RICHVIEW SQUARE ENERGY STRATEGY REPORT

Submitted in support of Zoning By-law Amendment
250 Wincott Drive and 4620 Eglinton Ave West, Toronto

Stantec

Project No.: 161011912
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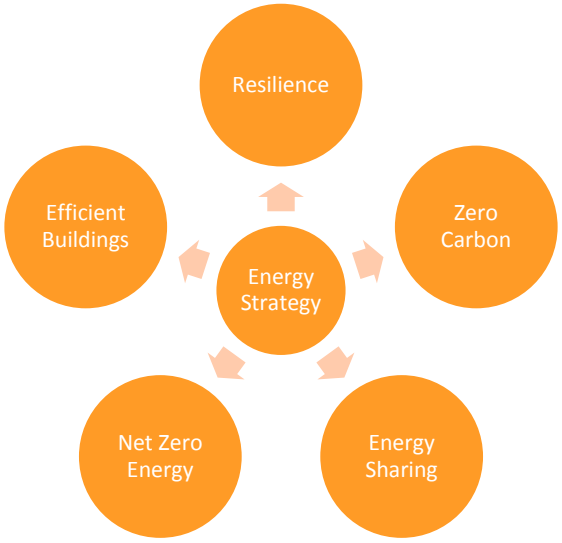
1.0 EXECUTIVE SUMMARY

The Richview Square development is in Etobicoke, located at 250 Wincott Drive and 4620 Eglinton Avenue West, and is owned by Trinity Development Group Inc and CreateTO, formerly Build Toronto. As part of Official Plan Amendment 262 (Environmental Policies and Environmentally Significant Areas), development proposals larger than 20,000 sq.m are required to submit an Energy Strategy along with the requisite Rezoning application requirements. This report is provided in support of this requirement and explores the energy strategies for the site which offer energy efficient, resilient and low-carbon solutions to address the development's energy.

Specifically, the Energy Strategy Report addresses:

- Opportunities for site buildings to take advantage of existing or proposed energy, infrastructure, energy capture and/or solar orientation at the conceptual design stage;
- Consideration of potential energy sharing for multi-building development and/or neighbouring existing/proposed developments;
- Consideration of opportunities to increase resiliency such as strategic back-up power capacity (for multi-unit residential buildings);
- Identification of innovative solutions to reduce energy consumption in new construction and retrofit of existing buildings (if part of new development);
- Exploration of potential to attract private investment in energy sharing systems;
- Identify how the development might achieve net zero on both an emissions and energy basis;
- Identify opportunities for backup power systems that will improve the resilience of buildings to area-wide power outages, especially multi-unit residential buildings.



STRATEGIES

As part of this analysis, Stantec considered a variety of building level and neighborhood scale strategies with the potential to reduce the development's energy and carbon impact and to improve resilience and wellness. The strategies were compared on the background of the three pillars of sustainability: society, environment and economy.

NEXT STEPS

The recommendations and measures within the report should be studied further as the design develops.

2.0 INTRODUCTION

The purpose of the Energy Strategy Report is to identify opportunities for minimizing the energy and carbon impact of the development and improved resiliency and wellness.

The study encompasses:

- Opportunities for site buildings to take advantage of existing or proposed energy infrastructure, energy capture and/or solar orientation at the conceptual design stage;
- Consideration of potential energy sharing for multi-building development and/or neighboring existing/proposed developments;
- Consideration of opportunities to increase resiliency such as strategic back-up power capacity (for multi-unit residential buildings);
- Identification of innovative solutions to reduce energy consumption in new construction and retrofit of existing buildings (if part of new development);
- Identify how the development might achieve net zero on both an emissions and energy basis;
- Identify opportunities for backup power systems that will improve the resilience of buildings to area-wide power outages, especially multi-unit residential buildings;
- Potential sources of incentives and funding associated with sustainable development on the site.

2.1 RICHVIEW SQUARE OVERVIEW

Figure 1 Richview Context-Existing Site **Source: UrbanMetrics Website**

The Richview Square development is located at the north-west corner of Wincott Drive and Eglinton Avenue West.

The proposed development is approximately 3 hectares of land, and envisions a mixed-use development consisting of retail and residential uses, and the addition of new pedestrian and vehicular connections through the site, with privately-owned publicly accessible space, to create a highly walkable, family-friendly environment. The Richview Square redevelopment is also aiming to achieve high levels of sustainability, wellness and resilience.

