

# **3480 Havenwood Drive and 1485 Williamsport Drive**

## **Official Plan Amendment and Zoning By-law Amendment**

### **Shadow Study**

Prepared by Urban Strategies Inc. and Architecture Unfolded

Application No. OZ 18/014 W3

May 24, 2024

## Purpose of the Shadow Study

This Shadow Study is prepared in support of the 3480 Havenwood Drive and 1485 Williamsport Drive Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) application to demonstrate the impact of the proposed infill building on the site and on the surrounding context, including building facades, private and public outdoor amenity and open spaces, public parkland, sidewalks and other components of the public realm.

The Shadow Studies illustrate the impact of development in terms of sun and daylight access to surrounding buildings, the public realm, public and private open spaces.

Mississauga's terms of reference for Shadow Studies require development proponents to meet the following five criteria for the dates of June 21, September 21 (similar to March 21, and therefore, criteria for September 21 are deemed to apply to March 21), and December 21:

- Ensure adequate sunlight on residential private outdoor amenity spaces.
- Ensure adequate sunlight on communal outdoor amenity areas including, children's play areas, school yards, tot lots, and park features such as sandboxes, wading pools etc., and outdoor amenity areas used by seniors and those associated with commercial and employment areas during spring, summer, fall and winter.
- Ensure adequate sunlight on the public realm including sidewalks, open spaces, parks and plazas to maximize their use during the shoulder seasons (spring and fall).
- Ensure adequate sunlight on turf and flower gardens in public parks.
- Ensure adequate sunlight on building faces to allow for the possibility of using solar energy.

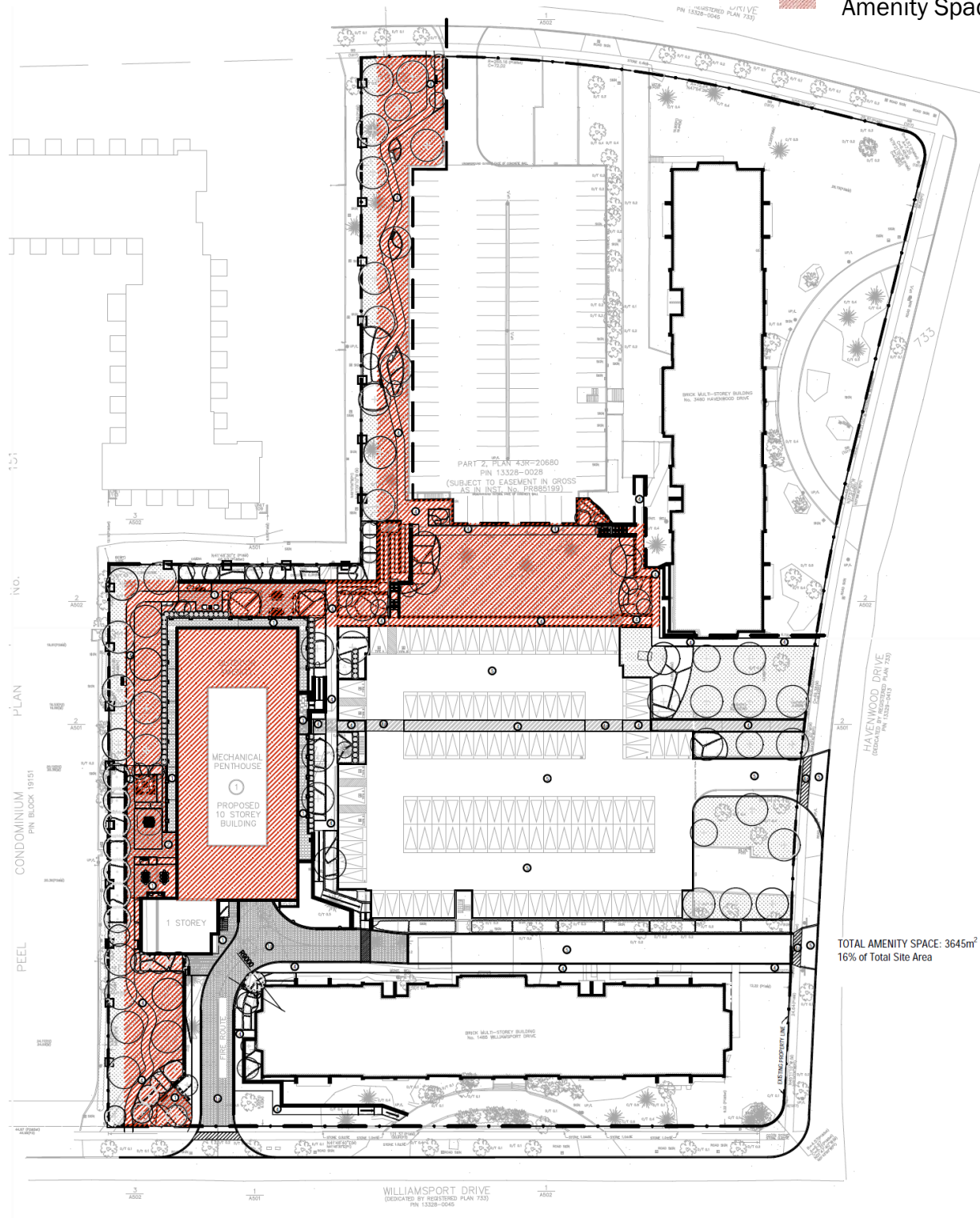
This Shadow Study is in support of the proposed development at 3480 Havenwood Drive and 1485 Williamsport Drive in Mississauga, which will feature an infill rental housing building with a building height of 10-storeys (34.95 metres). While the proposed development will be slightly taller than the two existing 9-storey rental housing buildings within the site, it will be consistent with the urban form of the surrounding developments.

## The Site

The site includes the property municipally known as 3480 Havenwood Drive and 1485 Williamsport Drive in Mississauga and is bounded by Williamsport Drive to the north and south, a townhouse complex to the west, and Havenwood Drive to the east. The site is currently occupied by two 9-storey rental apartment buildings.

The geographic coordinate location of the site is latitude: 43.619642° N and longitude: 79.593222° W. The time zone is UTC -4.00. The origin/source of the base plan was the Topographic Plan of Survey prepared by Schaeffer Dzaldov Bennett Ltd. dated May 18, 2016 that was included in the first application submission in 2018. Astronomic north (True North) was identified on the Survey and is carried forward in this Study.

Private Outdoor  
Amenity Spaces



Key Plan

## 1: Ensure adequate sunlight on residential private outdoor amenity spaces

This criterion is met if there is shadow impact for no more than two consecutive hourly test times within the space between the exterior wall of the dwelling that abuts the amenity space and the line of impact assessment on June 21 and September 21.

### Outdoor Amenity Space of Adjacent Townhouses

The proposed buildings will not significantly impact the existing adjacent townhouses to the southwest and northwest of the proposed infill building. On June 21, shadows cast by the proposed infill building largely clear off the large central amenity area of the adjacent townhouses by 9:20 am. On September 21, shadows cast by the proposed infill building clear off the large central amenity area of the adjacent townhouses by 9:12 am.

### SAF Calculations for Outdoor Amenity Space of Adjacent Townhouses

This criterion, which applies to private amenity areas that are part of the adjacent townhouses, is met if the sun access factor (SAF) is at least 50% or 0.5 on June 21, September 21, and December 21. This criterion applies to public amenity areas and common outdoor amenity areas that are part of a proposed or existing development. In assessing the SAF for all the private outdoor amenity spaces of the adjacent townhouses, it was found that the average SAF was greater than 50% for June 21 and September 21. For December 21, the average SAF was only 32%. However, it must be noted that the lower than 50% SAF due to the existing townhouses, where the proposed infill building only casts an additional 2% net new shadow at 9:19 AM and 1% net new shadow at 10:17 AM. Overall, the existing SAF of the amenity space without the proposed infill building is 33%, and the net new shadows from the proposed infill building only slightly reduces the SAF to 32%. As such, it is our opinion that the SAF requirements are still met for December 21.

#### June:

TIME (UTC - 4.00)	Shadow (%)	Sun Access Factor (%)
Jun 21 - 07:07 AM	86%	14%
Jun 21 - 07:20 AM	91%	9%
Jun 21 - 08:20 AM	65%	35%
Jun 21 - 09:20 AM	34%	66%
Jun 21 - 10:20 AM	19%	81%
Jun 21 - 11:20 AM	10%	90%
Jun 21 - 12:20 PM	7%	94%
Jun 21 - 01:20 PM	10%	90%
Jun 21 - 02:20 PM	15%	86%

TIME (UTC - 4.00)	Shadow (%)	Sun Access Factor (%)
Jun 21 - 03:20 PM	23%	77%
Jun 21 - 04:20 PM	35%	65%
Jun 21 - 05:20 PM	47%	53%
Jun 21 - 06:20 PM	64%	37%
Jun 21 - 07:20 PM	91%	9%
Jun 21 - 07:33 PM	100%	0%
AVERAGE	46%	54%

**September:**

TIME (UTC - 4.00)	Shadow (%)	Sun Access Factor (%)
Sep 21 - 08:35 AM	82%	18%
Sep 21 - 09:12 AM	51%	49%
Sep 21 - 10:12 AM	25%	75%
Sep 21 - 11:12 AM	19%	81%
Sep 21 - 12:12 PM	21%	79%
Sep 21 - 01:12 PM	25%	75%
Sep 21 - 02:12 PM	31%	69%
Sep 21 - 03:12 PM	41%	59%
Sep 21 - 04:12 PM	59%	41%
Sep 21 - 05:12 PM	80%	20%
Sep 21 - 05:48 PM	94%	6%
AVERAGE	48%	52%

**December:**

TIME (UTC - 5.00)	Shadow of Existing Townhouses (%)	Shadow of Proposed Infill Building (%)	Total Shadow (%)	Sun Access Factor (%)
Dec 21 - 09:19 AM	63%	2%	65%	35%
Dec 21 - 10:17 AM	54%	1%	55%	45%
Dec 21 - 11:17 AM	54%	0%	54%	46%

Dec 21 - 12:17 PM	58%	0%	58%	42%
Dec 21 - 01:17 PM	65%	0%	65%	35%
Dec 21 - 02:17 PM	78%	0%	78%	22%
Dec 21 - 03:15 PM	99%	0%	99%	1%
AVERAGE	67%	1%	68%	32%

### West and North Amenity Space of the Proposed Infill Development

The proposed outdoor amenity space with lounge, dining and barbeque, lawn, playground, and gardens to the north and west of the proposed infill development will have existing and net new incremental shadows until 2:20 PM on June 21. The western portion of the amenity space will be largely free of shadows from 11:20 am onward. The northern portion of the amenity space will be free of shadows from 2:20 PM onward until around 6:20 PM.

For September 21, the proposed outdoor amenity space will be free of shadows from 3:12 PM onward. The western portion of the amenity space will be largely free of shadows from 10:12 am onward. The northern portion of the amenity space will be free of shadows from 3.12 PM onward until around 5:48 PM on September 21.

### Central Open Lawn Space and Amenity Walk

The proposed central open lawn space north of the new surface parking area and the amenity walk that connects the central open lawn space with Williamsport Drive to the north will have minimal net new incremental shadows on June 21 or September 21.

### SAF Calculations for On-site Private Outdoor Amenity Spaces

This criterion, which applies to private amenity areas that are part of the proposed development, is met if the average sun access factor (SAF) is at least 50% or 0.5 on June 21, September 21, and December 21. This criterion applies to public amenity areas and common outdoor amenity areas that are part of a proposed or existing development. In assessing the SAF for all the private outdoor amenity spaces across the site, it was found that the average SAF was greater than 50% for June 21, September 21, and December 21.

#### June:

TIME (UTC - 4.00)	Shadow (%)	Sun Access Factor (%)
Jun 21 - 07:07 AM	52%	48%
Jun 21 - 07:20 AM	50%	50%
Jun 21 - 08:20 AM	32%	68%
Jun 21 - 09:20 AM	26%	74%

<b>TIME (UTC - 4.00)</b>	<b>Shadow (%)</b>	<b>Sun Access Factor (%)</b>
Jun 21 - 10:20 AM	20%	80%
Jun 21 - 11:20 AM	10%	90%
Jun 21 - 12:20 PM	6%	94%
Jun 21 - 01:20 PM	6%	94%
Jun 21 - 02:20 PM	2%	98%
Jun 21 - 03:20 PM	2%	98%
Jun 21 - 04:20 PM	4%	96%
Jun 21 - 05:20 PM	5%	95%
Jun 21 - 06:20 PM	12%	88%
Jun 21 - 07:20 PM	13%	87%
Jun 21 - 07:33 PM	13%	87%
AVERAGE	17%	83%

**September:**

<b>TIME (UTC - 4.00)</b>	<b>Shadow (%)</b>	<b>Sun Access Factor (%)</b>
Sep 21 - 08:35 AM	47%	53%
Sep 21 - 09:12 AM	24%	76%
Sep 21 - 10:12 AM	13%	87%
Sep 21 - 11:12 AM	8%	92%
Sep 21 - 12:12 PM	11%	89%
Sep 21 - 01:12 PM	15%	85%
Sep 21 - 02:12 PM	15%	85%
Sep 21 - 03:12 PM	4%	96%
Sep 21 - 04:12 PM	4%	96%
Sep 21 - 05:12 PM	19%	81%
Sep 21 - 05:48 PM	43%	57%
AVERAGE	18%	82%

**December:**

TIME (UTC - 5.00)	Shadow (%)	Sun Access Factor (%)
Dec 21 - 09:19 AM	51%	49%
Dec 21 - 10:17 AM	56%	44%
Dec 21 - 11:17 AM	34%	66%
Dec 21 - 12:17 PM	41%	59%
Dec 21 - 01:17 PM	49%	51%
Dec 21 - 02:17 PM	56%	44%
Dec 21 - 03:15 PM	35%	65%
AVERAGE	46%	54%

***Criterion 1 is partially met due to the net new incremental shadows on the west and north amenity space of the proposed infill development. However, there are minimal net new incremental shadows when examining the majority of the private outdoor amenity spaces within the site, along with the outdoor amenity spaces of the adjacent townhouses. The SAF calculations for both the amenity spaces within the site and adjacent townhouses are over 50% and meets the requirements. Generally, there is adequate sunlight when considering all the private outdoor amenity spaces as a whole.***



**2: Ensure adequate sunlight on communal outdoor amenity areas including, children’s play areas, school yards, tot lots, and park features such as sandboxes, wading pools etc., and outdoor amenity areas used by seniors and those associated with commercial and employment areas during spring, summer, fall and winter.**

*As all the outdoor amenity areas in the site are private outdoor amenity areas, this Criteria is not applicable.*

**3: Ensure adequate sunlight on the public realm including sidewalks, open spaces, parks and plazas to maximize their use during the shoulder seasons (spring and fall).**

**a) PUBLIC REALM**

Mixed use, commercial, employment, and high-density residential streets developments should be designed to allow full sunlight on the opposite boulevard including the full width of the sidewalk on September 21 as follows:

For a total of at least 5 hours that must include the 2-hour period between:

- 12:12 pm and 2:12 pm, and an additional 2-hour period from either:
- 9:12 am and 11:12 am or 3:12 pm and 5:12 pm

This criterion is met if there is no incremental shade from the proposed development at:

- 12:12 pm 1:12 pm and 2:12 pm, and three consecutive times either:
- 9:12 am, 10:12am and 11:12 am, or at 3:12 pm, 4:12 pm and 5:12 pm.

The proposed infill development will not cast any net new incremental shadows on the sidewalks of Williamsport Drive and Havenwood Drive at the times under consideration on September 21.

***Criteria 3a is met.***

**b) PUBLIC OPEN SPACES, PARKS AND PLAZAS**

Developments should be designed to provide a sun access factor of at least 50% on public open spaces, parks and plazas on September 21.

The proposed infill building will not cast net new incremental shadows on Gulleden Park to the northwest of the site on September 21, and the existing sun access factor of the park is maintained.

While it is not a requirement, net new shadows in June 21 and December 21 have been examined. The proposed infill building only casts net new incremental shadows on Gulleden Park on December 21 at 9:18 am, shadowing 3% of the total park area.

***Criteria 3b is met.***

#### **4: Ensure adequate sunlight on turf and flower gardens in public parks**

Proposed developments should allow for adequate sunlight during the growing season from March to October by allowing for a minimum of 6 hours of direct sunlight on September 21. This criterion is met if full sun is provided on any 7 test times on September 21, from 1.5 hours after sunrise to 1.5 hours before sunset.

