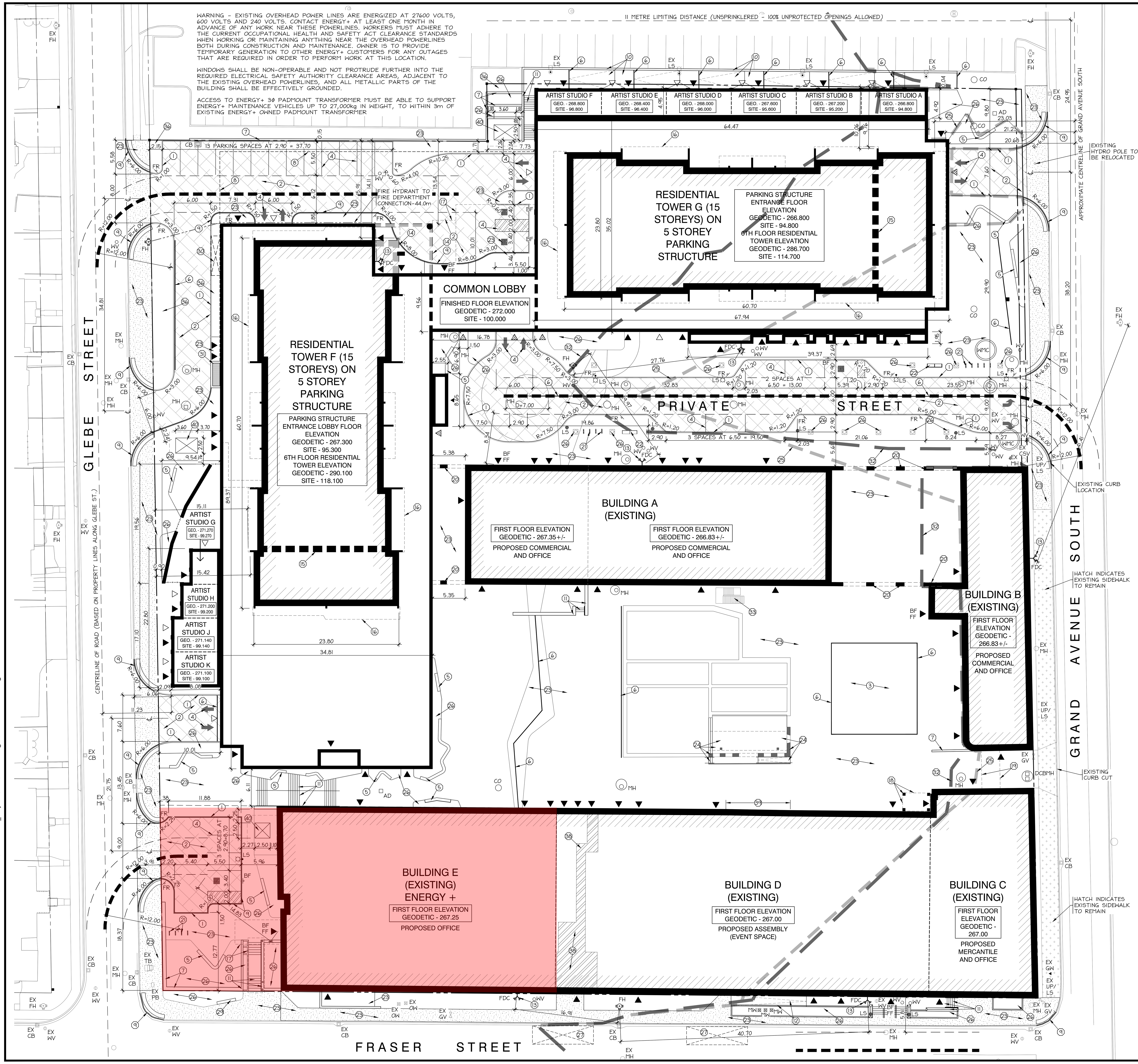
PROJECT

SOUTHWORKS
MULTI-USE DEVELOPMENT
THE GASLIGHT DISTRICT
64 GRAND AVENUE SOUTH, CAMBRIDGE, ONTARIO

DRAWING

SITE PLAN

DRAWN BY: KED
CHECKED BY: JM
DATE: AUGUST 1, 2018
SCALE: 1:300
DRAWING Nº: A101
PROJECT Nº: 1892-1



SITE PLAN NOTES

1. CURB - REFER TO CIVIL DWGS.
2. VEHICULAR UNIT PAVING - REFER TO LANDSCAPE DWGS.
3. STABILIZED AGGREGATE - REFER TO LANDSCAPE DWGS.
4. PAINTED LINE MARKINGS AND GRAPHICS
5. SEATWALL - REFER TO CIVIL/LANDSCAPE DWGS.
6. SLIT DRAIN - REFER TO CIVIL/LANDSCAPE DWGS.
7. RETAINING WALL - REFER TO CIVIL/LANDSCAPE DWGS.
8. LINE OF SUB-TERRAIN PARKING STRUCTURE
9. BARRIER FREE FLUSH CURB - PROVIDE TACTILE WARNING STRIPS AT MUNICIPAL ROADWAY CROSSWALKS - REFER TO LANDSCAPE DWGS.
10. CONCRETE BARRIER FREE RAMP/WALKWAY/RETAINING WALL/CURB - REFER TO CIVIL/LANDSCAPE DWGS.
11. EXTERIOR CONCRETE STAIRS/RETAINING WALLS (WHERE APPLICABLE) AND STAINLESS STEEL HANDRAILS
12. CONCRETE BARRIER FREE RAMP AND STAINLESS STEEL GUARDS AND HANDRAILS
13. FIRE DEPARTMENT CONNECTION
14. LINE OF BUILDING STRUCTURE ABOVE
15. LINE OF RESIDENTIAL TOWER 20TH FLOOR
16. LINE OF RESIDENTIAL TOWER BALCONIES
17. LINE OF CANOPY ABOVE
18. RECONSTRUCTED BOARD AND BATTEN STRUCTURE ABOVE
19. LINE OF OVERHEAD BRIDGE
20. EXISTING BUILDING STONE FACADE TO REMAIN
21. BICYCLE RACK - REFER TO LANDSCAPE DWGS.
22. BENCH - REFER TO LANDSCAPE DWGS.
23. HARD SURFACING - REFER TO LANDSCAPE DWGS.
24. ORIGINAL BUILDING RUINS c/w NEW BARRIER FREE RAMP/STAIRS AND STAINLESS STEEL GUARDS AND HANDRAILS - REFER TO MARTIN SIMMONS DWGS.
25. PROPOSED LOCATION OF REGULATORY FLOOD ELEVATION - REFER TO CIVIL DWGS.
26. PLANTING BED - REFER TO LANDSCAPE DWGS.
27. TEMPORARY GRADE LEVEL LOADING SPACE - 3.00m x 10.00m
28. EXISTING BUILDING RUINS
29. CORPORATE SIGNAGE
30. GAS METER - REFER TO MECHANICAL DWGS.
31. CONCRETE AREA WELL AND STEEL GRATE
32. APPROXIMATE LOCATION OF REGULATORY FLOOD ELEVATION - AS DESCRIBED BY GRCA RFE SECTIONS, REFER TO CIVIL DWGS. FOR EXTRAPOLATION ILLUSTRATED HERE.
33. RELOCATED EXISTING EXTERIOR FIRE ESCAPE.
34. ACCESS TO ENERGY + BUILDING VAULTS MUST BE ABLE TO SUPPORT ENERGY + MAINTENANCE VEHICLES UP TO 27,000kg IN WEIGHT.
35. RESERVED
36. LANDSCAPED AREA - REFER TO LANDSCAPE DWGS.
37. SNOW TO BE REMOVED FROM SITE BY PRIVATE SNOW REMOVAL SERVICE
38. EXTENT OF WASTE ROOM AND CORRIDOR (HATCHED)
39. EXTENT OF FOLDING GLASS DOORS
40. ELECTRICAL TRANSFORMER - REFER TO ELECTRICAL DWGS.

SITE LEGEND:

PROPERTY LINE	UP/LS — NEW UTILITY POLE/LIGHT STANDARD
BUILDING EXIT; BF - BARRIER FREE; FF - FIRE FIGHTER PRINCIPAL ENTRANCE	BLACK VINYL CHAINLINK FENCE
GRADE LEVEL OVERHEAD DOOR	NEW TRAFFIC SIGNAGE REFER TO SIGNAGE LEGEND
GRADE LEVEL ACCESS (NO MAN/OVERHEAD DOOR)	CONCRETE PAVING
DENOTES FIRE ROUTE MIN. 6.0m WIDE WITH MIN. 12.0m CENTRELINE RADIUS	EX CB — EXISTING CATCH BASIN
BARRIER FREE PARKING	EX MH — EXISTING MANHOLE
CB — NEW CATCH BASIN	EX UP/LS — EXISTING UTILITY POLE/LIGHT STANDARD
CO — NEW CLEAN OUT	EX WV — EXISTING WATER VALVE
MH — NEW MANHOLE	EX CSV — EXISTING CURB STOP VALVE
DO — NEW DRAIN OUTLET	EX FH — EXISTING FIRE HYDRANT
DCBMH — NEW DOUBLE CATCH BASIN MANHOLE	EX GW — EXISTING GUY WIRE
WMC — NEW WATER METER CHAMBER	EX OW — EXISTING OBSERVATION WELL
WV — NEW WATER VALVE	EX PB — EXISTING PULL BOX
FH — NEW FIRE HYDRANT	EX TB — EXISTING TERMINAL BOX-BELL
FDC — NEW FIRE DEPARTMENT CONNECTION	EX LS — EXISTING LIGHT STANDARD
LS OR LS — NEW LIGHT STANDARD	EX RS — EXISTING ROAD SIGNAGE
MW — NEW MONITORING WELL	EXISTING CHAINLINK FENCE

NOTE: UNMARKED RADII TO BE 1.00m

SIGNAGE LEGEND:

BF - BARRIER FREE PARKING
FR - FIRE ROUTE (ON PRIVATE ROADWAY)

CITY OF CAMBRIDGE
APPROVED
UNDER SECTION 41 OF THE PLANNING ACT R.S.O. 1990, c.P.13

SIGNATURE ____________
NAME ____________
TITLE ____________
DATE ____________

NOTE:
ALL SIGNAGE ON SITE WILL ADHERE TO CITY OF CAMBRIDGE SIGNAGE BYLAW AND WILL HAVE PERMITS APPLIED FOR UNDER THIS BYLAW.

ENERGY +
ALL STRUCTURES AND FIXTURES TO MEET ELECTRICAL SAFETY AUTHORITIES MINIMUM STANDARDS AND CLEARANCES.

SITE PLAN IS RECOMMENDED FOR APPROVAL

BUILDING DIV. ____________
C.S.D. - ACC. ____________
ECON. DEV. ____________
DEV. ENG. ____________
FIRE DEPT. ____________
HYDRO ____________
TRANSPORTATION ____________
PLANNING ____________

SITE DATA:

MUNICIPAL ADDRESS: 64 GRAND AVENUE SOUTH

LEGAL DESCRIPTION: 60/ 64 GRAND AVE SOUTH, CAMBRIDGE, PIN 03806-0091. LOTS 51-56, BLOCK A, PART OF MALCOLM STREET (CLOSED BY BYLAW, 57681), REGISTERED PLAN 456; LOT 27 REGISTERED PLAN D10; CITY OF CAMBRIDGE, REGIONAL MUNICIPALITY OF WATERLOO.

ZONING: C1RM1, (F)C1RM1, (F)C1RM1M2*

SITE AREA: 20,833.5 m², 2.08 ha, 5.14 ACRES

LOT FRONTAGE: (GRAND AVENUE SOUTH) 149.0 m

REQUIRED BUILDING SETBACKS:

	REQUIRED	PROVIDED
FRONT YARD - GLEBE ST.		
PARKING PODIUM - RES. TOWER F	4.5 m	10.01 m
RESIDENTIAL TOWER F	4.5 m	BALCONY-15.11 m
ARTIST STUDIOS G THRU K	4.5 m	2.09 m
FRONT YARD - GRAND AVE. S.		
EXISTING EAST (B) AND SOUTH (C) BLDGS.	0 m	0 m
PARKING PODIUM - RES. TOWER G	14.56 m	20.68 m
RESIDENTIAL TOWER G	14.56 m	BALCONY-21.23 m
INT. SIDE YARD - NORTH		
PARKING PODIUM - RES. TOWER G	2.5 m	4.95 m
RESIDENTIAL TOWER G	8.1 m	BALCONY-9.76 m
ARTIST STUDIOS A THRU F	2.5 m	0.04 m
BELOW GRADE PKG. STR. - RES. TOWER F	1.2 m	1.71 m
PARKING PODIUM - RES. TOWER F	2.5 m	13.54 m
RESIDENTIAL TOWER F	8.1 m	BALCONY-14.11 m
EXTERIOR SIDE YARD - FRASER ST.		
EXISTING SOUTH (C, D AND E) BLDG.	0 m	0 m

BUILDING AREA:

EXISTING BLDG. A	1,179.00 m²
EXISTING BLDG. B	544.09 m²
EXISTING BLDG. C	565.57 m²
EXISTING BLDG. D	1,869.08 m²
EXISTING BLDG. E	1,375.85 m²
PARKING PODIUM/RESIDENTIAL TOWER F	3,044.98 m²
ARTIST STUDIOS- TOWER F	157.44 m²
PARKING PODIUM/RESIDENTIAL TOWER G	2,424.88 m²
ARTIST STUDIOS - TOWER G	313.37 m²
COMMON LOBBY	160.34 m²
TOTAL:	11,634.60 m²

LOT COVERAGE: 11,634.60 m² / 20,833.5 m² = 55.8%

GROSS FLOOR AREA:

EXISTING BLDG. A	2,358.00 m²
EXISTING BLDG. B	1,088.18 m²
EXISTING BLDG. C	1,696.71 m²
EXISTING BLDG. D	2,459.32 m²
EXISTING BLDG. E	2,063.35 m²
RESIDENTIAL TOWER F (RESIDENTIAL)	18,301.7 m²
ARTIST STUDIOS - TOWER F	157.44 m²
RESIDENTIAL TOWER G (RESIDENTIAL)	18,301.7 m²
RETAIL UNITS - TOWER G	518.34 m²
ARTIST STUDIOS - TOWER G	313.37 m²
TOTAL:	47,258.11 m²

EXISTING BUILDINGS - PRESERVED BUILDING AREA

	ORIGINAL AREA	PRESERVED AREA
NORTH BUILDING	2,860.76 m²	
BUILDING A		1,179.00 m²
BUILDING B		544.09 m²
GLEBE ST. REMNANT		30.81 m²
FACADES		32.90 m²
TOTAL:		1,786.80 m²

NORTH BUILDING PERCENTAGE PRESERVED: 1,786.80 m²/ 2,860.76 m² = 62.4%

	ORIGINAL AREA	PRESERVED AREA
SOUTH BUILDING	3,845.90 m²	
BUILDINGS C,D,AND E		3,810.50 m²

SOUTH BUILDING PERCENTAGE PRESERVED: 3,810.50 m² / 3,845.90 m² = 99.1%

	ORIGINAL AREA	PRESERVED AREA
NORTH AND SOUTH BUILDING	6,706.66 m²	5,597.30 m²

TOTAL BUILDING PERCENTAGE PRESERVED: 5,597.30 m²/ 6,706.66 m² = 83.4%

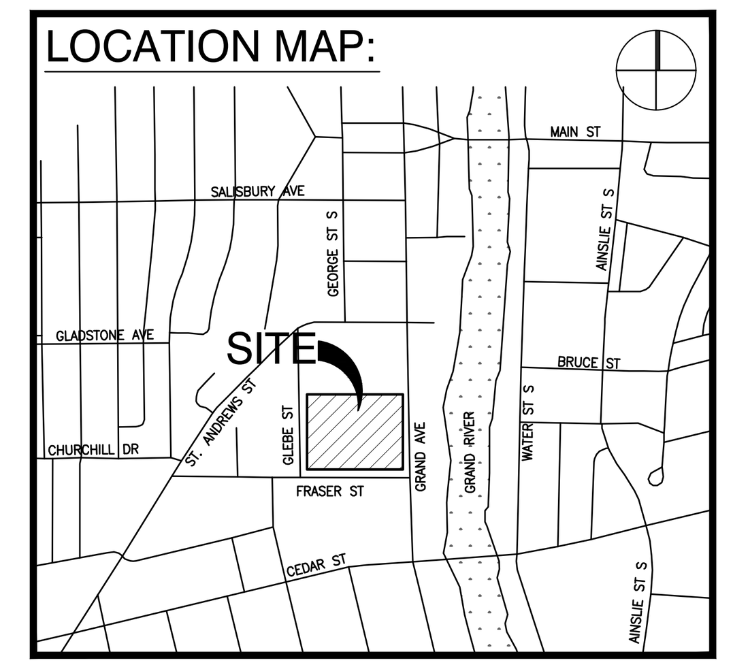
BUILDING HEIGHT (MAXIMUM 69.0 m): BUILDING F - 68.29 m; BUILDING G - 67.99 m

	REQUIRED	PROVIDED
LOADING (3.0m X 10.0m MINIMUM)	1 SPACE EACH FOR BLDG. F AND G	1 SPACE BLDG. F 1 SPACE BLDG. G
	2 SPACES FOR EXISTING BLDGS.	2 TEMPORARY SPACES ON FRASER ST.
PARKING	590 SPACES (SUBJECT TO MINOR VARIANCE APPROVAL)	592 SPACES
BARRIER FREE PARKING	9 TYPE A, 8 TYPE B	9 TYPE A, 8 TYPE B
BIKE STORAGE — LONG TERM RESIDENTIAL:	0.1 TO 0.6 SPACES/REQ'D. CAR SPACE: 39-235 SPACES	115 SPACES (.29 /CAR SPACE)
BIKE STORAGE — SHORT TERM SITE:	0.1 TO 0.2 SPACES/REQ'D. COMM. CAR SPACE BEFORE 25% REDUCTION: 28-55 SPACES	55 SPACES (.2/COMM. CAR SPACE BEFORE REDUCTION)
UNITS	MAXIMUM 396 UNITS	392 UNITS
AMENITY (RESIDENTIAL)	20m²/DWELLING UNIT w/ 1 BEDRM. = 3,200 m² 30m²/DWELLING UNIT w/ MORE THAN 1 BEDRM. = 6,960 m²	10,196.51 m²
LANDSCAPE	30% LOT AREA (6,250.05 m²)	6,878.36 m²

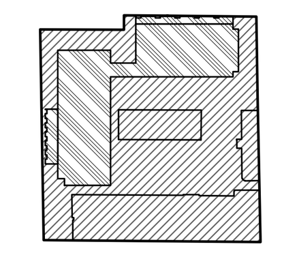
REFUSE/RECYCLING: REFUSE/RECYCLING WILL BE STORED INTERNALLY COLLECTION BY PRIVATE REFUSE/RECYCLING SERVICE

HIP DEVELOPMENTS
700 Rupert Street, Unit A
Waterloo, Ont. N2V 2B5
Phone 519-886-8850
Fax 519-886-8898
www.melloul.com

LOCATION MAP:



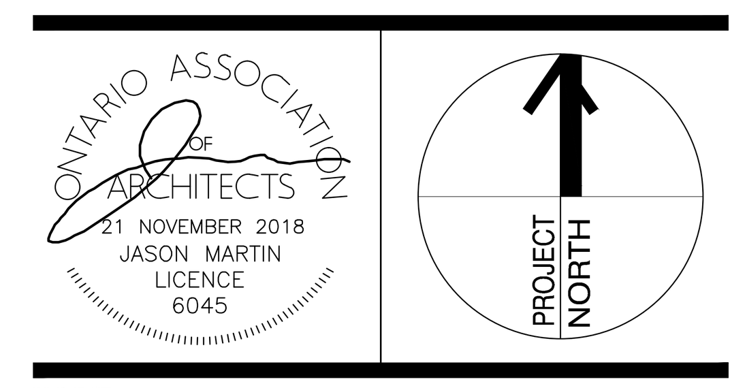
SCOPE OF RESPONSIBILITY



MARTIN SIMMONS ARCHITECTS
ABA ARCHITECTS INC.

Nº	DATE	ISSUE
3	11/21/18	ISSUED FOR SPA RESUBMISSION
2	09/14/18	ISSUED FOR SPA RESUBMISSION
1	04/13/18	ISSUED FOR SPA SUBMISSION

MARTIN SIMMONS ARCHITECTS
113 BREITHAUPT STREET, SUITE 200
KITCHENER, ONTARIO. N2H 5G9
TEL. 519-745-4754 FAX. 519-745-0061



PROJECT
SOUTHWORKS
MULTI-USE DEVELOPMENT
THE GASLIGHT DISTRICT
64 GRAND AVENUE SOUTH, CAMBRIDGE, ONTARIO

DRAWING
SITE PLAN

DRAWN BY: KED
CHECKED BY: JM
DATE: NOVEMBER 21, 2018
SCALE: 1:300
DRAWING Nº: A101
PROJECT Nº: 1892-1

PLOT DATE: 2018-11-28 TIME: 10:30:19 AM FILE PATH: C:\Users\Kevin\Documents_Projects\MSA\1892 Gaslight\1892-A101 SITE.dwg

MARTIN SIMMONS
ARCHITECTS

Appendix B

Landscape Package (Gaslight District), Planning Partnership

GASLIGHT DISTRICT

CAMBRIDGE, ON

LANDSCAPE

ISSUED FOR SPA RESUBMISSION

JOB NUMBER: 1984
NOVEMBER 22 2018

GENERAL NOTES

1. CONSTRUCTION SHALL CONFORM WITH ALL CURRENT GOVERNING CODES AND ALL APPLICABLE ORDINANCES INCLUDING REGULATIONS, SPECIFICATIONS, AND DRAWINGS.
2. SAFETY STANDARDS: IT IS THE INTENT OF THESE DOCUMENTS TO INCORPORATE THE SAFETY STANDARDS OF LOCAL AND NATIONAL DIVISIONS OF INDUSTRIAL SAFETY / OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS. SUCH STANDARDS SHALL BE COMPLETED WHETHER OR NOT SPECIFICALLY DETAILED. THE CONTRACTOR IS SOLELY RESPONSIBILE OF THE CONTRACTOR FOR SAFETY AND SAFETY STANDARDS DURING CONSTRUCTION.
3. ALL PROPERTY LINES AND LOT LINES SHALL BE VERIFIED PRIOR TO COMMENCING WORK.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND IDENTIFYING UNDERGROUND UTILITIES, PIPES, AND STRUCTURES, THE CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
5. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AND/OR GRADE DIFFERENCES WHEN IT IS OBVIOUS THAT OBSTRUCTIONS EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
6. THE LOCATIONS OF FEATURES TO BE CONSTRUCTED NOT SPECIFICALLY DIMENSIONED MAY BE DETERMINED BY SCALE. VERIFY SUCH CONDITIONS WITH OWNER'S REPRESENTATIVE.
7. ALL CURVE-TO-CURVE TANGENT LINES SHALL BE NEAT, TRIM, SMOOTH, AND UNIFORM.
8. CITY REPRESENTATIVE SHALL BE NOTIFIED AFTER THE SITE HAS BEEN STAKED OUT, PRIOR TO THE CONTINUATION OF WORK.
9. NO CHANGE IN CONTRACT PRICE SHALL BE ALLOWED FOR ACTUAL OR CLAIMED DISCREPANCIES BETWEEN EXISTING GRADING AND THAT SHOWN ON PLAN UNLESS SUCH DISCREPANCIES ARE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER IN WRITING PRIOR TO THE CONTRACTOR STARTING PROJECT.
10. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWING SCALE.
11. CONTRACTOR SHALL BE RESPONSIBLE TO PAY FOR AND OBTAIN ALL NECESSARY BUILDING PERMITS AS MAY BE REQUIRED BY LOCAL AGENCIES. ADDITIONALLY, EACH CONTRACTOR SHALL PROVIDE ALL DRAWINGS, SCHEDULES, AND SPECIFICATIONS AS MAY BE REQUIRED FOR BUILDING PERMITS.
12. ALL DIMENSIONS SHALL BE VERIFIED AGAINST EXISTING CONDITIONS AND ALL DISCREPANCIES REPORTED TO THE OWNER.
13. THE CONTRACTOR SHALL RECTIFY ALL DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE OWNER.
14. EXISTING TREES AND OTHER EXISTING SITE FEATURES SHALL BE PROTECTED AGAINST DAMAGE BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR DAMAGE OR RESTORATION TO SAME.
15. ALL TEMPORARY CONSTRUCTION SAFETY FENCING AND TREE PROTECTION FENCING SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF CONSTRUCTION.
16. THE PLANNING PARTNERSHIP WILL RETAIN PROPRIETARY OWNERSHIP AND COPYRIGHT OF THE LANDSCAPE CONSTRUCTION DRAWINGS.