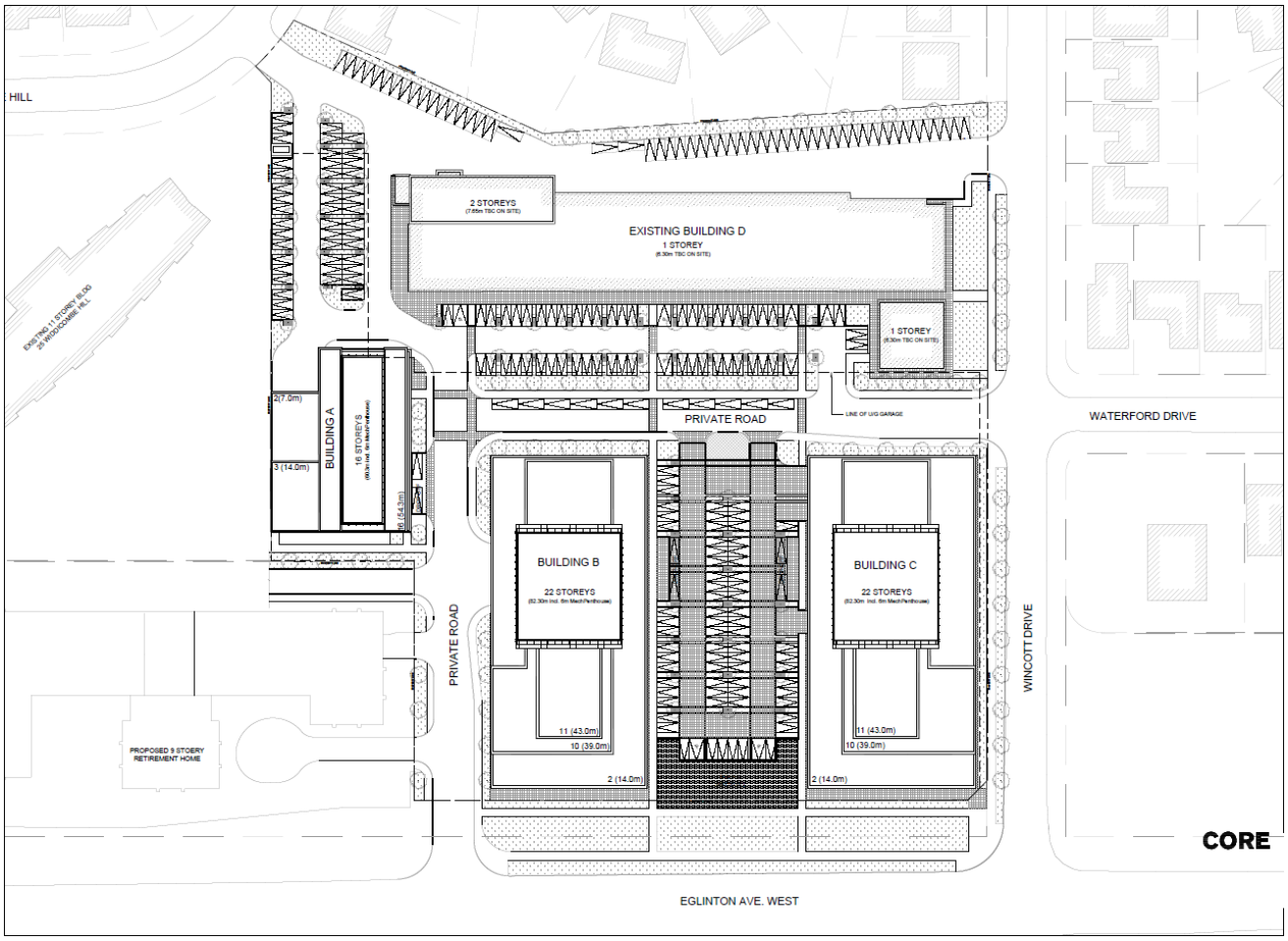


Figure 2 Richview Redevelopment Site **Source: Core Architects and Land Art Landscape Architects**

The pre-application community consultation process took place over the course of 2017 and included three community meetings.

Trinity is looking to build on the eight themes to deliver this inspiring neighborhood:

- Enhance the retail heart of the community
- Generate City-Building and financial value for the City of Toronto
- Integrate several land uses on this Mixed-Use site (Retail and residential)
- Focus on great urban design and architecture
- Create new residential opportunities
- Ensure open communications through the community engagement process
- Enhance the retail to serve the community
- Integrate with the surrounding neighborhood

The proposed plan for the three buildings includes retail units, amenity spaces, underground parking, public gathering spaces, and a stock of new housing options. Below the new buildings would be two

levels of underground parking. The first floor of all buildings would include retail, including the existing retail block, renovated, at the north end of Richview Square. Buildings B and C as per the plan above would also have retail on the second floor and include indoor and outdoor amenity spaces on the third floor. Residential units would top off Buildings A, B, and C above the retail floors, totaling 16 storeys for Building A and 22 storeys for Buildings B and C.

Comprehensively, the new development delivers a total of 671 residential units in a mix of housing forms, 50% of which are one-bedroom units, 40% of which are two-bedroom units, and 10% of which are three-bedroom units. These residential uses are supported by ±15,257 m^2 (±164,231 ft^2) of retail.

VIEW FROM EGLINTON AVE W.

Figure 3 Richview Square

Source: Core Architects' Presentation

In 2009, the City of Toronto launched the Power to Live Green program, a formalized Sustainable Energy Strategy for the City of Toronto. This program set out a mandate for Community Energy Planning (CEP). By focusing on CEP early in planning stages, projects can identify opportunities for integrating effective low carbon and resilient strategies into the built environment. The key CEP objectives are as follows:

2.1.1 POWERING GROWTH LOCALLY

Reducing energy consumption and demand are part of responsible development in the City of Toronto. Creating a sustainable built environment using high performance building components allows for densification and development in the urban environment as well as major investments in new infrastructure.

2.1.2 LOW-CARBON SOLUTIONS

Life cycle analysis (LCA) is a vital tool that should be used to assess carbon impacts from material selection and transportation choices at a community scale. Building energy modelling will be used to assess ways of reducing carbon emissions from on-site energy production and the use of grid supplied energy. Combined, these tools can provide low-carbon solutions for the built environment that help achieve greenhouse gas (GHG) reductions.

2.1.3 ENERGY RESILIENCE

Extreme weather events created by global climate require careful consideration of back-up power solutions. Systems that supply safety and comfort to building occupants necessitate robust smart building systems to mitigate power failures.

2.2 AREA BACKGROUND

2.2.1 EXISTING CONDITIONS

- The Richview Square property (250 Wincott Drive) is approximately 2 hectares (5.3 acres) in size and includes a shopping plaza and surface parking lot.

  The site was purchased by Trinity Development Group Inc. in 2015 for a redevelopment opportunity.

- 4620 Eglinton Avenue West is an approximately 1 hectare (2.2 acres) vacant parcel facing Eglinton Avenue which was reserved as part of the corridor for a future expressway. It is now proposed to be combined with 250 Wincott Drive as part of a future redevelopment.

  The site was declared surplus by the City of Toronto in 2011 for Build Toronto to explore redevelopment opportunities.

Figure 4 Richview Square & 4620 Eglinton Ave.W. **Source Community Interactive Meeting #3**

2.2.2 PLANNING CONTEXT

The proposed development is located just north of Eglinton West and just steps away from the Proposed Eglinton West LRT extension.