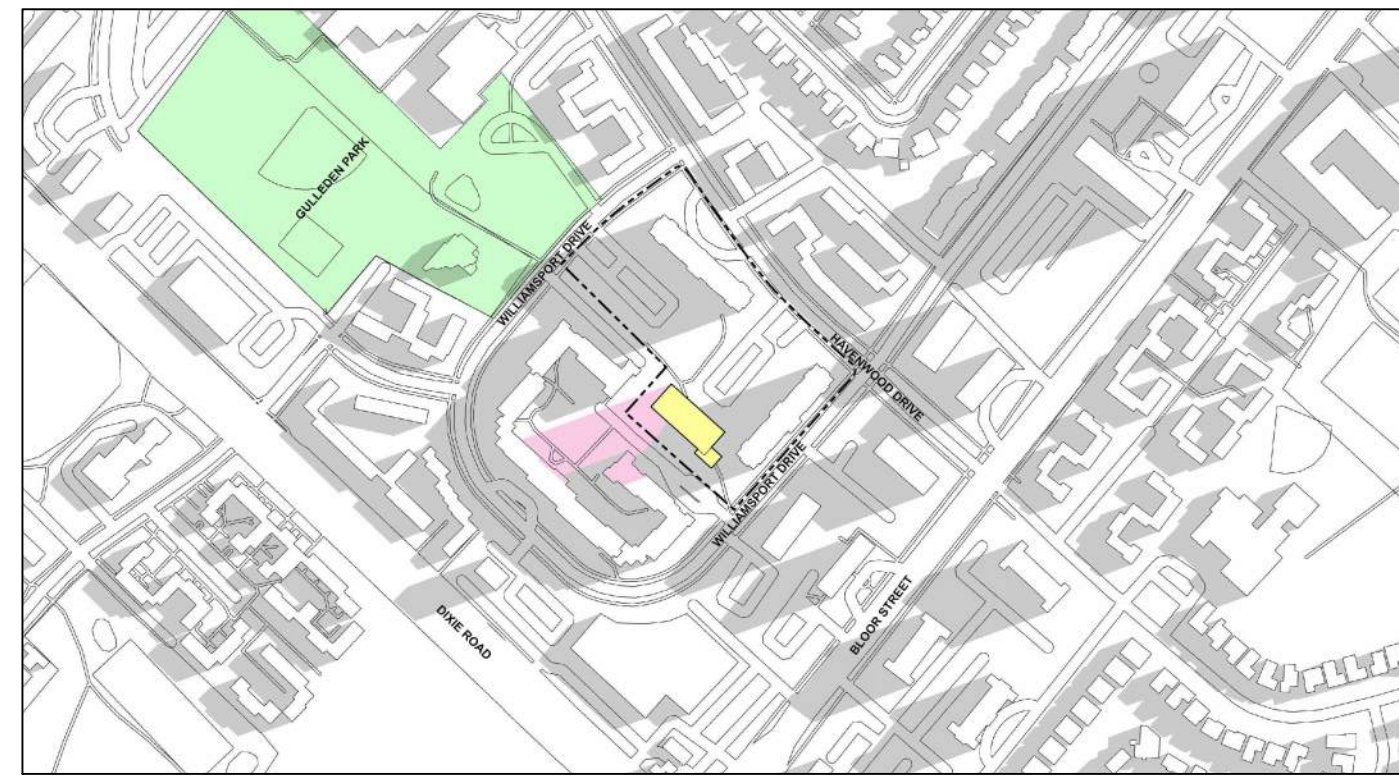
As previously stated in Criteria 3b, the proposed infill building will not cast net new incremental shadows on Gulleden Park to the northwest of the site on September 21, and the existing sun access factor of the park is maintained.

***Criteria 4 is met.***

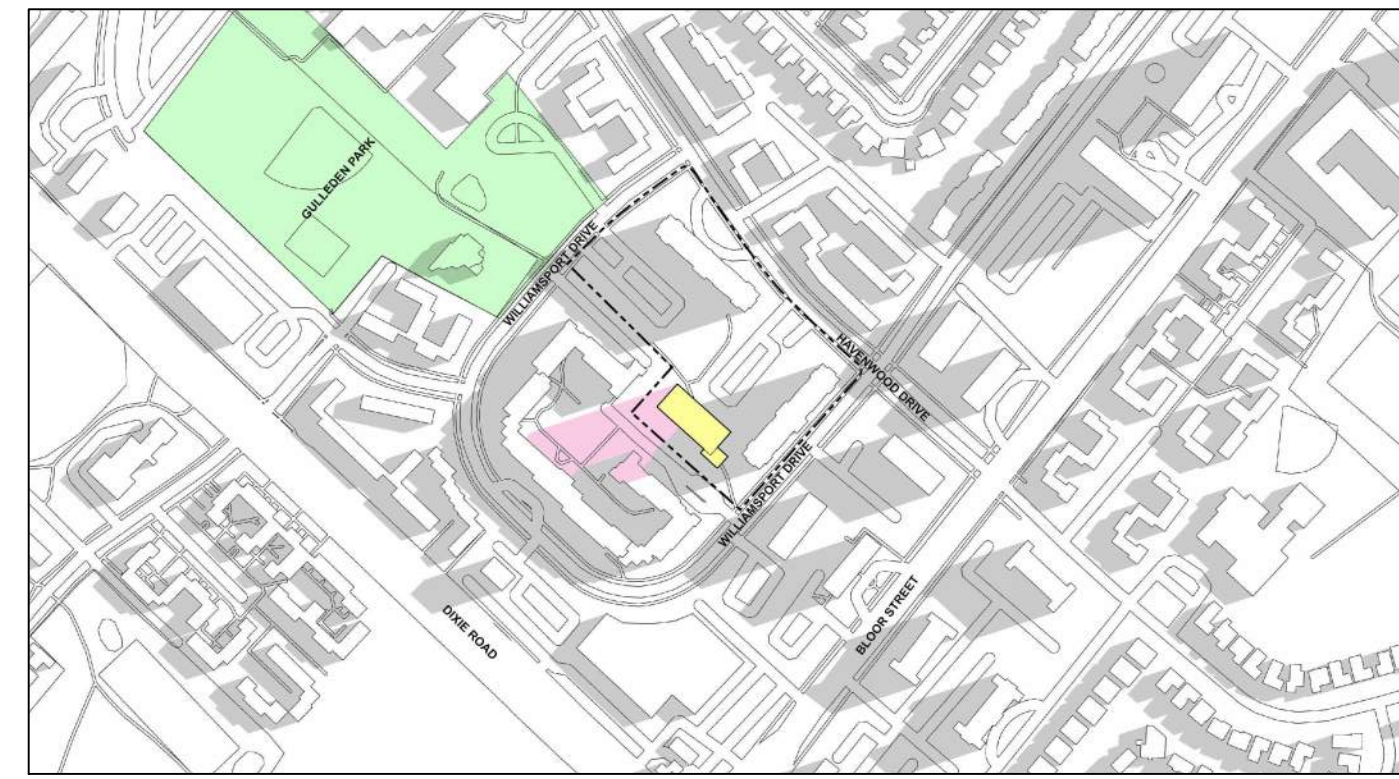
**5: Ensure adequate sunlight on building faces to allow for the possibility of using solar energy.**

*This criterion is met if the shadow impacts on September 21 are no more than two consecutive hourly test times in the “No Impact Zone” i.e. the space between the front, rear and exterior side walls of the adjacent low-rise residential buildings and the respective lines of impact assessment.*

