



SHADOW STUDY REPORT

69 & 117 JOHN STREET, MISSISSAUGA, ON

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October 2024

1. INTRODUCTION

The neighborhood surrounding the vicinity of John Street is a diverse hub, consisting of a variation of medium to high density residential buildings, institutional facilities, outdoor amenities, commercial spaces and transit oriented services. The site of 69 and 117 John Street aims to add a rich and vibrant proposal to an already diverse neighborhood, by introducing a series of high-rise towers that gently crescendos to meet the ever-evolving skyline of Mississauga’s Downtown Core.

The architectural composition of the building proposed consists primarily of three high-rise components that begin with a 20 storey building to the east, and two more towers of 30 storeys and 31 storeys set towards the west. The building also features a 12 storey podium that connects all three towers. This structure is drastically set back from John Street in order to gracefully frame the entryway to the site. A 30 meter setback to the north has also been implemented to allow for mitigating factors due the proximity of the Canadian Pacific Railway

corridor. To the east, the building gently tapers down to allow ample access to a portion of the site that has been designated as a future parkland space.

The proposals design has taken several factors into consideration in achieving a composition that effectively serves its unique sites conditions as well as to respect and mitigate its impact on the surrounding context. Some of these design strategies include; meeting the specifications of the required angular planes stemming from the adjacent properties rear or side yards, adequate terracing of the building to better articulate it form, providing ample separation between the towers and adjusting the proportion of the floor plates.

While these aspects of the design have lent themselves to the buildings overall form and massing, these design intentions have also become critical factors in sculpting the building in order to mitigate the shadow impacts on the surrounding lands. These impacts shall be explored in great detail in this report to rationalize the form and massing of the proposed building.