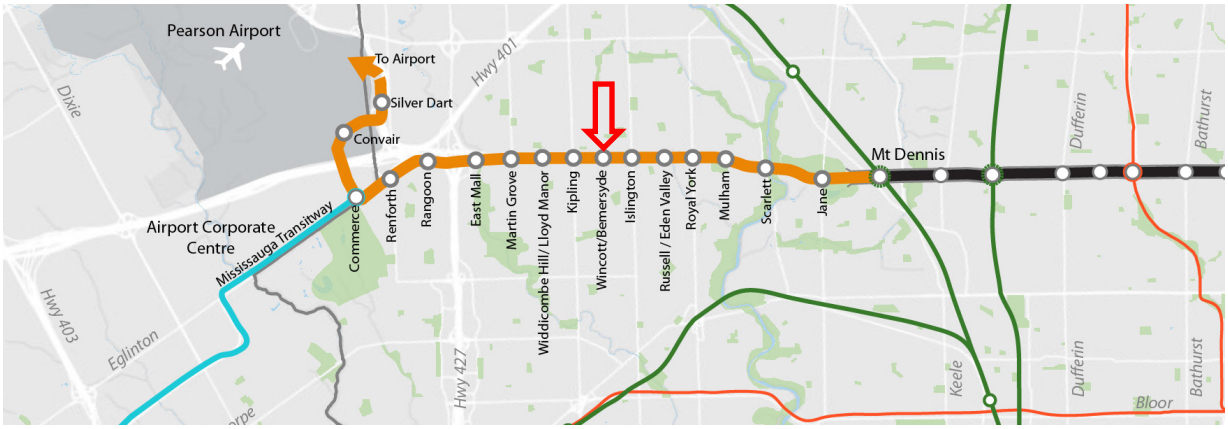


Figure 5 Proximity to Proposed Transit Extension **Source: Eglinton West LRT- SmartTrack at City of Toronto**

The context surrounding the Richview site is rapidly changing. The size of the site and the degree of investment anticipated in coming decades, offers a unique opportunity for sustainable urban development.

Terraces, podium and pedestrian pathways will provide a dynamic gateway into the site from Eglinton Ave. West. The landscape and layout will be situated in a way that accommodates pedestrians, cyclists and drivers, ensuring a safe and pleasant atmosphere for the community.

Figure 6 Site Plan **Source: Core Architect and Land Art Design**

The neighbourhood is currently primarily low-rise residential, with a majority of single family homes, town-houses and high-rise multi-unit residential buildings near Eglinton and Kipling. The vision for the proposed redevelopment is that it will create a new neighbourhood destination which integrates with the surrounding community.

Residential density is delivered across mid-rise and taller building elements. The relationship of the built form to the site and surrounding neighbourhood is carefully crafted by way of architecture and strategic tower location to respect angular planes and building separation distances.

3.0 HIGH PERFORMANCE BUILDINGS

Our intent is to encourage a responsible community development from an overall energy performance and emissions perspective.

3.1 TORONTO GREEN STANDARD (TGS)

The Richview Square development is applying for approval under Toronto Green Standard v2.0.

TGS v2.0 came into effect in 2017 and is characterized by two tiers. The first tier is mandatory for all developments in the City of Toronto and requires that new buildings achieve a 15% improvement in energy efficiency compared to the 2017 Ontario Building Code. Tier 2 is voluntary and incentivizes developers with development charge rebates equivalent to 20% of the 2014 rate.

The new Toronto Green Standard (v3.0), which takes effect in May 2018, is comprised of four levels of compliance: Tier 1 through Tier 4. As with TGS v2.0, Tier 1 compliance is mandatory for all developments in the City of Toronto. Tier 2 and up are voluntary performance levels which are incentivized with development charge rebates. The design standards and available rebates increase progressively between Tiers 2 through 4.

Below are the requirements of the TGS v3.0 for Tier 1 and Tier 2. There are refunds on development charges when designing to Tier 2.

Table 1 GHG Emissions/Energy Efficiency performance measures of the Toronto Green Standard.

Tier 1	Tier 2
Must achieve a 15% improvement in energy efficiency compared to the Ontario Building Code 2017 **OR** **Tier 1 TEUI, TEDI and GHGI targets by building type, as provided in Table 2.**	**Design the buildings to meet or exceed the Tier 2 TEUI, TEDI and GHGI targets by building type, as provided in Table 2.**
	Ensure that buildings are designed to accommodate connections to solar PV or solar thermal technologies.
	Design buildings to connect to a district energy system where one exists or is slated for development.

Table 2 Building Energy Performance Requirements Tier 1 & 2

Building Type	Total Energy Use Intensity* (eKWh/m2)		Thermal Energy Demand Intensity* (eKWh/m2)		Greenhouse Gas Intensity* (kgCO2e/m2)	
	Tier 1	Tier 2	Tier 1	Tier 2	Tier 1	Tier 2
Multi-unit Residential Buildings (>6 Storeys)	170	135	70	50	20	15
Multi-unit Residential Buildings (≤6 Storeys)	165	130	65	40	20	15
Commercial Office Buildings	175	130	70	30	20	15
Commercial Retail Buildings	170	120	60	40	20	10
Mixed Use Buildings (90% residential, 5% retail, 5% commercial)	170	134	70	49	20	15
All Other Building Types	*Tier 1: ≥15% Improvement above SB-10, 2017 Tier 2: ≥25% Improvement above SB-10, 2017					

At this stage in the approval and design process, we have put forward the following concepts to maximize the performance of the development and to minimize the environmental impact.

Tier 3 and Tier 4 TGS requirements are intended to drive projects to further reduce their energy use, thermal demand and carbon emissions and move projects towards Net Zero. These targets are outlined in Table 3. Alternative compliance options to meet Tier 3 and Tier 4 can include CaGBC's Zero Carbon Building Standard or Passive Hours standard certification.

