### 1. INTRODUCTION

This report presents the shadow study analysis for the application of a planned residential development comprising two residential buildings located on the land assembly known as 3480 Havenwood Dr. and the land assembly known as 1485 Williamsport Rd. in the city of Mississauga.

This report is prepared by IBI Group Architect on behalf of Starlight Investments.

The document addresses the specific criteria contained in the city of Mississauga Planning and Building Department's Standards for Shadow Studies (August 11) and demonstrates that the proposed development will not cause undue impacts with respect to shade.

### 1.1 PROPOSED DEVELOPMENT

The development proposal consists of two residential 8 storey buildings fronting Williamsport Rd. and Havenwood Dr. respectively.

The proposal contains a total of 202 rental units with access to the site via Williamsport Rd. and Havenwood Dr.



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SHADOW STUDY

#### 2. SUMMARY RESULTS OF SHADOW STUDY ANALYSIS

The Shadow Study Analysis demonstrates that the proposed development meets the City's standards for sun and daylight access on neighboring properties and in the public realm as summarized in the Table 1 below.

Detailed results for each of the five criteria are presented in Section 3.

Supporting shadow study exhibits for June 21, September 21, and December 21 for the hourly times specified in the City's Standards for Shadow Studies are provided in Appendix A.

TABLE 1 SHADOW STUDY ANALYSIS SUMMARY | 3480 HAVENWOOD DR. & 1485 WILLIAMSPORT RD.

City Criteria No.	Scenario	
1.	Residential Private Outdoor Amenity Spaces	
	i. June 21	Criteria Achieved
	ii. September 21	Criteria Achieved
2.	Community Outdoor Amenity Area	
	iii. June 21	Criteria Achieved
	iv. September 21	Criteria Achieved
	v. December 21	Criteria Achieved
3.	Public Realm	
	a. Low and medium residential streets	Criteria Achieved
	b. Mixed Use, Commercial, Employment and High Density Residential Streets	Criteria Achieved
	c. Public Open Spaces, Parks and Plazas	Criteria Achieved
4.	Turf and flower gardens in public park	Criteria Achieved
5.	Building faces to allow for the possibility of using solar energy	Criteria Achieved

#### Notes:

- The Site latitude is 43°37'12"N and longitude 79°35'41"W
- Astronomical north was based on the base mapping obtained from the City of Mississauga.
- The base mapping (CAD files) was obtained from the City of Mississauga.
- Base mapping includes a minimum coverage area of 4x the tallest building height to the north, east and west and 1.5x the tallest building to the south.

#### 3. INDIVIDUAL CRITERIA RESULTS

This section provides the result of the shadow analysis related to each of the five criteria applicable to this site contained in the City of Mississauga's Standards for Shadow Studies ( August 2 011). We have cited the relevant City standard and provide a conclusion with respect to each. As noted above, supporting exhibits for all required hourly analysis are provided in Appendix A.

#### 3.1 Residential Private Outdoor Amenity Spaces (Criterion 1)

Standard: To maximize the use of private residential amenity spaces during spring, summer and fall, shadow impacts from proposed developments should not exceed one hour in duration on areas such as private rear yards, decks, patios and pools of surrounding residential dwellings on June 21 and September 21.

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 ("No Impact Zone"). The line of impact assessment shall be, a line 7.5m minimum from the rear wall or other appropriate exterior building wall of the dwelling that abuts the private amenity space.

Conclusion: The criterion is met for June and September Residential Private Outdoor Amenity Spaces within the study area.

### 3.2 Communal Outdoor Amenity Areas (Criterion 2)

Standard: 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 by seniors and those associated with commercial and employment areas during spring, summer and fall. The criterion is met if the "sun access factor" is at least 50% on each of the required test dates.

The following communal outdoor amenity areas were identified within the study area:

i. Existing communal amenity space - Mississauga Williamsport YMCA (Child care center)

The communal space (Child care center) for the existing residential development, has no incremental shadows on June 21, September 21 and December 21.

Total Area: 473m<sup>2</sup> Area in sunshine: 473m<sup>2</sup> Sun access factor: 1.0

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#### Existing communal amenity space - St. Sofia School (School Yard)

The communal space (School Yard) for the existing residential development, has incremental shadows only on December 21.