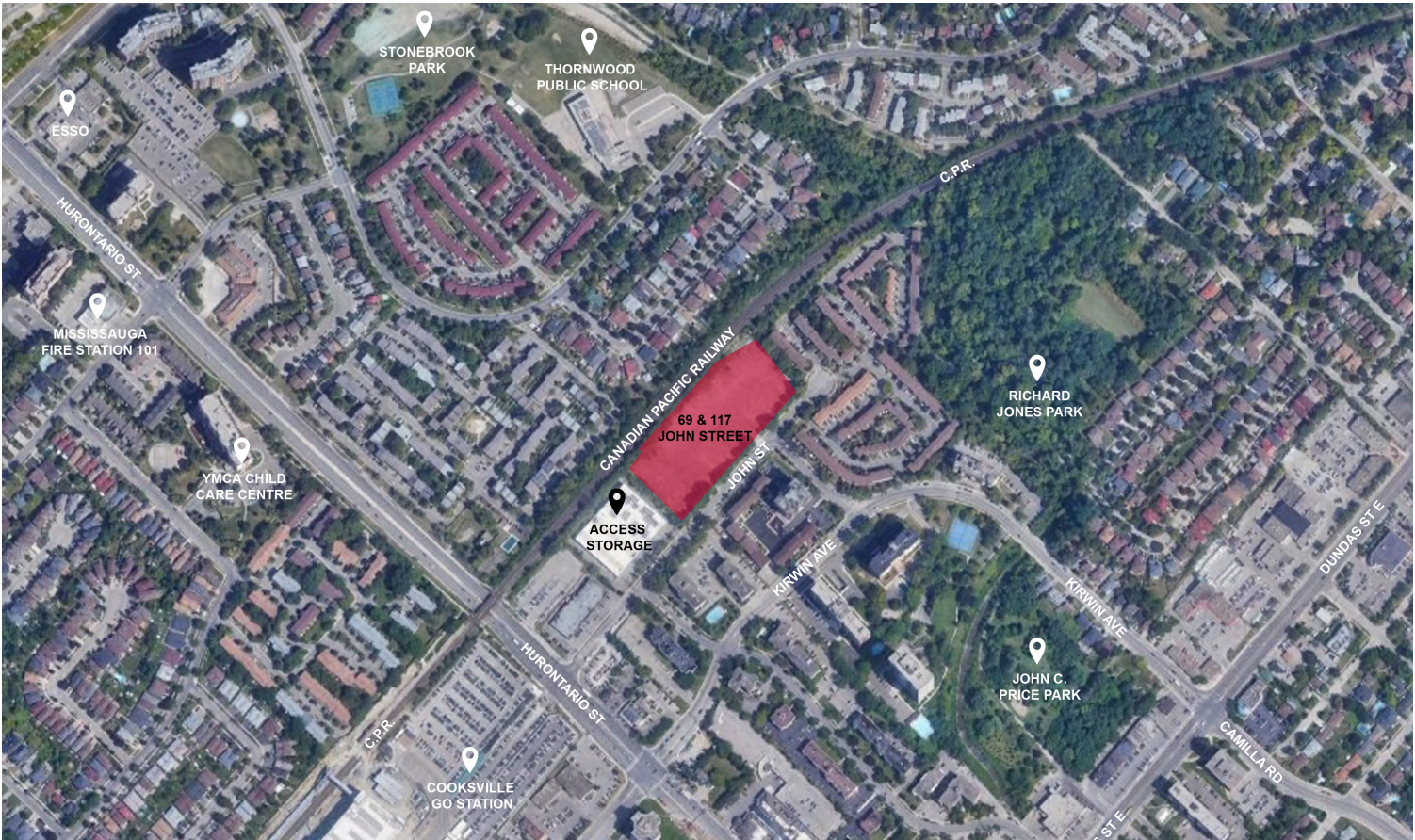


Figure 01: Proposed Development Location

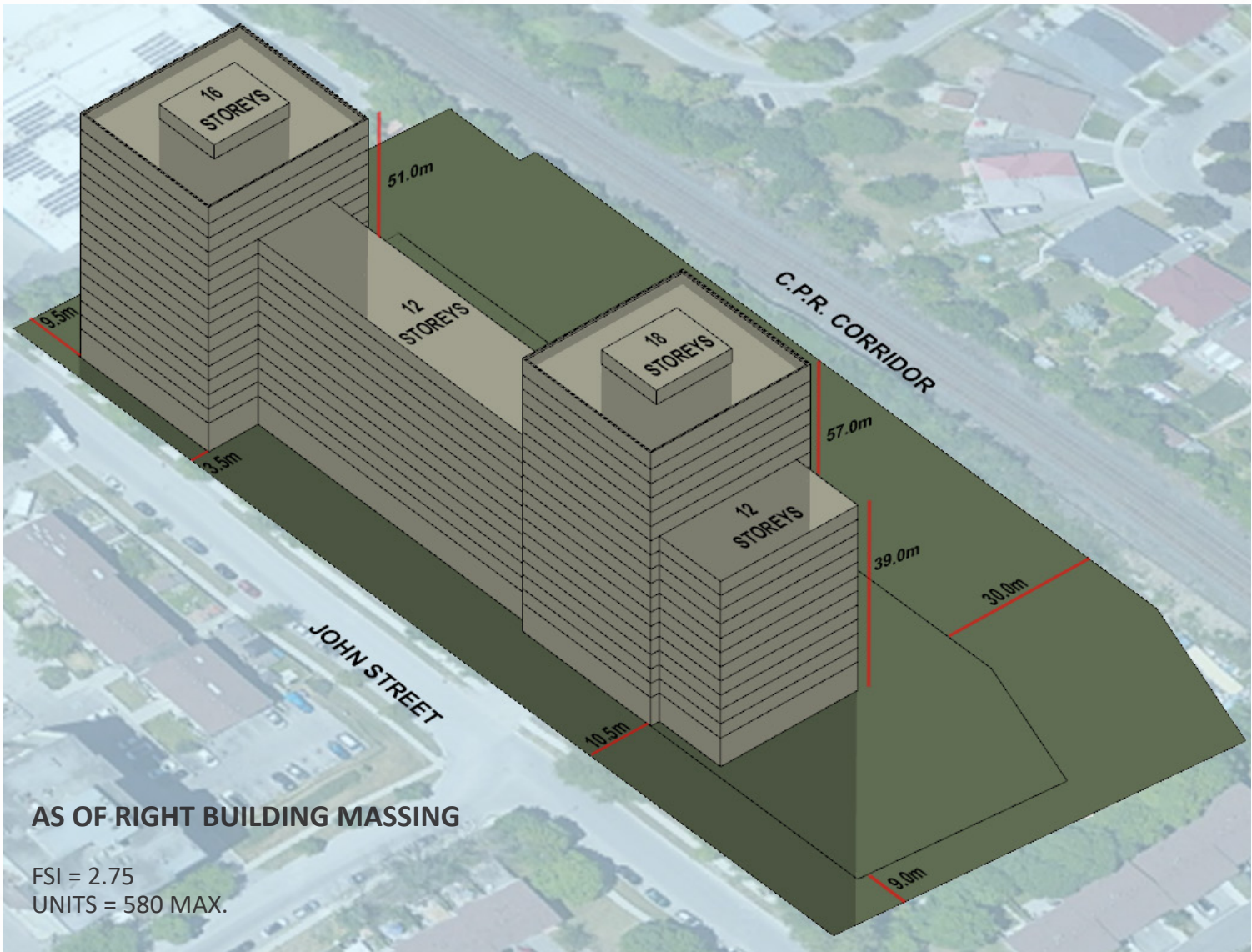


Figure 02: “As of Right” Massing Diagram

2. METHODOLOGY, STANDARDS AND DATA

The following shadow study examines two distinct sets of shadow studies to provide a comparative analysis of the proposal described previously to an “as of right” massing strategy. This shadow study report also takes into account a series of existing site conditions that merit the shadow impacts of the proposal.

These elements shall be presented and analyzed to demonstrate the design challenges that have been overcome to mitigate the shadows and validate its overall conformity to having a minimal shadow impact on the surrounding context.

Please take note that the following shadow study report and its accompanied shadow study documents have been prepared in reference to the City of Mississauga’s Urban Design Terms of Reference: Standards for Shadow Studies (July 2024).

The latitude and longitude (43°35’10”N 79°37’10”W) used for the site in shadow drawings, and the astronomic north was determined by cross referencing Google Earth coordinates and Geolocation in SketchUp 2023. The base plan, building massing and terrain were referenced from Land Surveys and ArcGIS 3D Terrain data provided through The City of Mississauga’s open data files to provide an accurate depiction of the site and its conditions.

3. CRITERIA

3.1 RESIDENTIAL PRIVATE OUTDOOR AMENITY SPACES

The proposed shadow must not exceed more than two consecutive hourly test times on areas such as private rear yards, decks, patios, and pools of surrounding residential dwellings on June 21 and Sept 21.

JUNE 21

When analyzing the shadow in conformity with Criteria 3.1 for the June 21 test times, the proposals shadow does impede some portions of the “No Impact Zones” to the south of the site for more than two consecutive hourly test times during this test period. This occurs between the span of 16:20 to 19:33. However, it is important to note that this impact is minimized as the yards in these

regions are already in shadow, primarily casted by the fences enclosing these backyards in the later of these select times. This resulting shadow produced by the yard fences is due to the low sun angle conditions of the setting sun.

This aspect of yard coverage has been analyzed more carefully on the following page with a series of diagrams to illustrate that there is little to no shadow impact following the 18:20 test time in June. Moreover, some of the yards immediately adjacent (3180 Little John Lane) have sheds, gazebos and other structures that already shade or cover a majority of the yards. (Figure 03)

Therefore, the proposals shadow will not majorly contribute towards introducing any ‘new’ shadows to severely impact or impede these “No Impact Zones”.

TIME	IMPACT
7:07	No Impact
7:20	No Impact
8:20	No Impact
9:20	No Impact
10:20	No Impact
11:20	No Impact
12:20	No Impact
13:20	No Impact
14:20	No Impact
15:20	No Impact
16:20	Impact On Townhomes Across John Street, Directly To The South And South-East. With Partial Coverage On Little John Lane
17:20	Impact On Townhomes Across John Street, Directly To The South And South-East. With Partial Coverage On Little John Lane
18:20	Minimal Impact On Townhomes Across John Street, Directly To The South And South-East. With Coverage On Little John Lane
19:20	No Impact. Zones Shadowed Primarily By Own Yard Fences
19:33	No Impact. Zones Shadowed Primarily By Own Yard Fences

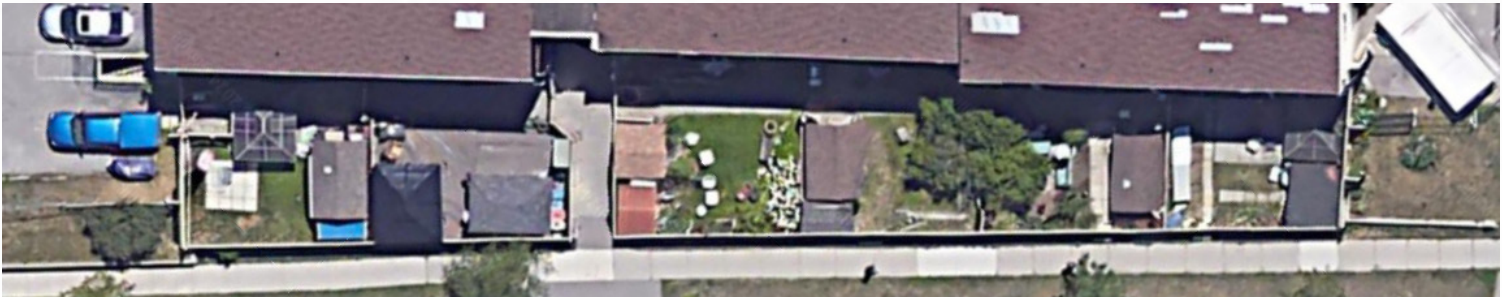


Figure 03: Existing Structures Impede Coverage of Yards

SEPTEMBER 21

Upon examining the shadow study analysis of the September 21 test times, it is apparent that there is a drastic contrast between existing shadows and the new shadows casted by the proposal. In the early hours of 8:35am it is apparent that the shadows casted by several of the existing townhomes and houses to the north of the tracks already bear a significant impact on their own yards. These conditions persist up to 11:12am. During these times there are no new shadows being casted on the townhome to the north for more than two consecutive test times. To the north-east, the semi-detached house of 94 Voltarie Cres. does receive a shadow for three consecutive test times. However it is important to note two conditions during the third hour of impact. Primarily, the area of impact on the specific yard at both 10:12am and 10:12am both cover less than 10% of the “no impact zone” in this area. Moreover, this portion of shadow, being the leading edge of the shadow represents a gradient effect or penumbra. That is to say,

the shadow at these intervals are not a harsh or absolute line separating light from shadow, but is a soft, feathered shadow. To better understand the delineation of a shadows umbra and penumbra please refer to Figure 04. A more precise analysis of these key areas can also be examined on the following pages.