Table 3 High Performance, Near Zero Emissions Requirements Tier 3 & 4

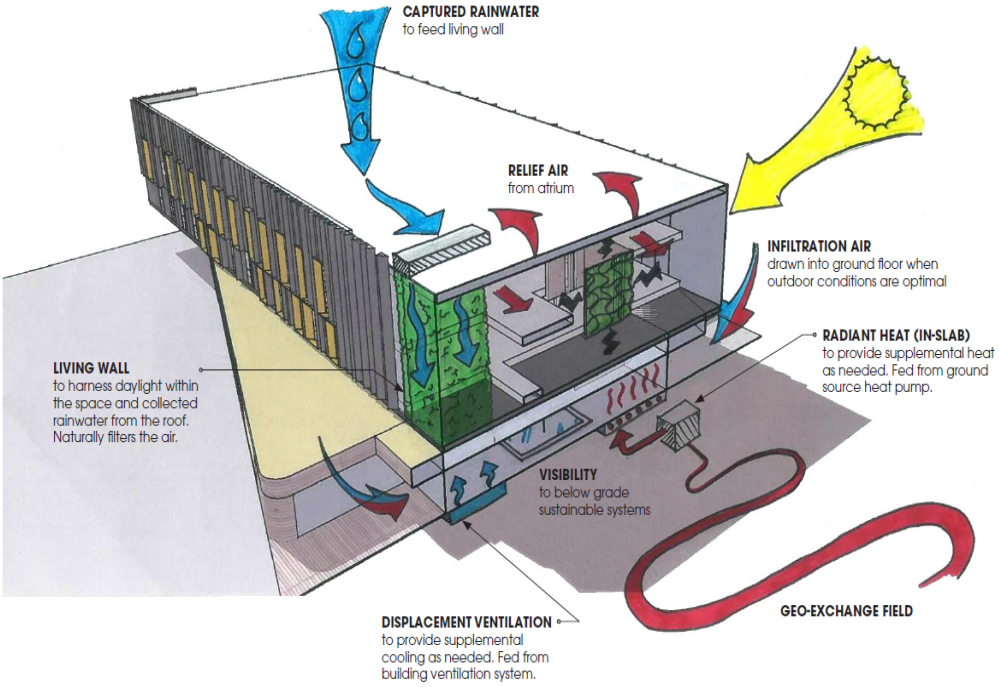
Building Type	Total Energy Use Intensity* (eKWh/m2)		Thermal Energy Demand Intensity* (eKWh/m2)		Greenhouse Gas Intensity* (kgCO2e/m2)	
	Tier 3	Tier 4	Tier 3	Tier 4	Tier 3	Tier 4
Multi-unit Residential Buildings (>6 Storeys)	100	75	30	15	10	5
Multi-unit Residential Buildings (≤6 Storeys)	100	70	25	15	10	5
Commercial Office Buildings	100	65	22	15	8	4
Commercial Retail Buildings	90	70	25	15	5	3
Mixed Use Buildings (90% residential, 5% retail, 5% commercial)	100	74	29	15	10	5

3.2 ENERGY MODELLING APPROACH TO TARGET NET ZERO ENERGY

Building Energy Modeling is a sophisticated calculation that allows a design team to quantify energy savings for different design options. It informs designers, clients, operators, and end users what value certain concepts bring to the building form in terms of energy consumption and cost. Decisions can be made based on quantitative metrics all involved parties can clearly understand, which include calculating cost savings, life cycle savings, and quantifying energy consumption.

Energy modeling can also be used to determine how a building is performing whether to gain LEED® points, target a level energy reduction (like Net Zero Energy or GHG's) or analyze differences between comparable projects. A variety of energy modelling tools can be used including IES-VE, eQuest, Sefaira and others depending on the level of complexity and detail required for each project. A software such as IES-VE is a modeling tool that allows us to use one 3D model to test energy use, daylighting strategies, natural ventilation, thermal massing and mechanical system simulation. With it the following could be completed:

- Building Envelope and System Selection – we will provide feedback of the various envelope schemes through parametric analysis of building features during early concept design. Life cycle costing can be used to provide relevant feedback on the economics of options in real time;



Source: Stantec

- Energy Efficient HVAC & Lighting design – prepare numerous energy efficient HVAC and lighting systems for comparison utilizing technologies such as ground-source heat pumps, air-source heat pumps, dedicated outdoor air systems, LED lighting, occupancy sensor controls, variable refrigerant flow systems, CO_2 controls, exhaust air heat recovery, condensing boilers, daylighting controls, and radiant floors to help reduce energy consumption and costs;
- Natural Ventilation Strategy Simulation – upon considering the merits of natural ventilation within the facility, our simulation tools marry the effect of natural ventilation with the building systems and provide feedback in both energy units and predicted occupant comfort;
- Daylighting Analysis – the effect of daylighting on energy and peak equipment loading can be determined with an integrated 3D model.

- Indoor Environment and Thermal Comfort – feedback on thermal comfort should be considered by comparing the simulation results to accepted standards and occupant satisfaction;
- Net-Zero Energy Study – mechanical and electrical system options analyzed to help reduce energy consumption and peak electric demand. Explored the feasibility of incorporating solar PV panels to offset the energy and GHG consumption, thus providing a net-zero energy scenario;
- Renewable Energy Technologies – explored the feasibility of renewable energy technologies such as solar PV, solar hot water, and solar wall technologies.

This process has been used on other projects and is well documented as the ideal method for achieving Net Zero Energy projects and is shown graphically on the following page.

We have used modelling to obtain a high-level understanding of the energy consumption of a typical building type on this site. Using this energy profile for each typology we have extracted this information to the entire development to understand the energy needs for the project. This information has been used to prepare a list of performance parameters that would be required to meet the energy performance requirements of OBC SB-10 and the Toronto Green Standard v2.0.

We have also used this modelling technique to run some analysis to determine strategies for increasing energy efficiency, decreasing carbon emissions, and targeting Net Zero Energy for the project. This has helped to inform our strategy for meeting the resilience goals of the project.