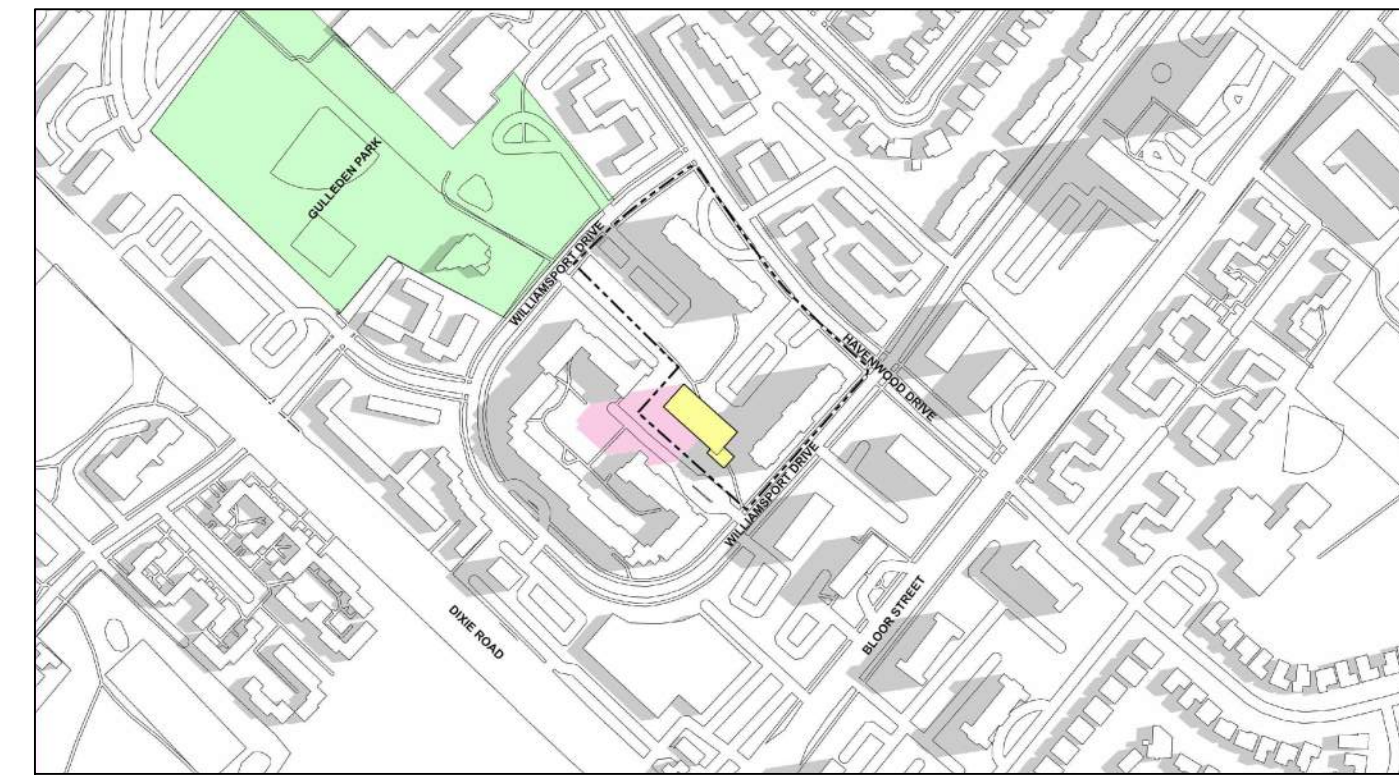
**Not applicable.**



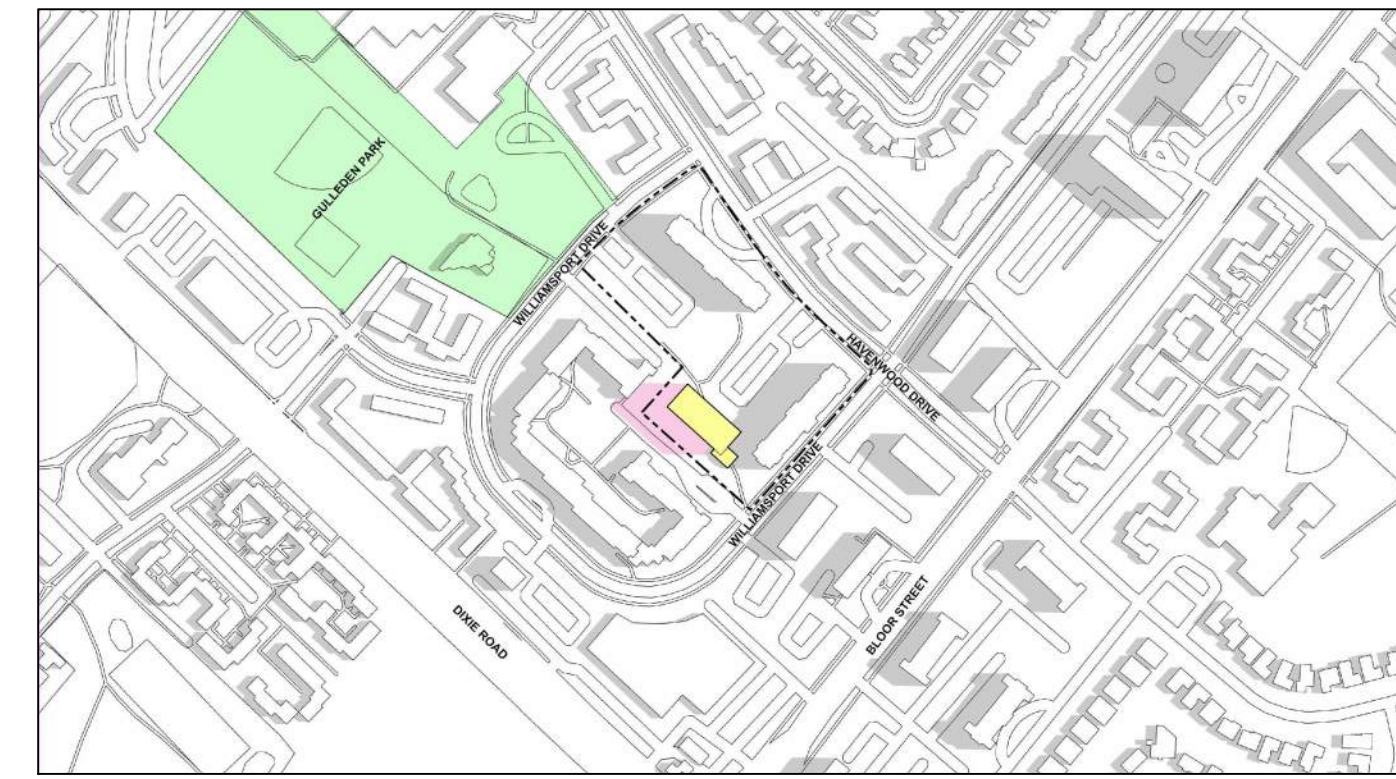
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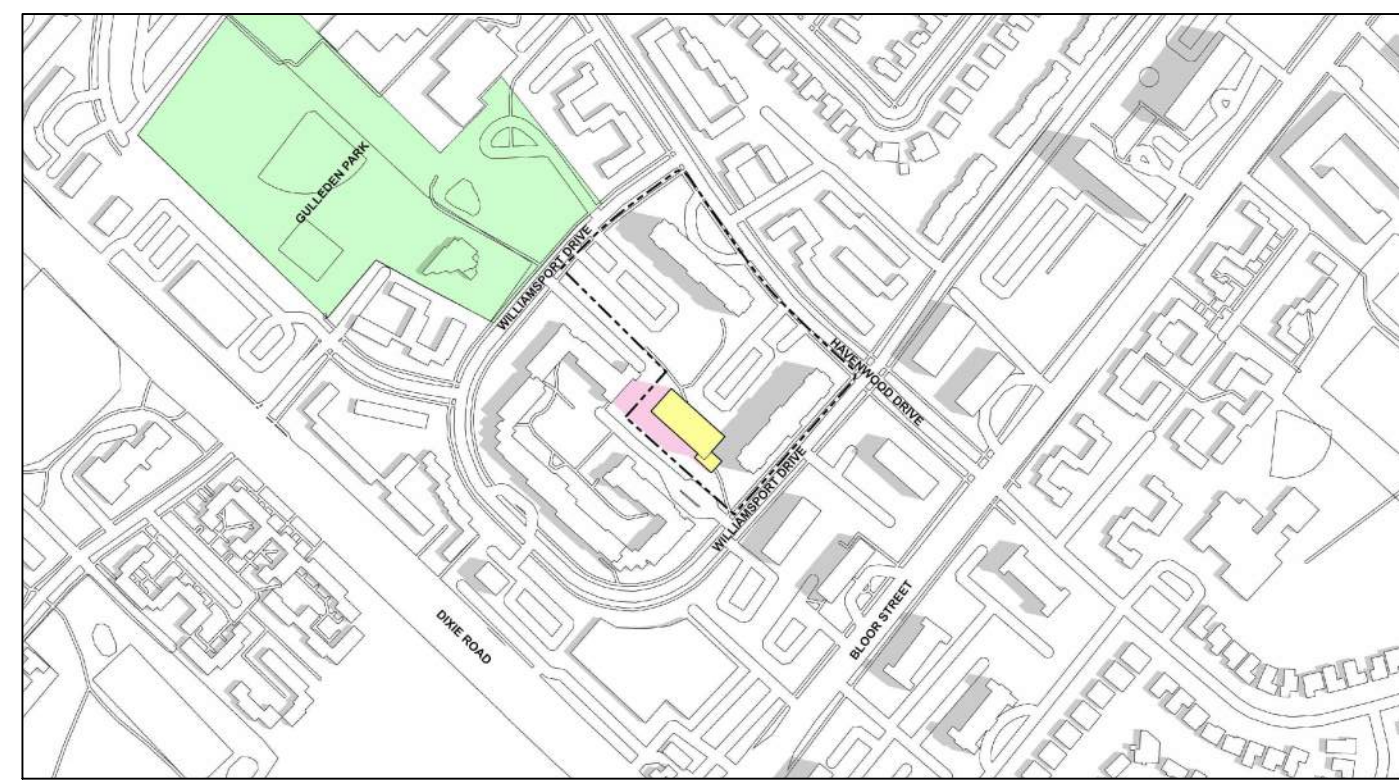
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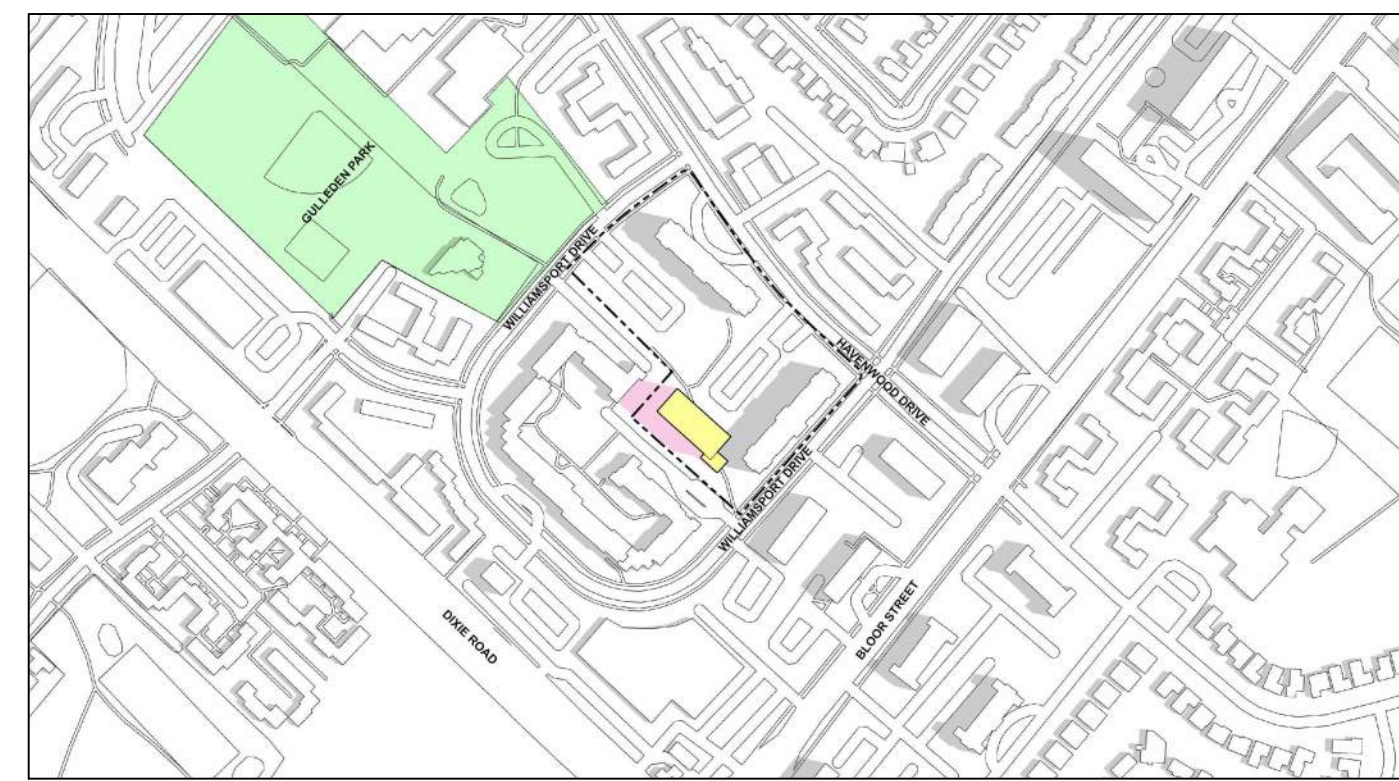
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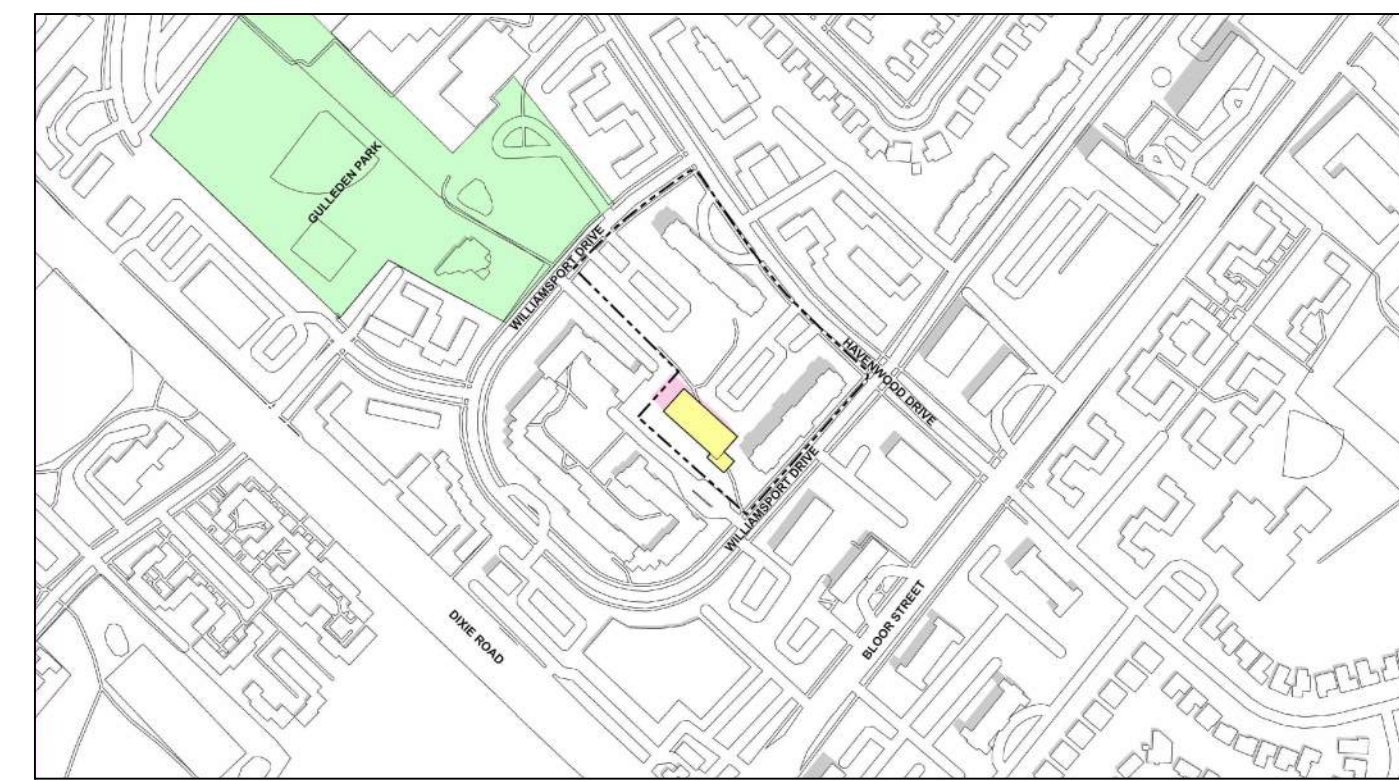
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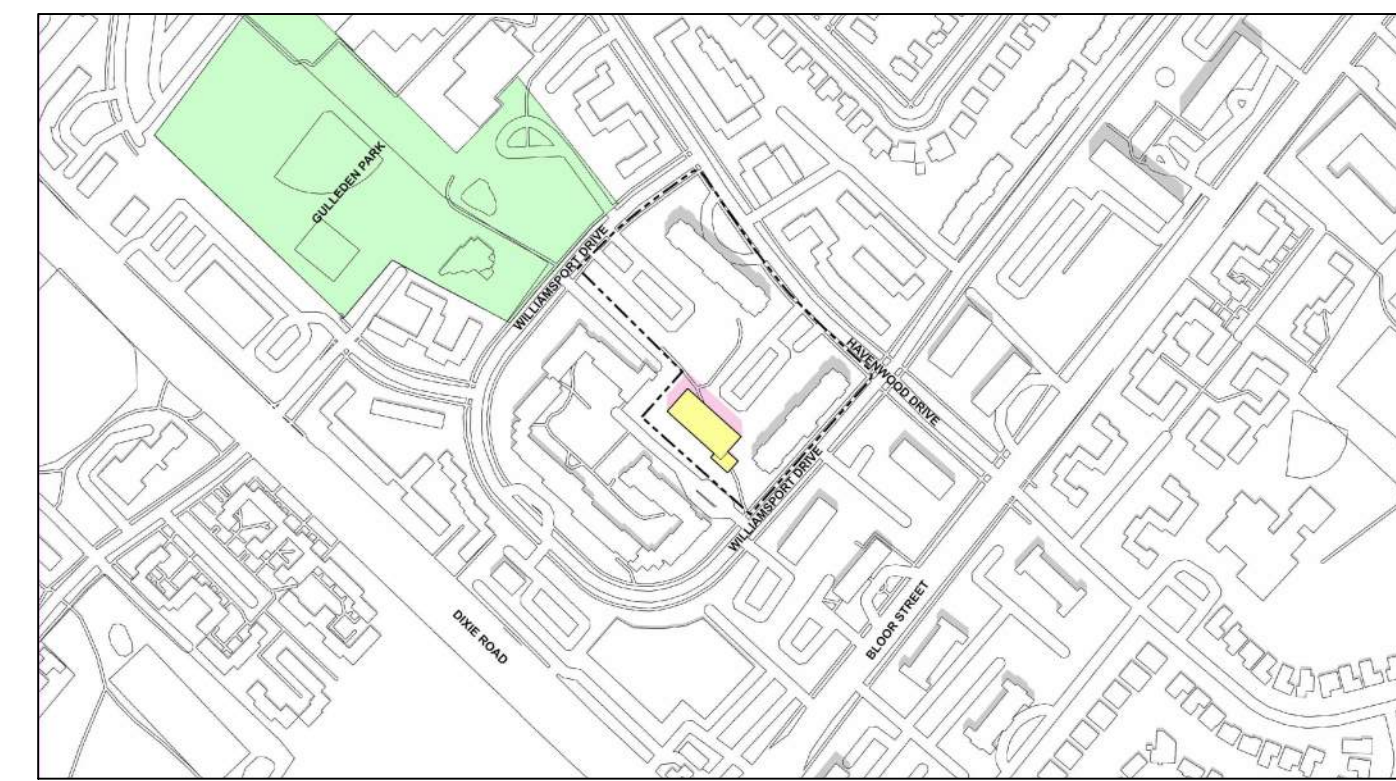
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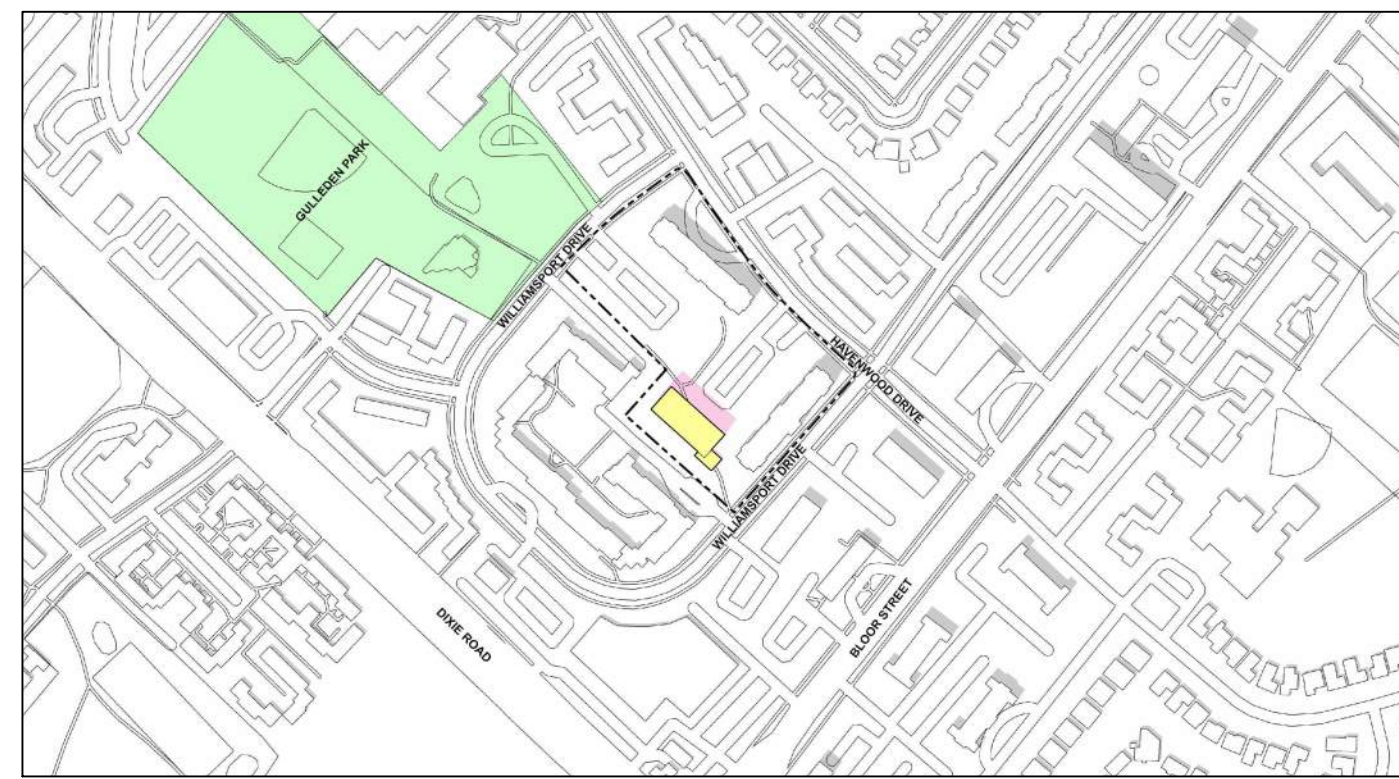
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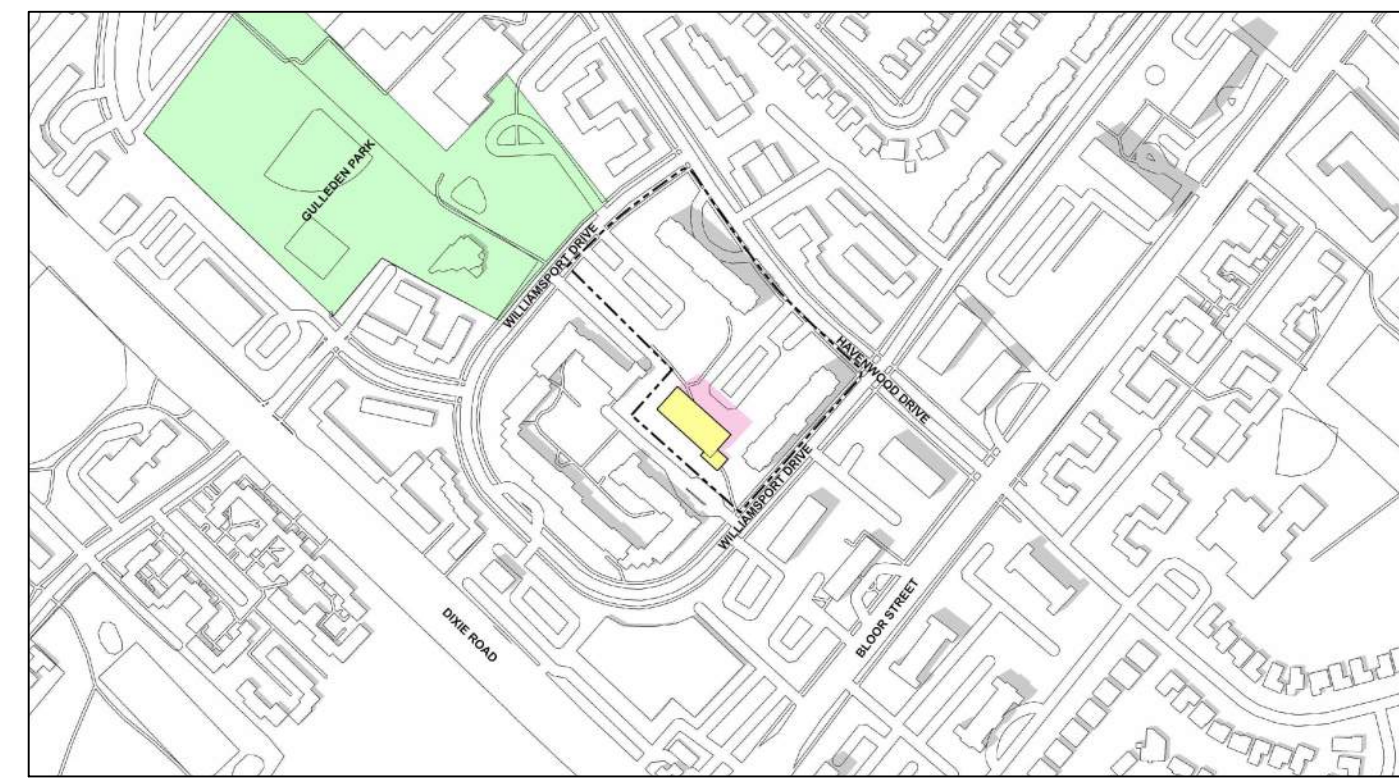
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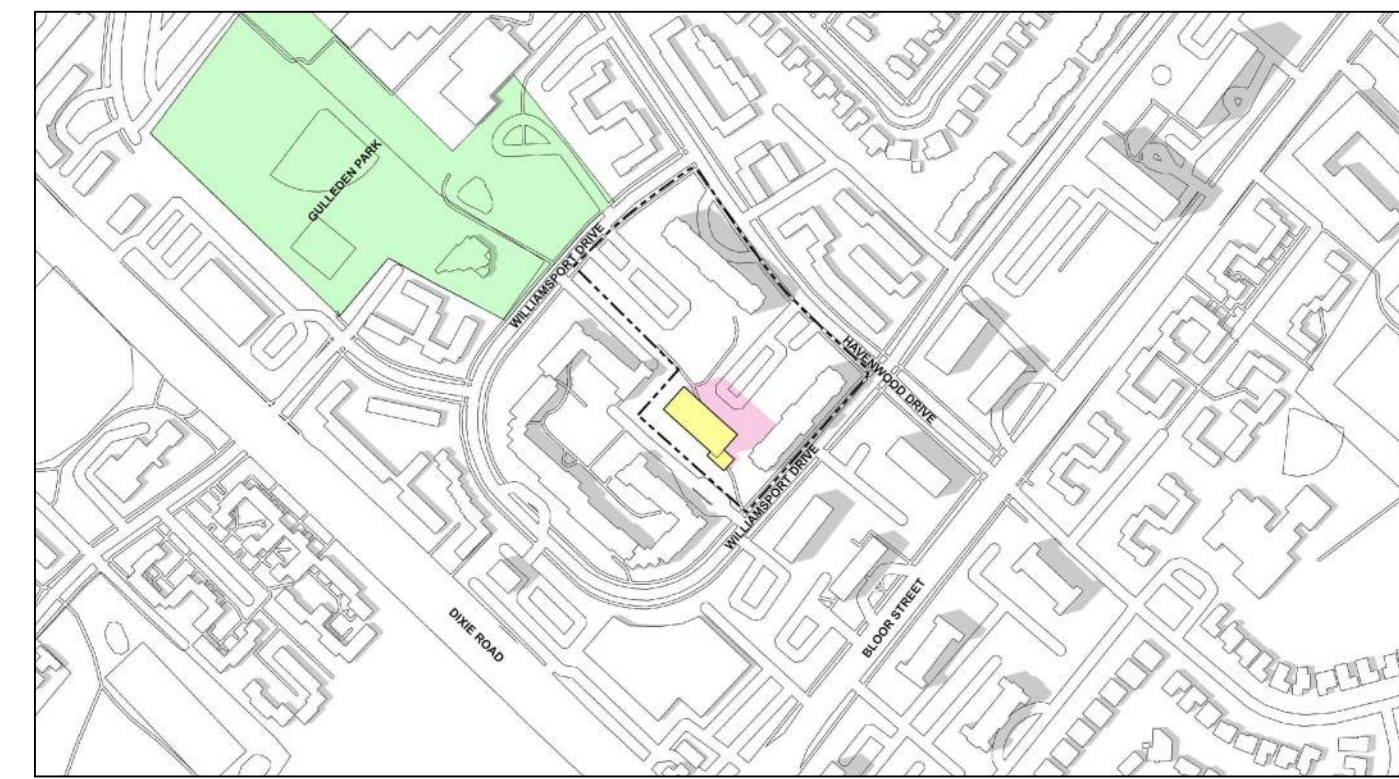
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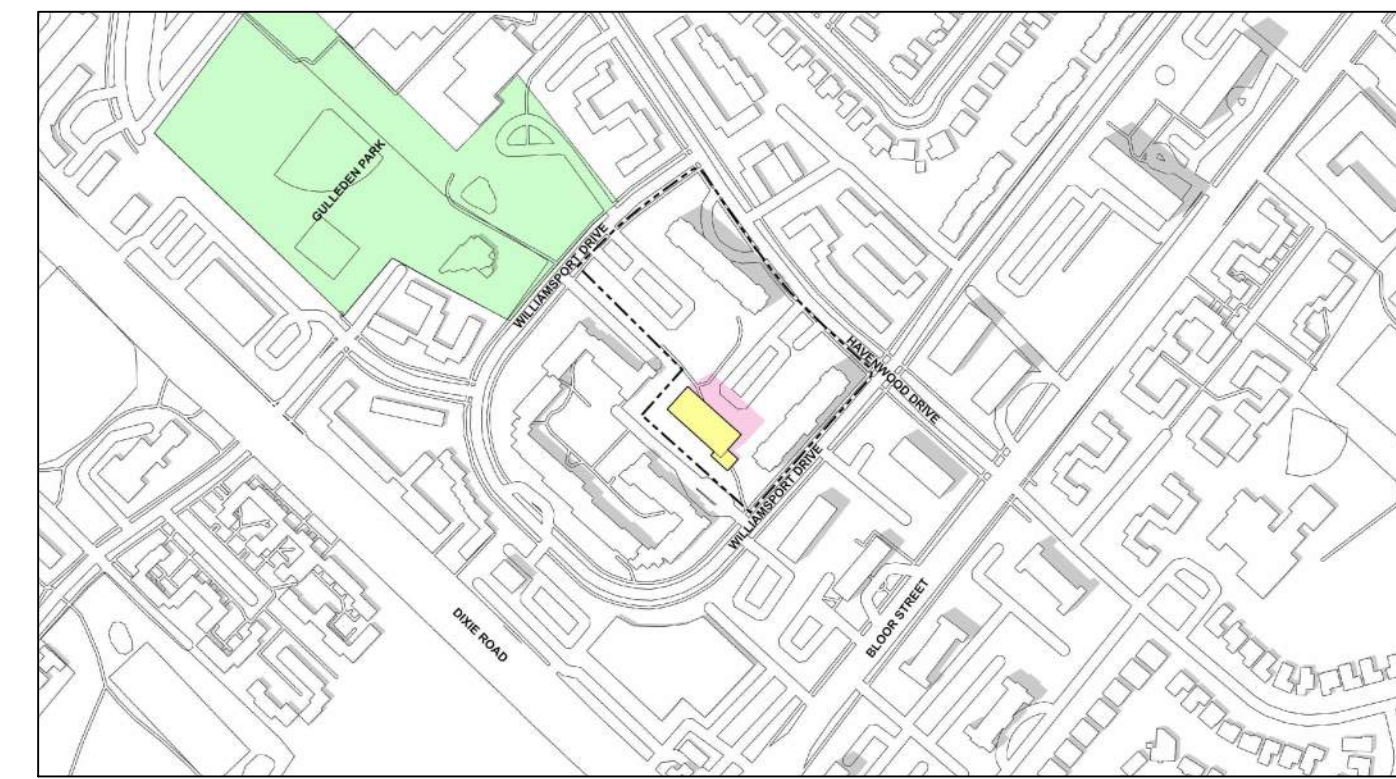
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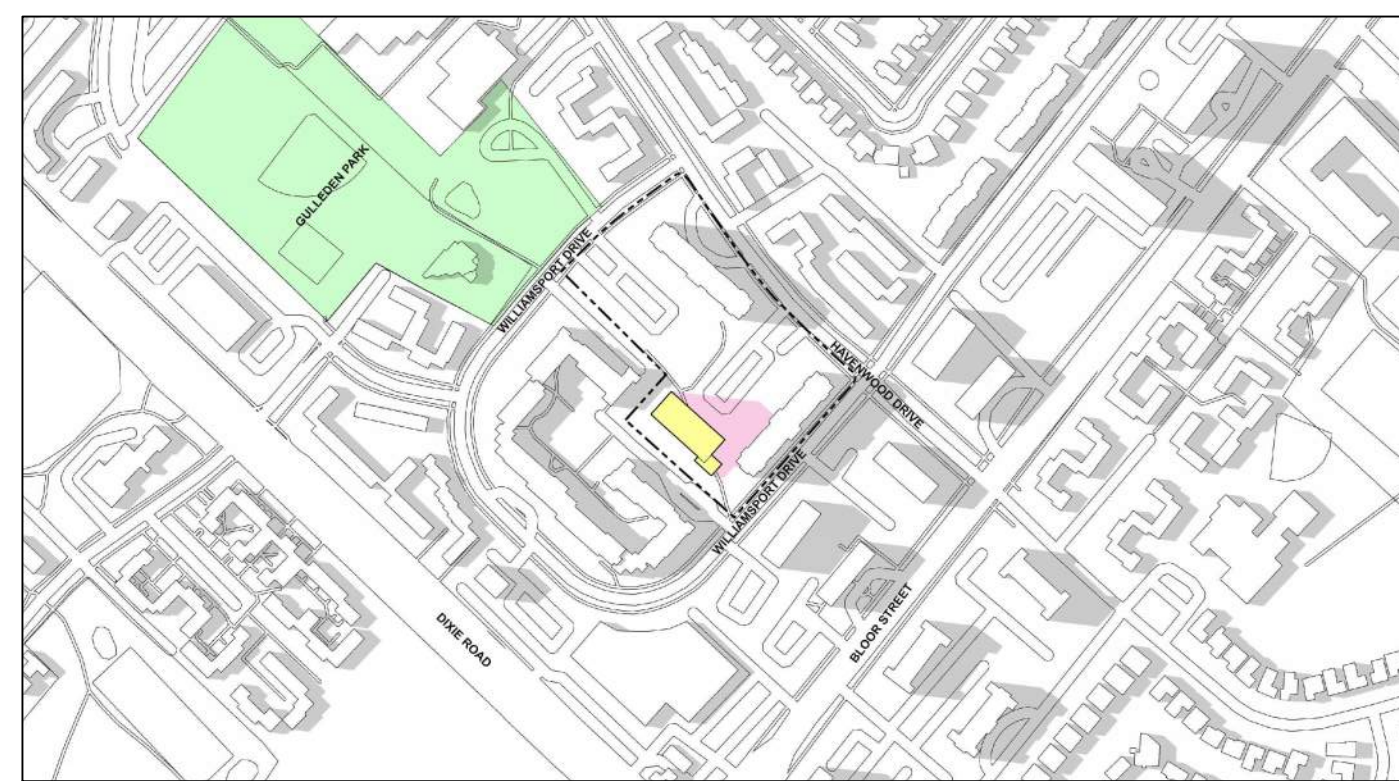
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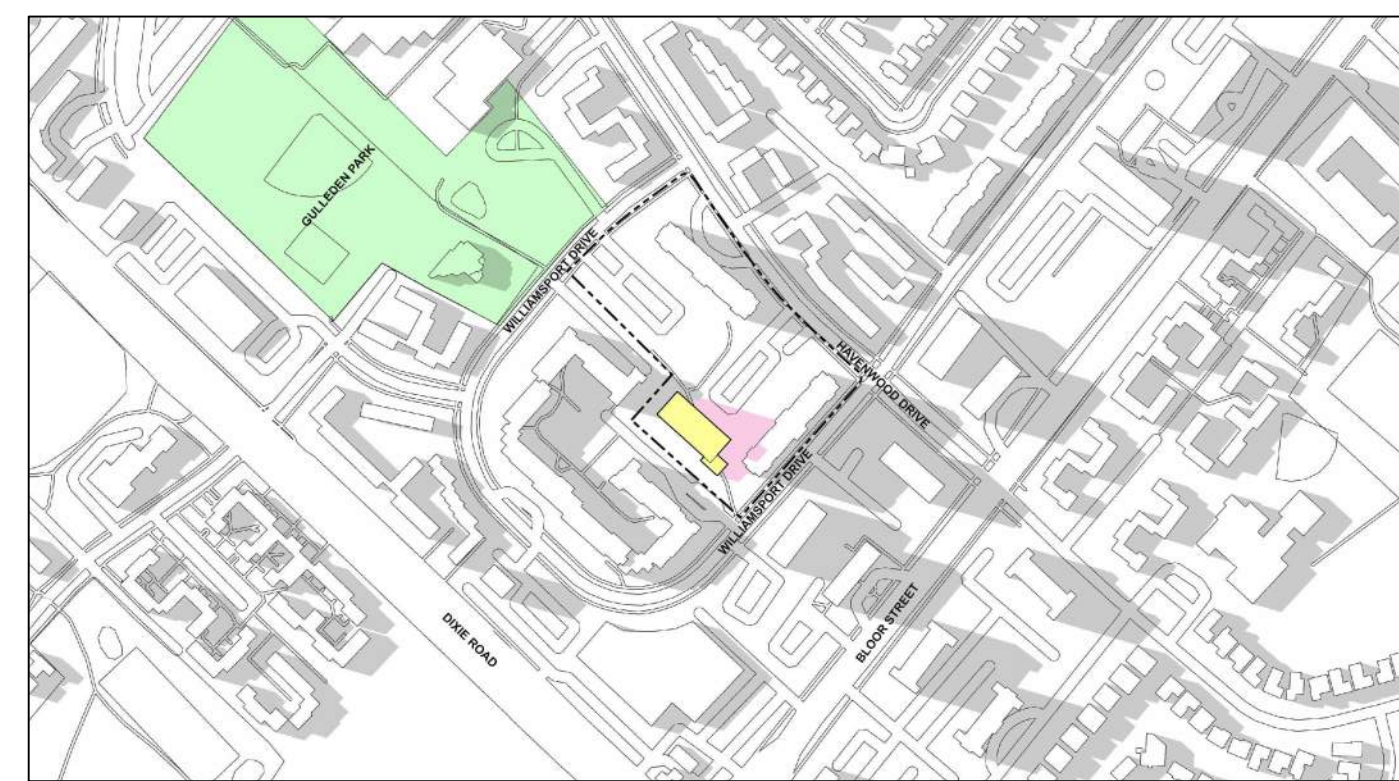
June 21st, 04:20 p.m