SITE CONTEXT MAP

SPA NOTES

BUILDING PERMIT ISSUANCE SHALL BE SUBJECT TO THE BUILDING PERMIT DRAWINGS NOT BEING IN CONTRAVENTION WITH THESE APPROVED PLANS AND DRAWINGS INCLUDING, BUT NOT LIMITED TO, THE EXTERIOR DESIGN OF THE BUILDING AND EXTERIOR BUILDING MATERIALS

SHEET INDEX

TITLE	SHEET NO.
COVER SHEET	L0.00
COMPOSITE LANDSCAPE UTILITY PLAN	L0.01
GROUND LEVEL REFERENCE PLAN	L1.00
GROUND LEVEL LAYOUT PLAN	L2.00
GROUND LEVEL GRADING PLAN	L3.00
GROUND LEVEL SOILS PLAN	L4.00
GROUND LEVEL PLANTING PLAN	L5.00
SECTIONS	L6.00
HARDSCAPE DETAILS	L7.00
SOFTSCAPE DETAILS	L8.00

PROJECT TEAM

CLIENT
HIP DEVELOPMENTS

LANDSCAPE ARCHITECT
THE **PLANNING** PARTNERSHIP
1255 BAY STREET, SUITE 500
TORONTO, ONTARIO, CANADA
M5R 2A9
T. 416.975.1556

ARCHITECT
MARTIN SIMMONS ARCHITECTS INC.
113 BREITHAUPT STREET, SUITE 200
KITCHENER, ON N2H 5G9
T. 519.745.4754

The Planning Partnership
urban design . landscape architecture . planning . communications

GASLIGHT DISTRICT CAMBRIDGE, ONTARIO

Project /Client

HIP DEVELOPMENTS

Issue / Revisions

No.	Description	Date YY.MM.DD	By
1	ISSUED FOR SPA SUBMISSION	18.04.13	TC
2	RE-ISSUED FOR SPA SUBMISSION	18.09.14	TB
3	RE-ISSUED FOR SPA SUBMISSION	18.11.22	TB/TC
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Stamp

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Designed By	MOH/TC
Drawn By	TC/TB
Checked By	MOH/TC

The Planning Partnership
urban design . landscape architecture . planning . communications
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t. 416.975.1556 f. 416.975.1580 info@planpart.ca

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Drawing Title

LANDSCAPE COMPOSITE UTILITY PLAN

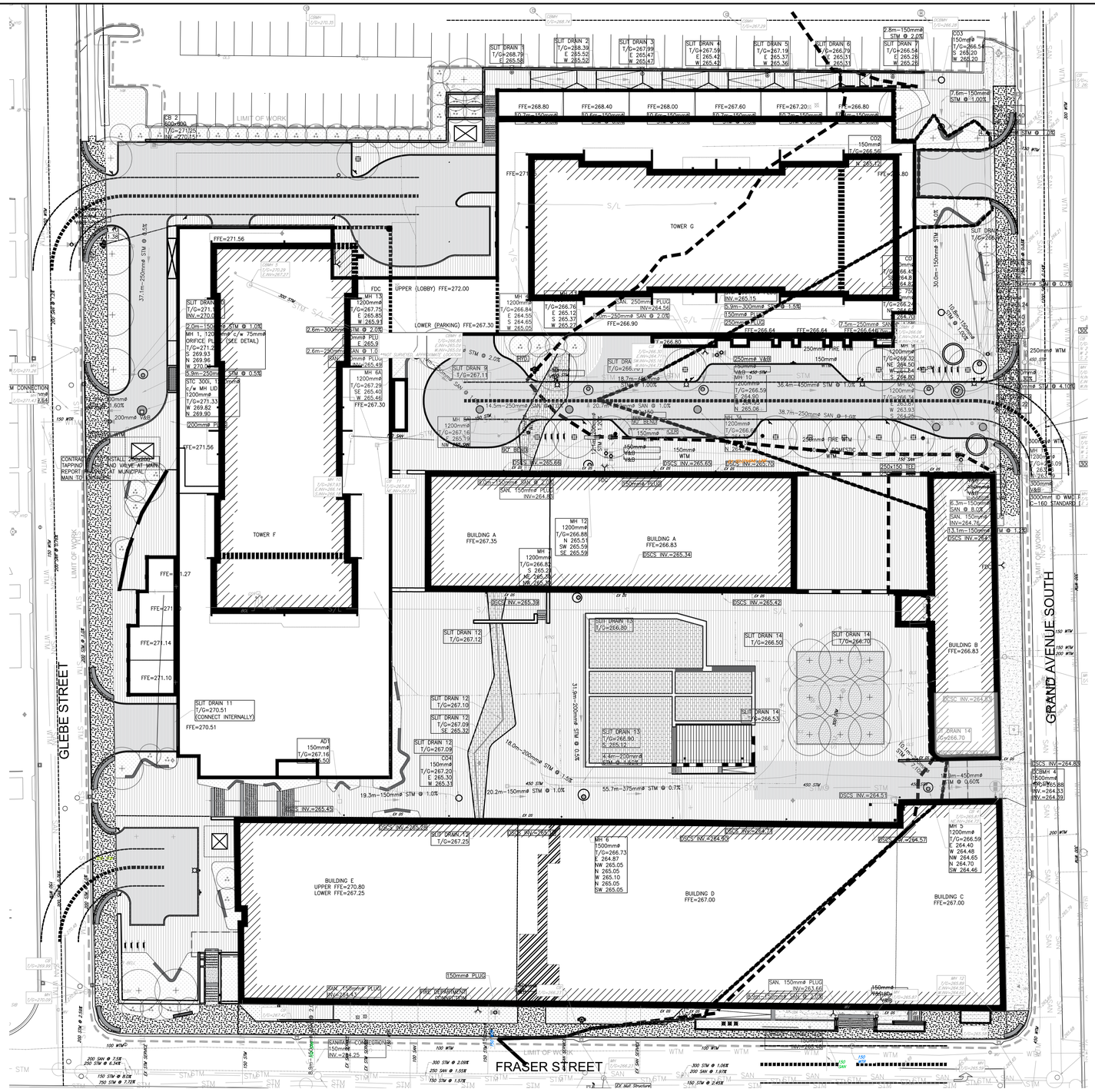
Scale

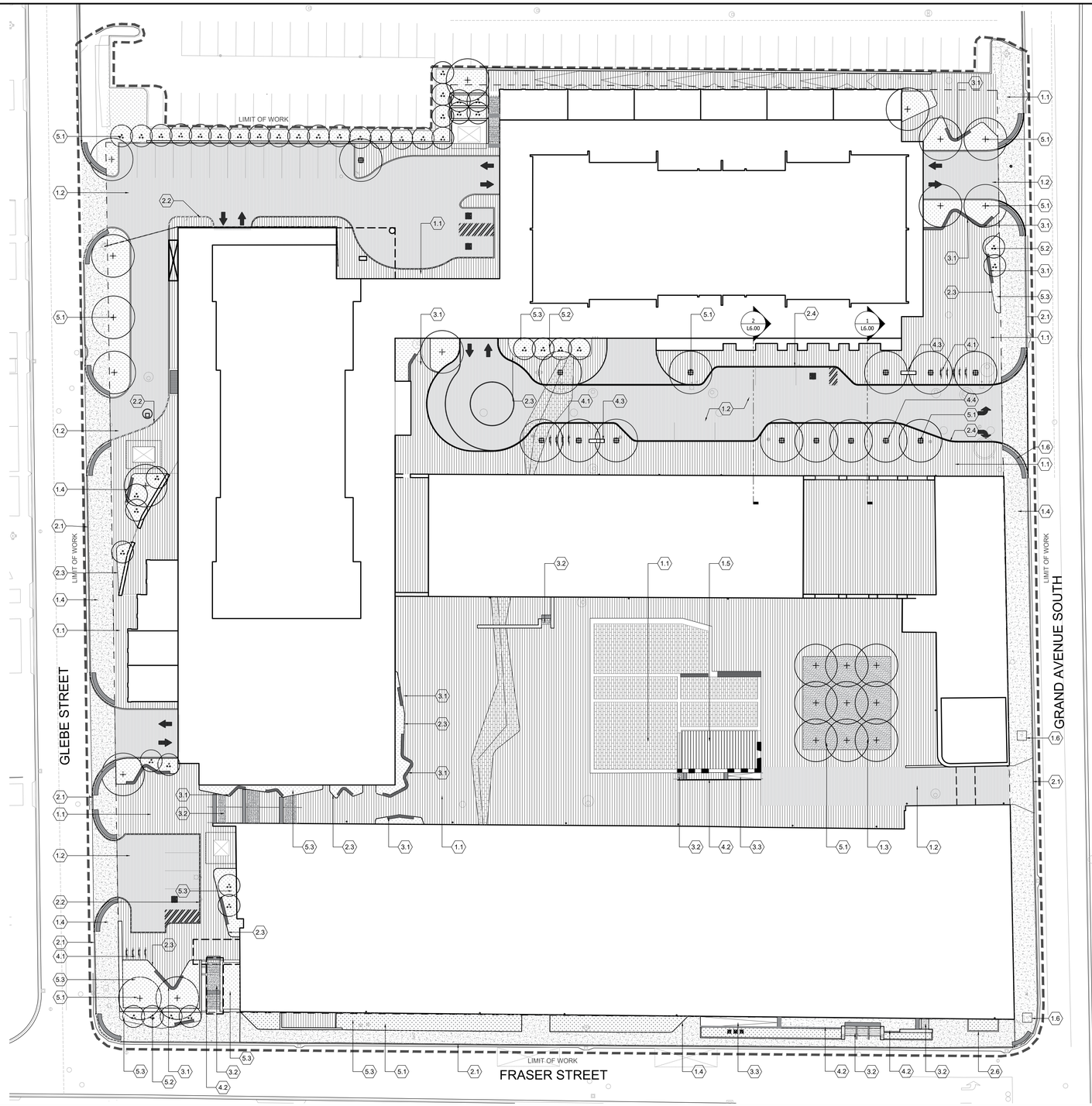
1:300

Proj. No.	Drawing No.
1984	L0.01
Sheet No.	

LEGEND:

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED DECIDUOUS CANOPY TREE
- PROPOSED DECIDUOUS CANOPY TREE IN PAVING
- PROPOSED MULTI-STEM TREE
- PROPOSED LARGE SHRUB
- GROUND COVER PLANTING
- UNIT PAVING TYPE 1 (VEHICULAR)
- UNIT PAVING TYPE 2 (PEDESTRIAN)
- UNIT PAVING TYPE 3 (PEDESTRIAN)
- UNIT PAVING TYPE 5 (HEAVY)
- CONCRETE SIDEWALK
- STONE PAVING
- STABILIZED AGGREGATE
- WOOD DECK
- SEATWALL
- BIKE RING
- BENCH
- TREE GRATE
- BARRIER CURB
- TACTILE FLUSH CURB
- MOUNTABLE CURB





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NOTE: LIGHTS BY OTHERS. REFER TO ELECTRICAL.

SITE DETAIL KEYNOTES

		DETAIL/ SHEET	SPEC SECTION
1.0	PAVEMENTS		
1.1	CONCRETE UNIT PAVING - LIGHT DUTY	1 / L7.00	
1.2	CONCRETE UNIT PAVING - HEAVY DUTY	2 / L7.00	
1.3	RESIN-BOUND AGGREGATE SURFACING	6 / L7.00	
1.4	C.I.P. CONCRETE SIDEWALK	1 / L7.02	
1.5	WOOD DECK	2 / L7.02	
1.6	SPACER JOINT AROUND HYDRO POLE	8 / L7.00	
2.0	CURBS, FENCES, AND GATES	DETAIL/ SHEET	SPEC SECTION
2.1	CONCRETE CURB - BARRIER	5 / L7.00	
2.2	CONCRETE CURB - MOUNTABLE	4 / L7.00	
2.3	STEEL PLANTER	7 / L7.00	
2.4	TACTILE UNIT PAVER FLUSH CURB	3 / L7.00	
3.0	WALLS	DETAIL/ SHEET	SPEC SECTION
3.1	450MM HT CONCRETE SEAT WALL	1 / L7.01	
3.2	CONCRETE STAIRS	3 / L7.02	
3.3	STONE RAMP	5 / L7.02	
4.0	SITE FURNITURE	DETAIL/ SHEET	SPEC SECTION
4.1	BICYCLE RACK	4 / L7.01	
4.2	STAINLESS STEEL HANDRAIL	4 / L7.02	
4.3	BENCH	5 / 7.01	
4.4	TREE GRATE	3 / 7.01	
5.0	SOFTSCAPE	DETAIL/ SHEET	SPEC SECTION
5.1	DECIDUOUS TREE PLANTING	1 / L8.00	
5.2	SHRUB PLANTING	2 / L8.00	
5.3	PLANTING BED	3 / L8.00	

GASLIGHT DISTRICT CAMBRIDGE, ONTARIO

Project /Client

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Stamp

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Designed By MOH/TC

Drawn By TC/TB

Checked By MOH/TC

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Drawing Title

MATERIALS PLAN

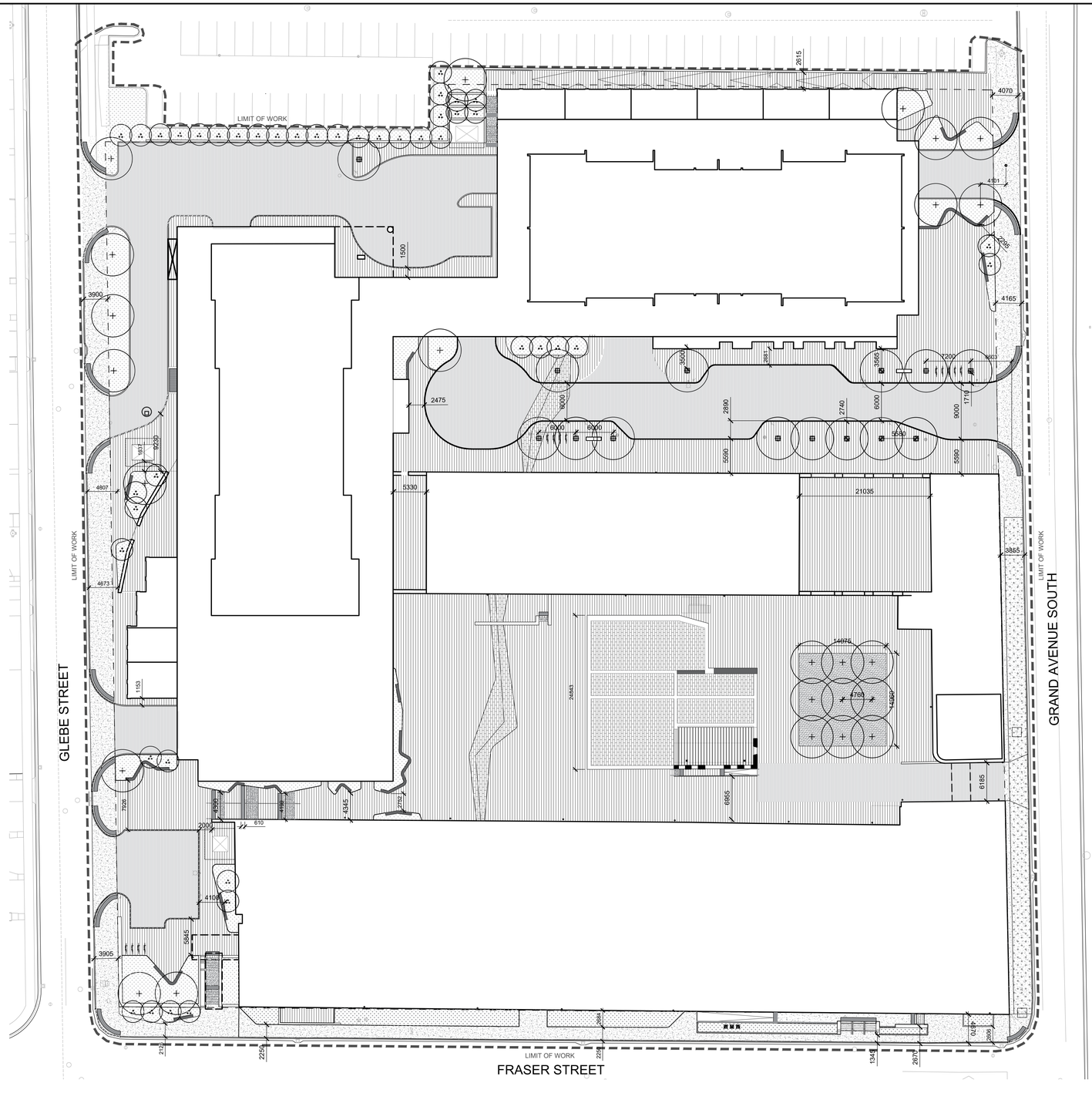
Scale

1:300

Proj. No. 1984

Drawing No. L1.00

Sheet No.



LEGEND:

- PROPERTY LINE
- LIMIT OF WORK
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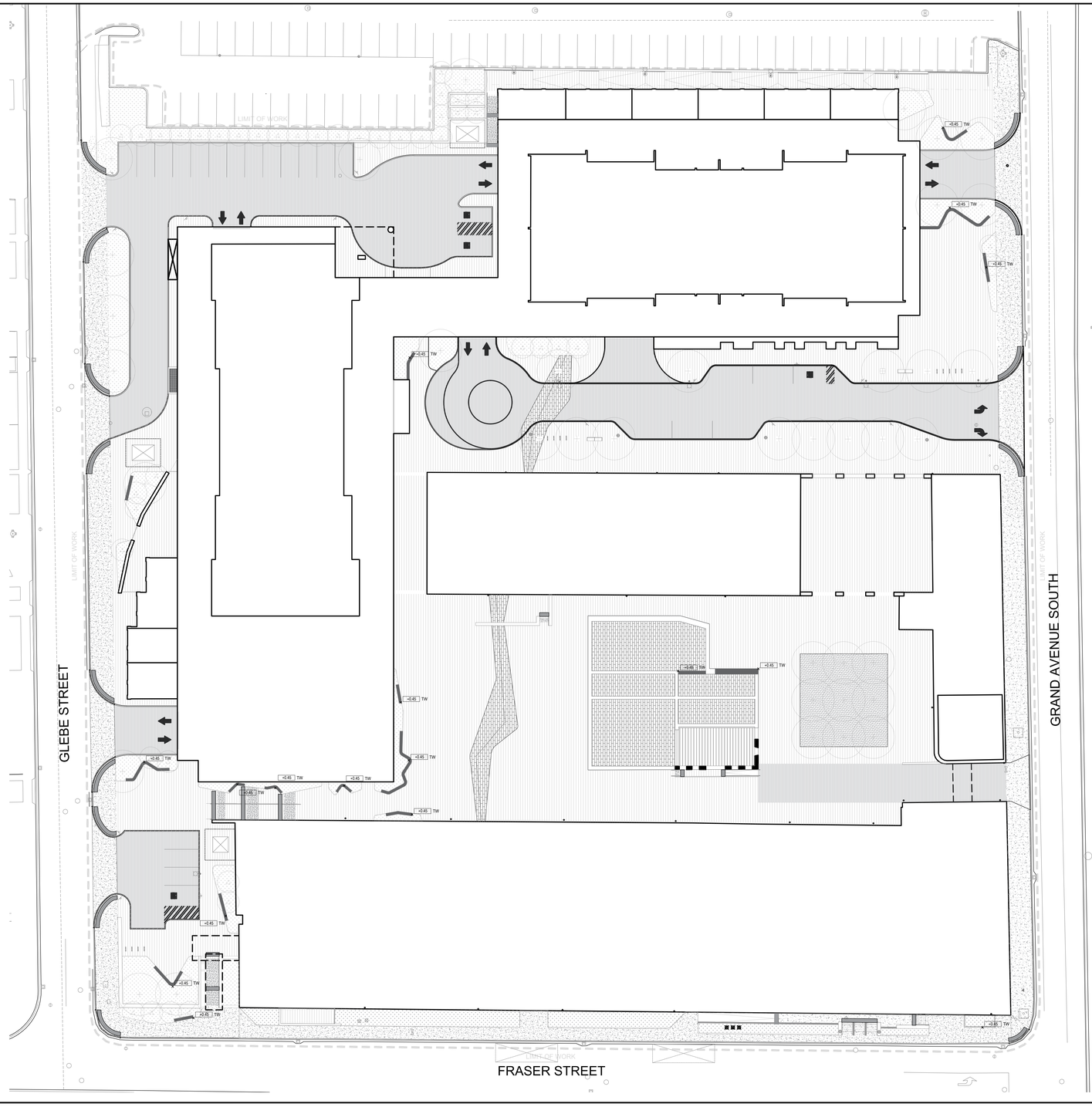
LAYOUT PLAN

Scale

1:300

Proj. No.	Drawing No.
1984	L2.00
Sheet No.	



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- PROPOSED MULTI-STEM TREE
- PROPOSED LARGE SHRUB
- SEAT WALL
- 366.04 TC / 365.89 BC — PROPOSED ELEVATION

GASLIGHT DISTRICT CAMBRIDGE, ONTARIO

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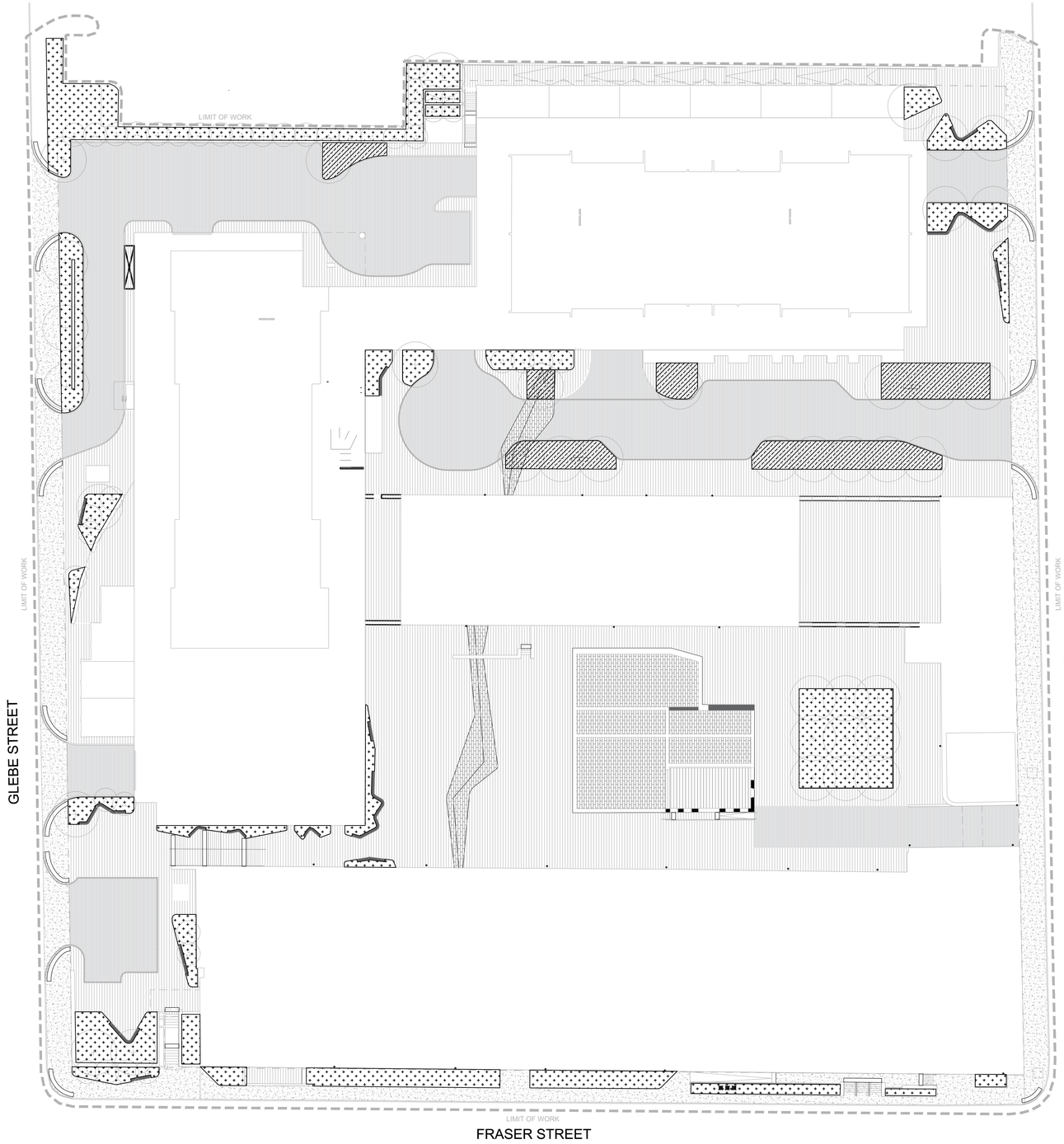
Drawing Title

TOP OF WALL HEIGHTS

Scale

1:300

Proj. No.	Drawing No.
1984	L3.00
Sheet No.	