As for the later hours of impact, between 16:12 to 17:48 it is apparent that the new shadow does not impact the yards of the townhouses to the south-east for more than two consecutive test times. This is because the yards in question are shadowed by their own fences for the last test time (17:48). This indicates that the new shadows during the evening periods of September 21 does not impede any “no impact zones” beyond two- consecutive test times. This has also been evaluated further in the following equinox diagrams.

Thus, the proposal casts no ‘new’ shadows on these areas maintaining the criteria of not exceeding an impact of more than two consecutive hourly test times.

TIME	IMPACT
8:35	Minimal Impact On Yards Of Town House To The North & Yards of Semi-Detached Houses Along Bend Of Voltare Cres.
9:12	Minimal Impact On Yards Of Town House To The North & One Yard of Semi-Detached Houses Along Bend Of Voltare Cres.
10:12	Impact On Yards Between Set Of Town House To The North & Yards of Semi-Detached Houses Along Bend Of Voltare Cres.
11:12	Impact On Single Yard of Town House To The North
12:12	No Impact
13:12	No Impact
14:12	No Impact
15:12	Impact On Townhomes To The East
16:12	Impact On Townhomes To The East & Across John Street To The South-East (Shadowed Primarily By Own Yard Fences).
17:12	Impact On Townhomes Across John Street To The South & South-East (Shadowed Primarily By Own Yard Fences).
17:48	Impact On Townhomes Across John Street To The South & South-East (Shadowed Primarily By Own Yard Fences).

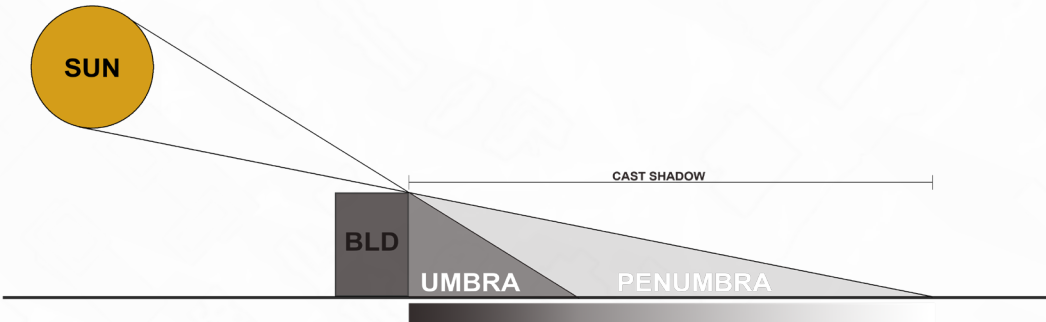


Figure 04: Umbra vs. Penumbra



06:20 PM JUNE

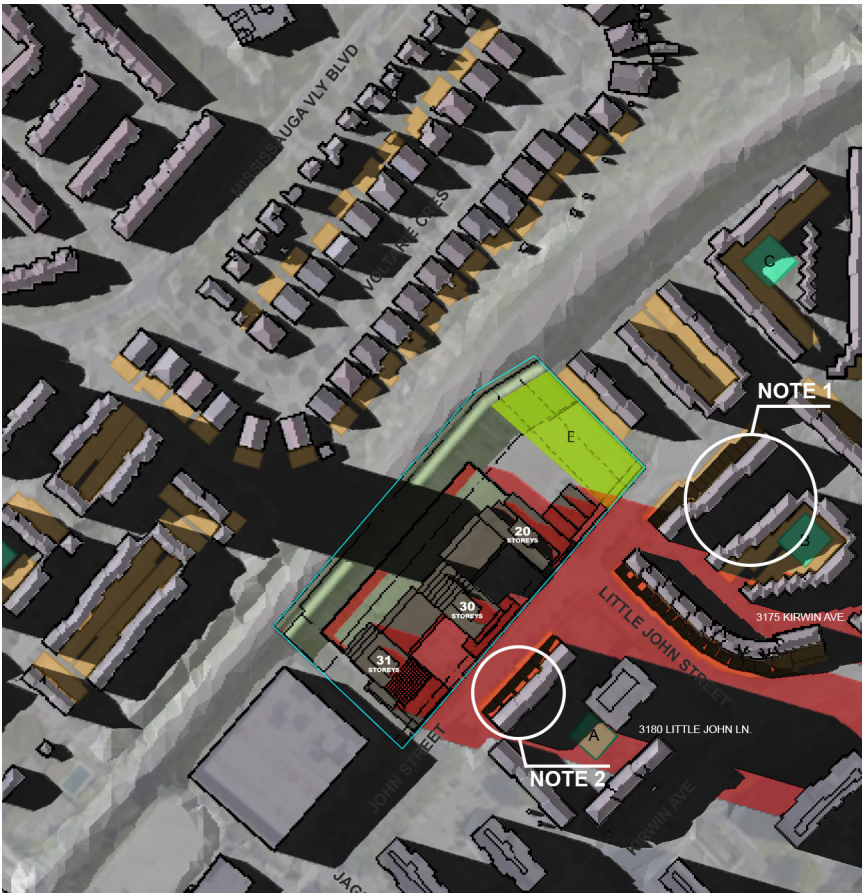
NOTE # 1:

Minimal impact of the proposed building on the yards at 3175 Kirwin Ave; yards begin to be impacted by shadows casted by the fence. There are only partial new shadow cast on these backyards at this time.

NOTE # 2:

Partial impact of the proposed building on the yards at 3180 Little John Ln; yards begin to be impacted by shadows casted by the fence. Yards also feature a variety of accessory structures that impede the “no impact zone”.

Communal Outdoor Area A is also partially shaded. Due to this leading edge of the impact at this time, there is shadow/ penumbra for 1 hour.