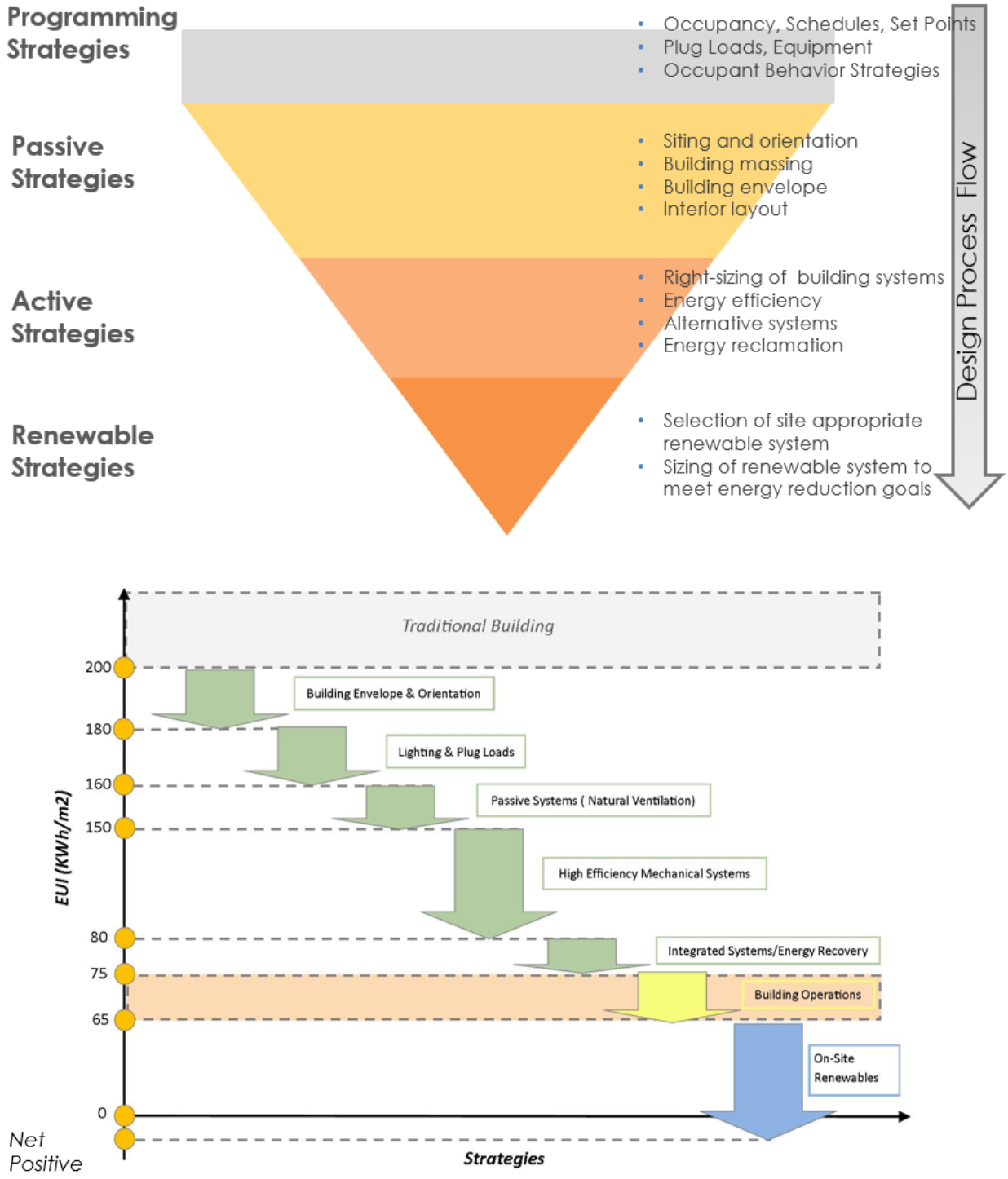


Figure 7 - Strategies for EUI Reduction

source: Stantec

3.3 ANALYSIS -BUILDING LEVEL

Figure 8 Rendering of Richview Square (North-East View) **Source: Core Architects' Presentation**

For this development, it is assumed that the design will comply with the Toronto Green Standard v2.0 Tier 1 requirements. However, TGS v3.0 has recently been released and will come into effect May 2018. TGS v3.0 Tier 1 compliance is also considered within this study. The analysis in this report leveraged the City of Toronto's Zero Emissions Building Framework and Stantec's experience of modelling buildings of similar typologies.

Based on the building type composition, four scenarios are examined.

Table 4 Summary of Scenarios

Scenario	Description
1 – TGS v2.0 Tier 1	Meeting current building code requirements of OBC SB-10 2017
2 – TGS v3.0 Tier 1	Exceed OBC SB-10 2017 by 15% and meet TEUI, TEDI and GHGI targets.
3 – TGS v3.0 Tier 2	Meet Tier 2 TEUI, TEDI and GHGI targets.
4 – Towards Net Zero	Meet Tier 4 TEUI, TEDI and GHGI targets.

The predicted energy use, thermal energy demand index and associated carbon emissions for each of the four scenarios are summarized below in Table 5.

Table 5 Summary of Performance

	TGS v2 T1 (SB 10 2017)	TGS v3 T1	TGS v3 T2	TGS v3 T4
EUI (kWh/m2)	191.66	169.75	132.02	72.54
TEDI (kWh/m2)	77.67	70.17	40.20	9.20
GHG (kg/m2)	25.22	22.06	15.46	3.70
Winter	16.27	4.18	14.83	20.68
Summer	21.65	19.66	18.52	20.81
Total Gas	117.36	102.05	57.40	63.46
Total Electricity	74.39	67.70	48.34	9.42
Heating Gas	77.93	70.14	38.75	0.26
Heating Elec	2.45	2.45	2.82	4.96
DHW Gas	39.43	31.91	28.11	0.33
DHW Elec	-	-	-	4.85
Cooling	5.31	4.65	5.26	13.85
Lights	26.45	21.28	21.28	15.95
Plug	23.20	23.20	21.77	19.70
Fans	8.67	8.72	6.74	5.72
Pumps	6.54	5.85	5.58	1.45
Heat Rejection	1.76	1.63	1.61	-