LEGEND:

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- PROPOSED DECIDUOUS CANOPY TREE IN PAVING
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- PROPOSED LARGE SHRUB
- PLANTING SOIL 600mm DEPTH
- AREA OF SOIL CELLS

GASLIGHT DISTRICT CAMBRIDGE, ONTARIO

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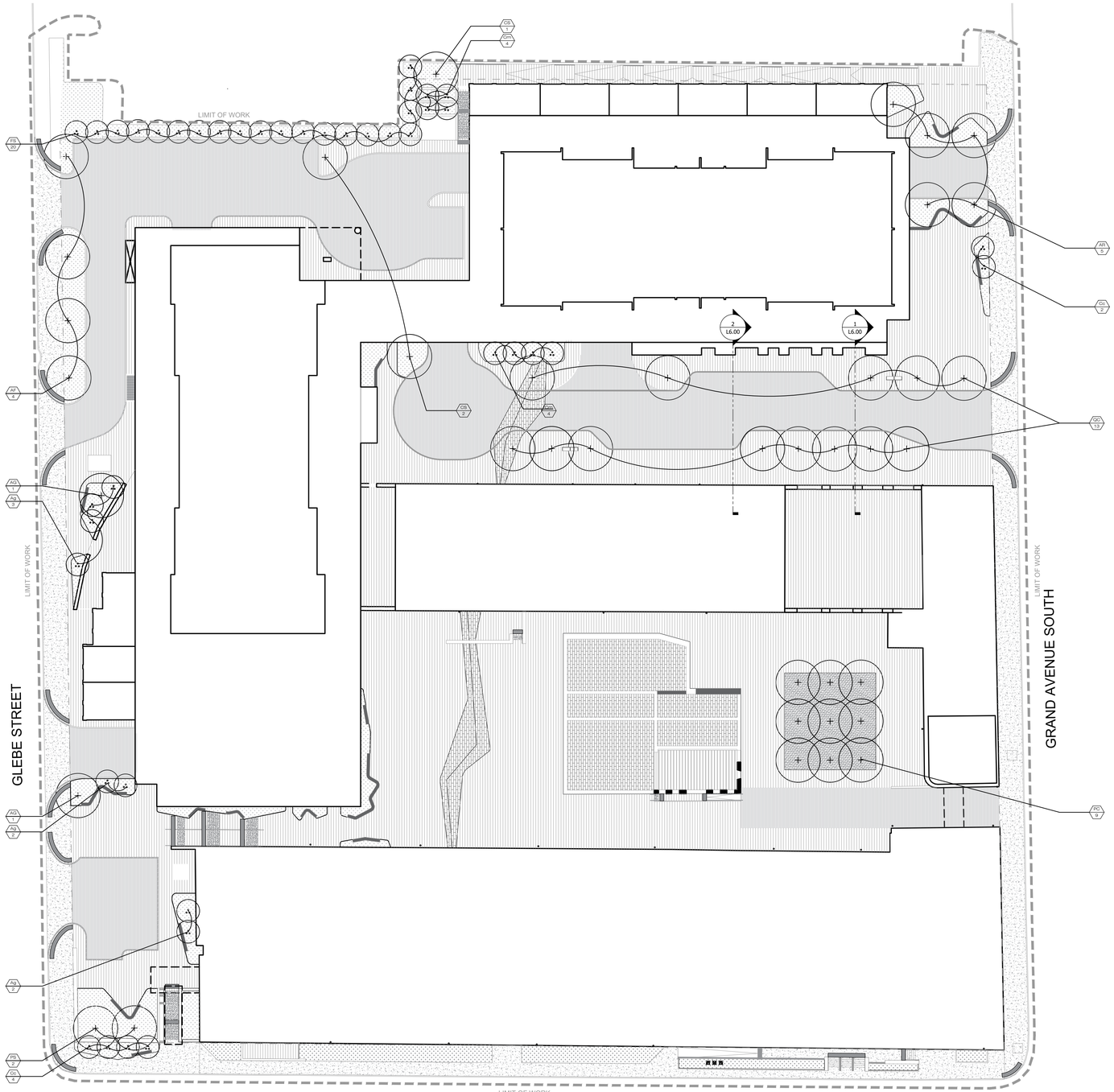
Drawing Title

SOILS PLAN

Scale

1:300

Proj. No.	Drawing No.
1984	L4.00
Sheet No.	



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- PROPOSED LARGE SHRUB
- GROUND COVER PLANTING

PLANTING SCHEDULE - PROJECT TOTAL

Key	Botanical Name	Common Name	Qty.	Size	Spacing
DECIDUOUS TREES					
AF	*Acer x freemanii* 'Autumn Blaze'	Autumn Blaze Maple	4	90MM B+B	AS INDICATED
AG	*Aesculus glabra*	Ohio Buckeye	2	90MM B+B	AS INDICATED
AR	*Acer rubrum*	Red Maple	5	90MM B+B	AS INDICATED
CS	*Catalpa speciosa*	Northern Catalpa	3	100MM B+B	AS INDICATED
FS	*Fagus sylvatica* 'Dawyck Green'	Dawyck Green Beech	20	80MM B+B	AS INDICATED
PC	*Pyrus calleryana*	Non-grafted Callery Pear	9	50MM B+B	AS INDICATED
QC	*Quercus coccinea*	Scarlet Oak	13	90MM B+B	AS INDICATED
CONIFEROUS TREES					
PS	*Pinus strobus*	Eastern White Pine	2	300CM B+B	AS INDICATED
DECIDUOUS LARGE SHRUBS/SMALL TREES					
Ag	*Acer griseum*	Paperbark Maple (Multi-Stem)	7	60MM B+B	AS INDICATED
Cc	*Cercis canadensis*	Eastern Redbud	6	60MM B+B	AS INDICATED
Cm	*Cornus mas*	Cornelian Cherry (Multi-Stem)	8	60MM B+B	AS INDICATED

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Drawing Title

PLANTING PLAN

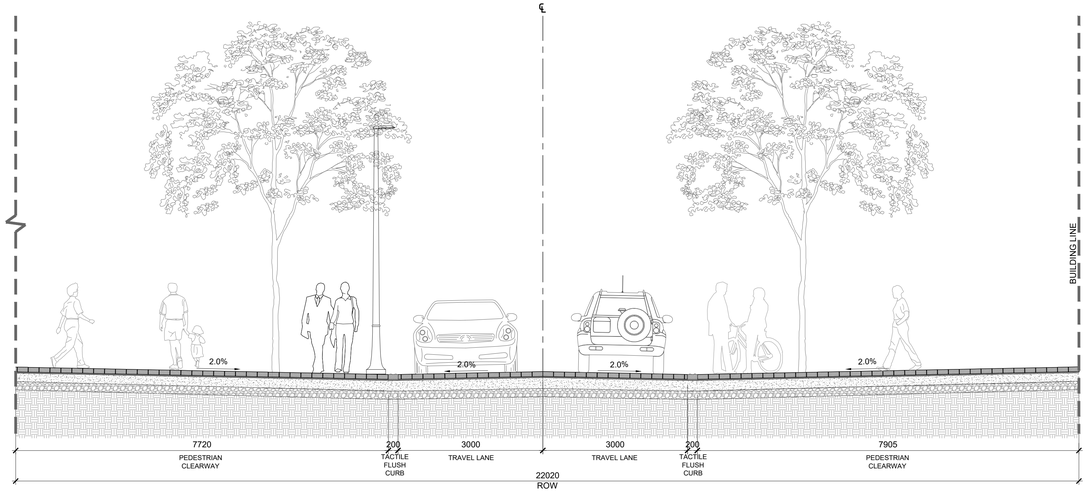
Scale

1:300

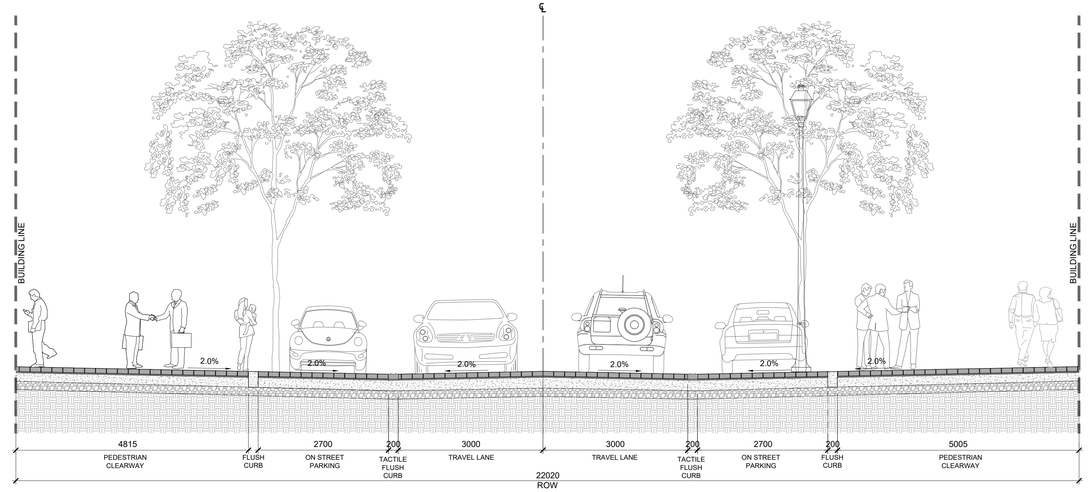
Proj. No. 1984

Drawing No. L5.00

Sheet No.



1 L-5.00 SECTION A-A



2 L-5.00 SECTION B-B

GASLIGHT DISTRICT
CAMBRIDGE, ONTARIO

Project /Client

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Drawn By
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Drawing Title

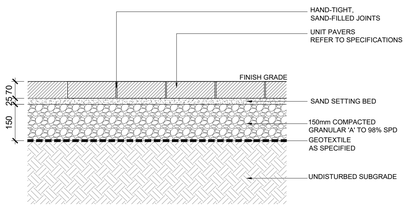
SECTIONS

Scale
1:50

Proj. No.
1984

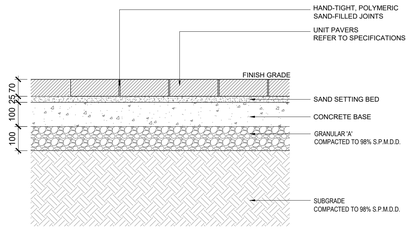
Drawing No.
L6.00

Sheet No.



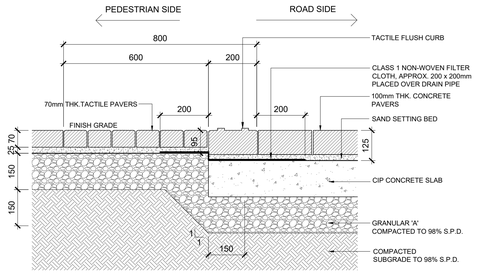
1 L7.00 CONCRETE UNIT PAVING - LIGHT DUTY

SCALE - 1:10



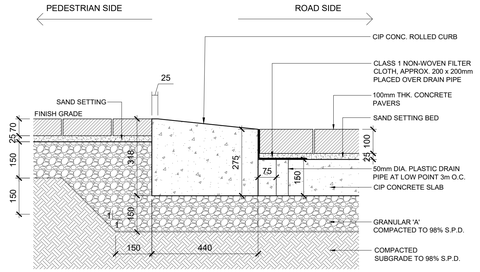
2 L7.00 CONCRETE UNIT PAVING - HEAVY DUTY

SCALE - 1:10



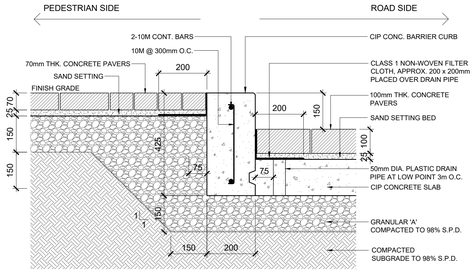
3 L7.00 TACTILE UNIT PAVER / FLUSH CURB

SCALE - 1:10



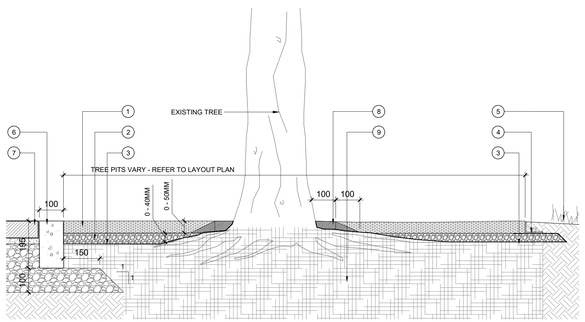
4 L7.00 CONCRETE MOUNTABLE CURB

SCALE - 1:10



5 L7.00 CONCRETE BARRIER CURB

SCALE - 1:10

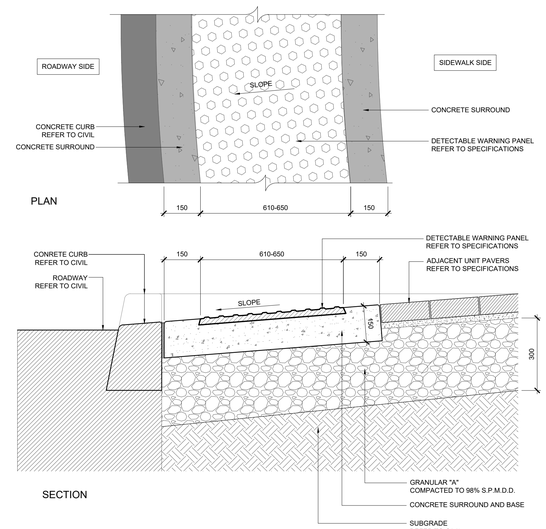


1. 50mm DEPTH RESIN-BOUND AGGREGATE SURFACING. REFER TO SPECIFICATION.
2. 3/8" WASHED LIMESTONE CHIP.
3. TERRAFIX 270R FILTER FABRIC OR APPROVED EQUAL.
4. EDGE RESTRAINT REFER TO SPECIFICATION.
5. ALL DISTURBED TURF AREAS ADJACENT TO PATHWAY SHALL BE PLANTING SOIL COVERED AND RESODED.
6. FLUSH CURB. SEE DETAIL 7 / L-800
7. UNIT PAVING. SEE DETAIL 1 / L-800
8. LOOSE DECORATIVE AGGREGATE
9. UNDESTURBED SOIL

NOTE:
1. HAND EXCAVATE THE AREA WITH SENSITIVITY TO NOT DISRUPT SURFACE FEEDER ROOTS.
2. ARBORESIN SURFACING TO MATCH EXISTING GRADE OF EXCAVATED SOIL AND TO BE NO HIGHER THEN BASAL ROOT FLARE.
3. ALL ROOT CUTTING IS TO BE CONDUCTED BY AN ISA CERTIFIED ARBORIST USING STERILIZED EQUIPMENT.

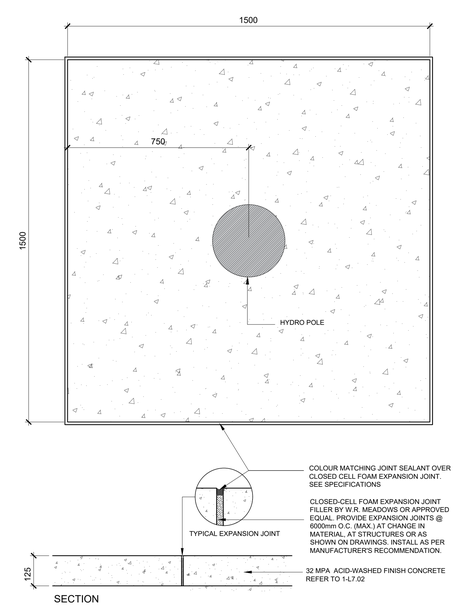
6 L7.00 RESIN-BOUND AGGREGATE SURFACING

SCALE - 1:10



7 L7.00 TACTILE WARNING PLATES

SCALE - 1:10



8 L7.00 SPACER JOINT AROUND HYDRO POLE

SCALE - 1:10

GASLIGHT DISTRICT CAMBRIDGE, ONTARIO

Project /Client

HIP DEVELOPMENTS

Issue / Revisions

No.	Description	Date (YY.MM.DD)	By
1	ISSUED FOR SPA SUBMISSION	18.04.13	TC
2	RE-ISSUED FOR SPA SUBMISSION	18.09.14	TB
3	RE-ISSUED FOR SPA SUBMISSION	18.11.22	TB/TC
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Stamp

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Designed By
MOH/TC

Drawn By
TC/TB

Checked By
MOH/TC

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t. 416.975.1556 f. 416.975.1580 info@planpart.ca

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Drawing Title

HARDSCAPE DETAILS

Scale

1:250

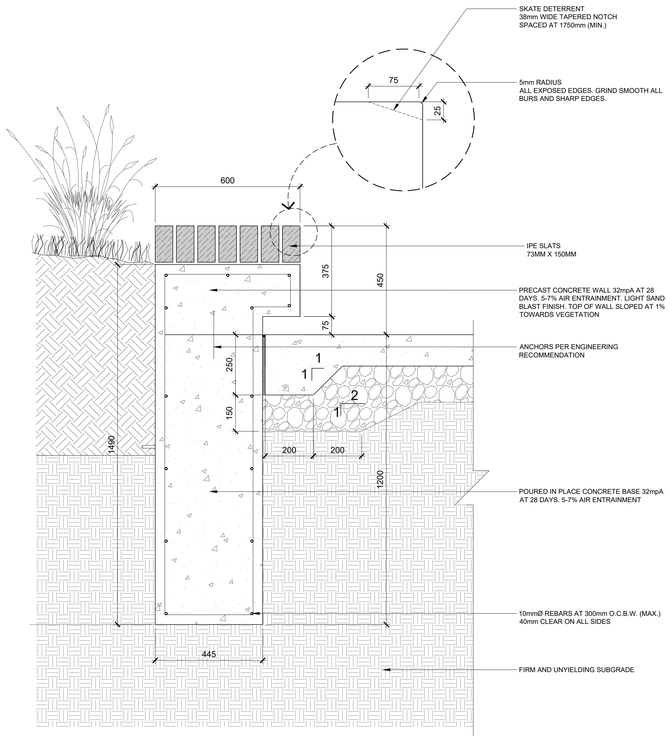
Proj. No.

1984

Drawing No.

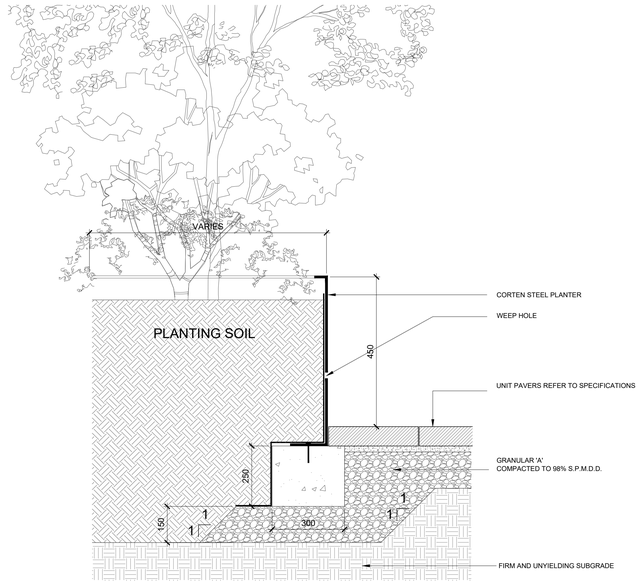
L7.00

Sheet No.



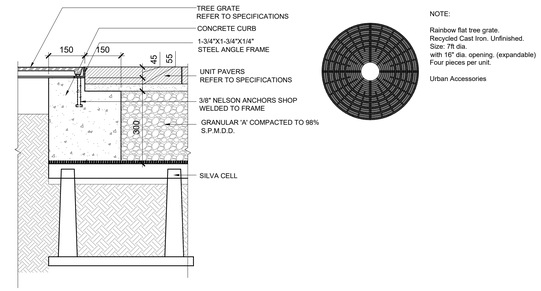
1 L-7.01 450MM HT CONCRETE SEATWALL

SCALE - 1:10



2 L-7.01 STEEL PLANTER

SCALE - 1:10



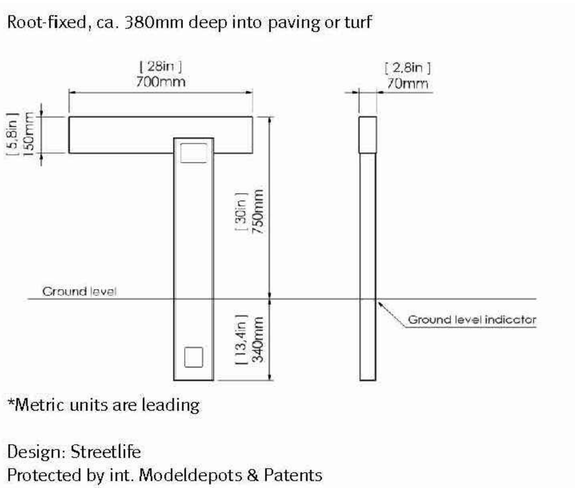
NOTE:

Rainbow flat tree grate.
Recycled Cast Iron. Unfinished.
Size: 7ft dia.
with 16" dia. opening. (expandable)
Four pieces per unit.

Urban Accessories

3 L7.01 TREE GRATE

SCALE - 1:10



4 L-7.01 BIKE RACK

SCALE - N.T.S.

5 L-7.01 BENCH

SCALE - N.T.S.

GASLIGHT DISTRICT CAMBRIDGE, ONTARIO

Project /Client

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MOH/TC

Drawn By
TC/TB

Checked By
MOH/TC

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Drawing Title

HARDSCAPE DETAILS

Scale
1:250

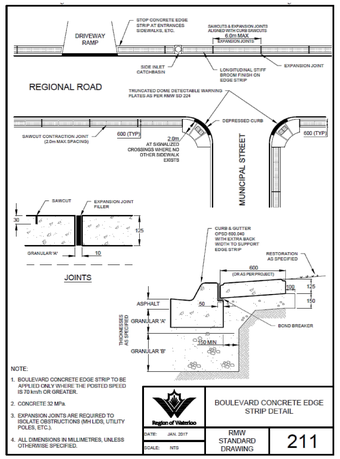
Proj. No.
1984

Drawing No.
L7.01

Sheet No.

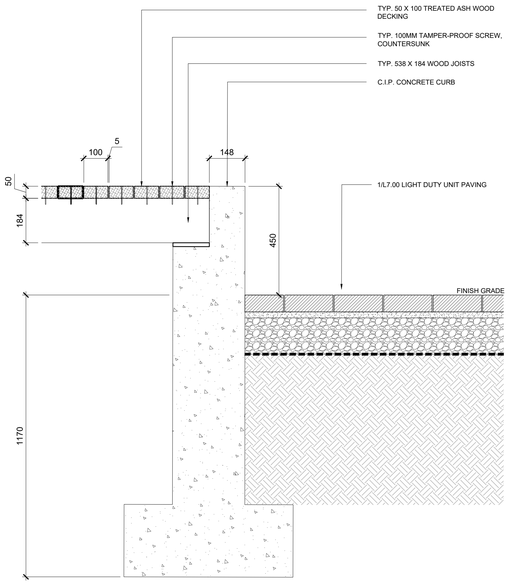
Regional Municipality of Waterloo
Standard Drawings

January 2018
Page **9** of **43**



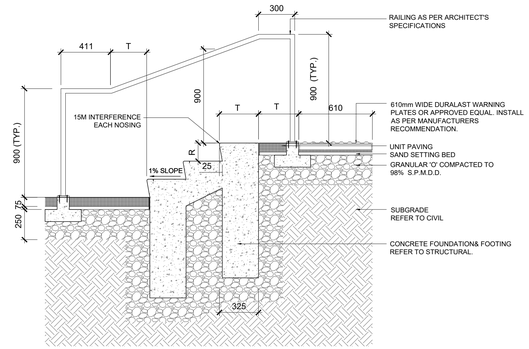
1 / L-7.02 CONCRETE SIDEWALK

SCALE - N.T.S.