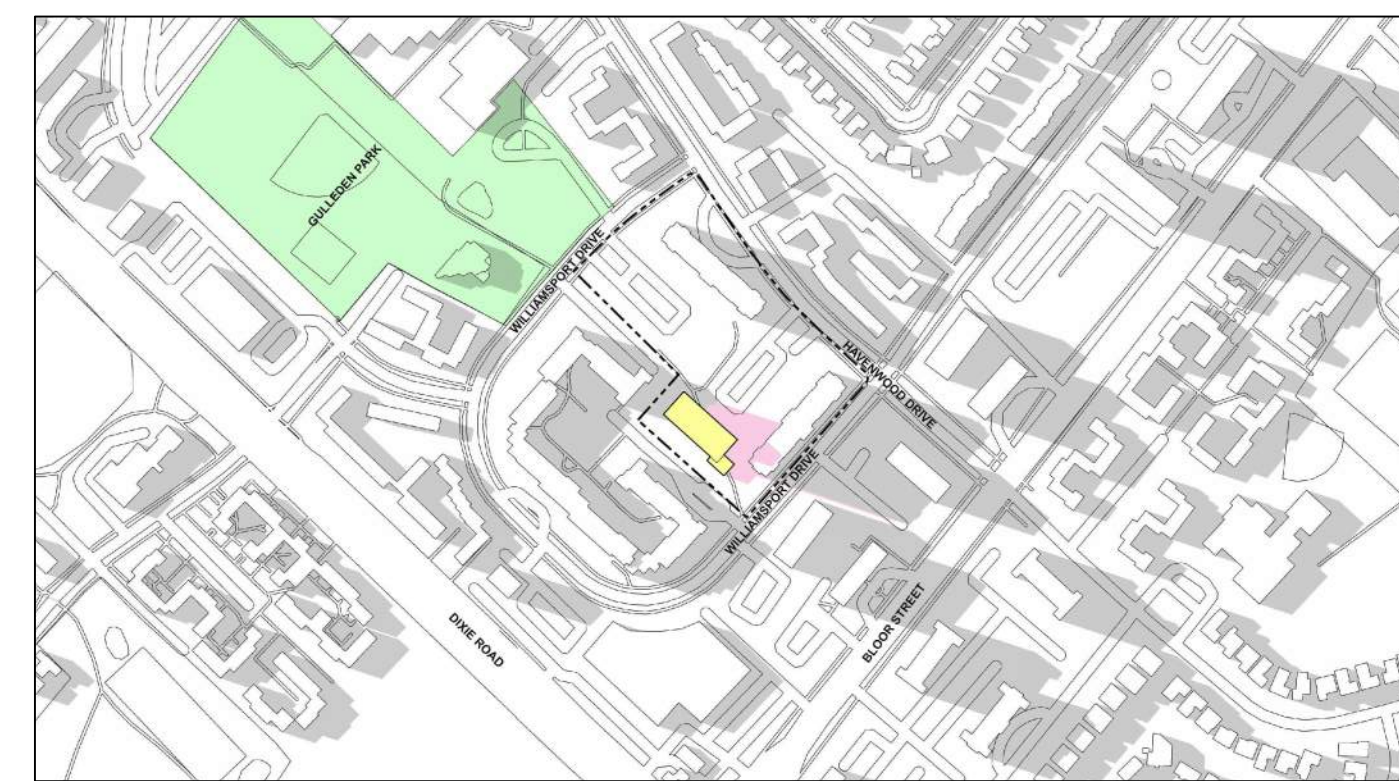
June 21st, 05:20 p.m



June 21st, 06:20 p.m



June 21st, 07:20 p.m



June 21st, 07:33 p.m

### Legend

- Proposed Development
- Existing Context Shadow
- New Massing Shadow
- Park

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### notes:

2. ZBA Submission 23-05-24  
 1. ZBA Submission 09-11-22  
 submissions: dd-mm-yy

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 ihab daakour  
 olena kobets-singh

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 Prognostech Waste Solutions  
 264 Bronte St. S. Unit 16 Milton, ON L9T 1Y8

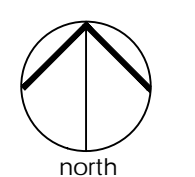
geotechnical & environmental:  
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surveyor:  
 Schaeffer-Bridlow-Bennet Ltd.  
 64 Jardin Drive, Concord, Ontario, L4K 3P3

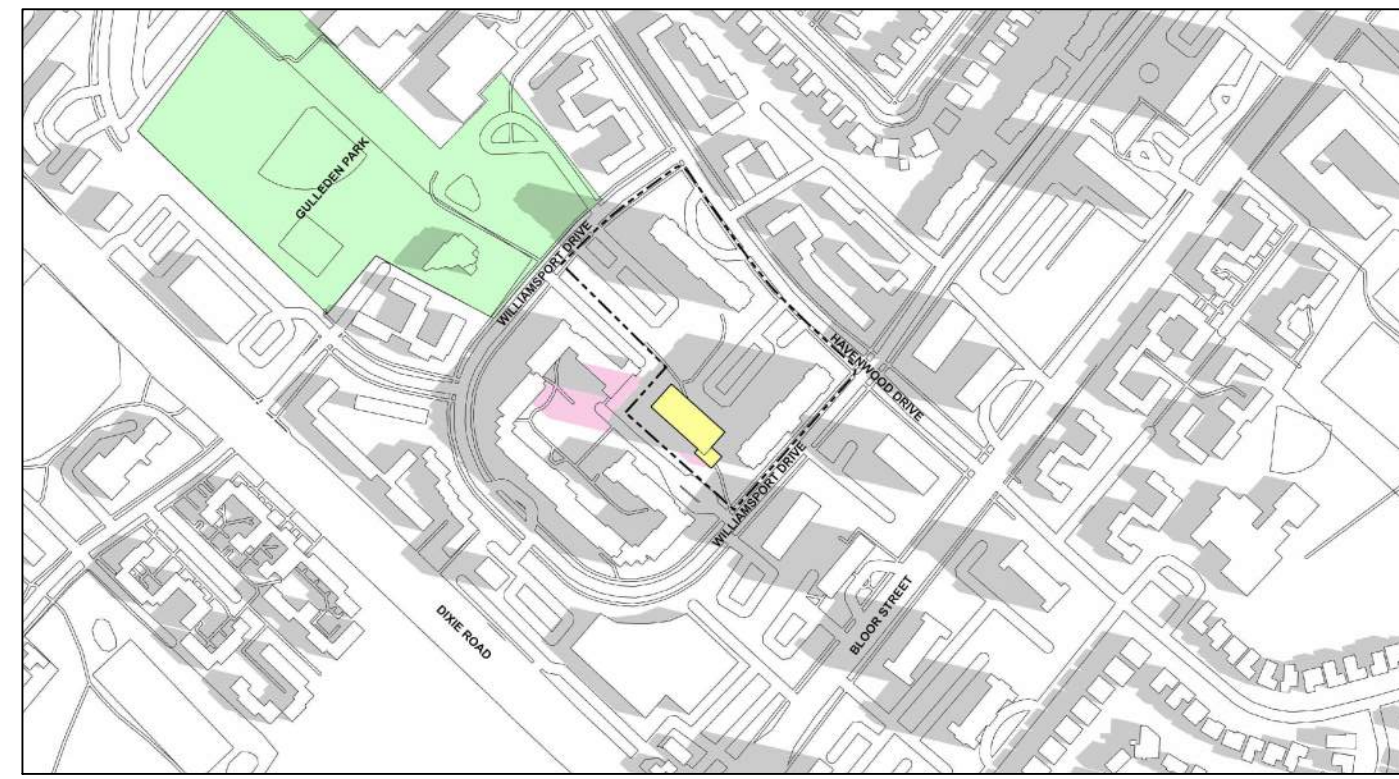
OWNER:  
 Starlight Investments  
 1400-3280 Bloor Street West, Centre Tower, Toronto, Ontario M8X 2X3

project:  
 Pacific way  
 3480 Havenwood Drive and 1485 Williamsport Drive  
 Mississauga, Ontario L4X 2M8  
 shadow study  
 june 21

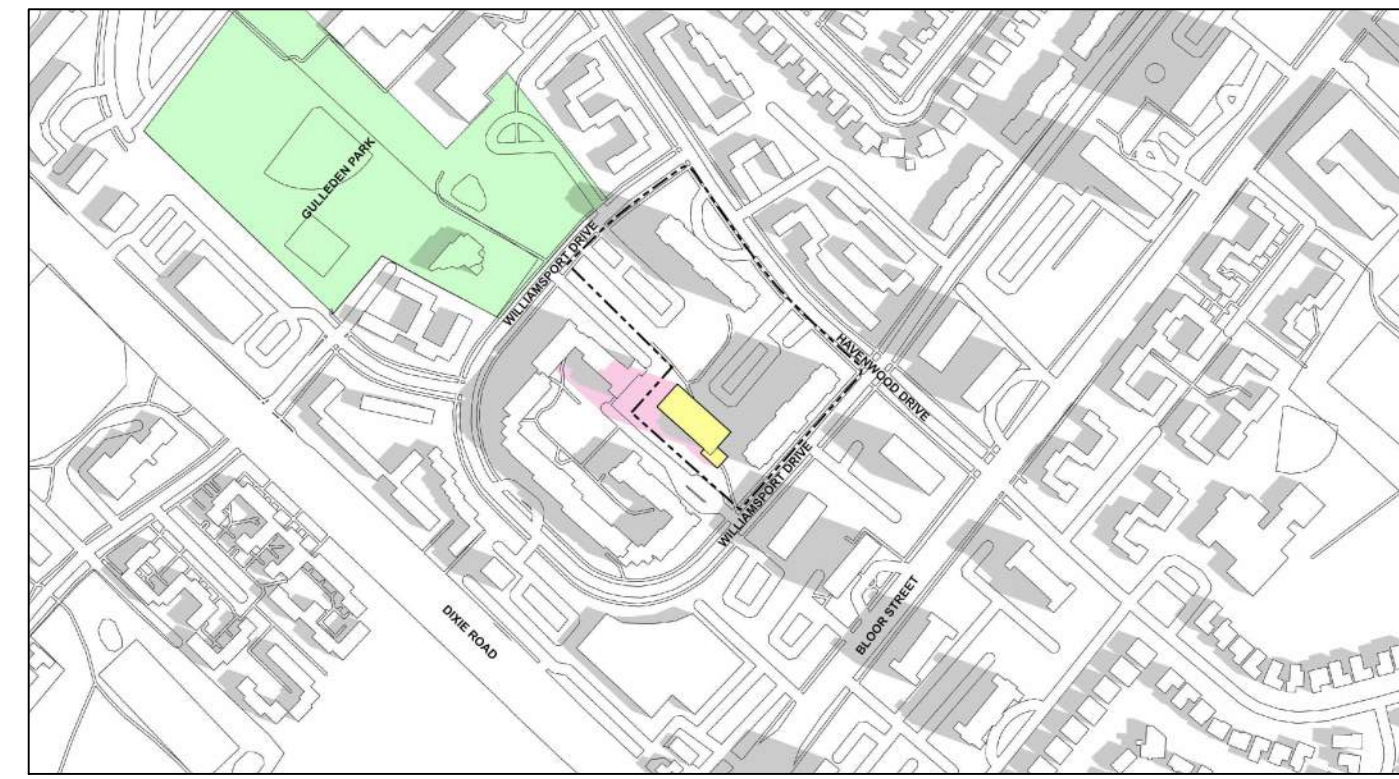
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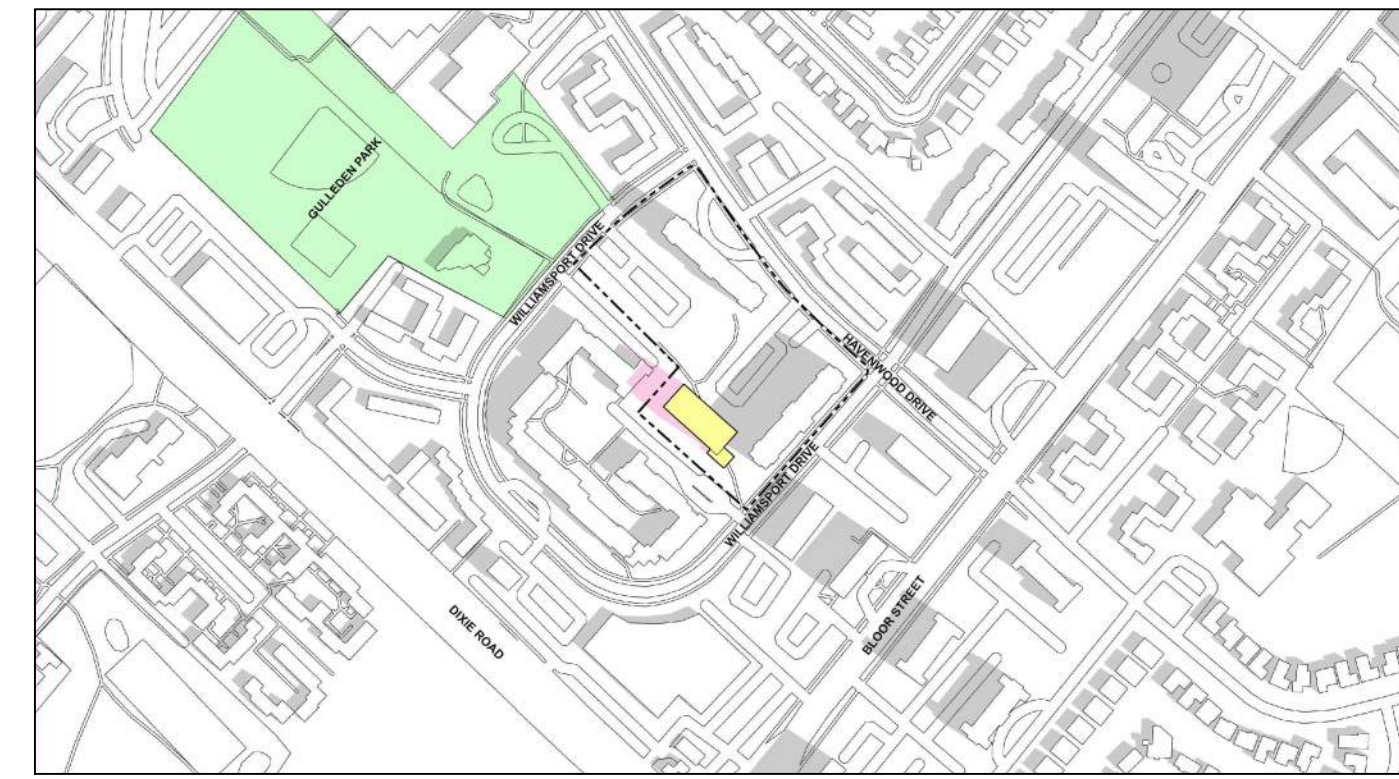
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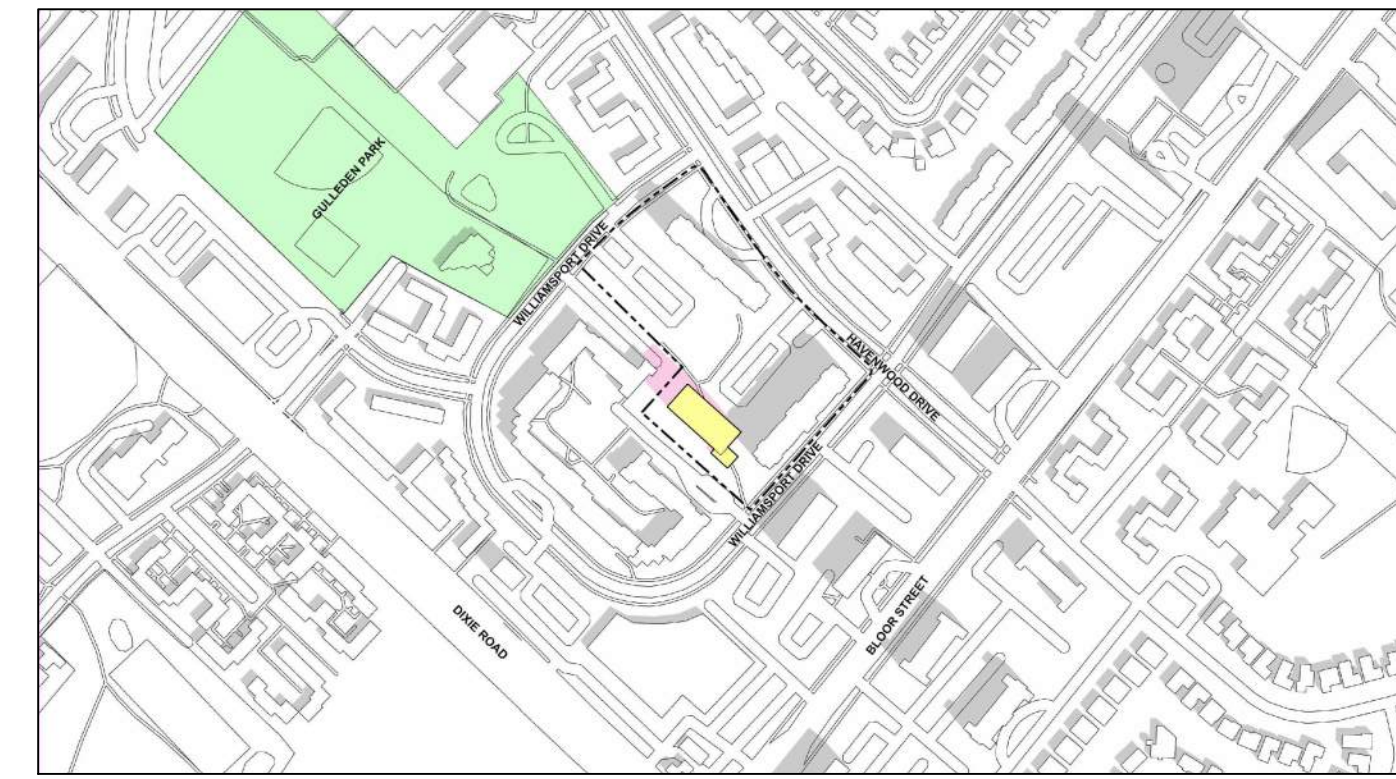
September 21st, 08:35 a.m