Total Area: 8840m<sup>2</sup> Area in sunshine: 8736m<sup>2</sup> Sun access factor: 0.96

Conclusion: The criterion is met for these existing communal outdoor amenity spaces as the current condition achieves 50% / 0.5 or more in Sun Access Factor.

#### 3.3 Public Realm (Criterion 3)

#### 3.3a) Low and Medium Residential Streets

Standard: Developments should be designed to allow full sunlight on the opposite boulevard including the full width of the sidewalk on September 21 for the total of at least 4 hours between 9: 12 and 11: 12 and between 15: 12 and 17: 12

Conclusion: The criterion is met as there are no incremental shadows on the opposite boulevard on the low density residential streets between the time periods noted in the standard above.

#### 3.3b) Mixed Use, Commercial, Employment and High Density Residential streets

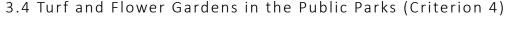
Standard: Developments should be designed to allow full sunlight on the opposite boulevard including the full width of the sidewalk on September 21 as follows: For a total of at least 5 hours that must include the 2 hour period between 12: 12 and 14: 12, and an additional 2 hour period from either 9: 12 to 11: 12 or from 15: 12 to 17: 12

Conclusion: The criterion is met as there are no incremental shadows on the opposite boulevard on the low density residential streets between the time periods noted in the standard above.

#### 3.3a) Public Open Spaces, Parks, and Plazas

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

Conclusion: This criterion is met as there are no incremental shadows that fall on public open spaces, parks or plazas on September 21.



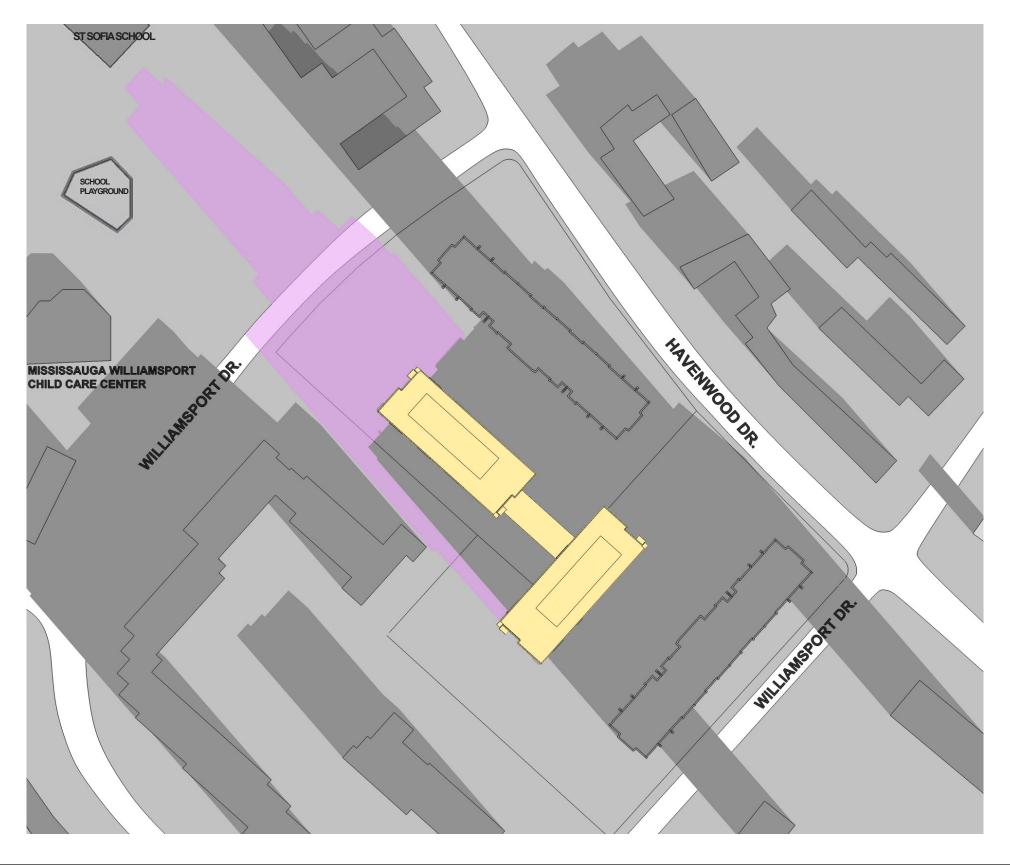
Standard: Proposed developments should allow for adequate sunlight during the growing season from March to October by allowing for a minimum of 6 hours of direct sunlight on September 21.