2 / L7.02 WOOD DECK

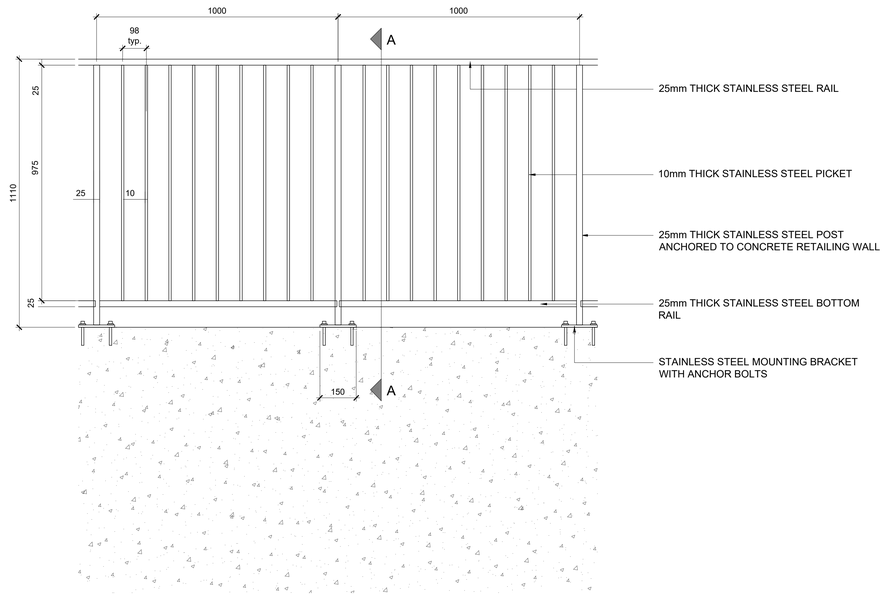
SCALE - 1:10



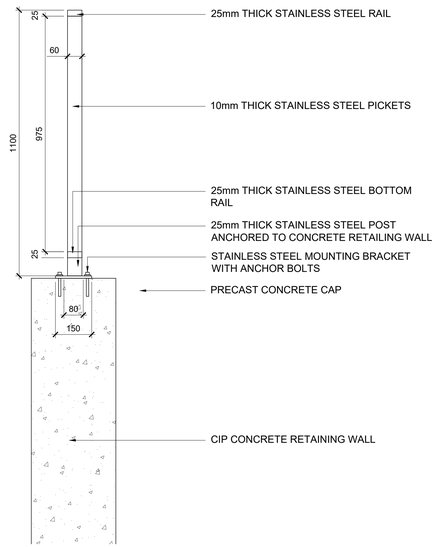
NOTES:
1. T: REFER TO GRADING PLAN
2. R: REFER TO GRADING PLAN
3. REFER TO GRADING PLAN FOR NUMBER OF STEPS.
4. REFER TO STRUCTURAL DRAWINGS FOR ANCHORING AND REINFORCING

3 / L7.02 CIP CONCRETE STAIRCASE

SCALE - 1:20



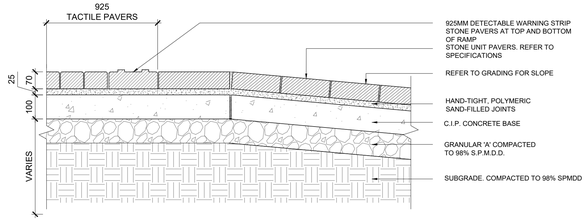
ELEVATION



SECTION A-A

4 / L7.02 STAINLESS STEEL GUARD RAIL

SCALE - 1:10



5 / L7.02 STONE RAMP

SCALE - 1:10

GASLIGHT DISTRICT CAMBRIDGE, ONTARIO

Project /Client

HIP DEVELOPMENTS

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Designed By: MOH/TC
Drawn By: TC/TB
Checked By: MOH/TC

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Drawing Title

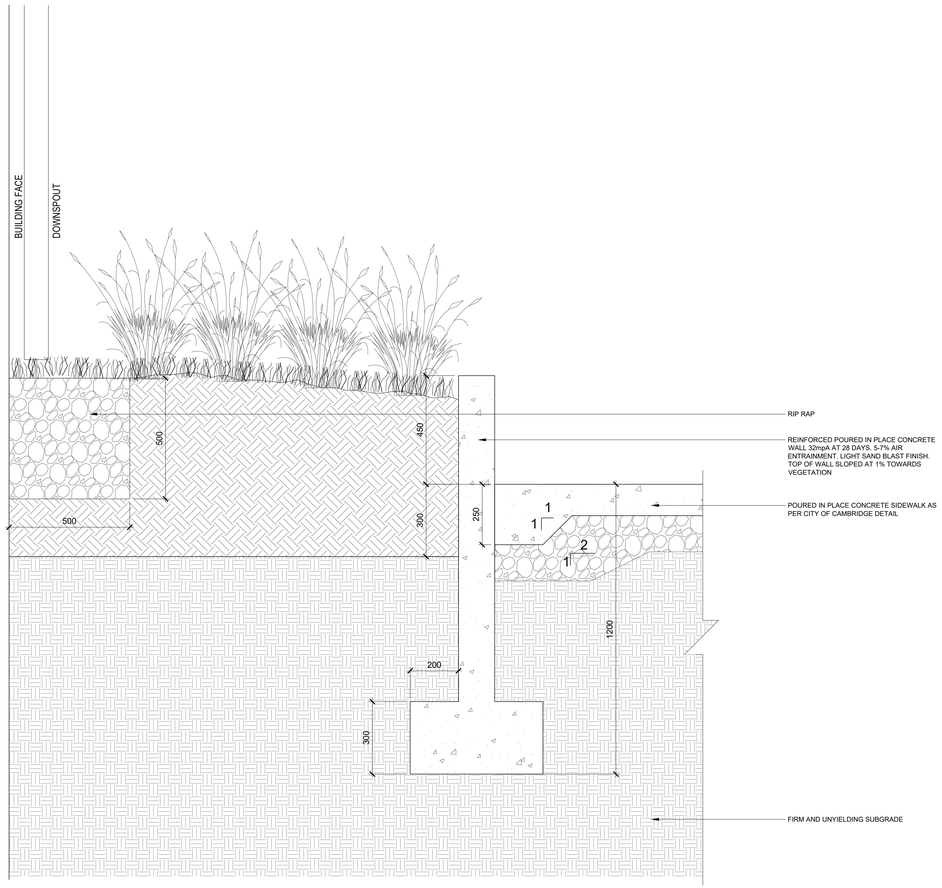
HARDSCAPE DETAILS

Scale: 1:250

Proj. No.: 1984

Drawing No.: L7.02

Sheet No.:



1
L-7.03

450MM HT RAIN GARDEN PLANTER

SCALE - 1:10

GASLIGHT DISTRICT CAMBRIDGE, ONTARIO

Project /Client

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Drawing Title

HARDSCAPE DETAILS

Scale
1:250

Proj. No.
1984

Drawing No.
L7.03

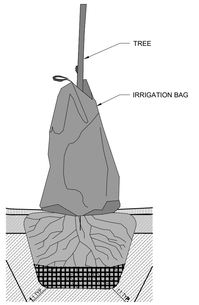
Sheet No.

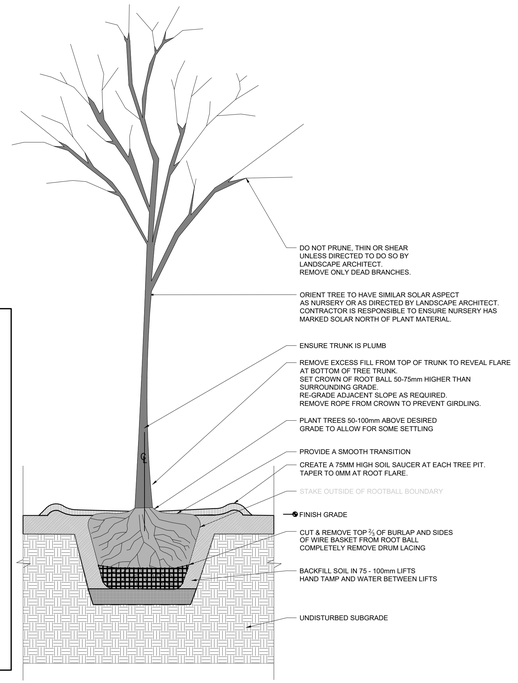
NOTES:
DO NOT ALLOW ROOTS TO DRY OUT DURING THE INSTALLATION PROCESS.

SOAK ROOTS OVERNIGHT BEFORE PLANTING.

INSTALL AFTER BACKFILLING ENTIRE BED.

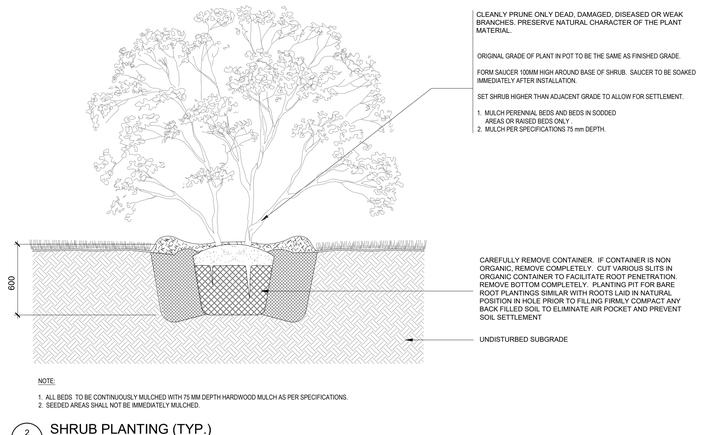
RECOMMENDED PLANTING UPGRADES:
- GATOR BAG IRRIGATION RELEASER OR APPROVED EQUAL
REFER TO SPECIFICATIONS
- FILLED MINIMUM 2X PER WEEK





1 L7.00 TREE PLANTING (TYP.)

SCALE - 1:20



NOTE:

1. ALL BEDS TO BE CONTINUOUSLY MULCHED WITH 75 MM DEPTH HARDWOOD MULCH AS PER SPECIFICATIONS.
2. SEEDED AREAS SHALL NOT BE IMMEDIATELY MULCHED.

2 L7.00 SHRUB PLANTING (TYP.)

SCALE - 1:20

GASLIGHT DISTRICT CAMBRIDGE, ONTARIO

Project /Client

HIP DEVELOPMENTS

Issue / Revisions

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Drawn By TC/TB

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Drawing Title

SOFTSCAPE DETAILS

Scale

1:250

Proj. No. 1984

Drawing No. L8.00

Sheet No.

MARTINSIMMONS
ARCHITECTS

Appendix C

Risk Management Summary, EXP

Memorandum

Date: April 4, 2018

To: Mr. Joel Doherty, HIP Developments Inc.

From: Tara Tait

CC: Travis Tan

Project No.: MRK-00010381-C0

RE: Summary of Risk Management Measures, 64 Grand Avenue South (The Gaslight District), Cambridge, Ontario

The following provides an overview of the Risk Management Measures (RMM) proposed for 64 Grand Avenue South, Cambridge, Ontario (herein referred to as the "Site") as it relates to the current development design for the Site. All of the RMM proposed for the Site are outlined in the Risk Management Plan (RMP) submitted as part of the Risk Assessment (RA) prepared by EXP. Based on the current development Site Design prepared by MartinSimmons Architects Inc., the locations where RMM apply are marked, as shown on the figure provided in Appendix A.

Note that the RMP is currently under review by the Ministry of Environment and Climate Change (MOECC) as part of the most recent RA submission. The design specifications presented here are subject to change pending the MOECC review.

1.0 Vapour Mitigation

Vapour mitigation measures to mitigate indoor air risks are required for both existing and new buildings on-Site for the protection of future residents and indoor workers. The locations where vapour mitigation applies is shown on the figure provided in Appendix A.

1.1 New Buildings

A combined vapour membrane and sub-slab venting system must be implemented for any new buildings constructed on-site. The vapour membrane must be installed under the floor slab and across the full areal extent of the structure. Based on the plans of the Site Design, this RMM is required for the 1- Storey Arts Spaces associated with Residential Towers A and B, as well as the parking garages associated with Residential Towers A and B. The locations where this system is required based on the current development plan are outlined in orange on the Site Plans provided in Appendix A.

Conceptual designs depicting membrane barrier and passive or active ventilation/ sub-slab depressurization (SSD) systems for building construction (grade) are provided as Figures M-3 and M-4, provided in Appendix B. The above grade components of both active and passive SSD systems are presented in Figure M-5 (Appendix B). Detailed specifications of the membrane barrier and SSD system for the new buildings is provided in Section M-4.2.1.1 of the RMP.

The sub-slab ventilation system may initially be designed to be passive with provisions for conversion to an active system, should it be warranted upon assessment of system performance and indoor air quality. Such a conversion would generally involve the installation of a roof level fan with required sensors, and a control panel with alarm notification.

Final designs and specifications are to be prepared in consultation with civil, structural, geotechnical, mechanical and electrical engineering discipline requirements for any new building construction.

1.2 Existing Buildings

Existing buildings (i.e. those labelled as Buildings A, B, C, D and Energy + on the plans of Site Design provided in Appendix A) are required to be fitted with an active SSD system. These buildings are outlined in pink on the Site Plans provided in Appendix A.

The SSD system would consist of multiple shallow soil vapour extraction points installed beneath the building slab. The extraction points would be connected through a network of header and riser pipes to one or more blowers/fans installed either on the building roof or exterior walls to create a negative pressure field within the sand and gravel fill layer beneath the building slab. The above grade components are the same as for new buildings and are presented in Figure M-5 (Appendix B). Conceptual details on the sub-grade components for the existing buildings are presented in Figure M-6 (Appendix B). Specific details are provided in Section M-4.2.2 of the RMP.

Final designs and specifications are to be prepared in consultation with civil, structural, geotechnical, mechanical and electrical engineering discipline requirements for any new building construction.

2.0 Soil Barrier

To prevent human and ecological exposure to contaminated soils, a barrier (“soil cap”) to site soils is required. The soil barrier must cover the entire aerial extent of the Site. The following options are available as soil cap:

- The existing buildings and paved areas (roadway, parking or sidewalks) of the Site are considered suitable caps.
- New building floor slab consisting of at least 7.5 cm of concrete and 15 cm of granular A or equivalent
- New roadway, parking or sidewalks of at least 7.5 cm of asphalt/concrete and 15 cm of granular A or equivalent

- New landscaped area consisting of at least 0.5 metres of clean soil underlain by a demarcation blanket. Where trees are to be planted, there must be at least 0.5 metres of clean soil surrounding the root ball.

Schematics of all soil barrier options and requirements are provided in Figure M-7 (Appendix B) and described further in Section M-4.3 of the RMP.

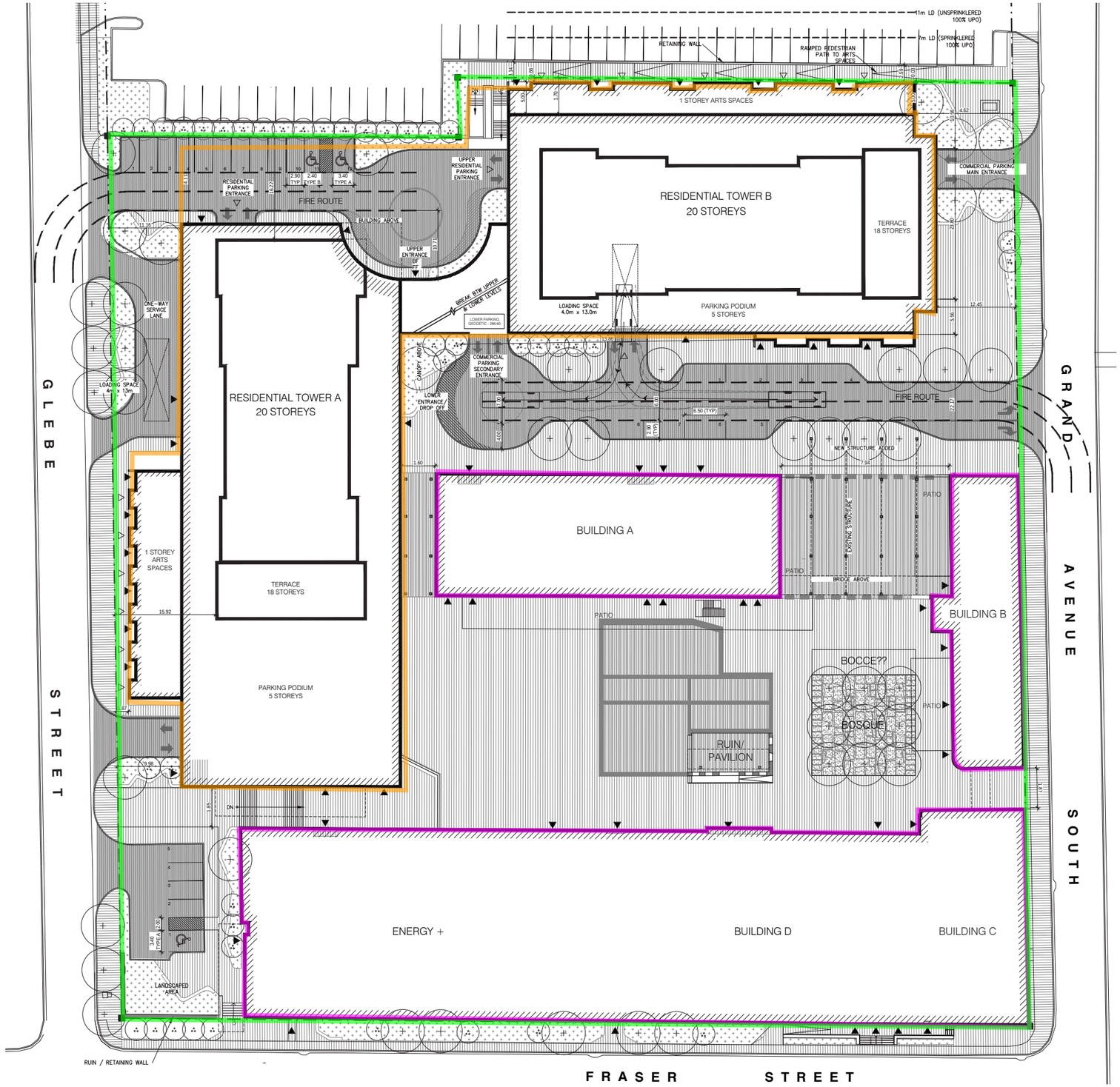
3.0 Other RMM

Other RMM that are required at the Site but do not directly influence design are as follows:

a) Administrative Controls
   - Restriction on the installation of potable water wells.
   - Prohibition of gardening for consumption of produce to block exposure to soil contaminants.

b) Health and Safety Plan (HASP) and Soil and Ground Water Management Plan (SGWMP)
   - A HASP is required to protect any workers performing subgrade work that may come into direct contact with impacted soil or ground water as well as protect against inhalation of vapours sourced from soil and/or ground water while working within a trench excavation.
   - The SGWMP is required to properly manage and track all soil during earthworks as well as manage ground water if an excavation extends below the depth of the ground water table or requires dewatering.
   - The HASP and SGWMP will be required during construction.

APPENDIX A



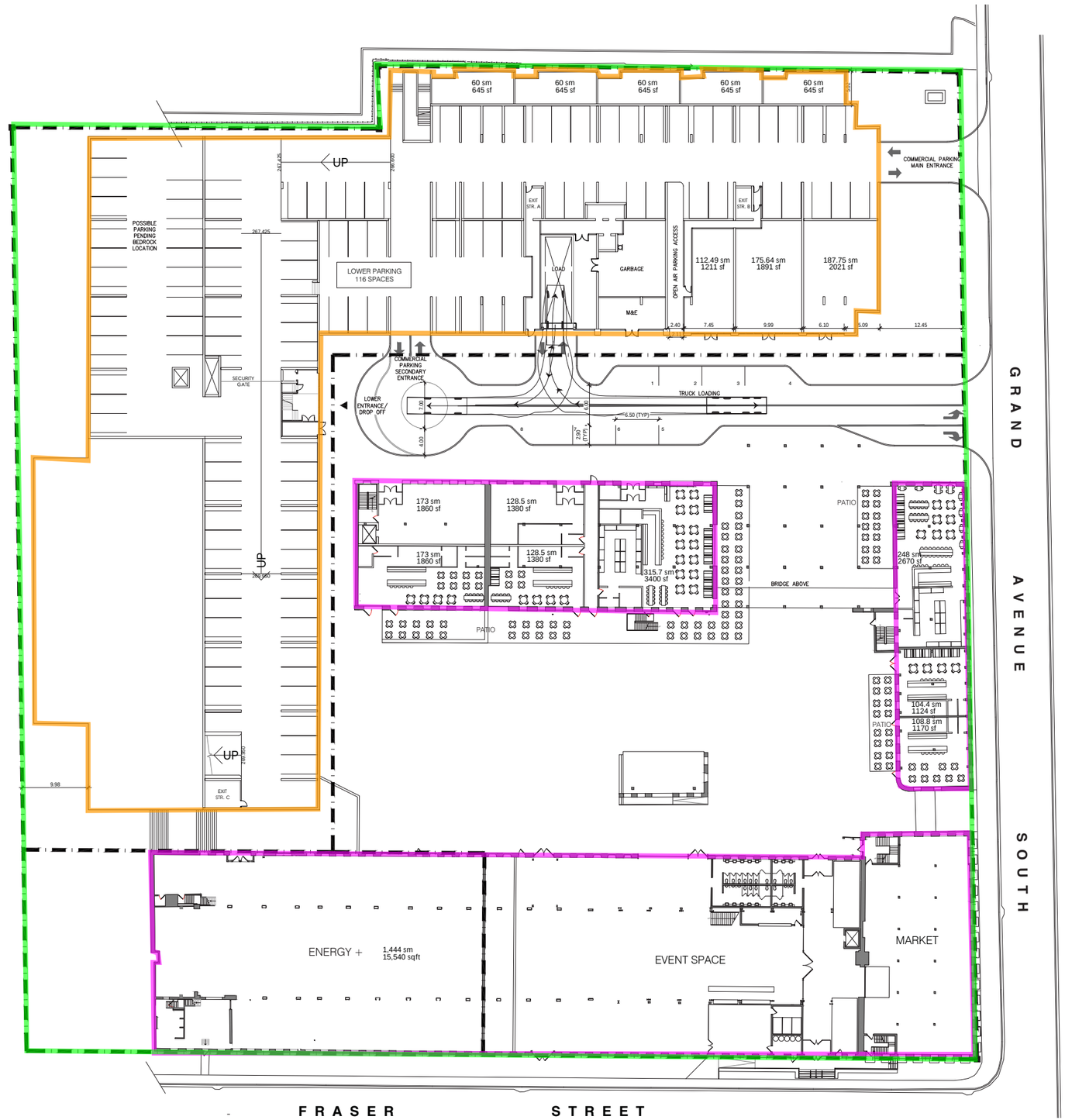
Vapour Mitigation System Required** (New Building)

Vapour Mitigation System Required (Existing Building)

Soil Barrier

** Required across entire aerial extent of proposed parking garage/building footprint (see next page)

Site Plan



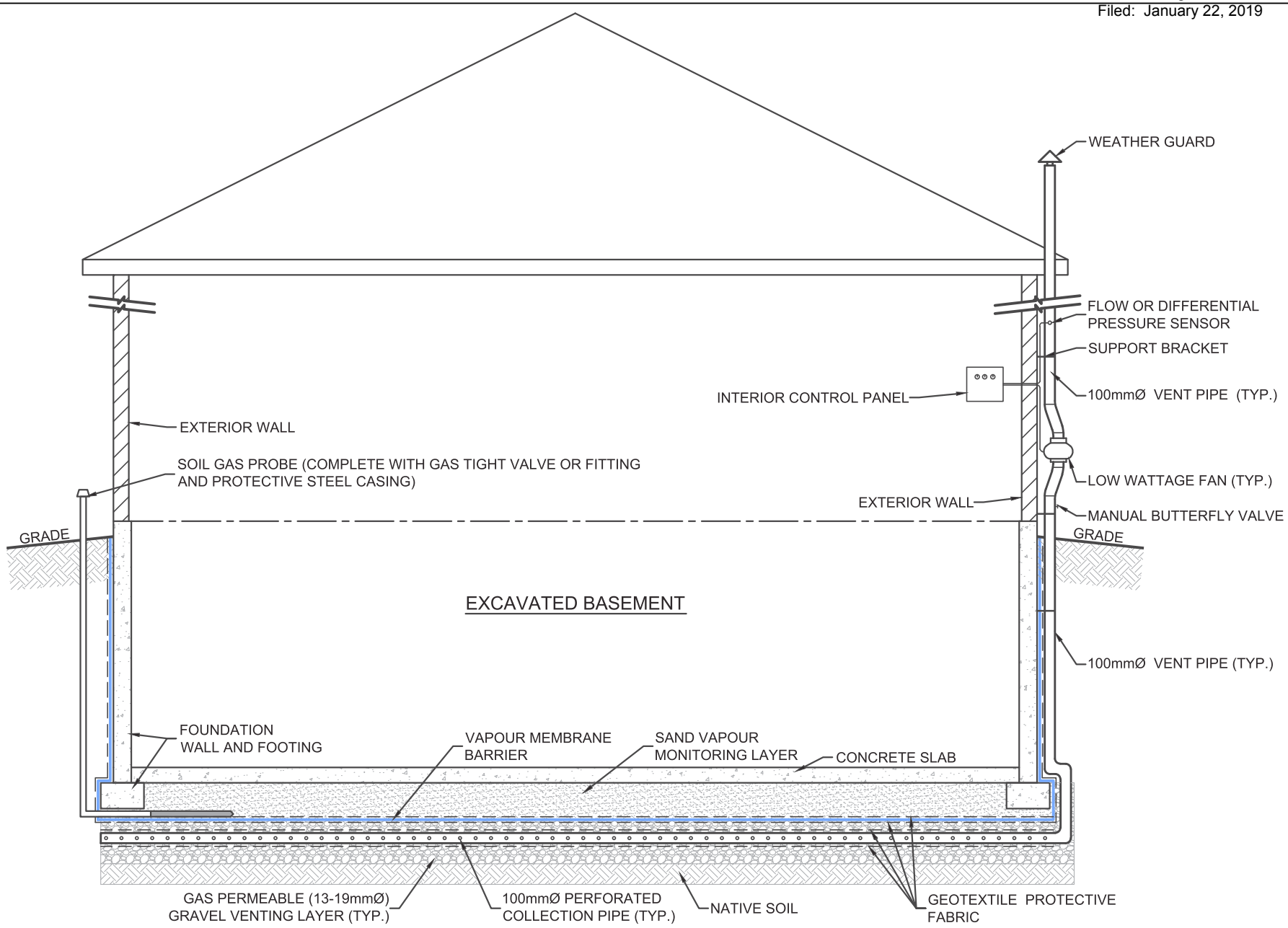
Vapour Mitigation System Required (New Building)

Vapour Mitigation System Required (Existing Building)

Soil Barrier

Site Plan Lower Level

APPENDIX B



DRAWING IS CONCEPTUAL AND NOT FOR CONSTRUCTION USE

exp.