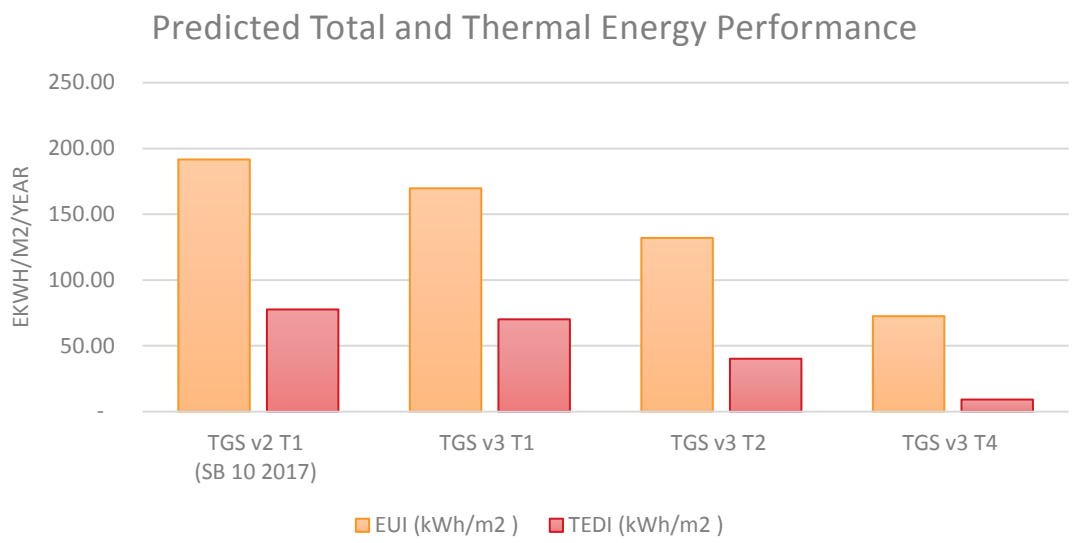


Figure 9 Predicted Total & Thermal Energy Performance under various TGS guidelines

Building level strategies for the achievement of the four scenarios are summarized in Table 6.

Table 6 Summary of Building Elements

	TGS v2 T1 (SB 10 2017)	TGS v3 T1	TGS v3 T2	TGS v3 T4
Building Envelope				
Window-Wall-Ratio	50	40	40	40
Wall R-Value	7	10	10	20
Roof R-Value	20	20	20	20
Window U-Value	0.4	0.4	0.3	0.14
Infiltration	Code	Code	25% Improvement	75% Improvement
Electrical				
Lighting Savings Over Code for Common Areas and Commercial	0	25%	25%	70%
Mechanical				
Heat Recovery Effectiveness	65%	65%	75%	85%
Central Plant	Condensing Boilers and Screw Chillers	Condensing Boilers and Screw Chillers	Condensing Boilers and Screw Chillers	Air Source Heat Pump with Electric Boiler
HVAC System	DOAs with Fan Coils for MURBs, VAV for commercial	DOAs with Fan Coils for MURBs, VAV for commercial	DOAs with Fan Coils	DOAs with Fan Coils

3.4 ANALYSIS - DISTRICT LEVEL MEASURES

Low carbon thermal energy networks and district energy systems are an important part of our City's goal of decreasing the GHG emissions of the built environment. These systems create an opportunity to reduce GHG emissions from building and reduce infrastructure demand through economies of scale necessary to integrate local, renewable or low-carbon energy sources.

The City of Toronto has identified numerous District Energy System opportunities in areas where there is a completed Community Energy Plan or a large development. The City is encouraging buildings within these areas to be ready for DES connection through minor mechanical provisions in the mechanical designs. These design standards would be applicable to developments which are:

- In close proximity to an existing or potential DES node (see Figure 4);
- Within a Community Energy Planning Area;
- Part of a large development (over 20,000 m^2).

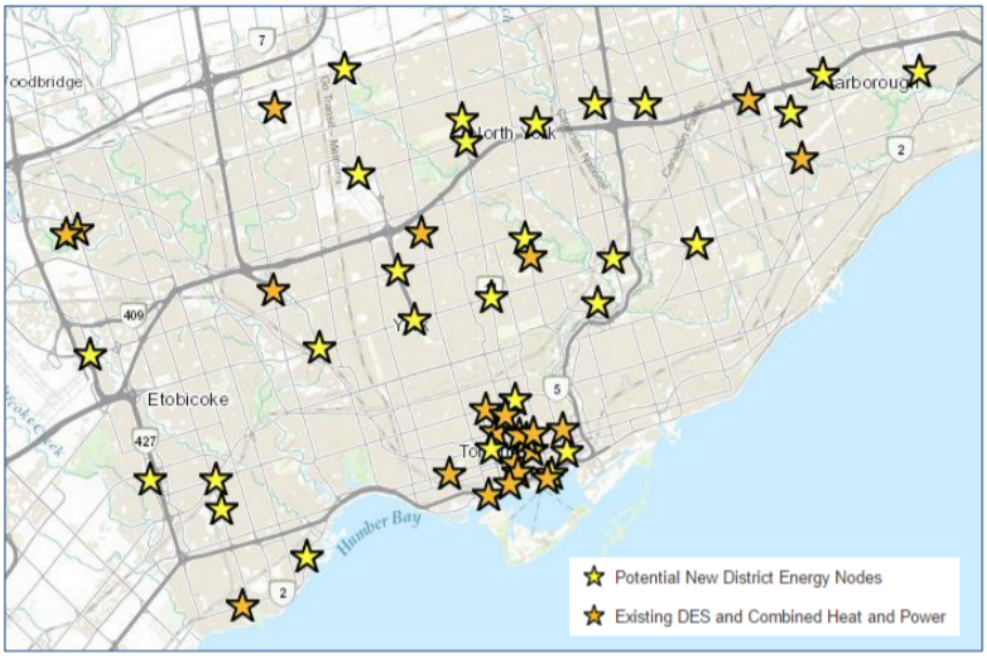


Figure 10 Existing and Potential District Energy Nodes **Source: Design Guideline for District Energy-Ready Buildings**

District energy systems may include such technologies as:

- Traditional central plant (boiler and chiller);
- Geoexchange supplying hot/cold water;
- Geoexchange supplying condenser water;
- Combined Heat and Power;
- Sewage Heat Reclaim;
- Biomass;

- Solar and Micro-Grid.