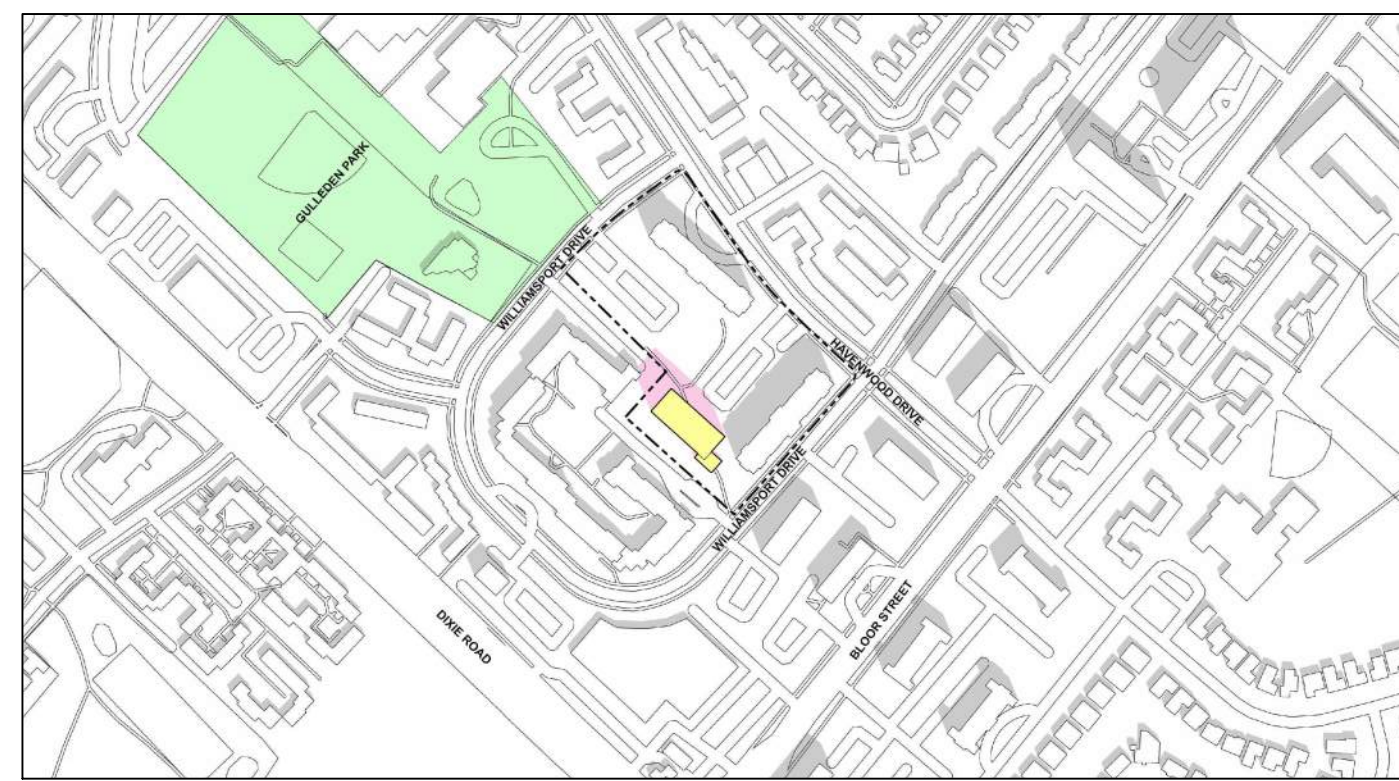
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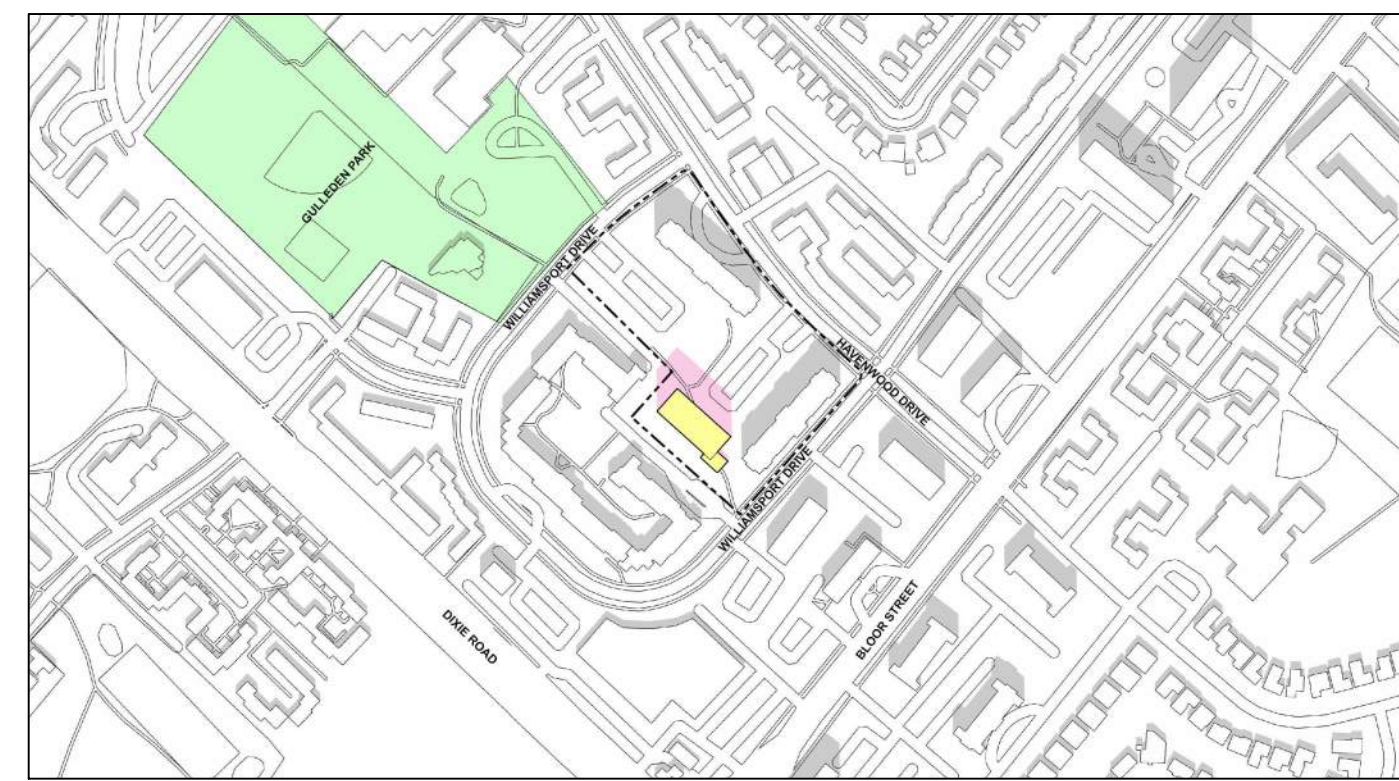
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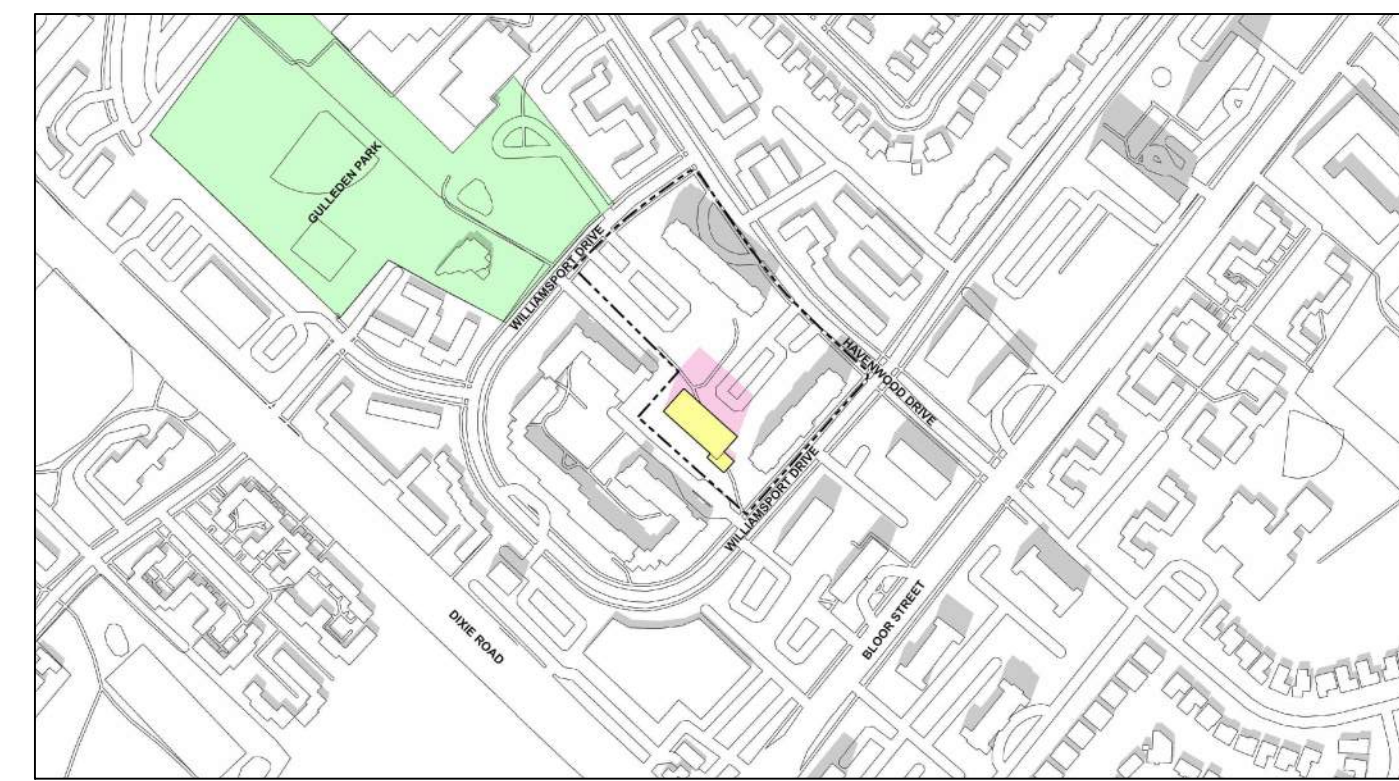
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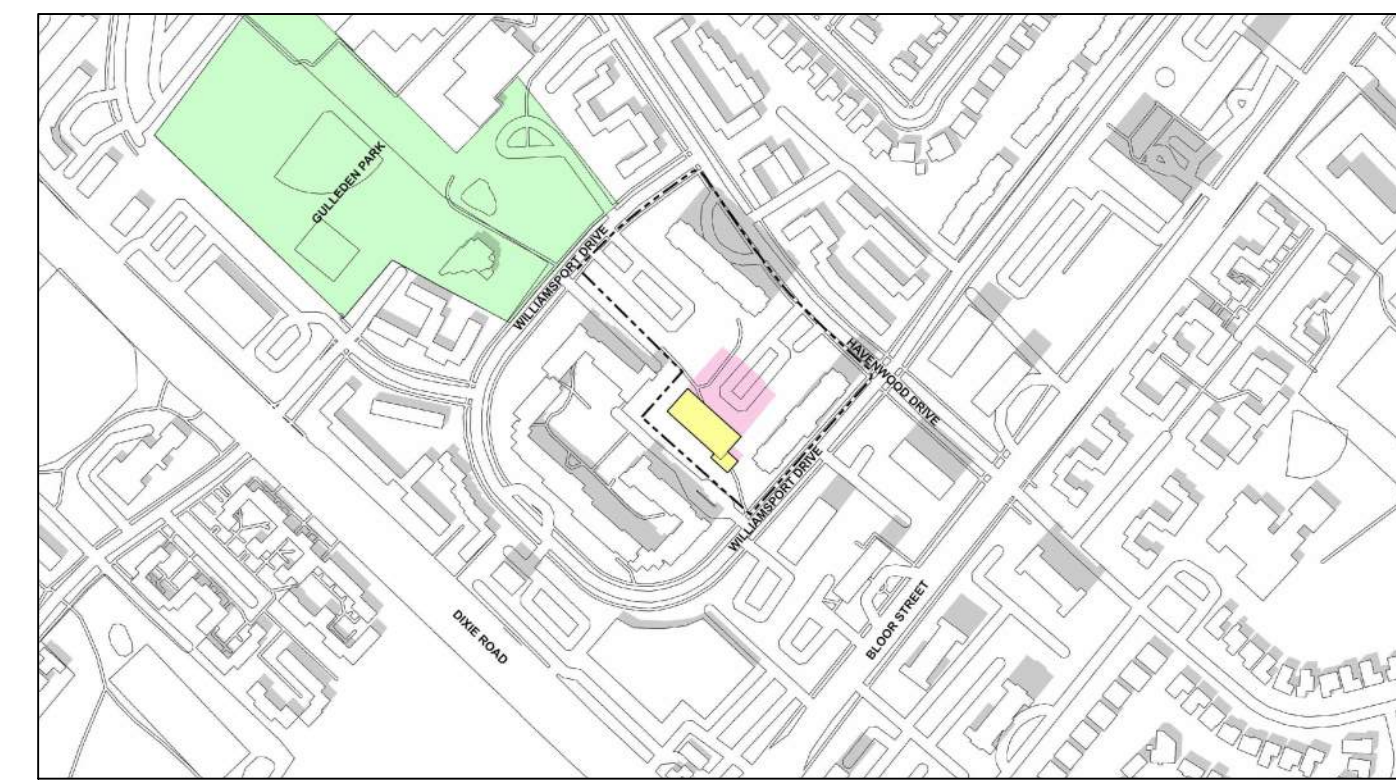
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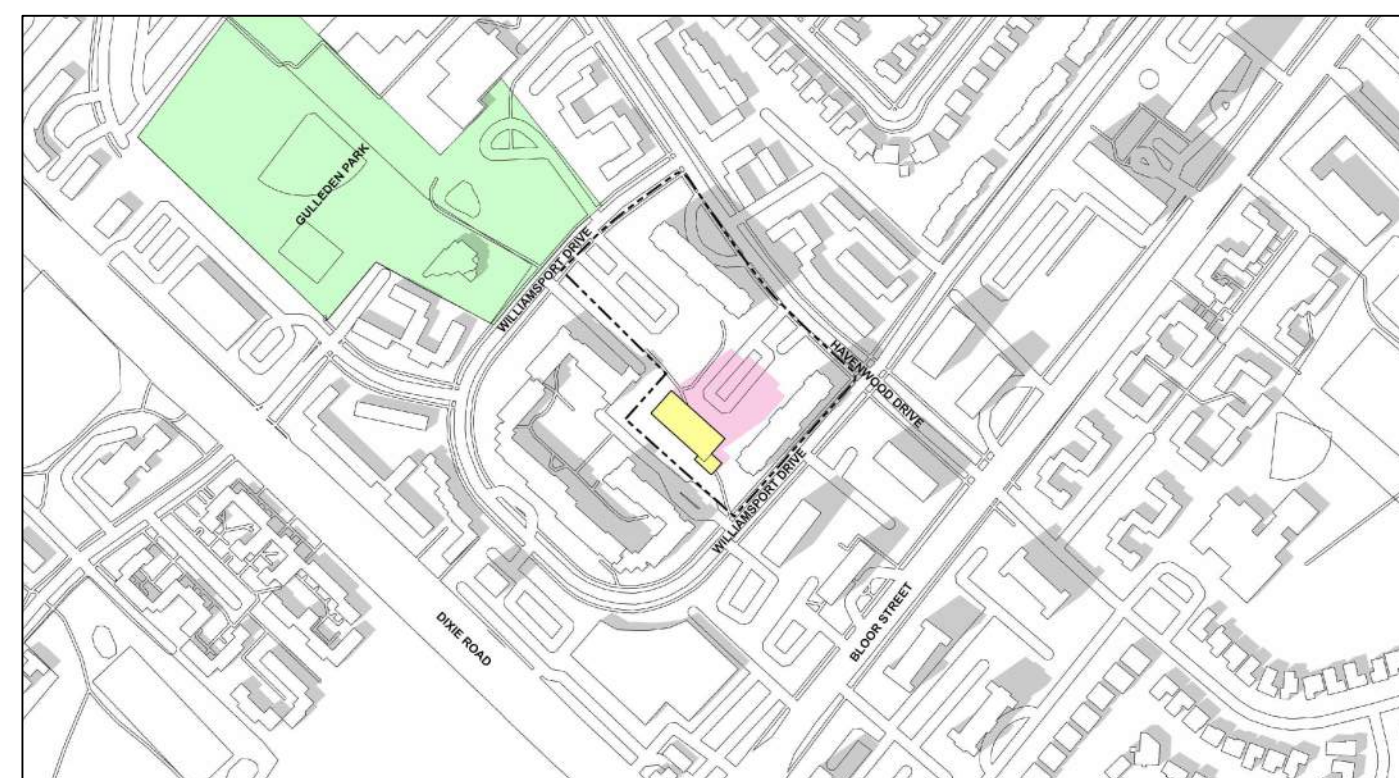
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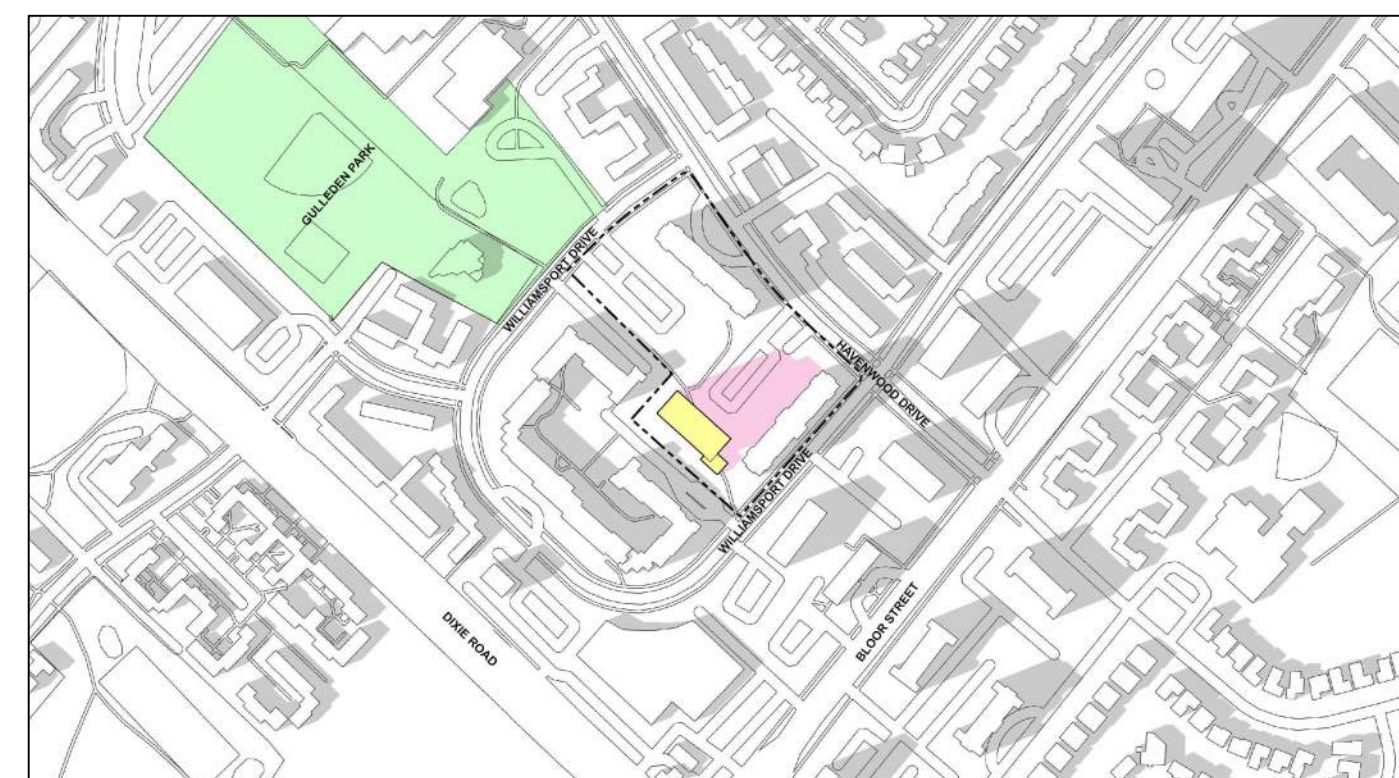
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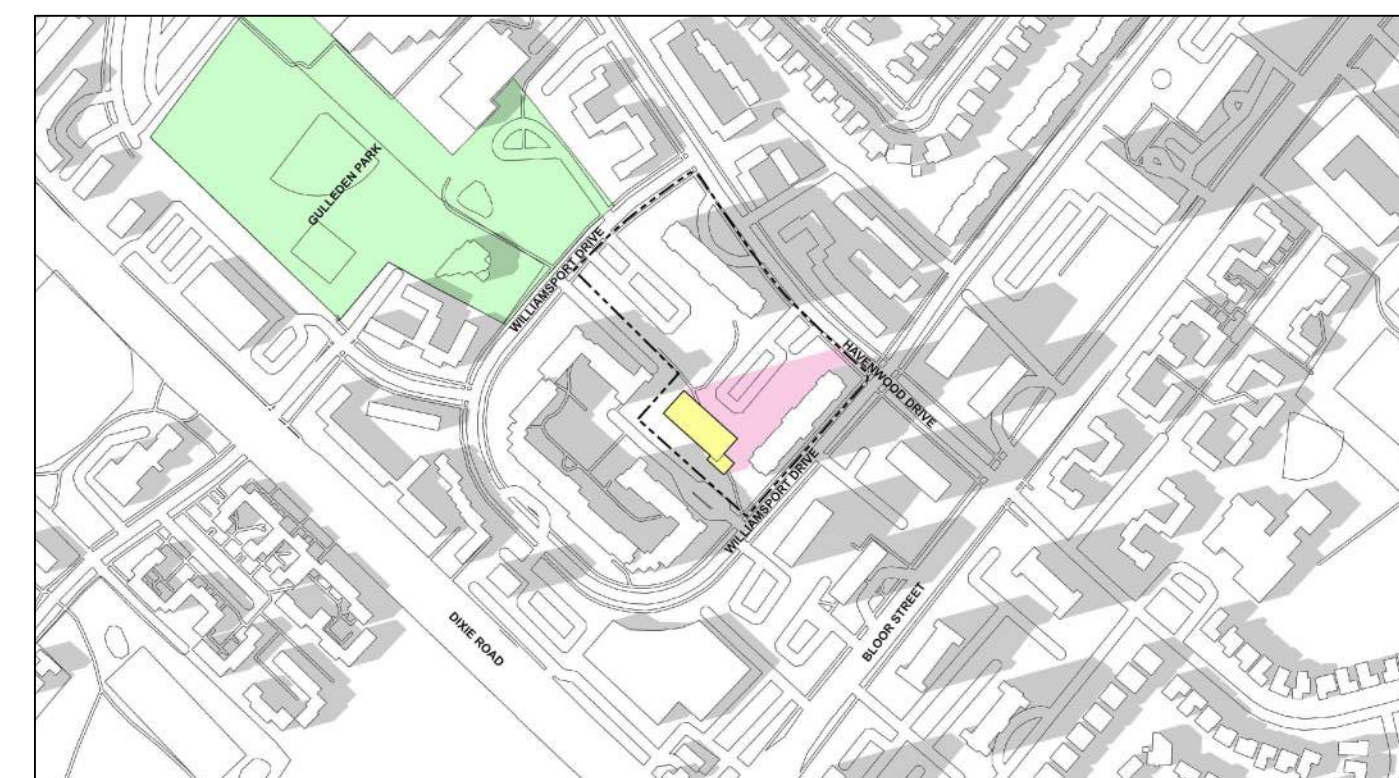
September 21st, 03:12 p.m