CONCEPTUAL
ACTIVE SUB SLAB
DEPRESSURIZATION SYSTEM,
BUILDING WITH BASEMENT

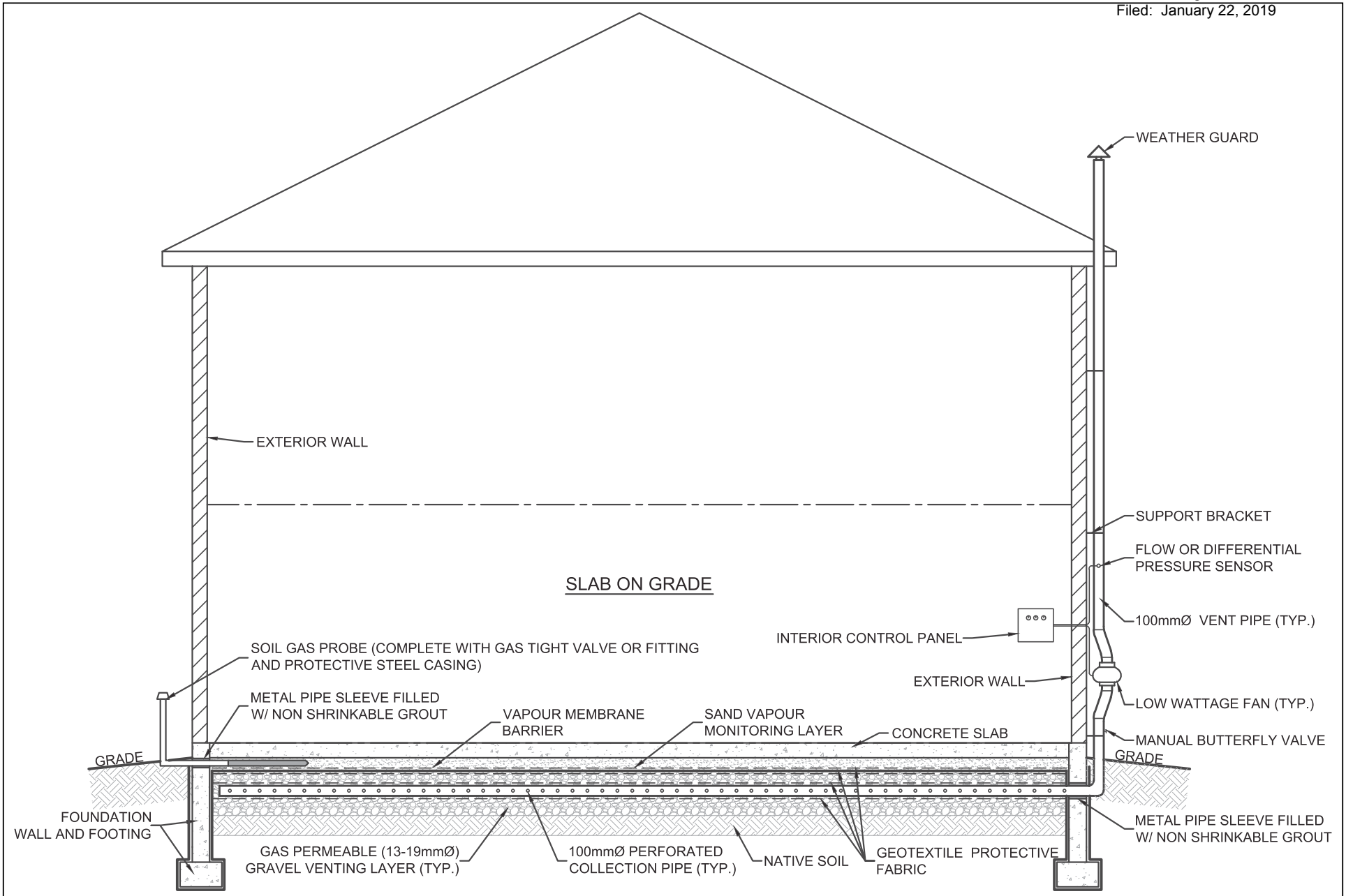
64 GRAND AVENUE SOUTH
CAMBRIDGE, ONTARIO

JOB NUMBER: 10381
NOT TO SCALE
DATE: OCTOBER 2015

CHECKED BY: T.N.T.

M-3

10381-M3



DRAWING IS CONCEPTUAL AND NOT FOR CONSTRUCTION USE

exp.

CONCEPTUAL
ACTIVE SUB SLAB
DEPRESSURIZATION SYSTEM,
SLAB-ON-GRADE

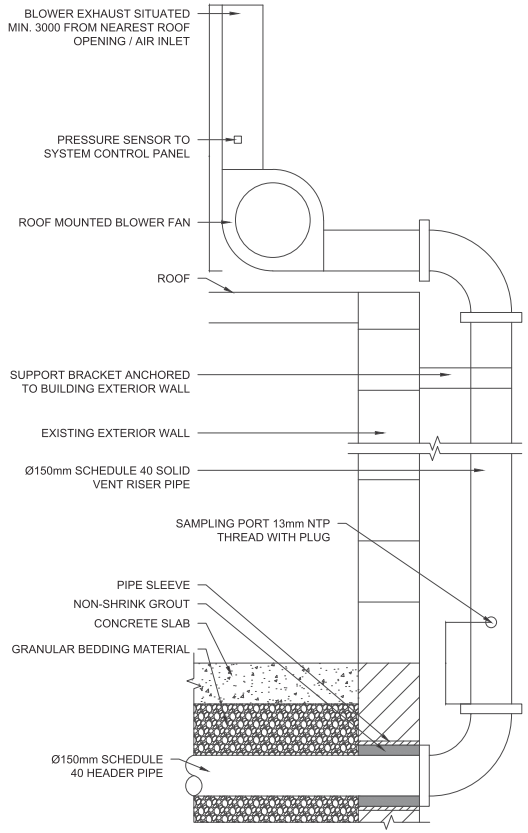
64 GRAND AVENUE SOUTH
CAMBRIDGE, ONTARIO

JOB NUMBER: 10381
NOT TO SCALE
DATE: OCTOBER 2015

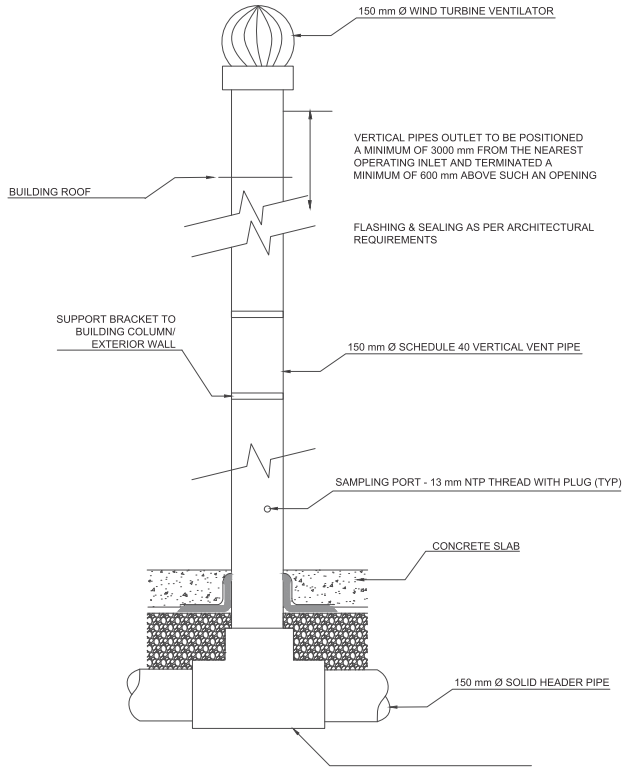
CHECKED BY: T.N.T.

M-4

10381-M4



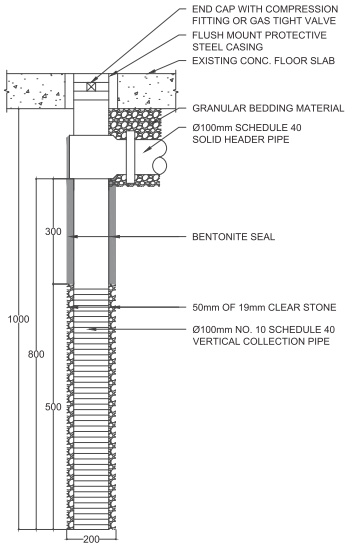
DETAIL P-3.1 VERTICAL VENT RISER PIPE AND BLOWER/FAN FOR ACTIVE SYSTEM
NTS



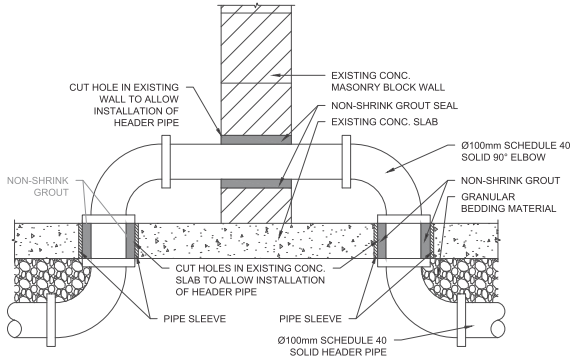
DETAIL P-3.2 VERTICAL VENT RISER PIPE AND WIND TURBINE VENTILATOR FOR PASSIVE SYSTEM
NTS

CONCEPTUAL ONLY
NOT FOR CONSTRUCTION USE

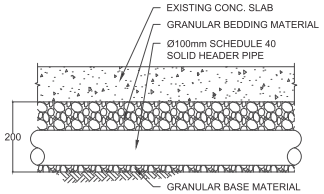
exp.	SUB SLAB DEPRESSURIZATION SYSTEM, ABOVE GRADE DETAILS	64 GRAND AVENUE SOUTH CAMBRIDGE, ONTARIO	JOB NUMBER: 10381 NOT TO SCALE DATE: OCTOBER 2015	CHECKED BY: T.N.T. M-5



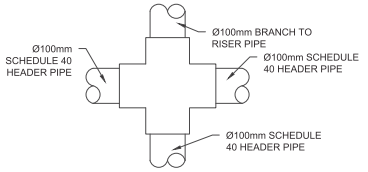
DETAIL P-4.1 SUB-SLAB DEPRESSURIZATION SUMP
NTS



DETAIL P-4.2 HEADER PIPE THROUGH INTERIOR WALL
NTS



DETAIL P-4.3 HEADER PIPE BENEATH FLOOR SLAB
NTS

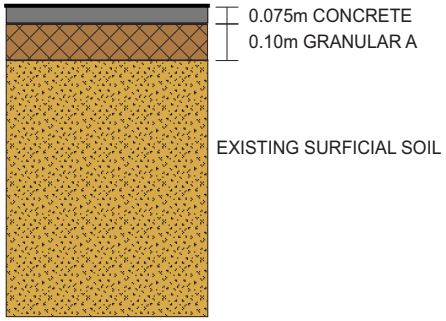


DETAIL P-4.4 HORIZONTAL HEADER BRANCH TEE CONNECT
NTS

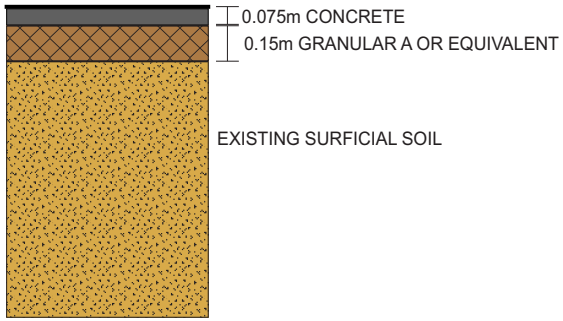
CONCEPTUAL ONLY
NOT FOR CONSTRUCTION USE

exp.	SUB SLAB DEPRESSURIZATION SYSTEM, BELOW GRADE DETAILS, EXISTING BUILDING	64 GRAND AVENUE SOUTH CAMBRIDGE, ONTARIO	JOB NUMBER: 10381 NOT TO SCALE DATE: OCTOBER 2015	CHECKED BY: T.N.T. M-6

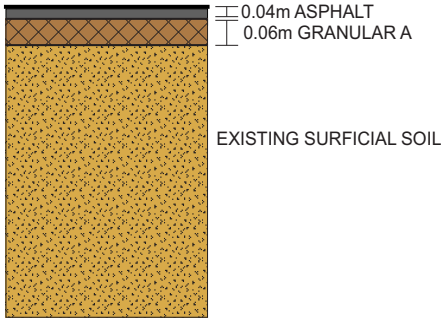
EXISTING BUILDING FLOOR SLAB AND FOUNDATIONS



NEW BUILDING FLOOR SLAB

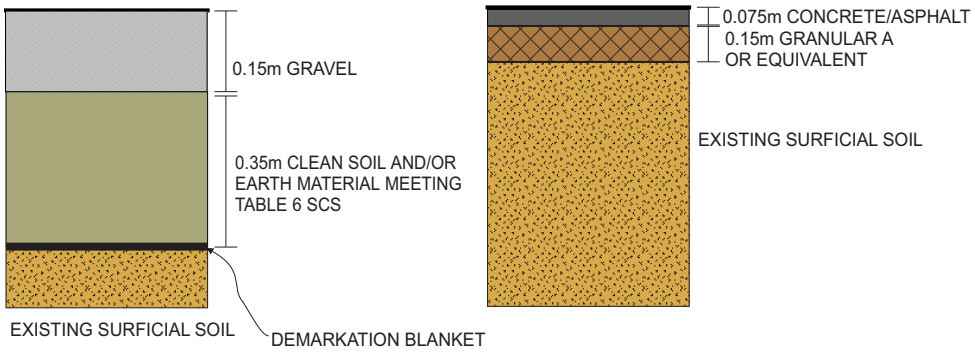


EXISTING, ROADWAY AND PARKING AREAS



NEW, ROADWAY AND PARKING AREAS

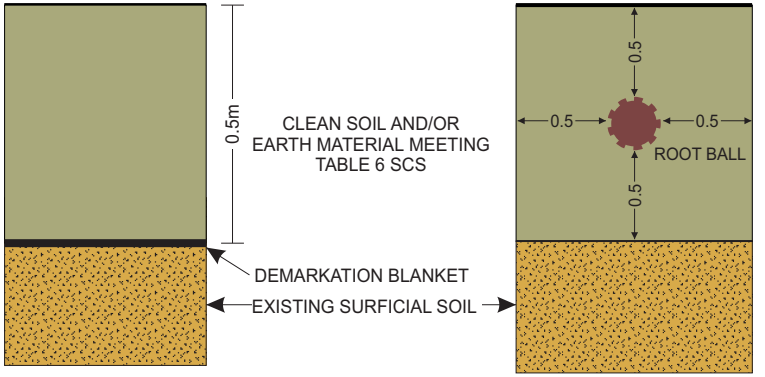
OR



LANDSCAPED AREAS

TYPE I: SUITABLE FOR PLANTS WHERE ROOT DEPTH EXTEND LESS THAN 0.5 METRES BELOW GRADE

TYPE II: SUITABLE FOR TREES AND SHRUBS WHERE ROOT DEPTH EXCEEDS 0.5 METRES BELOW GRADE



DRAWN BY	CHECKED BY
K.G.	T.N.T.

exp.

NOTES:

1. MOECC TABLE 6 SCS FOR RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE AND COARSE TEXTURED SOILS
2. ADDITIONAL CLEAN SOIL MAY BE PLACED ABOVE THE RA BARRIER TO MEET LANDSCAPE REQUIREMENTS
3. CONCRETE SLAB DESIGNS SHOULD BE DETERMINED BY A STRUCTURAL ENGINEER RESPONSIBLE FOR BUILDING AND/OR ROAD/SIDEWALK/PARKING CONSTRUCTION AND SHOULD MEET OR EXCEED THE MINIMUM REQUIREMENTS SHOWN IN THIS DRAWING
4. FINAL PAVEMENT DESIGN REQUIREMENTS SHOULD BE DETERMINED BY A GEOTECNICAL ENGINEER WITH PAVEMENT LAYERS EQUALING OR EXEEDING THE MINIMUM REQUIREMENT SHOWN IN THIS DRAWING

SOIL BARRIER OPTIONS

FIGURE M-7

64 GRAND AVENUE SOUTH
CAMBRIDGE, ONTARIO

JOB NUMBER: 10381 | DATE: NOVEMBER 2017

MARTIN SIMMONS
ARCHITECTS

Appendix D

Architectural Schematic Design package, MartinSimmons Architects

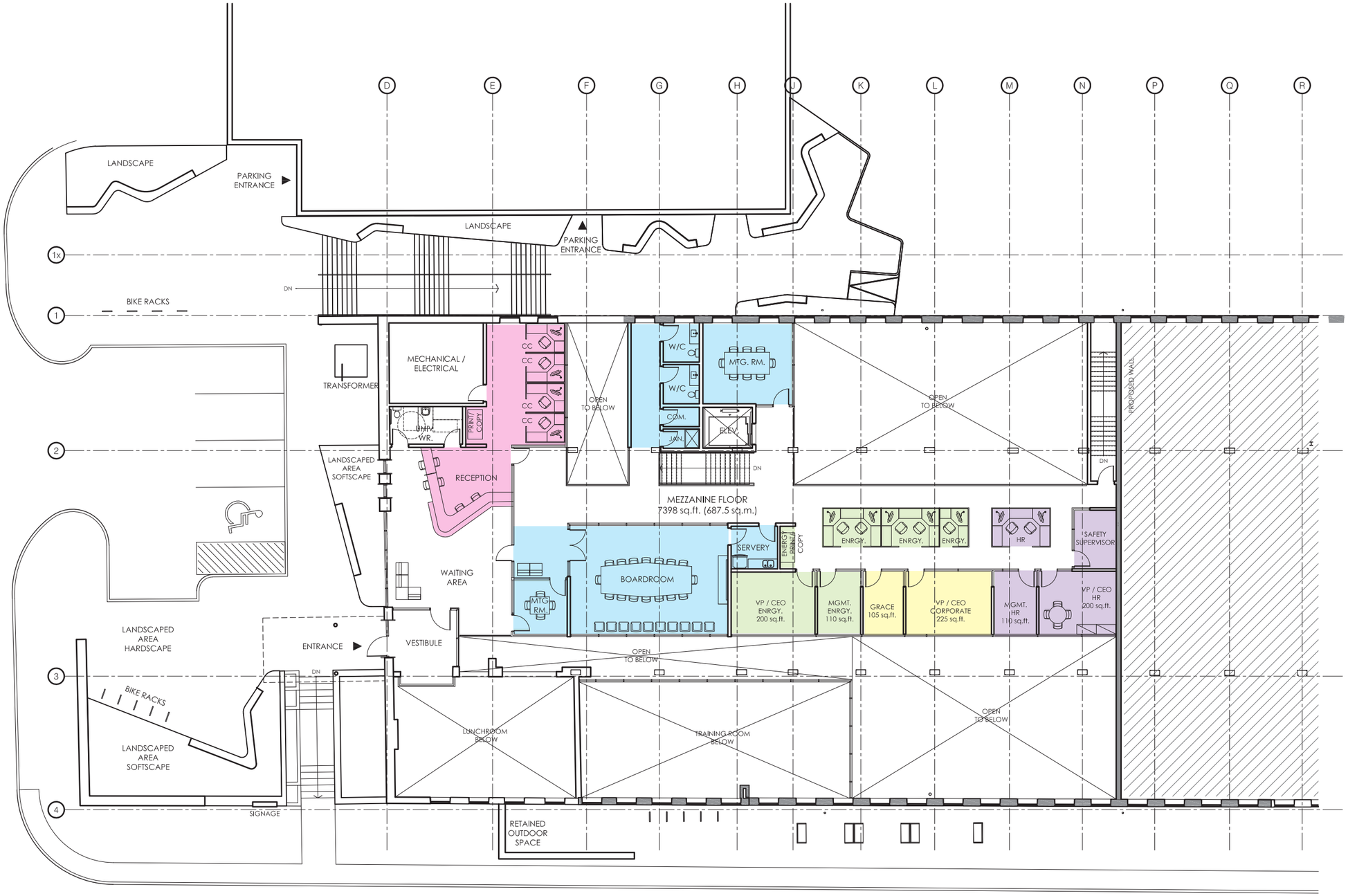
Energy+
64 Grand Avenue
Cambridge, ON

- Energy Conservation
- Corporate
- Corporate Common
- Customer Care
- IT
- Human Resource
- Billing
- Finance

Ground Floor
Scale 1:250

MARTINSIMMONS ARCHITECTS

Energy+
64 Grand Avenue
Cambridge, ON

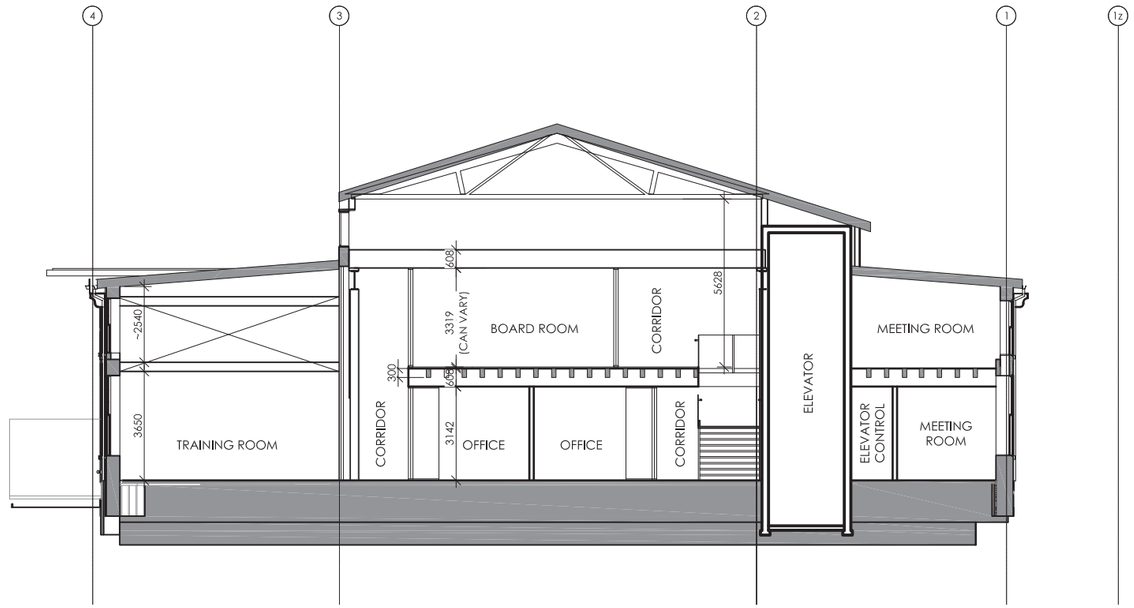


- Energy Conservation
- Corporate
- Corporate Common
- Customer Care
- IT
- Human Resource
- Billing
- Finance

Mezzanine Floor
Scale 1:250

MARTIN SIMMONS ARCHITECTS

Energy+
64 Grand Avenue
Cambridge, ON



Section At Elevator

Scale 1:200

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Energy+
64 Grand Avenue
Cambridge, ON