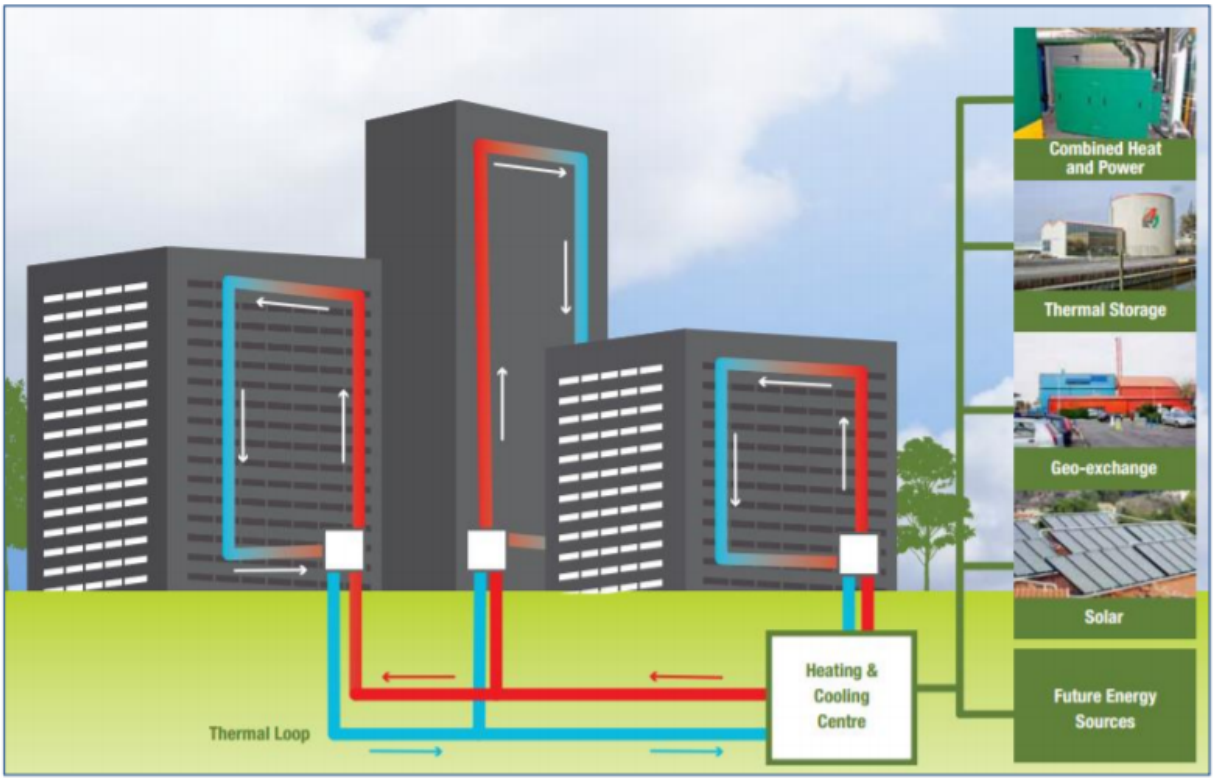


Figure 11 Illustration of a District Energy System Source: Design Guideline for District Energy-Ready Buildings

While the current planned development may not be able to connect to an existing or planned node, the size of the development provides an opportunity for a stand-alone district energy system which may incorporate low-carbon sources.

Designing a building to be district energy ready is an important step in planning for the low-carbon future. Based on the City of Toronto's Design Guideline for District Energy-Ready Buildings, the following are design provisions are recommended:

- Have a hydronic system;
- Allow sufficient space for an Energy Transfer Station (ETS);
- Design for large temperature differentials, variable volume flow with variable speed pumps, two-way valves and minimize return temperatures;
- Consider lower temperature systems such as in-floor heating to allow lower return temperatures.

3.4.1 ON-SITE POWER GENERATION

Based on the development's overall use and scale, there is a possibility to efficiently generate renewable power on site to reduce overall consumption, while at the same time provide resilient energy production. This approach can also help support future power growth in the community.

A micro grid (Solar PV with storage) or a Combined Heat and Power (CHP) system may be viable for the site. In addition, there may be opportunity for some smaller building measures to generate electricity with micro turbines, from the rainwater collection in the taller buildings.

Solar generation is becoming an increasingly attractive and economic option for on-site energy generation as panel costs decrease and as grid supplied electricity prices continue to increase. Long term financial benefits can be gained by installing on site PV provided that sufficient access to sunlight is available. If PV would be placed only on the highest floors of each of the blocks, approximately 1,448 m^2 is available, considering space for mechanical requirements, the following levels of production can be expected.

Table 7 Expected PV Production for Richview Square

Area of PV	**1,448 m^2**
Size estimate	170.20 kWdc
Energy Production	204,240 kWh/year
% of energy for Scenario 1	1.5%
% of energy for Scenario 4	3.9%

Further solar or additional renewable resources would be required to reach a net zero goal. A full analysis of solar PV viability, including shading analysis, is recommend for this project.

3.4.2 Alternate Scenario to Qualify for Additional Incentive Rebates

All new developments within the City of Toronto, including the proposed development, are subject to the Toronto Green Standard v2.0, which requires any development to have an energy performance at minimum meeting energy code criteria. The Richview Square development will meet the mandatory Tier 1 requirements of the Toronto Green Standard v2.0.

Tier 2 of the TGS is voluntary and makes a building eligible for development charge rebates. Tier 2 of TGS v3.0 (effective May 2018) requires that a building meets or exceed the Tier 2 TEUI (134 ekWh/m^2), TEDI (49 ekWh*/m^2) and GHGI (15 $kgCO_2e/m^2$) targets for the mixed used buildings.

This could be an alternate scenario for this development.

To achieve this alternate scenario (i.e. voluntarily meeting TGS v3.0 Tier 2), the following options would need to be incorporated into the design and will be considered at the site plan stage:

- Envelope exceeding the minimum requirement of the building Code (As provided in Table 6);
- LED common area lighting and overall 25% LPD reduction;
- Condensing boilers and efficient chillers;
- In-suite energy recovery ventilators with a minimum efficiency of 75%;

With the above energy efficient features, the development can achieve an EUI of **132.02 ekWh/m²**.