07:20 PM JUNE

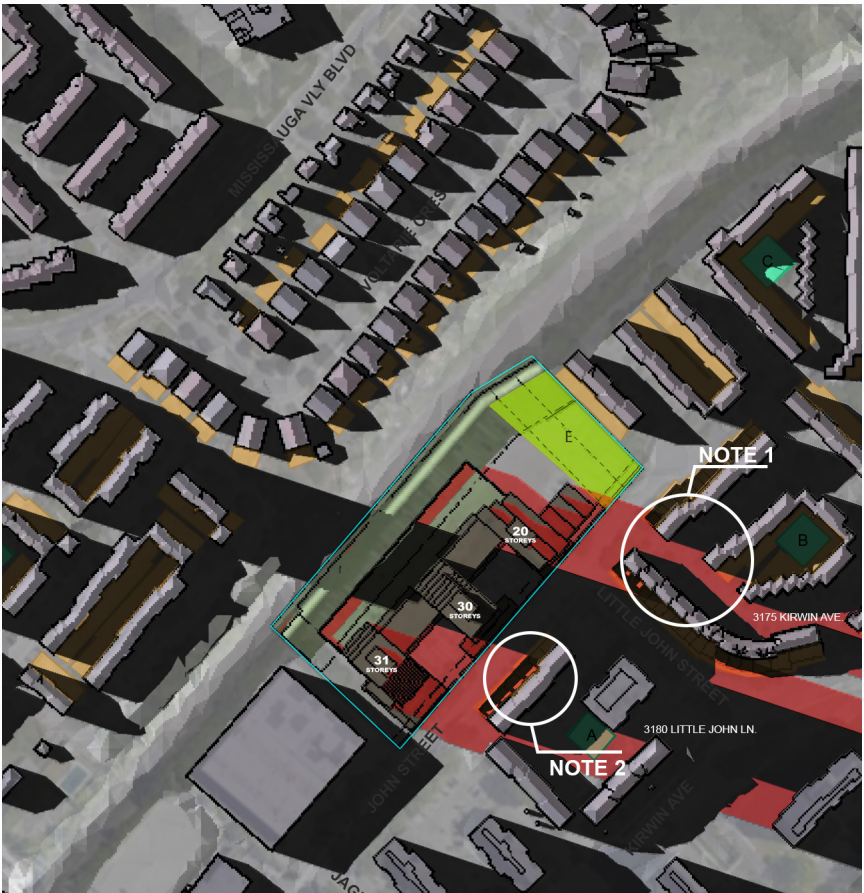
NOTE # 1:

Negligible impact of the proposed building on the yards at 3175 Kirwin Ave; low angle of setting sun cause yards to be impacted by shadows casted by the fence. This is in compliance with Mississauga’s criteria. At 3175 Kirwin Ave, there is no significant new shadow cast on these backyards at this time.

Also note that communal outdoor Area A is only partially impacted by the proposals shadow. Existing shadow contributes to shadowing the amenity space. Area B is not impacted in this hour or the next by any new shadows. Only existing shadows contribute.

NOTE # 2:

Negligible impact of the proposed building on the yards at 3180 Little John Ln; low angle of setting sun cause yards to be impacted by shadows casted by the fence. Yards also feature a variety of accessory structures that impede the “no impact zone”.



07:33 PM JUNE

NOTE # 1:

Negligible impact of the proposed building on the yards at 3175 Kirwin Ave; low angle of setting sun cause yards to be impacted by shadows casted by the fence. This is in compliance with Mississauga’s criteria. At 3175 Kirwin Ave, there is no new shadow cast on these backyards at this time.

NOTE # 2:

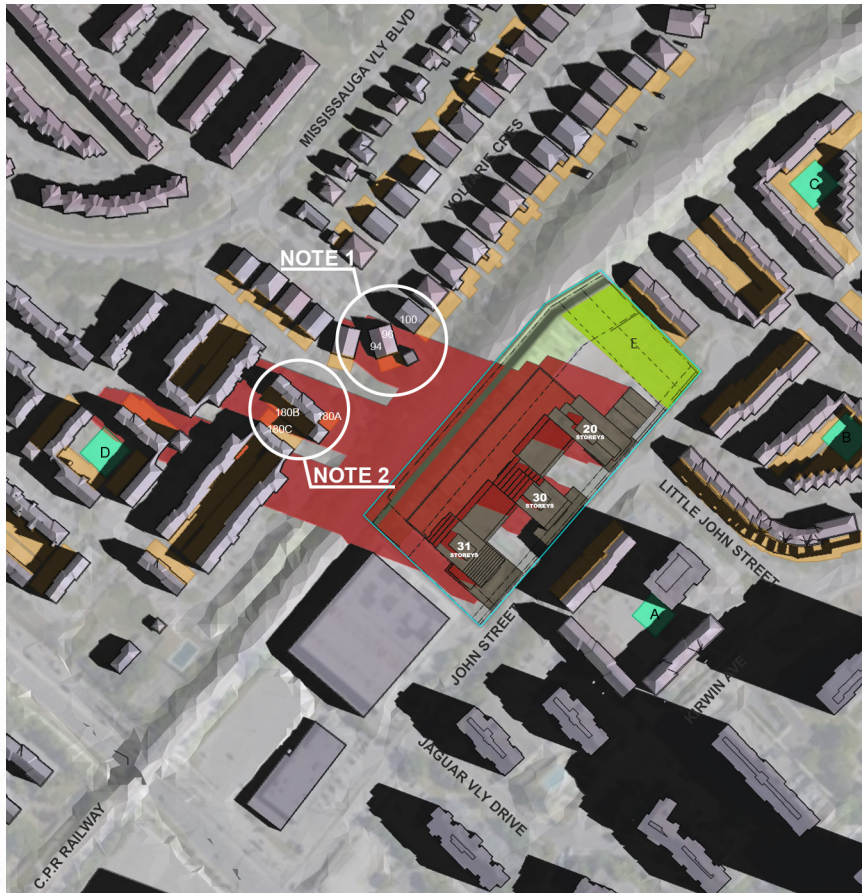
Negligible impact of the proposed building on the yards at 3180 Little John Ln; low angle of setting sun cause yards to be impacted by shadows casted by the fence. Yards also feature a variety of accessory structures that impede the “no impact zone”.

UMBRA:

Full Shadow, 100% Of The Complete Shadow On The Building

PENUMBRA:

Partial Shadow, A Gradient From 100% To 0% Shadow On The Building.



09:12 AM SEPTEMBER EQUINOX

NOTE # 1:

Impact of the proposed building on the yards at 94 and 100 Voltarie Cres; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. At 100 Voltarie Cres, the shadow cast is only a small percentage of the backyard.

Impact of the proposed building on the yards at 96 Voltarie Cres; there is shadow/ penumbra for 1 hour.

NOTE # 2:

Impact of the proposed building on the yard 180a; there is shadow/ penumbra for 1 Hour.

Impact of the proposed building on the yards 180b and 180c voltarie cres; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. During this time the majority of the shadow cast is from the existing houses, with only a small percentage the proposed building.