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ARCHITECTS

Energy+
64 Grand Avenue
Cambridge, ON

Energy+
64 Grand Avenue
Cambridge, ON

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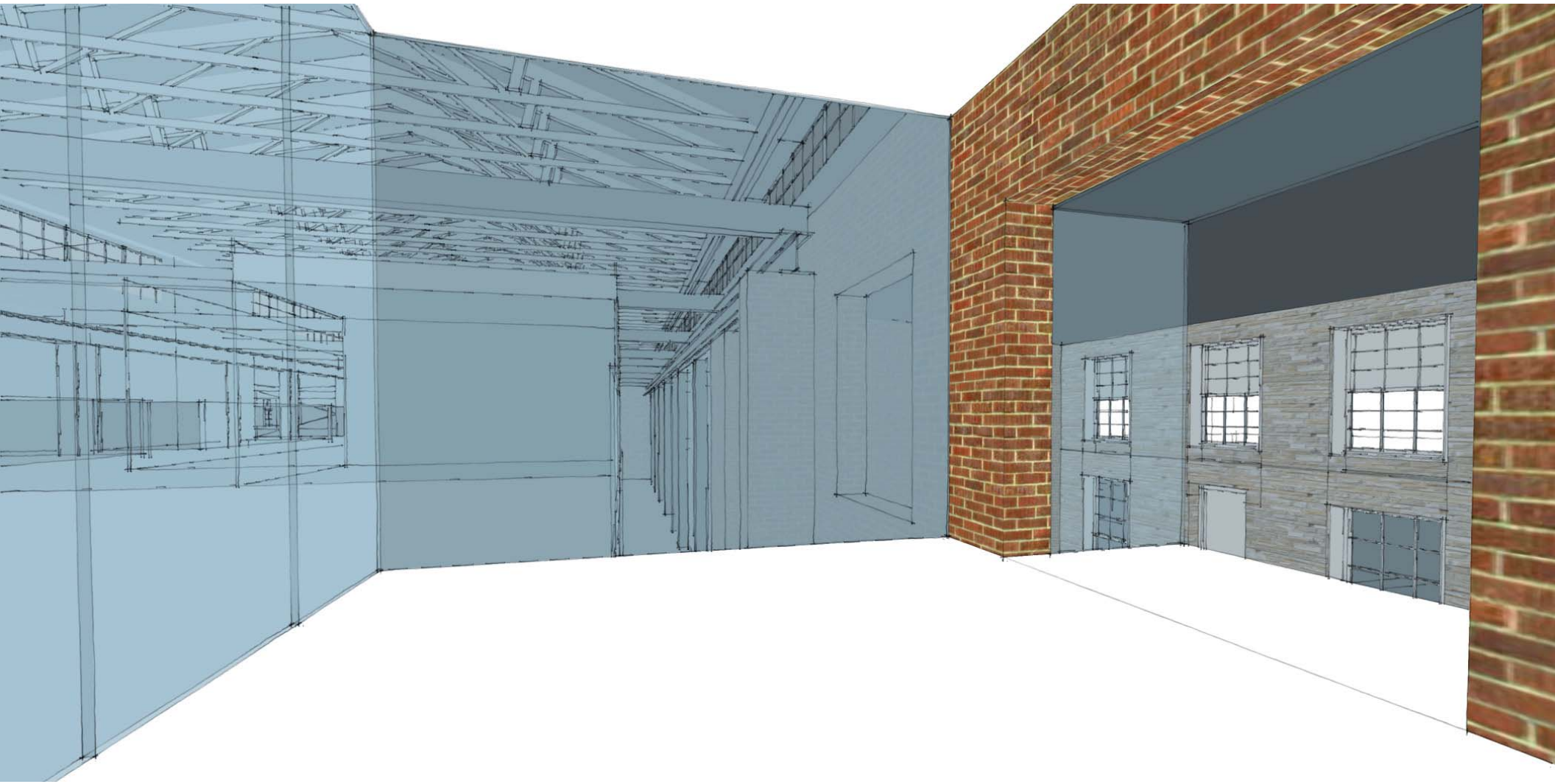
Energy+
64 Grand Avenue
Cambridge, ON

MARTIN SIMMONS
ARCHITECTS

Energy+
64 Grand Avenue
Cambridge, ON



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Energy+
64 Grand Avenue
Cambridge, ON

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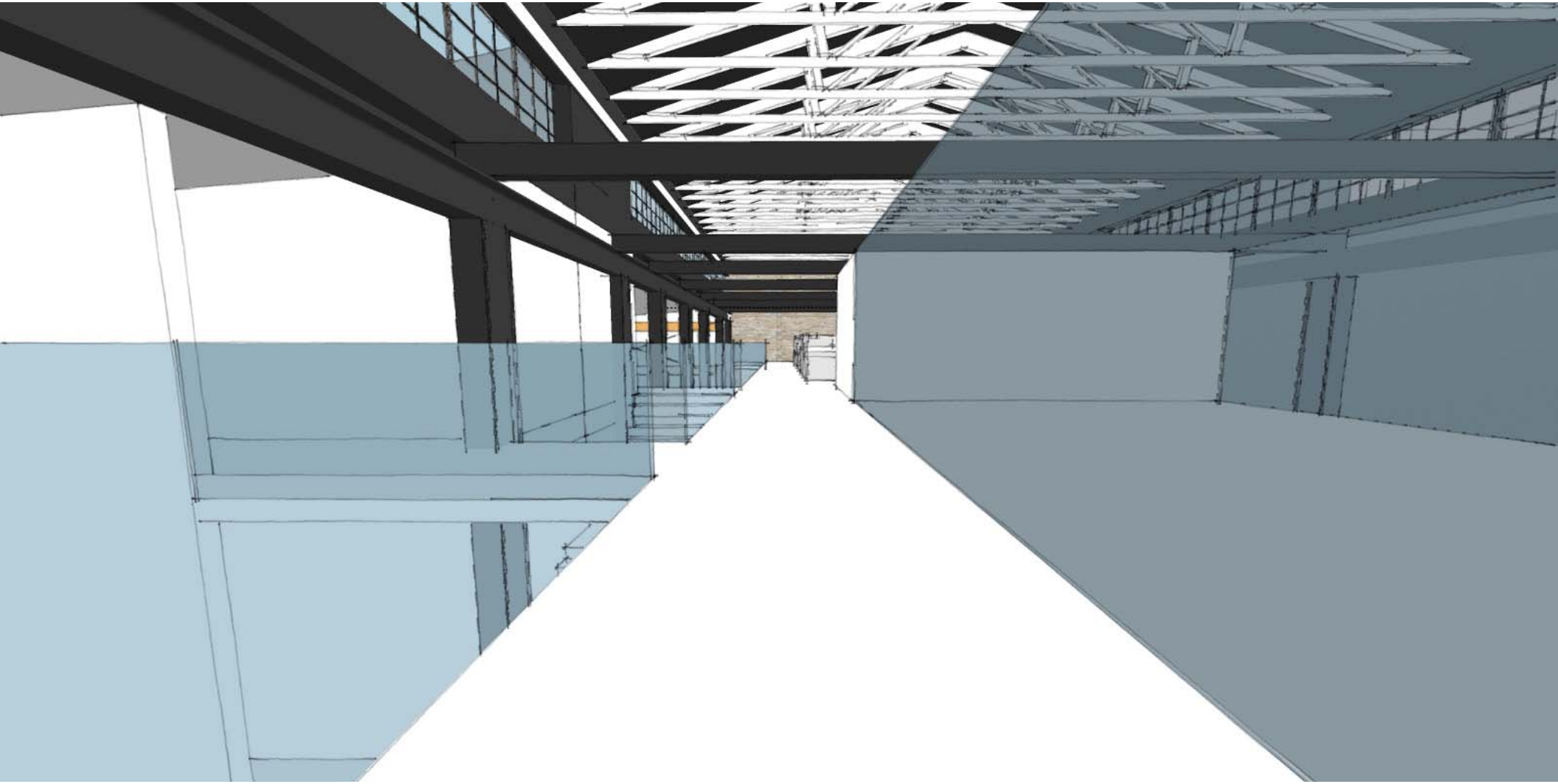
Energy+
64 Grand Avenue
Cambridge, ON



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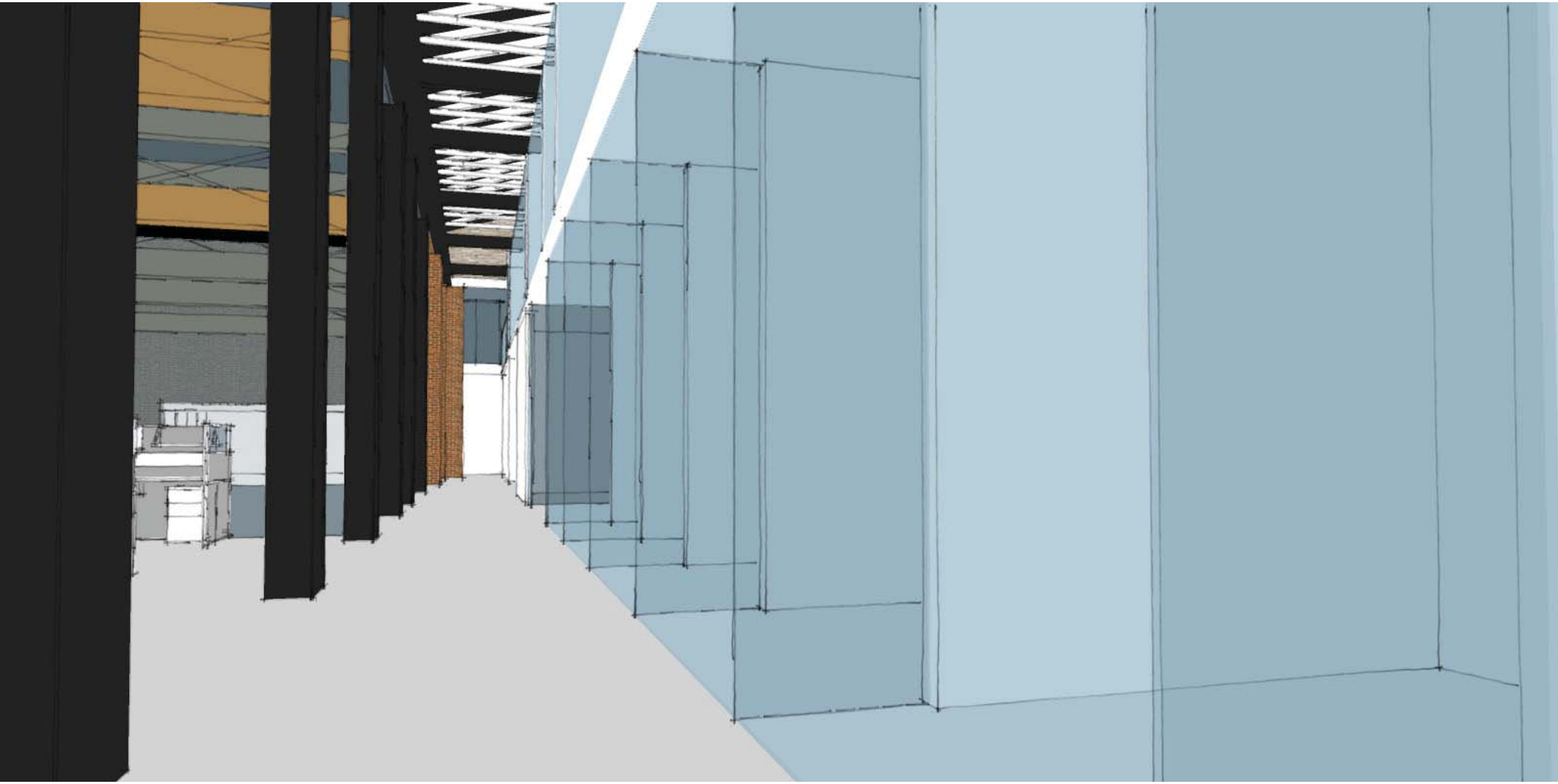
Energy+
64 Grand Avenue
Cambridge, ON

Energy+
64 Grand Avenue
Cambridge, ON



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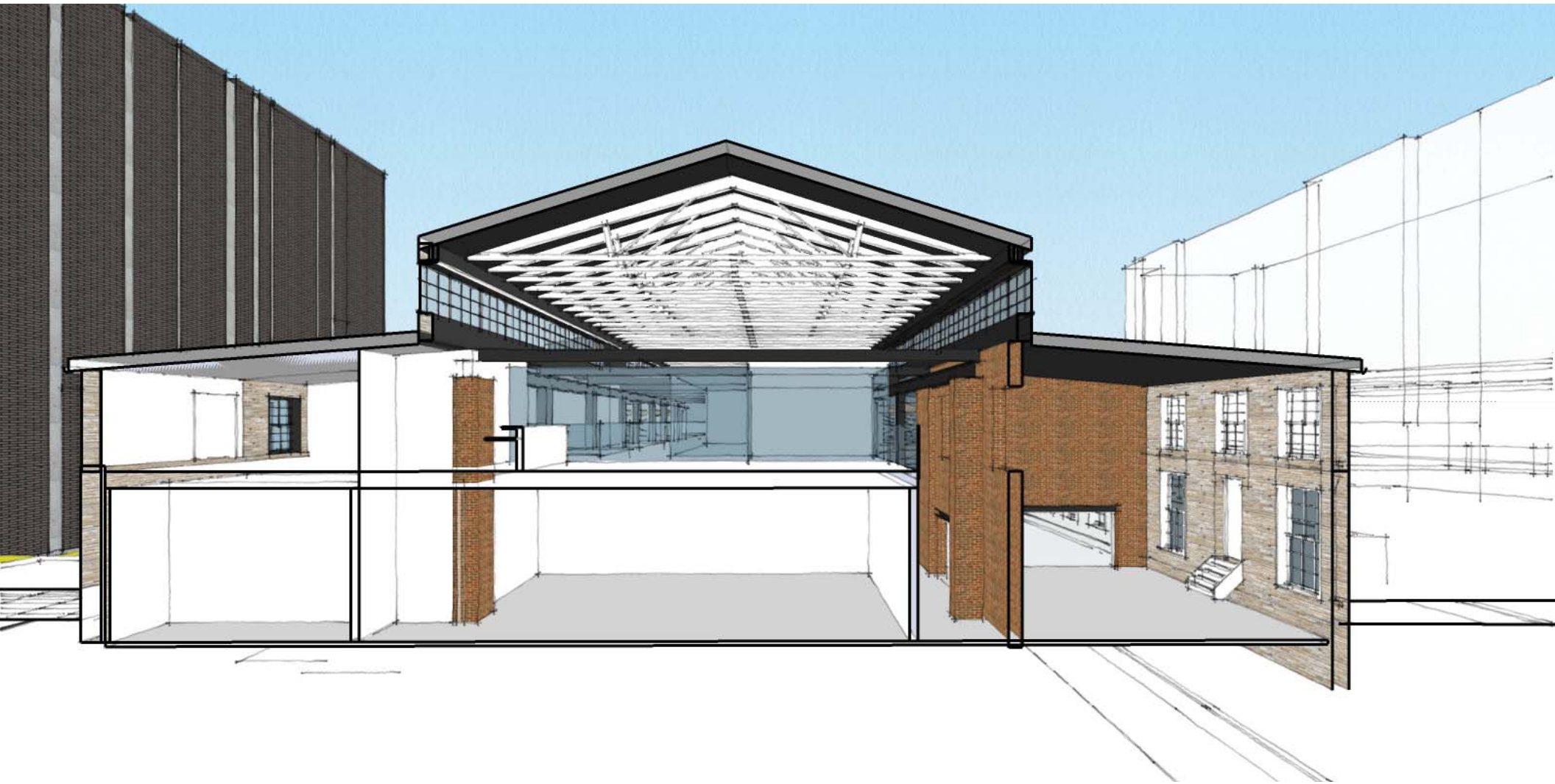
64 Grand Avenue
Cambridge, ON



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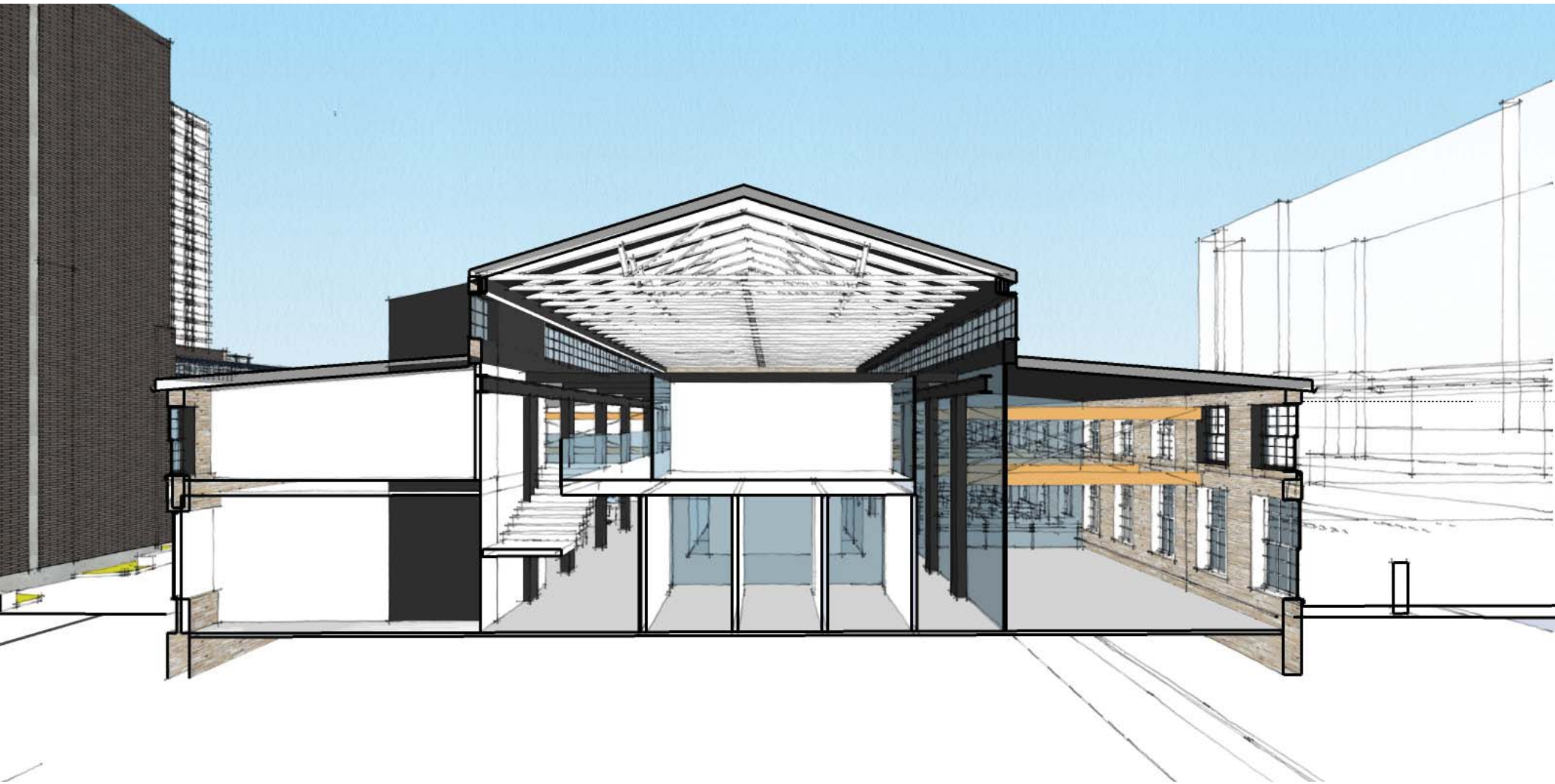
Cambridge, ON



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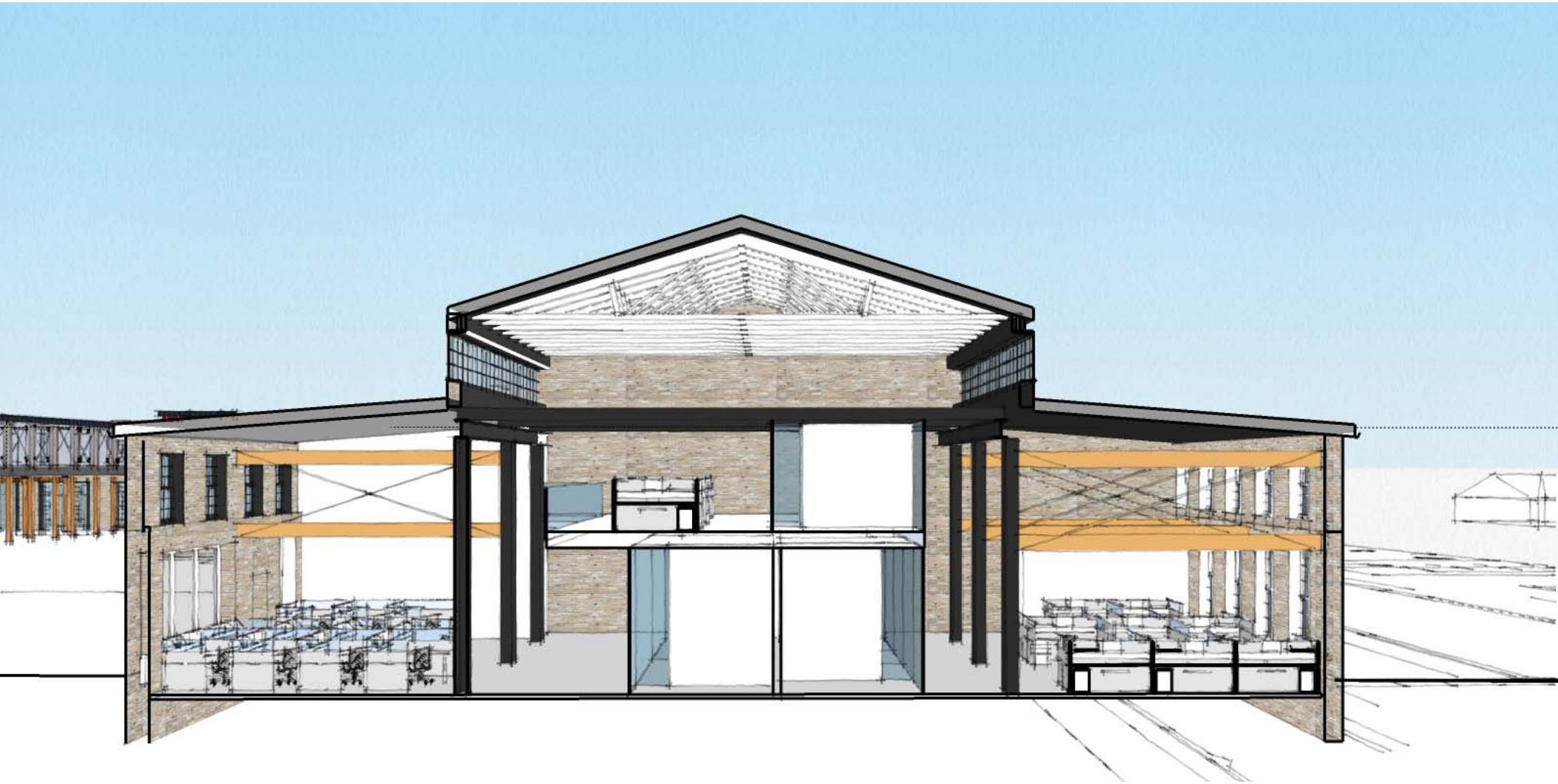

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Appendix E

Structural Design Brief, MTE

THE GASLIGHT DISTRICT ENERGY+ INC.
OFFICE RENOVATION

Structural Design Brief

Project Location:
64 Grand Avenue South
Cambridge, Ontario

Prepared for:
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113 Breithaupt Street, Suite 200
Kitchener, ON N2H 5G9

Prepared by:
MTE Consultants Inc.
520 Bingemans Centre Drive
Kitchener, ON N2B 3X9

September, 2018

MTE File No.: 41654-400

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this design brief is to summarize the primary structural design criteria and to describe the structural systems to be employed in the Energy+ office renovation.

This structural design build brief is to be read in conjunction with the architectural drawings and design brief as well as the structural concept drawings. Reference shall also be made to the mechanical and electrical design briefs for further requirements and coordination.

1.2 Project Description

The project will re-purpose an existing building shell into an office space for the new tenants, Energy+. The existing structure, originally designed for manufacturing purposes, is a combination of interior steel girders and columns, exterior load bearing brick-masonry walls supporting and a roof structure generally constructed of wood rafters and wood/steel hybrid trusses.

A new mezzanine is to be installed within the existing building envelope to increase the floor area and create more office space. The construction of this floor structure will be wood joists supported on steel beams and columns. The existing slab on grade floor will need to be cut and repaired to accommodate new concrete foundations below the new mezzanine columns.