More detailed energy modeling can also be completed at the site plan stage to determine how a building is performing whether to gain LEED® points, target a level energy reduction (like Net Zero Energy or GHG's) or analyze differences between comparable projects. A variety of energy modelling tools can be used including IES-VE, eQuest, Sefaira and others depending on the level of complexity and detail required for each project. A software such as IES-VE is a modeling tool that allows us to use one 3D model to test energy use, daylighting strategies, natural ventilation, thermal massing, and mechanical system simulation. With it the following could be completed:

- Building Envelope and System Selection – modeling can provide feedback of the various envelope schemes through parametric analysis of building features during early concept design. Life cycle costing can be used to provide relevant feedback on the economics of options in real time.

4.0 ENERGY RESILIENCE

In addition to establishing energy and performance targets the City of Toronto has recognized the need to prepare its built environment for the impact of climate change. New buildings must be constructed in a way which reduces the impact of the future climate on Toronto's buildings. This includes design considerations intended to mitigate flood events, improve thermal resilience, and extend the duration of back-up power generation. Building resilience can be modeled using temperature decay after 72 hours and two weeks using a typical weather file for Toronto following a power outage beginning January 24th. A lower TEDI has a clear correlation with improved thermal comfort resiliency for the built environment. This will play an increasingly important role as our climate changes.

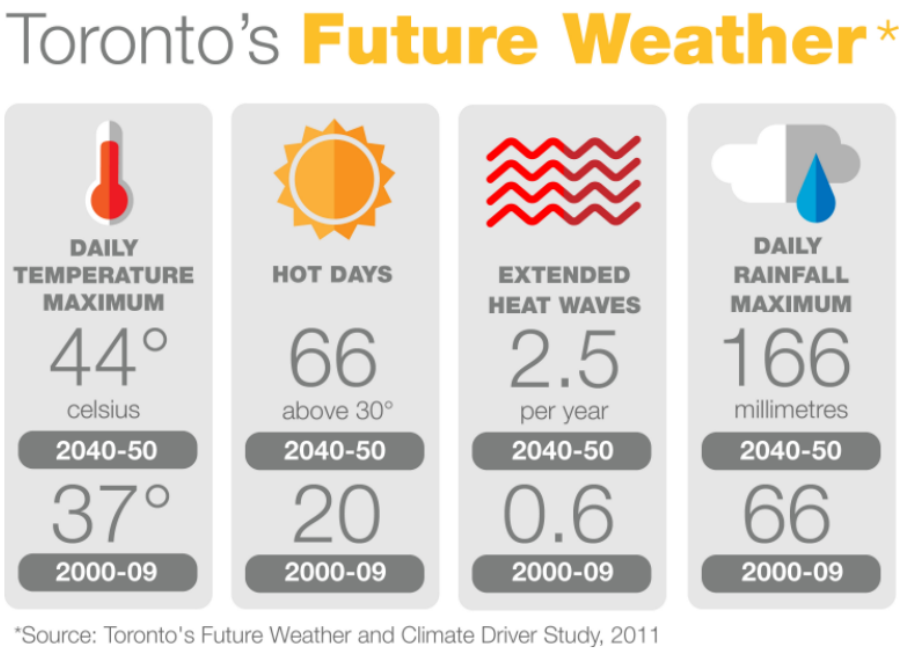


Figure 12 Future Weather in the City of Toronto

The City of Toronto has developed and published their document "Minimum Backup Power Guidelines for Multi-Unit Residential Buildings (MURB's), Voluntary Performance Standards for Existing and New Buildings, dated October 2016. The guideline outlines financially viable options to provide essential back-up power to MURB's residents in the event of long term electrical power outages.

4.1.1 BACKUP POWER GUIDELINES FOR MURBS

The guideline targets a 72-hour maintenance of non-life safety requirements to allow multi-unit residential buildings' residents to remain in their building in safety and comfort, especially to the most vulnerable. Suggested systems for increased resilience includes:

- Power provision to domestic water booster pumps;
- Power provision to hot water boilers and pumps;
- Power provision to additional elevators to the required fire fighter's elevator;
- Power provisions to sump pumps;
- Power provisions to space heating;
- Provision of a common refuge area;
- Preference of a natural gas generator due to space constraint of fuel tanks and fuel support.

5.0 FUNDING OPPORTUNITIES

5.1 TORONTO GREEN STANDARD TIER 2 AND ABOVE

Projects meeting the requirements of Tier 2 or higher levels of the Toronto Green Standard are incentivized through development charge rebates.

5.2 ENBRIDGE/UNION SAVINGS BY DESIGN PROGRAM

The Commercial Savings by Design Program is designed to guide, assist, and reward developments which improve energy efficiency and environmental performance above 15% better than building code. The program provides up to $60,000 in value per building with $15,000 of energy performance incentives, $15,000 of commissioning incentives and up to $30,000 for an Integrated Design Process.

5.3 HIGH PERFORMANCE NEW CONSTRUCTION PROGRAM

The Independent Electricity System Operator (IESO) High Performance New Construction (HPNC) program incentivizes eligible distribution-connected building owners constructing new buildings. Three application tracks are available to projects: prescriptive, engineered and custom. The custom path is the most flexible and allows project to capture whole building and innovative measures resulting in energy savings. Custom projects are eligible for incentives up to $800/kW of verified demand savings.

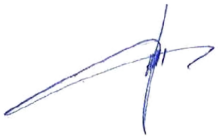
6.0 CONCLUSION

Moving forward with implementation of the above recommended actions will depend on early and ongoing engagement with developers. Consultants for Energy, Resilience and Sustainability should be engaged throughout the design process to continually manage the projects compliance for TGS, building code and project energy goal requirements. The energy prediction in this report are preliminary; a detailed energy model should be performed once building and system designs are finalized to assess the development's performance. In addition, achieving Tier 2 of TGS v.2 will be further investigated in the Energy Efficiency Report filed as part of a Site Plan Control Application.

Some measures outlined within this report, such as geo-exchange, solar PV and district energy, required further study beyond the scope of the Energy Strategy Report.

Regards,

STANTEC CONSULTING LTD.



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