10:12 AM SEPTEMBER EQUINOX

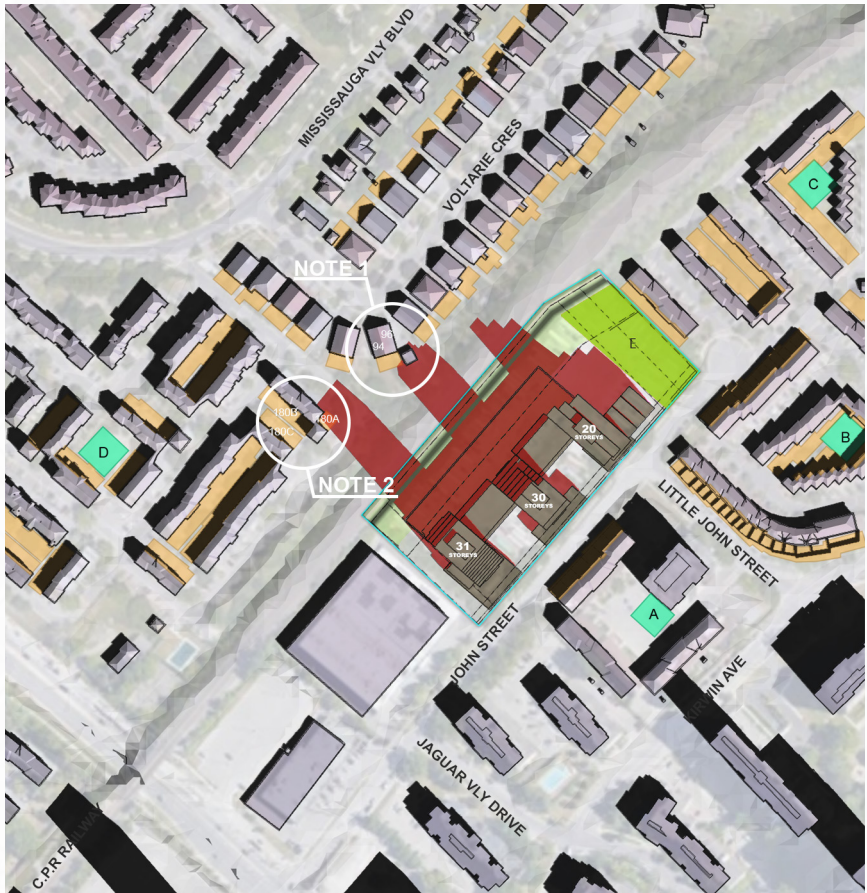
NOTE # 1:

Impact of the proposed building on the yards at 88, 90 and 102 Voltarie Cres; there is shadow/ penumbra for 1 hour.

Impact of the proposed building on the yards at 94 and 100 Voltarie Cres; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. At 94 Voltarie Cres, the shadow cast is only a small percentage of the backyard at this time.

NOTE # 2:

Impact of the proposed building on the yards 180b and 180c; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. On the yard 180b a percentage of the shadow cast is from the existing houses during this time of the day.



11:12 AM SEPTEMBER EQUINOX

NOTE # 1:

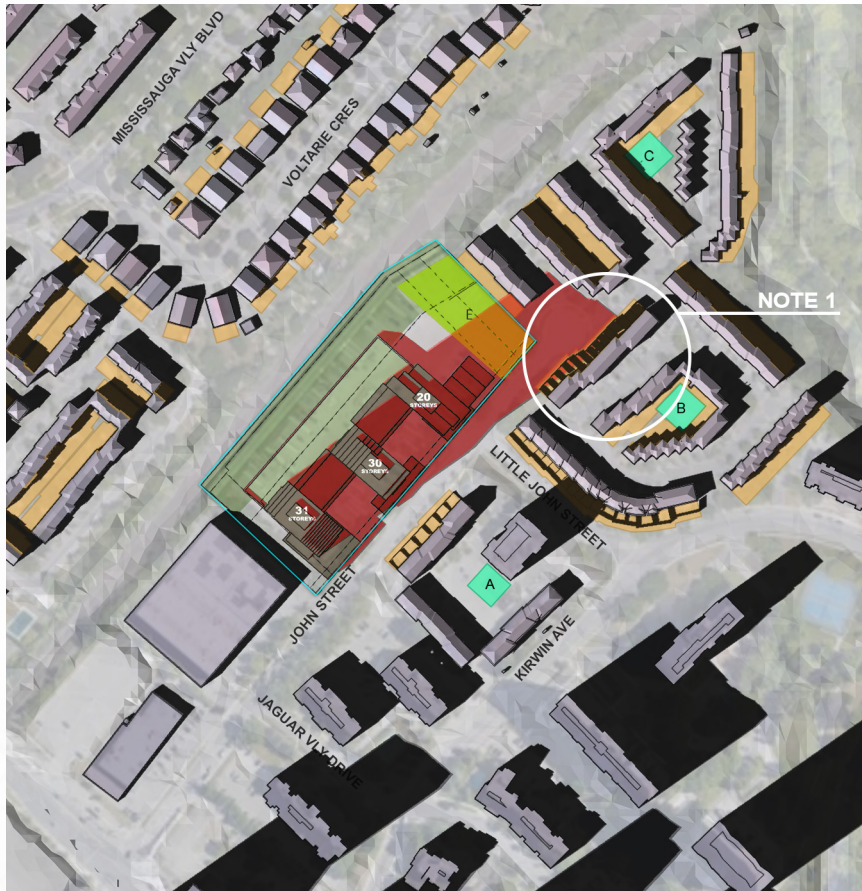
Minor impact of the proposed building on the yards at 96 Voltarie Cres; there is shadow/ penumbra for 1 hour.

NOTE # 2:

Impact of the proposed building on the yards 180a; there is shadow/ penumbra for 1 hour.

UMBRA:
Full Shadow, 100% Of The Complete Shadow On The Building

PENUMBRA:
Partial Shadow, A Gradient From 100% To 0% Shadow On The Building.



04:12 PM SEPTEMBER EQUINOX

NOTE # 1:

Impact of the proposed building on John Street; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. A percentage of the shadow cast is from existing yard's fences.

UMBRA:

Full Shadow, 100% Of The Complete Shadow On The Building

PENUMBRA:

Partial Shadow, A Gradient From 100% To 0% Shadow On The Building.



05:12 PM SEPTEMBER EQUINOX

NOTE # 1:

Minor impact of the proposed building on John Street; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. A percentage of the shadow cast is from existing yard's fences.

Minor impact of the proposed building on Little John Street; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. A percentage of the shadow cast is from existing yard's fences and other existing buildings.

No impact from proposed building on amenity Area B.

NOTE # 2:

Impact of the proposed building on John Street; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. A percentage of the shadow cast is from existing yard's fences.



05:48 PM SEPTEMBER EQUINOX

NOTE # 1:

No impact of the proposed building on the yards at John Street. All shadow cast are from existing yard's fences.

Minor impact of the proposed building on Little John Street; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. A percentage of the shadow cast is from existing yard's fences and other existing buildings.

Impact from proposed building on amenity Area B; there is shadow/ penumbra for less than an hour.

NOTE # 2:

Impact of the proposed building on John Street; there is shadow/ penumbra for no more than 2 consecutive hours. This is in compliance with Mississauga's criteria. A percentage of the shadow cast is from existing yard's fences.

05:12 PM SEPTEMBER EQUINOX

NOTE # 1:

Negligible impact of the proposed building on the yards at 3175 Kirwin Ave; low angle of setting sun cause yards to be impacted by shadows casted by the fence. This is in compliance with Mississauga’s criteria. At 3175 Kirwin Ave, there is no new shadow cast on these backyards at this time and those following.

For this area of study, all fences have been modeled as 2 meter high fences placed on grade.

NOTE # 2:

Partial impact of the proposed building on the yards at 3175 Kirwin Ave; yards begin to be impacted by shadows casted by the fence. These yards also feature a variety of accessory structures such as patio umbrellas, gazebos, and sheds that impede the “no impact zone”.

For this area of study, all fences have been modeled as 2 meter high fences placed on grade.

NOTE # 3:

Partial impact of the proposed building on the yards at 3180 Little John Ln; yards begin to be impacted by shadows casted by the fence. These yards also feature a variety of accessory structures such as patio umbrellas, gazebos, and sheds that impede the “no impact zone”.

For this area of study, all fences have been modeled as 2 meter high fences placed on grade.