The East façade of the existing structure is currently a brick-masonry wall with punch window openings. This façade is to be removed and a new structural steel frame installed to support the existing roof structure and accommodate new full-height glazing. Additionally, new structural steel canopies will be installed on the east elevation.

2.0 STUCTURAL DESIGN STANDARDS

2.1 Design Codes and Standards

1. Ontario Building Code (OBC), 2012
2. CSA S16-09 – “Design of Steel Structures”
3. CSA A23.3-04 – “Design of Concrete Structures”
4. CSA A23.1-09 - “Concrete Materials and Methods of Concrete Construction”
5. A23.2-09 - “Methods of Testing for Concrete”
6. CSA S304.1-04 – “Design of Masonry Structures”
7. CSA O86-09 – “Engineering Design in Wood”

2.2 Design Loads - General

The design loads conform to the building code requirements and are based on the intended building uses, building construction and finishes and the proposed building equipment. The building is classified as Normal Importance for the purposes of determining the load type importance factors.

2.2.1 Design Dead Loads

Superimposed design dead loads applied to the structure (in addition to the structure self-weight) are noted as follows:

Ground Floor – Slab on Grade

Carpet, Linoleum and other light floor finishes	0.1 kPa
Tile or similar heavy floor finishes	0.25-0.5 kPa
Basic Partition Allowance	1.0 kPa

Mezzanine Floor

Typical Ceiling, Mechanical and Electrical (C,M,&E)	0.25-0.5 kPa
Carpet, Linoleum and other light floor finishes	0.1 kPa
Tile or similar heavy floor finishes	0.25-0.5 kPa
Basic Partition Allowance	1.0 kPa

Exterior Canopy

Roofing	1.0-1.2 kPa

2.2.2 Design Live Loads

Specified Uniform Loads used for design are noted as follows, but in no case are permitted to be less than code minimums. Live load reduction factors may be utilized to the extent allowed by the code.

Ground Floor	4.8 kPa

Mezzanine Floor

Office Area	4.8 kPa
Mechanical Areas (but not less than weight of equipment)	4.8 kPa

Exterior Canopy	1.68 kPa + SPU

2.2.3 Design Wind Loads

Design wind loads are calculated based on the code using a 1 in 50 year return wind reference velocity pressure using the climatic data for the City of Cambridge, q(1/50)= 0.36.

Wind uplift loads on steel-framed roofs and canopies shall be a minimum of 0.5 kPa (net factored load) unless otherwise required to be higher by the code.

2.2.4 Design Seismic Loads

Seismic design loads are calculated based on the code which is based on a 2% probability of exceedance in 50 years using design data for the City of Cambridge, Sa(0.2) = 0.18, Sa(0.5) = 0.10, Sa(1.0) = 0.060, Sa(2.0) = 0.019 and PGA = 0.073

2.3 Serviceability Limits

Building drifts, displacements, deflections, and other serviceability criteria shall be in accordance with the code and as noted below:

2.3.1 Deflection Criteria

The structure shall be designed to minimize the effects of deflections. The limitations are as per CSA S16.1, Limit State Design of Steel Structure, for steel structures and CSA O86, Engineering Design in Wood, for wood structures.

Deflection Criteria Summary:

- Steel/Wood Structures – Live Load Deflection -Span/360
- Steel/Wood Structures – Total Load Deflection -Span/240
  (with a maximum of 19mm above windows)
- Wind Storey Drift -Height/500
- Seismic Storey Drift -Height/100

2.3.2 Vibration Criteria

Vibration isolation shall be provided at mechanical equipment in mechanical rooms to prevent vibration and noise from translating to the office area below. Floating/isolation slabs shall be provided as required.

3.0 STRUCTURAL SYSTEMS

3.1 Foundations

3.1.1 General Requirements

Conventional spread footing foundations of normally reinforced concrete as required to support mezzanine columns within the existing building shell. Conventional spread footings shall also be installed to support exterior canopy columns as necessitated by the loading requirements.

1. The foundation system shall support, without detrimental settlement, all temporary and sustained dead loads and live loads associated with construction of the building including loads from all adjacent structures that may be undermined by any new basement construction. Furthermore, the foundations shall support loads due to seismic, wind, hydrostatic and earth pressure as dictated by the Ontario Building Code.

2. Foundations shall be placed below the level at which frost is anticipated to occur given the characteristics of the soil material and the environment of the building adjacent to the foundation but in no case less than 1200mm below the final grade. The bearing material shall be protected against freezing, disturbance by construction activity and the loss of bearing capacity.

3. Foundations shall be lowered (stepped down) to suit all new or existing building or site services, sump pits and elevator pits.

4. Foundations of mechanical and electrical bases, pits, trenches and similar elements requiring support are included.

3.1.2 Design and Performance Requirements

Standard foundations designed to satisfy the requirements of the Ontario Building Code and all relevant standards referenced therein. Refer to the geotechnical report for recommendations on foundations. The following is an overview of the geotechnical recommendations:

- Bearing on bedrock ULS = 3000 kPa;
- Earthquake – Seismic Site Class B. Based on value of Sa(0.2) = 0.18 for Cambridge (per Building Code SB-1 – Climatic info), the value of Fa = 0.8 from table 4.1.8.4 B. The importance factor for Earthquake loads Ie = 1.0 for normal importance category;
- The design shall be conformance with CAN/CSA-A23.3-04 and shall conform to tolerances set out in CAN/CSA-A23.1-09;
- Excavation slopes shall be 1 horizontal:1 vertical with groundwater properly controlled; and
- The design shall be conformance with CAN/CSA-A23.3-04 and shall conform to tolerances set out in CAN/CSA-A23.1-09.

3.2 Superstructure

3.2.1 Mezzanine Framing System

1. The new mezzanine structure within the existing building shell will consist of plywood decking and wood joists supported on structural steel beams and girders on structural steel columns.

3.2.2 Existing Low Roof Structure

1. The existing low roof structures on the north and south of the building require reinforcing for the snow accumulation in these areas. The proposed reinforcement is to add additional joists between the existing members to shorten the span of the existing roof deck and decrease the load on the existing joists. The new wood members will need to be field cut to suit the in situ conditions and a new notch created in existing brick masonry wall at each new joist location.

3.3 Lateral System

1. The lateral load resisting system for the new mezzanine will generally consist of structural steel bracing between structural steel columns within non-load bearing steel stud partition walls.

2. The lateral load resisting system for the existing structure will not be altered except where the existing façade is to be altered. A structural steel frame will be implemented as required to resist the imposed lateral forces.

3.4 Additional Items

The design build contractor shall also include for secondary structure, special structures and atypical elements consistent with this building type. Some such elements are as follows:

- Secondary framing for the support of cladding, louvers, screens, and glazing;
- Secondary framing for mechanical equipment and at electrical rooms;
- Secondary framing for floor and roof openings as well as sleeves for floor penetrations. Refer also to architectural and mechanical briefs;
- Stairs, stair landings, and framing for elevators between floors; and
- Exterior structures such as retaining walls, planters, walkways, curbing and the like.

4.0 STRUCTURAL MATERIALS

Unless otherwise noted, structural materials shall meet the following specifications and requirements.

4.1 Structural Steel

1. Structural Steel:

W Sections:	Grade 350W CAN/CSA-G40.21
WWF Sections:	Grade 350W CAN/CSA-G40.21
Channels, Angles & Plates:	Grade 300W CAN/CSA-G40.21
HSS Sections:	Grade 350W CAN/CSA-G40.21 (Class C UNO)

2. Welding Materials: CSA W59-03

3. Anchor Bolts: ASTM F1554-07a – Standard Specification for 36, 55, and 105 ksi yield strength Steel Anchor Bolts.

4. Bolts: ASTM A325-07a – Standard Specification for Structural Bolts, Steel, Heat Treated 120/105 ksi Minimum Tensile Strength.

5. Primer for interior exposure not to receive a shop or field paint finish shall be to CISC/CPMA Standard 1-73a (minimum).

6. Primer used in a multi-coat system where a final shop or field paint finish is to be applied shall be selected and preapproved by the Architect based on surface preparation, exposure conditions and compatibility with subsequent coatings.

7. Structural steel to be primed for exterior exposure shop or a shop/field paint finish shall be cleaned in accordance with SSPC SP6 “Commercial Blast Cleaning” as a minimum.

8. Grout for column bases shall be non-metallic, non-expanding and non-shrink type with a minimum strength of 35 MPa at 28 days.

9. Structural steel elements, including shelf angles and lintels, exposed to weather including their connections and inserts shall be fully galvanized in accordance with CAN/CSA G164.

4.2 Reinforced Concrete

4.2.1 Concrete and Formwork

1. Concrete mixes conforming to CAN/CSA A23.1-09 shall be specified for strength, slump, air content, exposure classification, etc., and shall be confirmed by the supplier before construction.

   Reinforced concrete shall meet the requirements of CSA A23.1/A23.2-04 "Concrete Materials and Methods of Concrete Construction/Methods of Testing for Concrete" and shall generally adhere to the following requirements.

Element or Location	Minimum Concrete Strength (f'c @ 28 d)	Notes
Footings	25	
Foundation Walls/Retaining Walls	25	Class F-2
Columns / Piers	30	
Interior Slab on Grade	25	
Exterior Slab (unreinforced)	32	C-2
Exterior Slab (reinforced)	35	C-1

2. Concrete testing shall be in conformance with CAN/CSA A23.2-09

3. Cement to conform to CSA 3000-03; Type GU.

4. Concrete Formwork: CAN/CSA S269.3. Concrete walls at stairs and columns within open spaces as architecturally exposed concrete finish.

5. Falsework for construction: CSA S269.1

6. The tolerances for all concrete work shall conform to the requirements of A23.1.

4.2.2 Concrete Reinforcing

1. Reinforcing Steel: CAN/CSA G30.18-M (R2007) Fy=400MPa

2. CSA G30.5M, Welded Steel Wire Fabric for Concrete Reinforcement.

3. CSA G30.18, Billet Steel Bars for Concrete Reinforcement.

4.3 Lumber

1. Sawn lumber products shall conform to the requirements of CSA O141. All Sawn Lumber is to be SPF Grade No. 2 or better.

2. All bolts and threaded rod connecting wood members shall conform to ASTM A307.

3. All steel bearing, side plates and connector plates shall conform to CSA G40.21.

4. Nails and spikes shall conform to CSA B111 “wire nails, spikes and staples”.

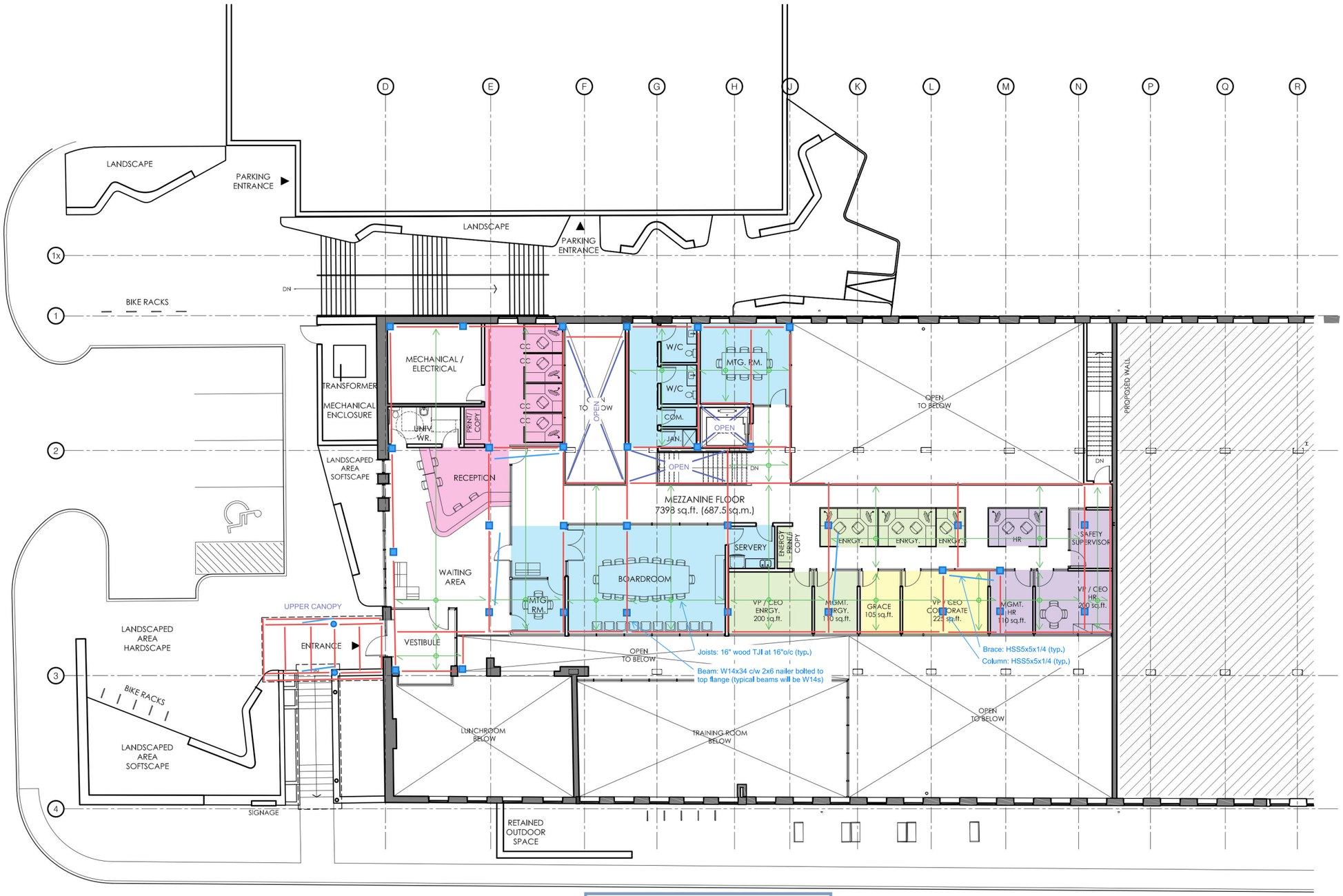
APPENDIX A

LIST OF STRUCTURAL DRAWINGS

Drawing Name
Foundation Plan
Mezzanine Framing Plan
Framing Scheme for new East Exterior Wall

FOUNDATION PLAN

- Energy Conservation
- Corporate
- Corporate Common
- Customer Care
- IT
- Human Resource
- Finance
- Billing



MEZZANINE FRAMING PLAN

FRASER STREET

Energy+
64 Grand Avenue
Cambridge, ON

FRAMING SCHEME FOR NEW
EAST EXTERIOR WALL

MARTINSIMMONS
ARCHITECTS

Appendix F

Mechnaical and Electrical Design Brief, DEI

Mechanical and Electrical Systems Design Brief

For:

Energy+
Office Tenant Improvement
Grand Avenue South
Cambridge, ON

Prepared for:

MARTINSIMMONS
ARCHITECTS

MartinSimmons Architects Inc.
200-113 Breithaupt St.
Kitchener, Ontario
N2H 5G9

Prepared by:

DEI Consulting Engineers
MECHANICAL | ELECTRICAL | AQUATIC

September 2018
DEI Project No. 18083

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1.0 TERMS OF REFERENCE

DEI & Associates Inc. has been retained by MartinSimmons Architects Inc. to provide mechanical and electrical engineering services for the proposed tenant improvement renovation for the proposed Energy+ Office located at 60 Grand Avenue South in Cambridge, Ontario, part of the Gaslight District development.

This design brief shall provide a preliminary outline of the mechanical and electrical systems proposed for the Owner's review, in order to comply with good engineering practices and to obtain an energy efficient building.

The descriptions of the proposed mechanical and electrical systems are based on architectural design brief prepared by MartinSimmons Architects Inc. and discussions held with the project team.

All work carried out shall be in conformance with the Ontario Building Code 2012 and all other applicable codes, by-laws, and authorities having jurisdiction.

2.0 MECHANICAL SYSTEMS

2.1 PROPOSED DESIGN CONDITIONS

The building's HVAC design will be based upon climate data outlined in the Ontario Building Code and the following indoor design conditions.

Indoor Temperature	Summer	75°F (55% RH)
	Winter	68°F (No humidity control)
Outdoor Ambient Temperature	Winter (1% OBC)	-7.6°F
	Summer (2 ½% OBC)	87.8°F db / 75.2°F wb
Min. O/A Ventilation	20 CFM/person	
Washrooms	Greater of 10 ACH, 50 cfm per sanitary fixture or 2 cfm/ft^2	
Rainfall	1" (25mm) per 15 minutes	

A set of acceptable temperature deviations which will allow certain non-occupied spaces (corridors, vestibules, storage areas) to swing in temperature based on the outside conditions may be adopted to provide energy operating savings.

2.2 APPLICABLE CODES AND REGULATIONS

The following Codes and Guidelines will apply to the project:

- Ontario Building Code 2012 & Supplement
- Ontario Fire Code
- CGA (Canadian Gas Code) CSA B149.1-15
- ASHRAE Standards 90.1 and 62-2013
- National Fire Protection Association Codes:
    - NFPA 10: Standard for Portable Fire Extinguishers
    - NFPA 13: Installation of Sprinkler Systems
    - NFPA 14: Installation of Standpipe Systems

2.3 PROJECT SCOPE

The proposed tenant improvement involves the renovation of an existing indoor market space into an office space. The existing building is part of a larger development that is being sub-divided into individual tenant spaces. The proposed tenant improvement involves the construction of a firewall and a severance to be able to classify the Energy+ office as a separate building from the remainder of the development. The existing building was constructed in 1847, and was originally a foundry, thus the existing building envelope is old. The mechanical system has taken increased infiltration in to the design calculations.

The proposed building will utilize a central heating and cooling plant. The mechanical system is an air-cooled variable refrigerant flow (VRF), with supplementary electric heat, and packaged ventilation unit with electric heating and cooling.

3.0 PLUMBING AND DRAINAGE SYSTEMS

3.1 APPLICABLE CODES AND REGULATIONS

Plumbing will be designed as per the 2012 Ontario Building Code. The building shall be provided with the following new utility services:

- 150 mm (6") domestic water supply. Domestic water will be provided from the municipal system.
- 150 mm (6") sanitary sewer – gravity system.
- 250 mm (10") storm sewer – gravity system.
- Natural gas service complete with meter and pressure reducing valve station is available on site; however, the client has requested that all heating and cooling energy be fueled by electricity. No gas service connection is planned for this tenant improvement project.

A site services plan identifying all underground services will be required for coordination of the connection of the new services to the building.

The water service pressure to the building is unknown, though assumed to be suitable to serve a 2 storey office building without the need for booster pumps. Fire flow analysis shall be required prior to the design of the sprinkler system, and any pressure issues can be addressed at that time if required.
The use of low volume water closets, low flush urinals, and low flow plumbing faucets/showers will be utilized for the building to reduce water usage.

3.2 DOMESTIC WATER SYSTEM

Domestic water distribution shall be copper type L (above grade) complete with soldered fittings. All risers (where applicable) shall be provided with isolation valves and drain valves. Both domestic cold and hot water supplies to individual plumbing fixtures shall be provided.

All domestic water piping will be thermally insulated in compliance with ASHRAE 90.1 Standard

3.3 PLUMBING FIXTURES

The following plumbing fixtures are anticipated for this project:

Water Closets
- Floor mounted with manual dual flow flush valves (barrier free where required).

Urinals
- Wall hung with ultra-low flush electronic flush valves.

Lavatories
- Wall hung with electronic faucets.

Service Sinks
- Janitor: 24" square mop basin.

Miscellaneous
- Drinking fountain refrigerated, barrier free.

3.4 BUILDING SANITARY DRAINAGE SYSTEM

All plumbing fixtures and floor drains shall be connected to the municipal sanitary drainage system. All piping above grade shall be Ipex PVC System-XFR, hub less cast iron with mechanical joints, and/or DWV copper with soldered joints.

3.5 BUILDING STORM DRAINAGE SYSTEM

Roof drainage shall consist of architectural eaves troughs and downspouts to grade. Any mechanical service platforms, flat roof areas, and entrance canopies will feature conventional roof drains connected to the municipal storm service connection. All piping above grade shall be Ipex PVC System-XFR, hub less cast iron with mechanical joints, and/or DWV copper with soldered joints. Above grade storm piping shall be insulated and jacketed to prevent condensation within the occupied space.

3.7 NATURAL GAS SYSTEM

An existing natural gas service is available on site. The client has requested that all heating, cooling, and ventilation energy be fueled by electricity. No gas service connection is being proposed for this tenant improvement project.

3.8 FIRE PROTECTION SYSTEM

The building will be provided with sprinklers to NFPA 13 and with fire extinguishers to the requirements of the Ontario Building Code and relevant NFPA 10.

The building will be provided with a standpipe system to NFPA 14 standards.

3.7 LIFE SAFETY MECHANICAL CODE COMPLIANCE

The design and construction of the life and safety systems is regulated by the following Codes and Regulations:

- 2012 Ontario Building Code (OBC).
- 2007 Ontario Fire Code (OFC).
- Ontario Electrical Safety Code, 24 (OESC).
- NFPA 13 Latest Edition
- NFPA 14 Latest Edition
- NFPA 96 Latest Edition
- Refrigeration Code
- NFPA 20 Installation of Stationary Pumps

4.0 MECHANICAL HVAC SYSTEMS

4.1 BUILDING FEATURES

The facility will be fully heated, ventilated, and air conditioned in accordance with the latest ASHRAE standards.

4.2 SPACE REQUIREMENTS

The proposed air-cooled VRF system shall require the following major equipment. A mechanical equipment space is required either at grade, or on the roof, approximately 40ft x 20ft.

- Approximately 30 indoor VRF fan coils from 1 to 3 tons capacity each
- Six(6) 8-ton VRF condensing units installed on roof
- 6000 cfm make-up air (MUA) unit with heat recovery for ventilation, installed on roof
- Associated electrical equipment.

4.3 BUILDING HEATING SYSTEMS

The building's heating system will be fueled by electricity, as directed by the client. An air cooled VRF system has been proposed as the main source of heating, which uses heat pump technology to transfer thermal energy into the building from outdoors using small diameter refrigerant pipes. Each set of pipes is directed to individual fan coil units serving each space. In order to achieve the desired heating capacity, supplemental electric duct heaters are required on very cold winter days. The electric duct heaters will be installed in the distribution ductwork serving all perimeter zones.

Indoor fan coil units are available in many forms: wall hung, ceiling diffuser, ducted, etc. Each space type will be evaluated to determine the best indoor fan coil solution to suit each space.

Heating will also be built into the building ventilation system (make-up air). This unit will feature electric resistance heat.

4.4 BUILDING COOLING SYSTEMS

This building will be provided with comfort cooling using the air cooled VRF system. The VRF uses heat pump technology to transfer heat from within the building thru the individual fan coils into small diameter refrigerant pipes, and transports the energy outdoors, rejected by the air cooled condensing units.

Cooling will be built into the "Make-Up Air" equipment on the roof to dehumidify entering air into the building. The make-up air units will supply conditioned air to all common spaces.

This equipment's efficiency will meet or exceed the latest ASHRAE energy ratings

4.5 SIMULTANEOUS HEATING AND COOLING

The VRF units are able to function while individual zones are in both heating and cooling mode. The piping network and control system allows heat from one zone (requiring cooling) to be transported to another zone (requiring heating). This allows energy to stay within the building, making the system very energy efficient.

4.6 BUILDING MAKE-UP AIR

Ventilation supply air to the building will be provided by a central make-up air unit located on the roof.

The make-up air unit will feature DX cooling and electric heating in conjunction with a discharge air controller to maintain a supply discharge temperature scheduled in accordance with the outdoor air temperature and reset by the return air temperature.

The make-up air unit will also feature an energy recovery wheel, and will provide exhaust for the washroom. As the conditioned air from the washroom area passes thru the energy recovery wheel, the incoming unconditioned air will pick up some of the thermal energy from the leaving exhaust air. This maintains better humidity control within the space, and reduces the amount of energy required to heat or cool the space.

The make-up air is intended to operate continuously as the building is always occupied. A night setback speed can be scheduled for low speed in night time operation.

4.7 AIR DISTRIBUTION

The distribution of ventilation air will be accomplished by distribution ductwork on each level of the office. Perimeter office areas will receive ducted VRF fan coil units with electric duct heaters to match the skin loss of the old building. Interior zones will receive a mixture of fan coil options to suit the size and aesthetics of each space.

4.8 SUPPLEMENTAL HEATING

Supplemental building heating will be via electric duct heaters serving perimeter zones.

Building entrance and exterior door locations will be heated by electric forced air units.

Service rooms will be heated by electric forced air unit heaters.

4.9 EXHAUST AIR SYSTEMS

Exhaust air will be provided for all sanitary exhaust such as washrooms and service rooms in accordance with the Ontario Building Code. Exhaust from these areas will be provided by the MUA unit energy recovery wheel.