September 21st, 04:12 p.m



September 21st, 05:12 p.m



September 21st, 05:48 p.m

### Legend

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### notes:

2. ZBA Submission 23-05-24  
 1. ZBA Submission 09-11-22  
 submissions: dd-mm-yy

### architectural team :

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Grounded Engineering Inc.  
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wind:  
SR Consulting (Canada) Ltd  
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waste:  
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geotechnical & environmental:  
TerraSolve  
11 Indell Lane, Brampton, Ontario, L6J 3Y3

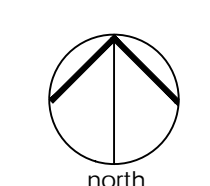
surveyor:  
Schaeffer Davidson Bennett Ltd.  
64 Jardin Drive, Concord, Ontario, L4K 3P3

OWNER:  
Starlight Investments  
1400-3280 Bloor Street West, Centre Tower, Toronto, Ontario M8X 2X3

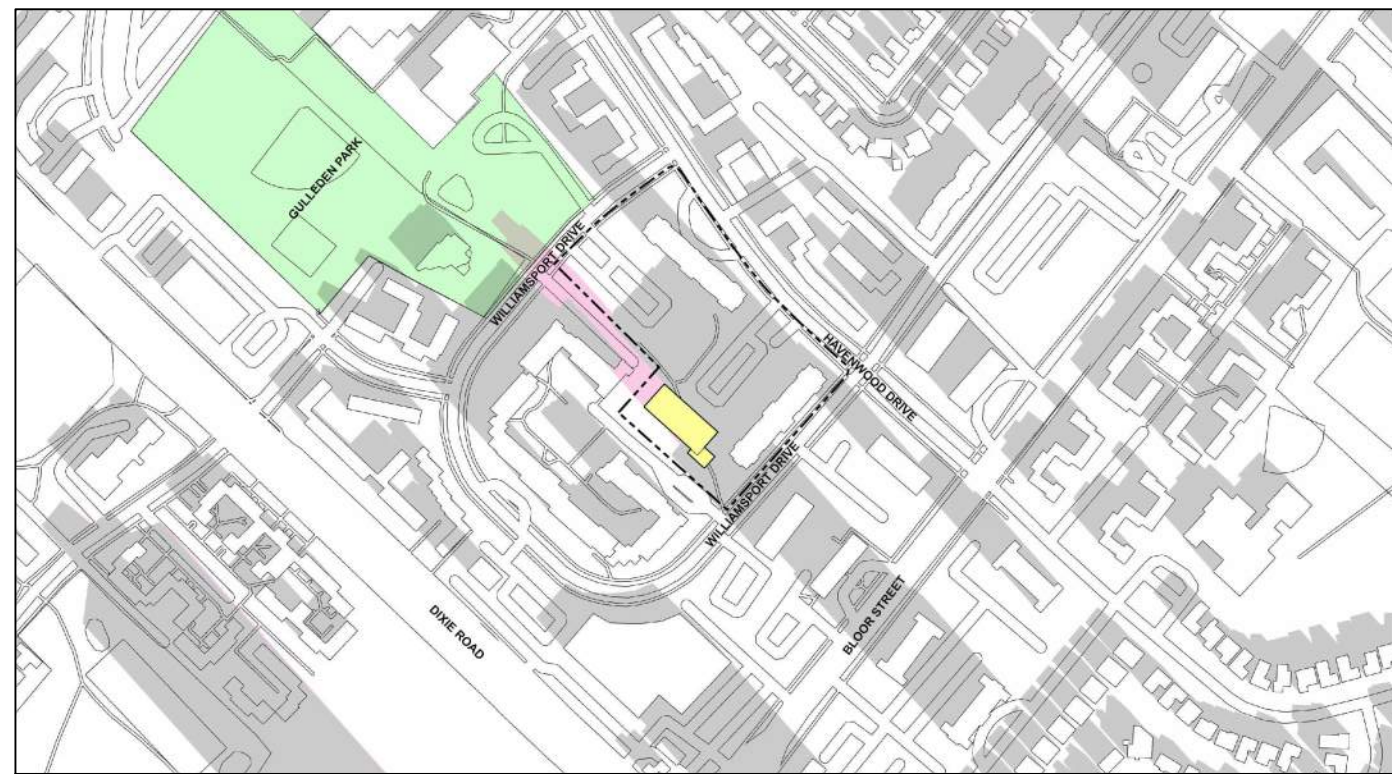
project:  
Pacific way  
3480 Havenwood Drive and 1485 Williamsport Drive  
Mississauga, Ontario L4X 2M8

### shadow study september 21

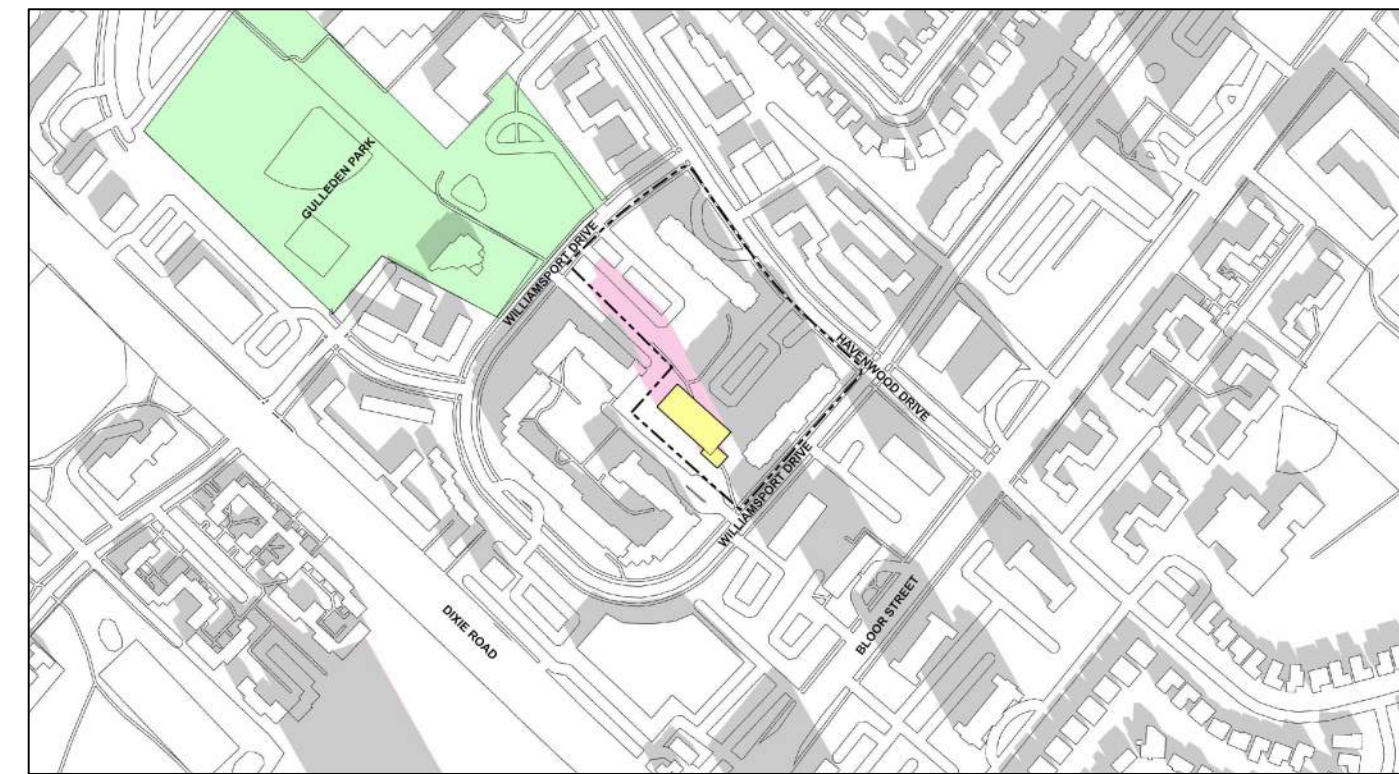
2021 date:  
NTS scale:  
21-15 project:  
NA drawn by:



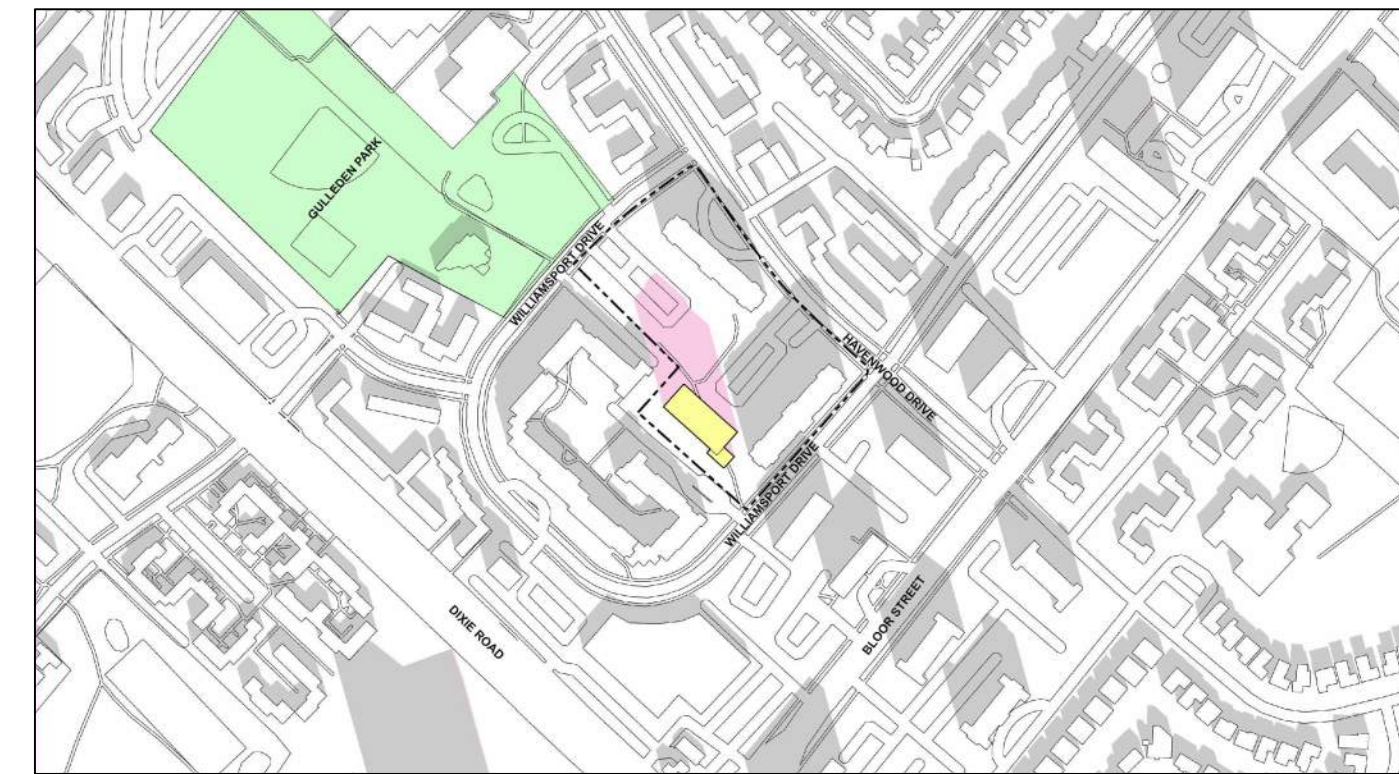
# A602



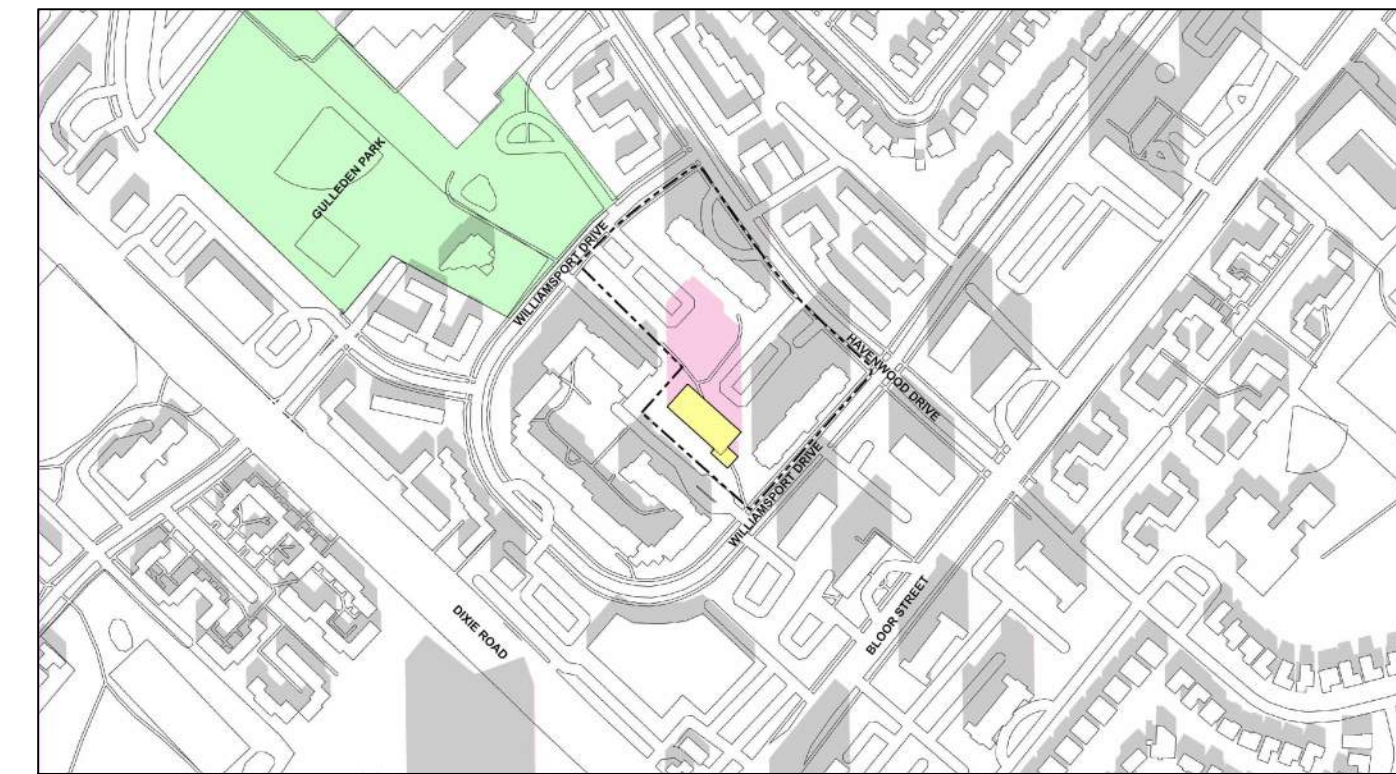
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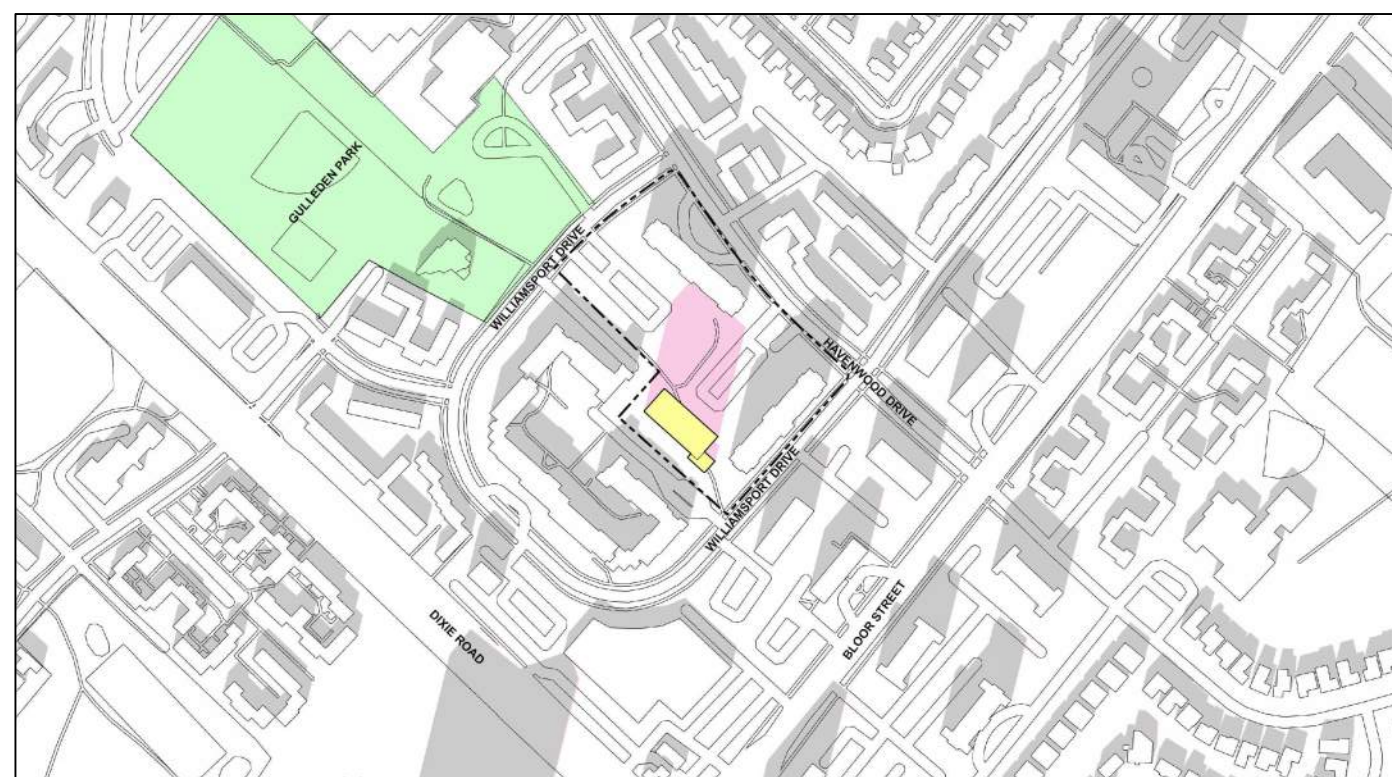
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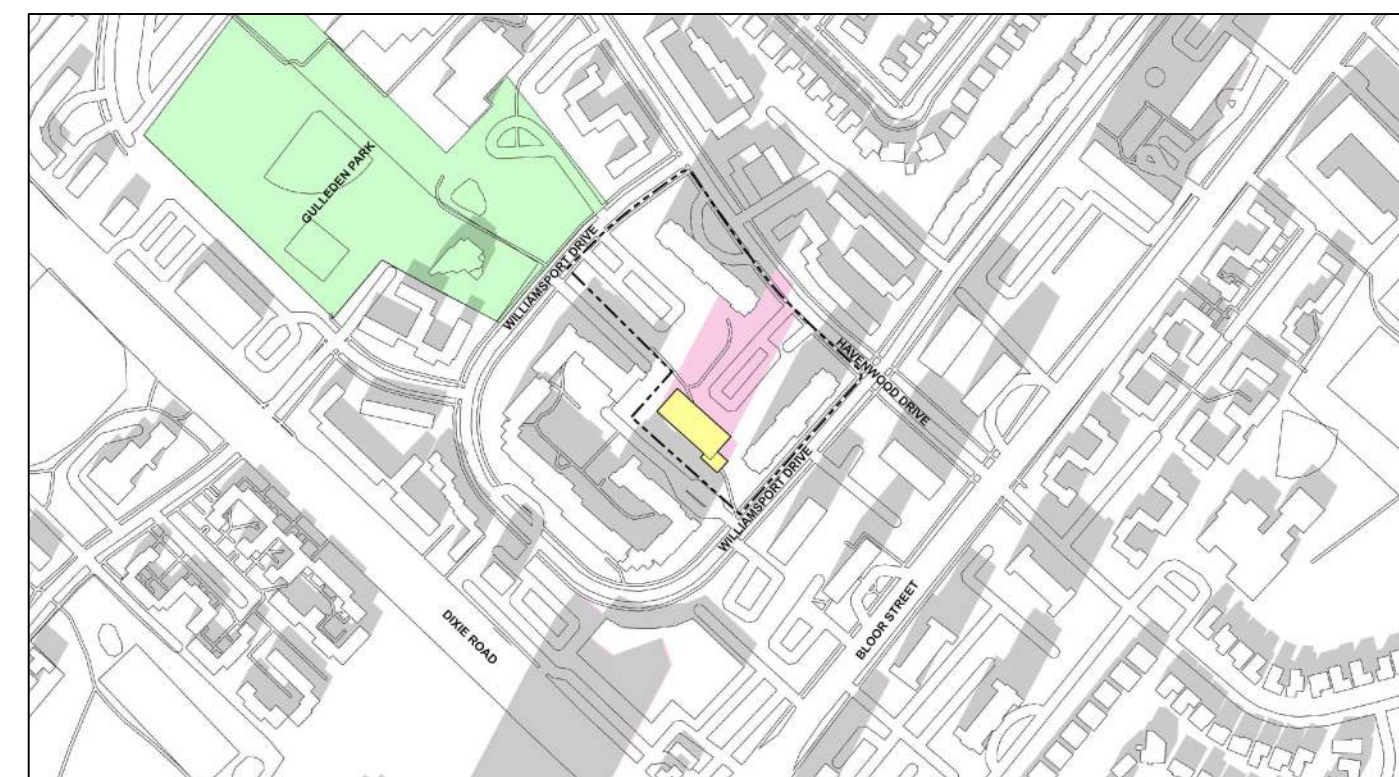
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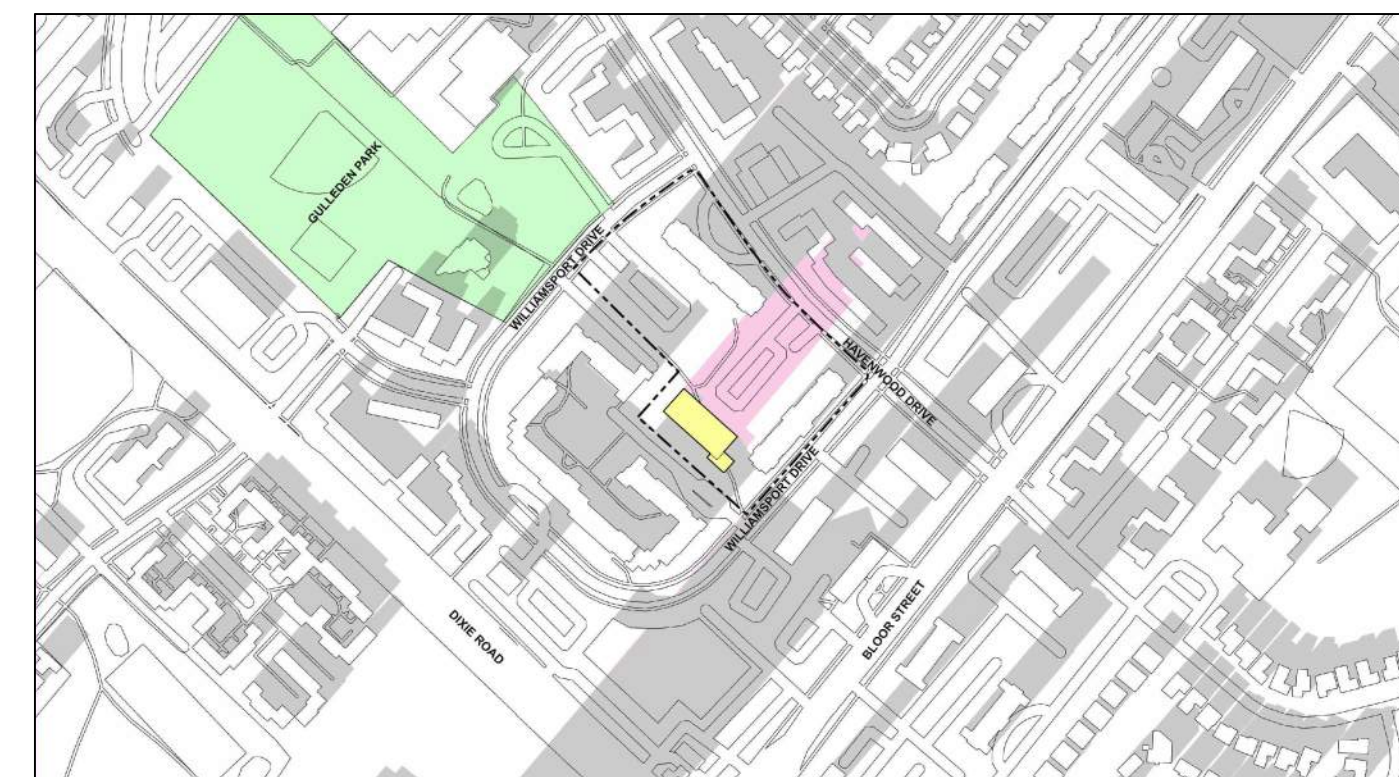
December 21st, 12:17 p.m



December 21st, 01:17 p.m



December 21st, 02:17 p.m



December 21st, 03:15 p.m

### Legend

- Proposed Development
- Existing Context Shadow
- New Massing Shadow
- Park

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Drawings are not to be scaled for construction. Contractor to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the architect before commencing work.

Positions of exposed or finished mechanical or electrical devices, fittings, and fixtures are indicated on architectural drawing. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the architect.

These drawings are not to be used for construction unless noted below as "based for construction".

All work to be carried out in conformance with the Code and bylaws of the authorities having jurisdiction.

The Designer of these plans and specifications gives no warranty or representation to any party about the constructability of the represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times that they can properly construct the work represented by these plans.

### notes:

2. ZBA Submission	23-05-24
1. ZBA Submission	09-11-22
submissions:	dd-mm-yy

### architectural team :

mark zwicker  
ihab daakour  
olena kobets-singh

planning:  
Urban Strategies Inc.  
117 Spadina Ave. suite 400, Toronto, Ontario M5T 2C8

landscape:  
Land Art Design  
53 Mimico Avenue, Studio B, Toronto ON M8V 1R1

site services & traffic:  
LEA Consulting Ltd.  
425 Cochrane Drive, suite 900, Markham, Ontario, L3R 9W9

engineering:  
Grounded Engineering Inc.  
1 Bangan Drive, Toronto, M4H 1G3

wind:  
S/R Consulting (Canada) Ltd  
100 Stone Road West, suite 201, Guelph, Ontario N1G 5L3

waste:  
Pragmatech Waste Solutions  
264 Bronte St. S. Unit 16 Milton, ON L7L 1Y8

geotechnical & environmental:  
TerraSolve  
11 Indef Lane, Brampton, Ontario, L6J 3Y3

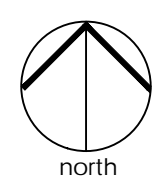
surveyor:  
Schaeffer Davidson Bennett Ltd.  
64 Jardin Drive, Concord, Ontario, L4K 3P3

OWNER:  
Starlight Investments  
1400-3280 Bloor Street West, Centre Tower, Toronto, Ontario M8X 2X3

project:  
**Pacific way**  
3480 Havenwood Drive and 1485 Williamsport Drive  
Mississauga, Ontario L4X 2M8

**shadow study**  
December 21

2021	date:
NTS	scale:
21-15	project:
NA	drawn by:



drawing number:  
**A603**