NOTE # 4:

Future Parkland Area E can be seen to be similarly partially shaded in this hour, the preceding hours and the following hours. However, due to this leading edge of the impact at this time, there is shadow/penumbra for those hours.

UMBRA:

Full Shadow, 100% Of The Complete Shadow On The Building

PENUMBRA:

Partial Shadow, A Gradient From 100% To 0% Shadow On The Building.





Figure 05: 3175 Kirwin Ave. Accessory Structures Coverage



Figure 07: 2 Meter Yard Fences Along Little John Lane



Figure 06: 3180 Little John Ln. Accessory Structures Coverage



Figure 08: 2 Meter Yard Fences Along John Street

3.2 COMMUNAL OUTDOOR AMENITY AREAS

The proposed shadow must not exceed more than 50% of the test times covering areas such as children’s play areas, school yards, tot lots, sandboxes, wading pools and other communal outdoor amenity areas on June 21, Sept 21 and Dec 21.

When analyzing the shadow in conformity with Criteria 3.2, the proposals shadow indicates that the shadows casted on these communal areas barely impede the conditions for the “Sun Access Factor” on each of the test dates. Thus, maintaining that the shadows casted cover at most, 10% to 20% of these spaces during the indicted test times. With the only exception being the impact

on the proposed future parkland to the east during the Dec 21 test period. The key communal outdoor amenity spaces have been indicated (teal colour) in the attached shadow study diagrams and labeled ‘A’ through ‘E’ in the diagrams attached. ‘A’ is located at 3180 Kirwin Ave. ‘B’ is located at 3175 Kirwin Ave. south-side. ‘C’ is located at 3175 Kirwin Ave. north-side. ‘D’ is located at 180 Mississauga Valley Blvd. ‘E’ is the dedicated park space proposed to the east.

The method of calculation for the Sun Access Factors listed in the table below have been measured and calculated as per the method (3.2a) cited in the City of Mississauga’s Urban Design Terms of Reference: Standards for Shadow Studies.

ZONES	SUN ACCESS FACTOR JUNE 21	SUN ACCESS FACTOR SEPTEMBER 21	SUN ACCESS FACTOR DECEMBER 21
Area A – 335 m2	0.83	1.00	1.00
Area B – 175 m2	1.00	0.93	1.00
Area C – 100 m2	1.00	1.00	0.95
Area D – 750 m2	1.00	0.98	1.00
Area E – 2,380 m2	0.94	0.77	0.41

JUNE 21

TIME	IMPACT
7:07	No Impact
7:20	No Impact
8:20	No Impact
9:20	No Impact
10:20	No Impact
11:20	No Impact
12:20	No Impact
13:20	Less Than 5 % Impact On Area E (Future Parkland)
14:20	Less Than 10 % Impact On Area E (Future Parkland)
15:20	Less Than 15 % Impact On Area E (Future Parkland)
16:20	Reduction Of Impact On Area E (Future Parkland)
17:20	Reduction Of Impact On Area E (Future Parkland)
18:20	Reduction Of Impact On Area E (Future Parkland), Partial Impact On Zone A
19:20	Minor Impact On Area E (Future Parkland), 65% Impact On Zone A - 35% Covered By Existing Shadows
19:33	Minor Impact On Area E (Future Parkland), 35% Impact On Zone A - 65% Covered By Existing Shadows

SEPTEMBER 21

TIME	IMPACT
8:35	Minor Impact On Area D With 20% Impact Due To New Shadow & 80% Covered By Existing Shadows
9:12	Minor Impact On Area D With Less Than 10 % Impact Due To New Shadow & Partially Covered By Existing Shadows
10:12	No Impact
11:12	No Impact
12:12	Less Than 10 % Impact On Area E (Future Parkland)
13:12	Partial Impact On Area E (Future Parkland)
14:12	Partial Impact On Area E (Future Parkland)
15:12	Partial Impact On Area E (Future Parkland)
16:12	Partial Impact On Area E (Future Parkland)
17:12	Partial Impact On Area E (Future Parkland)
17:48	Partial Impact On Area E (Future Parkland), 80% Impact On Zone B - 20% Covered By Existing Shadows

DECEMBER 21

TIME	IMPACT
9:19	Less Than 10 % Impact On Area E (Future Parkland), Additional Shadow Cast On Area E By Existing Shadows
10:17	Partial Impact On Area E (Future Parkland)
11:17	Growing Impact On Area E (Future Parkland)
12:17	Growing Impact On Area E (Future Parkland)
13:17	Growing Impact On Area E (Future Parkland)
14:17	Growing Impact On Area E (Future Parkland)
15:15	Reducing Impact On Area E (Future Parkland)

To aid in the analysis of the “Sun Access Factor” it is worthy to note that December shadow, due to the low angle of the sun produce long drawn out shadows. This means that even small/short buildings and objects cast very long shadows. Thus, the proposal creates long shadows that cover a larger swath of area. Moreover, the low angle also contributes to larger penumbra shadows dictating that the shadows during the December times, while lengthy, are not hard or harsh shadows. These shadows are rather softer and form a gradient over the future parkland to the east. Therefore, based on the analysis of the December shadow falling short of the recommended “Sun Access Factor” of 50% by a mere 9% which seems to be within a reasonable and acceptable range of impact. Note that even designs such as the “As of Right” would yield similar results during the December months despite its significant reduction in building height.

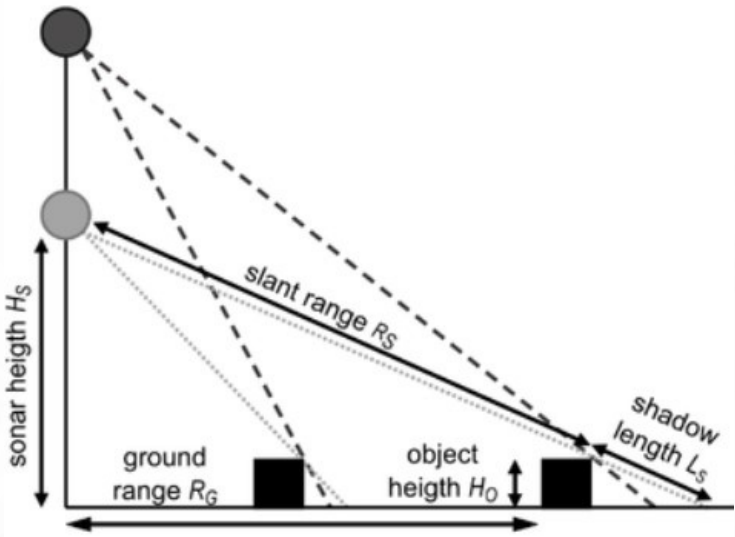


Figure 09: Sun Angle vs Shadow Length

3.3 COMMUNAL OUTDOOR AMENITY AREAS

(3b - Commercial, Employment and High Density Residential Streets)
The proposed shadow must allow for full sunlight on the opposite boulevard including the full width of the sidewalk on Sept 21, for a total of at least five hours between 12:12pm to 2:12pm and an additional two hours from either 9:12am to 11:12am or 3:12pm to 5:12 pm.