Building areas where excessive heat loads are produced, such as electrical and elevator machine rooms will be exhausted with a local exhaust system.

4.10 SPOT COOLING

The elevator machine room requires year round cooling and will be equipped with spot air conditioners for proper equipment operation & temperature control.

These spot air conditioners will maintain the space setpoint temperature. The equipment being proposed is the wall hung split DX air conditioners, which will be part of the main VRF system.

4.11 SYSTEMS CONTROL

A DDC control system will be provided to control the VRF system and make-up air ventilation system; other systems are expected to operate from the manufacturers integral controls.

5.0 ELECTRICAL SYSTEMS

5.1 APPLICABLE CODES AND REGULATIONS

The following Codes and Guidelines will apply to the project:

- Ontario Building Code 2012 & Supplements
- Ontario Fire Code
- Ontario Electrical Safety Code 26th Edition
- ASHRAE Standards 90.1-2013

5.2 ELECTRICAL SITE SERVICES

As part of the utility coordination and site plan approval process, a primary utility feeder consisting of 4-100mm concrete encased ducts has been coordinated with the local utility (Energy+). This radial primary feed will originate from a utility pole along Glebe Street and enter a shared utility padmount located 1.0m from the northwest corner of the building. The padmount transformer will be shared by the adjacent Event Space and 3 storey Office. Secondary cables will be designed for the full ampacity of the building main switchboard and will be routed from the utility transformer into the building main switchboard. The building main electrical room is located adjacent to the utility transformer location, however due to the existing grades, the main electrical switchboard will be located on the upper level in a mechanical space to provide adequate slope for drainage.

The transformer base and ductbank configurations will be configured and constructed to utility standards.

3-100mm underground PVC ducts for building communication services will be installed from the property line and will enter the building main demarcation point.

LED exterior wall mount and landscape lighting has been designed by a third pary during the site plan approval process as part of the site-wide presentation.

The estimated electrical service size for the building 400A 600V 3P 4W based on the electrical code required minimum allowance for office occupancies, an estimated 100kW of mechanical equipment, as well as some supplemental electric heating. A final load study will be performed to verify this.

5.2 DISTRIBUTION EQUIPMENT

The main distribution equipment will be located in the upper level mechanical service space and will consist of a switchboard complete with main electronic breaker, metering compartment, and remote meter cabinet/enclosure to suit the local utility. Distribution breakers to feed step down transformers and associated distribution panels, 120/208 volt lighting panels and mechanical equipment throughout the building will also be provided. A dedicated distribution panel will also be provided in the main mechanical room, which will contain feeders to mechanical units, pumps, and fan equipment.

120/208V 3 phase branch circuit panels for lighting and workstation receptacles will typically occur on each floor and will be located within the electrical room or service spaces along with an associated stepdown transformer.

Energy metering rough-ins will be installed into the feeders of each branch panel, per load type, to meet the minimum requirements of Ashrae 90.1-2013.

Surge protective devices (SPD) will be specified on the main switchboard, sub-distribution panels and 120/208V branch circuit panels to protect sensitive equipment loads (Telecommunications Rooms' equipment, lighting drivers, and controls systems, etc.). The surge protection system will be extended to include incoming telephone services.

Feeders will consist of wiring in conduit and all feeders will be copper. The panels will be provided with molded case type circuit breakers.

All breakers and equipment will be provided with interrupting capacity and bus bracing to withstand the available short circuit on the associated system.

A protective device coordination study will be specified to be undertaken by the electrical contractor.

Due to the inherent nature of the circuitry contained in LED lighting drivers, digital lighting controls, addressable fire alarm systems, and computer workstation switch mode power supplies, the following additional electrical equipment will be provided:

- Harmonic mitigating 600/120/208V transformers will be provided to accommodate non-linear electronic loads.
- Oversized neutral conductors will be designed to accommodate high neutral currents resulting from harmonics.
- Surge protective devices will contain ring wave filtering capabilities.

General convenience receptacles will also be provided throughout the building in areas such as corridors, lobby, service rooms. Receptacles will be provided above each counter in the washrooms. Generally, all receptacles in the building will be duplex 15/20A T-slot configuration and connected to 15/20A branch circuits. Connections will be made to any systems furniture as is required to suit open office layouts.

All receptacles located within 1.0m of sinks will be GFI type or protected by a GFI type breaker. Wall receptacles will typically be mounted at 200mm above finished floor and 150mm above counters, unless otherwise indicated in the documents or to coordinate with other interferences.

Power connections will be provided for miscellaneous equipment, including the following:
- Automatic door operators, including conduit and wiring for actuator pushbuttons.
- Destratification fans, including conduit and wiring for remote controls.

Main power feeds will be provided to disconnect switches in the elevator machine rooms for cab lighting, elevator motor, and ancillary loads required by the elevator supplier. Final connections to the elevator controllers from the disconnect switches and all control wiring, etc. will be by the elevator supplier. Power, lighting, and fire alarm connections will be provided to the elevator machine room, pits, and hoist way to the requirements of the elevator supplier, the elevator code, and electrical code.

All relays and fire alarm connections, including smoke detectors in elevator lobbies for automatic homing and firefighters' emergency operation in accordance with CSA B44-07 Safety Code for Elevator and Escalators will be provided. Conduit and power connections for lobby panels and other ancillary elevator equipment located outside of the elevator machine room as required by the elevator supplier will be provided.

Electrical services will be provided for universal toilet rooms including power for door operators, alarm system, and occupied lights as well as conduit and wire for door pushbuttons and push-to-lock buttons.

An AC grounding system will be provided in the main electrical room. All transformer neutrals will be connected to the grounding bar and a common cable connected back to the system ground.

Grounding will be provided following IEEE 1100, EIA/TIA/ANSI/CSA Standards, and Electrical Safety Code Section 10 requirements.

Separate communication grounding and bonding system will be provided from the main building electrical ground and will be distributed to a ground bus located at the main communications demarcation point and LAN room(s).

5.3 LIGHTING & LIGHTING CONTROLS

The interior lighting will consist of a combination of traditional commercial grade recessed LED fixtures and/or suspended direct linear LED fixtures. Specialty/decorative lighting will be proposed in "feature" areas such as elevator lobbies and main lobby. Given the unique architecture of this facility, lighting fixture selection must be closely coordinated with the architect. A combination of occupancy sensors, daylight sensors, and dimming fixtures will be specified to suit space and occupancy type.

Controls for interior common spaces such as corridors will be provided with occupancy sensing for continuous dimming of fixtures to preset minimum level when vacant as well as time of day function such that after hours fixture turn off in unoccupied areas.

The exterior lighting will be controlled by contactors with maintenance bypass and connection to the main building lighting control system for time of day and building occupancy scheduling.

Illumination levels will be designed in accordance with the latest IES recommendations, specific user requirements, and energy density requirements of building code.

Service and storage rooms will be provided with LED strip lights which include wire guards. Local room wall mounted switching will be provided.

Washrooms will be provided with a combination of recessed linear lighting and compact LED pot lights. Lighting in washrooms will be controlled by occupancy sensors.

Stairwells will be illuminated with LED luminaires. The type of luminaires will be chosen to suit the design of the stairwell. Surface type LED luminaires will be considered in enclosed service stairwells.

Exit lighting will be 2-watt LED pictogram (“running man”) style, with decorative edge-lit versions specified for “feature” areas such as the main lobby.

Emergency lighting will consist of 12 volt 4 watt LED “micro” emergency fixtures spaced and located to suit current codes and standards. Local rechargeable maintenance free battery units will be provided to feed these emergency fixtures and exit signs.

5.4 FIRE ALARM SYSTEM

The fire alarm system for this facility will be specified as a single-stage, zoned, addressable system consisting of main control panel, remote annunciator and passive graphic at the main entry, initiating devices throughout to suit codes and standards, as well as horn and horn/strobes. All required sprinkler valves will be connected and annunciated.

The fire alarm system will be monitored by the security system, which will provide remote monitoring of this facility.

The system will include, but not limited to, the following features:

- Smoke detectors will be provided at the top of all exit stairs.
- Smoke detectors and connections to fire alarm relays for release of doors will be provided at doors to be equipped with hold open devices.
- Heat detectors will be provided at the bottom of each elevator shaft.
- Smoke detectors will be provided at the top of each elevator shaft and elevator machine room.
- Pull stations will be provided at all exits.
- All necessary loop isolation modules will be required at fire separations, stairwells, floor assemblies, etc.
- Connections will be provided to all supervised valves, flow switches, and pressure switches on the sprinkler system.

- Combination horn/strobes will be used as audible signal appliances.
- Strobe lights will be provided in corridors, public spaces, noisy areas including mechanical equipment rooms, and other areas required by code.
- Recirculating air handling systems will be provided with duct smoke detectors and shut down where required by the code.
- The system will be provided with integral batteries for backup power for the minimum duration required by the code.

5.5 SECURITY AND DOOR ACCESS SYSTEMS

Rough-in conduits, device boxes and cabling will be provided for a card access and intrusion detection systems. All security system conduits will be terminated in the telecommunications rooms and provide with pull-strings. Security system rough-in locations will be coordinated through the owner and their preferred security vendor.

Provision of security cabling and equipment (card readers, contacts, request to exit and locking devices, control panels, etc.) will be coordinated with the owner's preferred security vendor.

5.6 TELECOMMUNICATION NETWORK

Telecommunication outlets (voice/data) will be roughed in (conduit only – 21 mm to each outlet) throughout the common areas and service spaces, and run to the respective cable management or zone conduit. Floor areas will also contain rough-ins for wireless access points as coordinated with the owners' IT department.

Cable management will be provided in corridors, with conduit sleeves into LAN rooms on each floor. The LAN rooms will contain riser conduits between each floor. Communication backboards will be provided within each LAN room. The LAN rooms will be linked to the main building demarcation point via riser conduits. The telecommunication riser system will be bonded to the main communications ground system.

Open office areas will contain cable management branches or zone conduits, depending on the density of cabling required. Conduits will be provided to groupings of system furniture to suit furniture layouts.

Wiring solutions for voice and data systems will be provided by the owners' telecommunications vendor.

5.7 EXISTING SERVICES AND DEVICES

All existing base building devices including, but not limited to, lighting, outlets, electrical distribution, fire alarm, etc. will be removed where redundant and reused where applicable.

5.8 BASIC MATERIALS AND INSTALLATION

All equipment and material must be new, CSA, and/or ULC approved.

All equipment shall be complete with sprinkler proof enclosures.

Wiring shall be installed in conduit complete with separate, insulated, and identified grounding conductor.

In general, conduit shall be EMT. Use flexible metal conduit for connection to vibrating equipment (including transformers) and motors.

The use of AC90 (BX) cable is permitted in accessible ceilings and from the top of steel stud walls to the closest junction box provided the length is limited to 2,400 mm.

5.9 ELECTRICAL COMMISSIONING

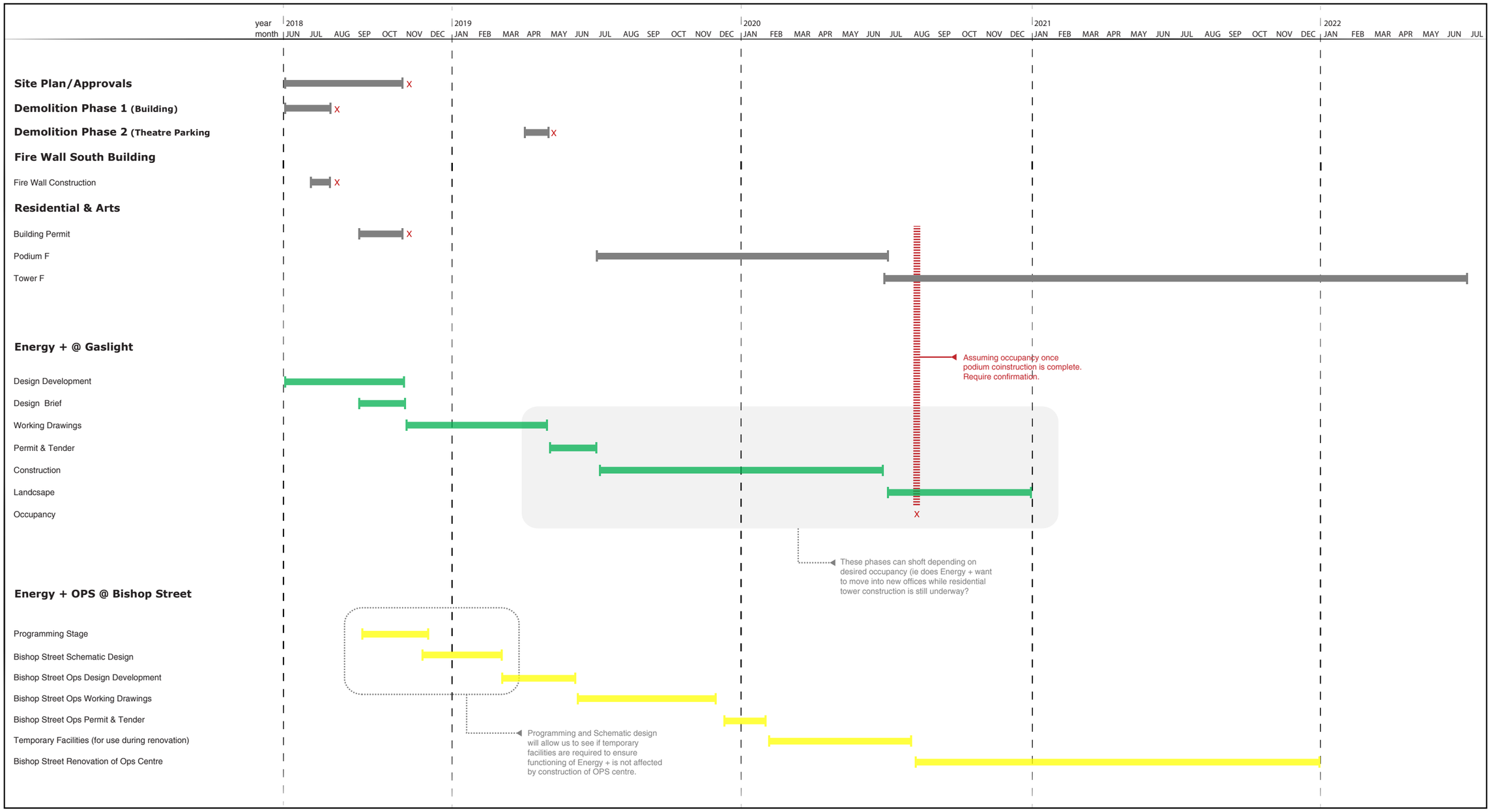
The electrical systems will be fully commissioned by the fire systems commissioning agent, sub-contracted to the electrical contractor, to satisfy the integrated life safety systems commissioning requirements of the building code.

MARTINSIMMONS
ARCHITECTS

Appendix G

Draft Schedule

Energy+
64 Grand Avenue
Cambridge, ON



Draft Project Schedule

MARTINSIMMONS
ARCHITECTS

MARTINSIMMONS
ARCHITECTS

Appendix H

Class C Cost Estimate, Melloul-Blamey Construction Inc.

MELLOUL-BLAMEY CONSTRUCTION INC.
CLASS C COST ESTIMATE
Energy + Steel Framed Mezzanine

Estimate Description: Budget based on Design Meeting Brief dated May 2, 2018, as well as followup discussions on intent, assumptions, and cost saving design changes. This estimate reflects the design as of a meeting regarding cost with MSA, Energy + and M-B December 2018. Firewall costs are not included in this budget.

	# Suites		# Storeys	m2	SF
1 bedrm:					0
2 bedrm:		Parking Area:			0
3 bedrm:		Ground Floor Area:		1,325	14,262
		Mezzanine Area:		672	7,233
Total:	0	Overall Building:	0	1,997	21,496

1.0 SITEWORK COSTS		Gross Costs	S/F Costs on Gross Costs	Remarks
1.1	**Demolition / Alterations - Cleaning Wood Structure**	$121,797	$5.67	plg flr rem only
1.2	**Excavation**	$67,989	$3.16	no A u/s SOG
1.3	Site Services	$0	$0.00	stub to blg by others
1.4	Shoring	$0	$0.00	
1.5	Fencing	$0	$0.00	
1.6	**Irrigation**	$4,750	$0.22	
1.7	**Landscaping, Planting, Paving Stone, Seat Walls**	$84,968	$3.95	to property line only
1.8	**Site Furnishings / Bike Racks**	$2,000	$0.09	
1.9	Asphalt	$0	$0.00	
1.10	**Curb & Sidewalk**	$24,020	$1.12	
1.11	Sutera Garbage Unit and Garbage Enclosures	$0	$0.00	
	SITEWORK Sub-total (excl. H.S.T.)	**$305,525**	**$14.21**	**-$232,732**

2.0 BUILDING COSTS		Gross Costs	S/F Costs on Gross Costs	Remarks
2.1	**Concrete Forming**	$81,525	$3.79	no trans walls
2.2	**Concrete Supply**	$74,356	$3.46	125 - 150 & plg sog
2.3	**Rebar**	$17,050	$0.79	
2.4	**Concrete Finishing**	$63,525	$2.96	plg SOG & SOD
2.5	**Misc Concrete - Anchor bolts. Grouting, Foundation Insulation etc.**	$93,877	$4.36	Cupolex 86k
2.9	**Masonry and Stonework**	$291,454	$13.56	50% repointing
2.10	**Structural Steel**	$300,348	$13.97	stl frame mezz
2.11	**Misc Metal**	$100,339	$4.67	trans encl / guards
2.12	**Timber Systems Mezzanine**	$0	$0.00	see str steel
2.13	**Carpentry**	$107,115	$4.98	trans enclosure
2.14	Millwork - Common Space, Elevator Lobbies, and Main Lobby	$47,300	$2.20	
2.21	Waterproofing	$2,475	$0.12	
2.22	Pedestrian Traffic Coating	$0	$0.00	
2.23	**Roofing**	$6,500	$0.30	1 canopy
2.24	Foam Insulation	$0	$0.00	
2.25	EIFS	$0	$0.00	
2.26	Metal Siding & Roofing	$384,085	$17.87	
2.27	**Composite Panels**	$50,220	$2.34	west wall & 1 canopy
2.28	Fire Retardant Coating	$30,011	$1.40	U/S wood roof deck
2.29	Firestopping	$2,660	$0.12	
2.30	Caulking	$10,000	$0.47	
2.31	Hollow Metal Supply	$5,200	$0.24	
2.32	Wood Door Supply	$7,800	$0.36	
2.33	Finish Hardware Supply	$26,000	$1.21	
2.34	Hollow Metal Door, Frame and Hardware install	$4,810	$0.22	
2.35	Building Access control - Supply and install	$4,800	$0.22	
2.46	Sliding Door Partitions	$50,000	$2.33	
2.47	Auto Operators	$22,500	$1.05	
2.48	**Aluminum Entrances - Storefronts / Curtain Wall**	$647,978	$30.14	no glazed guard
2.49	Residential Aluminum Wndws and Sliders / Doors	$159,598	$7.42	
2.50	Glazed Balcony Railings	$0	$0.00	
2.51	Misc Glazing - Mirrors etc.	$8,240	$0.38	frosted film
2.52	**DW & Acoustic**	$304,294	$14.16	
2.53	Flooring	$157,226	$7.31	
2.54	Painting	$49,000	$2.28	
2.55	Lockers	$3,375	$0.16	
2.56	Toilet Partitions	$1,700	$0.08	
2.57	Washroom Accessories	$4,640	$0.22	change table
2.58	Floor Grilles	$0	$0.00	
2.60	Mailboxes	$5,400	$0.25	
2.61	Signage	$10,000	$0.47	allowance
2.66	Elevators	$90,000	$4.19	Delta 96 Grand +
2.67	Sprinklers	$60,000	$2.79	C&H
2.68	Mechanical	$775,000	$36.05	Conestogo #2
2.69	Electrical	$234,000	$10.89	Conestogo
2.70	lighting / Lutron package	$286,000	$13.30	mid range Cooper
	BUILDING Sub-total (excl. H.S.T.)	**$4,580,203**	**$213.08**	**-$296,162**

3.0 GENERAL CONDITIONS, ALLOWANCES & FEES		Gross Costs	S/F Costs on Gross Costs	Remarks
	3.1 GENERAL CONDITIONS BUDGET based on 12 Months			
3.1.1	Site Supervision & Facilities (Truck, Office/Storage, Toilets, Phone/Fax, etc…)	$349,042	$16.24	
3.1.2	General Expenses (Clean up, Safety, Barriers, Tools etc…)	$163,423	$7.60	
3.1.3	Cranes,Hoists etc.	$80,200	$3.73	
3.1.4	Winter Heat	$41,064	$1.91	
3.1.5	Temporary Power & Lighting	$15,764	$0.73	
3.1.6	Bonding Costs	$0	$0.00	
3.1.7	Insurance Costs	$31,984	$1.49	
	Subtotal General Conditions	***$681,477***	***$31.70***	
	3.2 ALLOWANCES			
3.2.1	Testing & Inspection	$10,000	$0.47	
3.2.2	Commissioning	$5,815	$0.27	
3.2.2	Connections - Water, Sanitary, Storm	$10,000	$0.47	
	Connections - Gas	$0	$0.00	
	Connections - Hydro	$50,000	$2.33	not in Conestogo
3.2.3	Building Security	$0	$0.00	
3.2.4	Furniture & Equipment	$0	$0.00	
3.2.5	Soils Remediation	$100,000	$4.65	
3.2.6	**Str Roof Reinforcing**	$260,000	$12.10	low bays only
3.2.7	Contingency	$300,000	$13.96	
	Subtotal Allowances	***$735,815***	***$34.23***	
	3.3 PROFESSIONAL FEES			
3.3.1	Pre-Construction Services Fee	$30,000	$1.40	
3.3.2	Construction Management Fee	$420,000	$19.54	
3.3.3	Architectural, Structural, Drawings & Preparation	$0	$0.00	
3.3.4	Mechanical & Electrical Engineering	$0	$0.00	
3.3.5	Site Civil & Site Lighting Design	$0	$0.00	
3.3.6	Soils Investigation	$0	$0.00	
	Subtotal Professional Fees	***$450,000***	***$20.93***	
	GENERAL, ALLOWANCES & FEES Sub-total (excl. H.S.T.)	**$1,867,293**	**$86.87**	**-$221,620**

4.0 ITEMS PAID DIRECTLY BY OWNER		Gross Costs	S/F Costs on Gross Costs	Remarks
4.1	Building Permit			By Owner
4.2	Development Fees			By Owner
4.6	Real Estate Fees			By Owner
4.7	Financing Fees			By Owner
	ITEMS BY OWNER Sub-total (excl. H.S.T.)	**$0**	**$0.00**	

5.0 TOTAL PROJECT DEVELOPMENT COSTS SUMMARY	Gross Costs	S/F Costs on Gross Costs	Remarks
1.0 SITEWORK COSTS	$305,525	$14.21	-$232,732
2.0 BUILDING COSTS	$4,580,203	$213.08	-$296,162
3.0 GENERAL CONDITIONS, ALLOWANCES, FEES & OTHER	$1,867,293	$86.87	-$221,620
4.0 ITEMS PAID DIRECTLY BY OWNER	$0	$0.00	$0
TOTAL PROJECT DEVELOPMENT COSTS (excl. H.S.T.)	**$6,753,020**	**$314.16**	**-$750,515**

-$750,515

Note: This cost estimate represents our best assumptions given the current cost trends and our database of past pricing information. DECEMBER 2018
This cost estimate **does not represent actual subtrade quotations** and subsequently is **not to be considered a firm price**.
We reserve the right to make changes as required. Melloul-Blamey labour chargeout rates as follows: $66.00/hour for carpenter and $56.00 for labourer

Date: M-B Approval: _____
Print Sign

Date: Owner Approval: _____
Print Sign

SEC 3

Technical Conference Question

P.7

With respect to the environmental condition of the property:

a. Please provide any initial assessments provided to Energy+ regarding the environmental conditions and any forecast mitigation costs.

RESPONSE

Attached as Appendix SEC-3 is the initial Property Condition Audit Energy+ received in February 2018. At that time, the mitigation measures to deal with ground water contamination for the entire development were under discussion between HIP Developments and the Ministry of the Environment, Conservation and Parks (MECP).

The selected risk mitigation methodology is outlined in the Design Brief and the cost is included in the updated Class C estimate from Melloul-Blamey.

SEC 3

Technical Conference Question

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With respect to the environmental condition of the property:

b. Does the Class C estimate include a budget for mitigation costs? If so, please explain the basis for the cost estimate. If not, please explain why not.

RESPONSE

Yes, the current Class C estimate incorporates an additional $207,000 for a vapour mitigation solution that involves pouring a layer of cement on top of the existing building slab with pre-formed air spaces to allow sub-floor ventilation. The system is more fully described in the Design Brief. The basis of the cost estimate is based on a specific product (called Cupolex) and the cost of additional cement.