When analyzing the shadow in conformity with Criteria 3.2, the proposals shadow does not impede any portion of the public realm as per the city’s terms of reference. Looking at the suggested times, the opposite boulevard

and sidewalks are clear between the hours of 9:12am to 11:12am. It is also noted that the opposite boulevard and sidewalks are clear between the hours of 12:12pm to 2:12pm. These test periods in itself suggest that the proposal and its shadows meet the criteria set out by section 3.2. Not only does the proposal meet the set out criterial but also exceeds the recommendations by providing a clear boulevard through 3:12pm. Moving to the following test interval, it is noted that the initial 3:12pm test time is clear but the following two test times are impeded by a minor shadow. This occurs during the 4:12pm and 5:12pm test times. However this impact is negligible as it allows for full sun light for a total of five hours between the suggested interval times.

SEPTEMBER 21: 3b

TIME	IMPACT
9:12	No Impact
10:12	No Impact
11:12	No Impact
12:12	No Impact
13:12	No Impact
14:12	No Impact
15:12	No Impact
16:12	Shadow occurs on the north and partially the south side of John Street/Sidewalks.
17:12	Shadow occurs on the north and partially the south side of John Street/Sidewalks.



Figure 10: John Street Boulevard

3.4 TURF AND FLOWER GARDENS IN PUBLIC PARKS

Requires turf and flower gardens in public parks to have direct sunlight for 7 test times during the Sept 21 test period.

There are no distinguished Public Parks within the immediate vicinity that will be impacted by the shadow of the proposed development. The only zones of impact

that could be considered yet are not Public Parks are the playground/park amenity spaces located at 3175 Kirwin Ave. and 180 Mississauga Vly Blvd. However these zones have access to adequate sunlight for at least 9 or 10 test times. 3175 Kirwin Ave. has direct sunlight between the hours of 8:35 to 17:12. Whereas 180 Mississauga Vly Blvd. has direct sunlight between the hours of 10:12 to 17:48. This exceeds the recommended terms of maintaining direct sunlight for at least 7 test times.

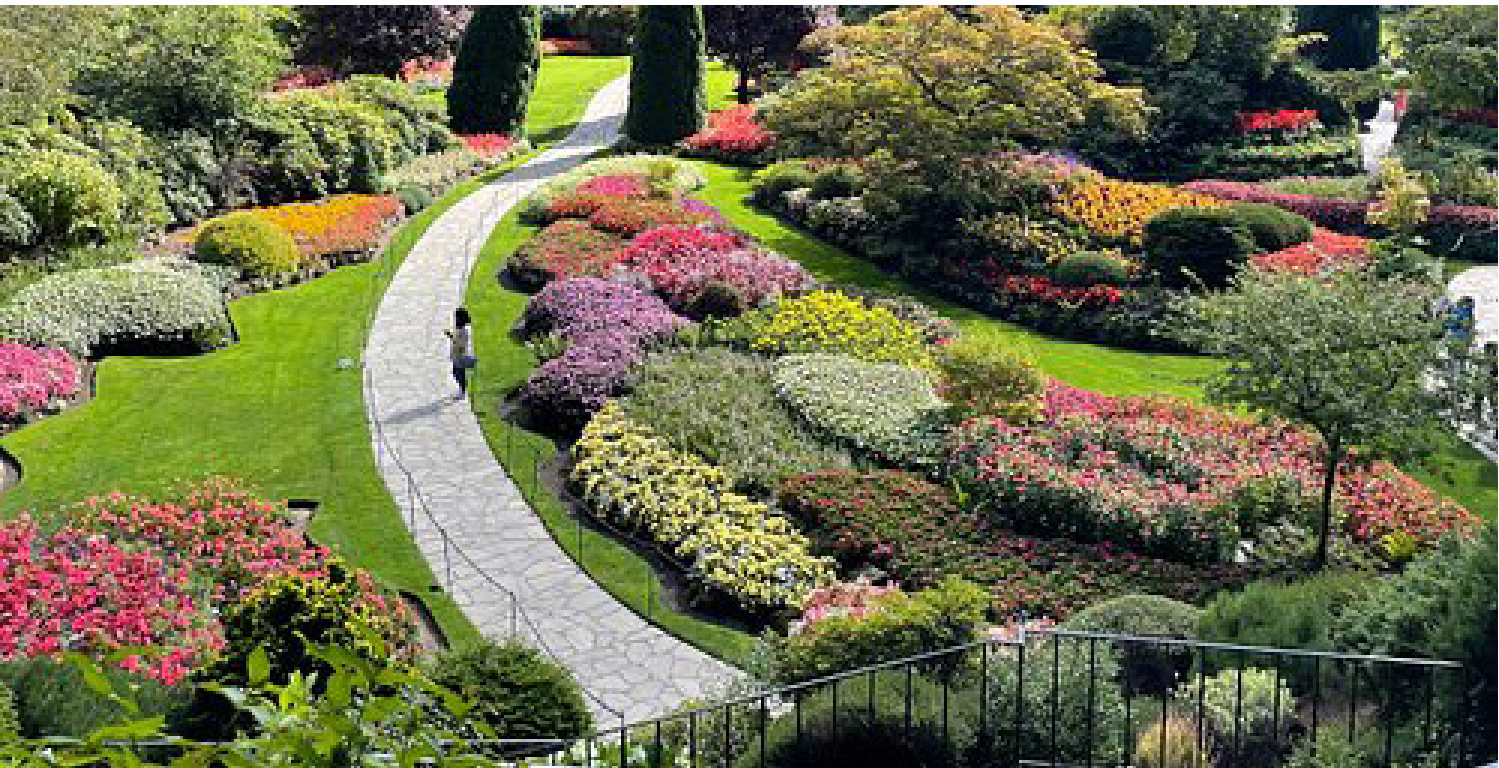


Figure 11: Turf and Flower Gardens

3.5 BUILDING FACES TO ALLOW FOR POSSIBILITY OF USING SOLAR ENERGY

Shadow impacts from proposed developments should not exceed 1hr in duration on the roofs, front, rear and exterior side walls of adjacent low rise (1-4 storeys) residential buildings on Sept 21 to allow for possibility of harvesting solar energy. The “no impact zone” shall be 3m offset from the exterior walls of said residential properties.

The North-Western Townhouse Complex (180 Mississauga Vly Blvd.) and Semi-Detached Homes (along Voltarie Crescent) will be impacted by the proposed

developments shadows during September 21. These shadows however only span between the test times of 8:35 to 10:12 during which time the shadows move quickly. Thus not posing a major impairment towards the potential for harvesting solar energy. Most of these regions may already be shaded or impeded by shadows due to the proximity of trees, fences and other neighboring structures. Similar occurrences take place for the Easterly Townhouse Complex (3175 Kirwin Ave.) between the test times of 17:12 and 19:18. The Townhouse Complex to the immediate east is impacted as the initial shadow at 16:12 is within the 3 meter offset however this shadow passes over within the 1 hour duration.

CONCLUSION

For the purpose of fulfilling the application of this proposal, the Mississauga Official Plan necessitates a Shadow Study. The assessment above has followed the Urban Design Terms of Reference: Standards for Shadow Studies (July 2024) to analyze the proposed development’s shadowing and its impact on the surrounding area.

This study assessed the ‘new’ shadow impacts on the recommended test periods of June 21, September 21 and December 21, conducted at Solar Noon, and at hourly intervals before and after Solar Noon, up to and including 1.5hrs after sunrise and 1.5hrs before sunset, as indicated.

The latitude and longitude (43°35’10”N 79°37’10”W) used for the site in shadow drawings, and the astronomic north was determined by cross referencing Google Earth coordinates and Geolocation in SketchUp 2023. The base plan, building massing and terrain were referenced from Land Surveys and ArcGIS 3D Terrain data provided through The City of Mississauga’s open data files to provide an accurate depiction of the site and its conditions.

Upon reviewing the information above, the shadow impact of the proposed development has a minimal impact on the surrounding context primarily during the later test times of the June 21, on private outdoor amenity spaces. However as discussed previously, the orientation and configuration of some of these properties do not introduce any significant new shadow in addition to self-imposed shading or shadowing.

Mitigating these shadow impact factors has been a foremost concern to the design team in approaching the design of the structure. Sculpting the architectural massing of the building was primarily based on controlling and mitigating the shadow impact. It is with this forethought and consideration that the design team has come to the proposed design resolution.

It is also important to note that the “As of Right” building massing also contributes to a similar shadow impact over similar test times. This indicated that although the

proposed building exceeds some of the zoning conditions, the shadows casted do not differ in terms of negatively impacting the surrounding context.

Further, as part of analyzing the community outdoor amenity areas, the shadow impact on the proposed park land to the east (Area E) does indicate a sun access factor less than 0.5 during the Dec 21 test times. However, it is important to note that the shadows in this area are casted by the first 6-8 storeys of the building due to the low sun angle. This causes longer shadows at the early hours between sunrise and shortly before solar noon, covering a greater area. The sun access factor during the June 21 and Sept 21 test times are far greater than 0.5. Providing greater sun access to the proposed park during the more functional and active periods/seasons of the year.

Moreover, if an “As of Right” building massing is held to the same criterial, the shadow impact would not only impact the “Sun Access Factor” in the June and September months more but also contribute to a lower December “Sun Access Factor”.

Therefore, the proposal for 69 & 117 John Street has undergone a vigorous design process in order to tailor its form and massing it hopes of respecting the existing context and minimizing its implications on the surrounding areas.

The proposed heights of the towers on the lot are 31, 30 and 20 storeys, with the eastern portion of the site seeing a gradual stepping downward. In the scenario of the building design, height limitations were assessed to drastically mitigate shadowing of neighboring properties, therefore, various design studies with varying tower heights and cutbacks led the to the proposed massing being presented here.

These studies have allowed the design team to assess which shadowing criteria were affected and informed the design decision making process and dictated an appropriate resolution for the tower heights.

The proposed heights and massing respect the terms of reference set forth by adapting solutions and

considerations to resolve or minimize any probable shadow impact. Gradual reduction in floor plate sizes was also evaluated, to strategically carve away corners and edges of the building to minimize the resulting shadows. These alterations to the initial built form have given the proposal its distinct shape. A structure that gently crescendos from east to west. Growing to meet the ever evolving skyline of Mississauga’s Downtown core. While setbacks and notches respectfully grace the context, respecting the privacy of neighboring residential units without impeding their access to natural sunlight.

It is then the goal of this proposal to articulate its design in order to work alongside the city of Mississauga’s vision of the downtown core and its growth plan to create a rich, diverse and vibrant community for living.

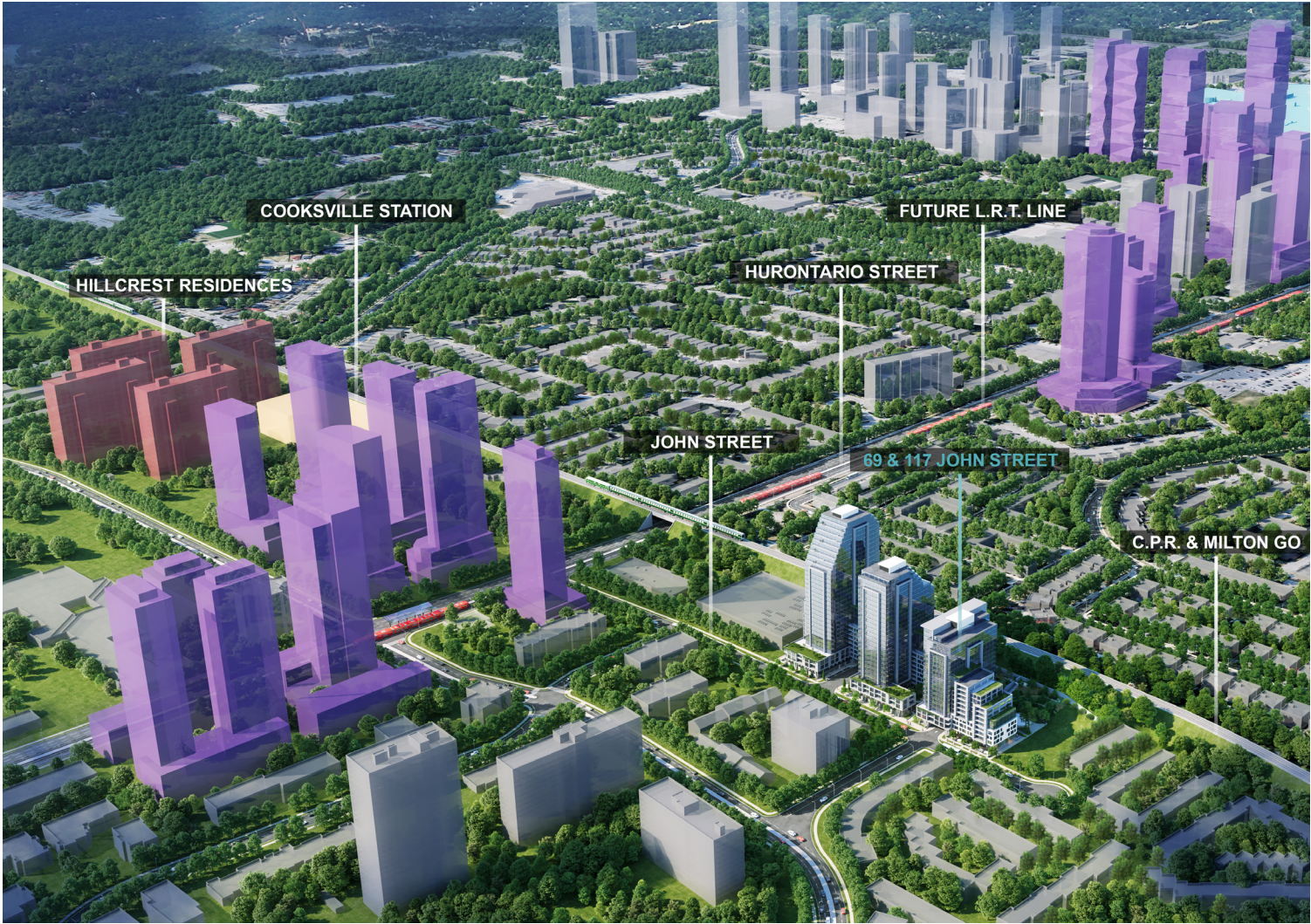


Figure 12: 69 & 117 John Street Proposal