Conclusion: There are no incremental shadows on turf or flower gardens in public parks on any of the test times on September 21st.

### 3.5 Building faces to allow for the possibility of using solar energy (Criterion 5)

Standard: Shadow impacts from proposed developments should not exceed one hour in duration on the roofs, front, rear and exterior side walls of adjacent low rise (one to four storeys) residential buildings including townhouses, detached and semi-detached dwellings on September 21.

Conclusion: The criterion is met as the incremental shadows not exceed more than one hour in duration.

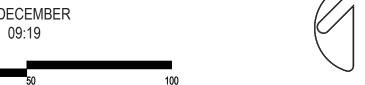




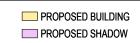
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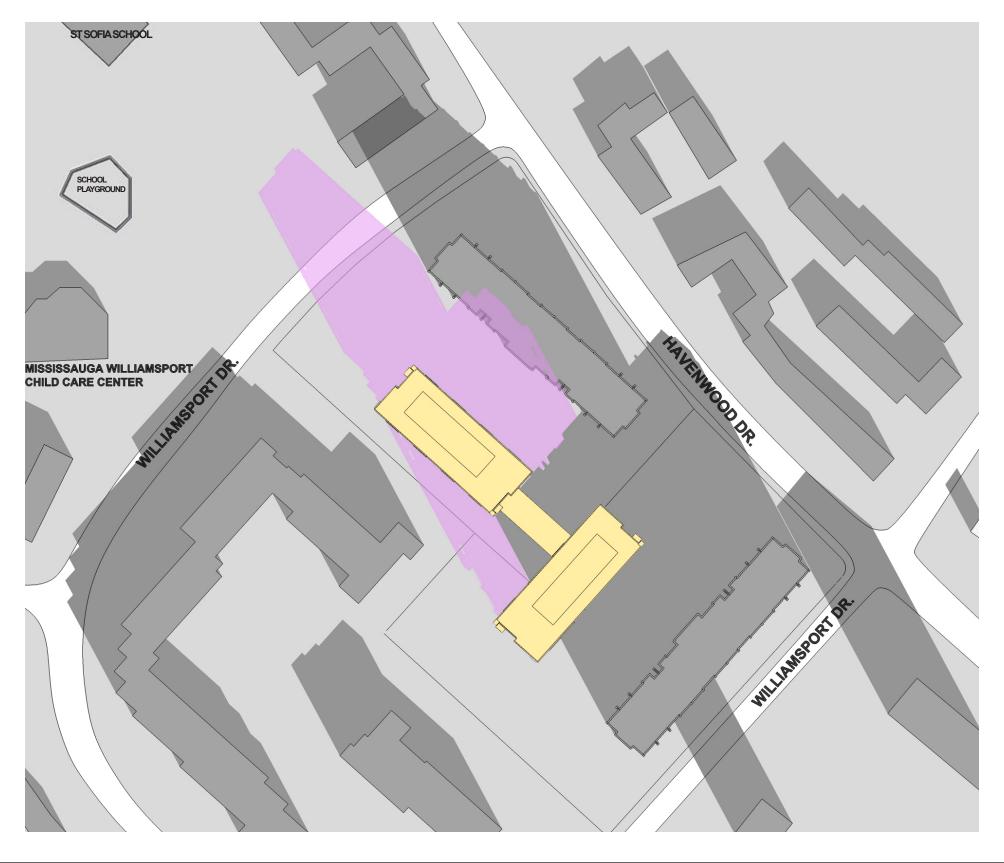
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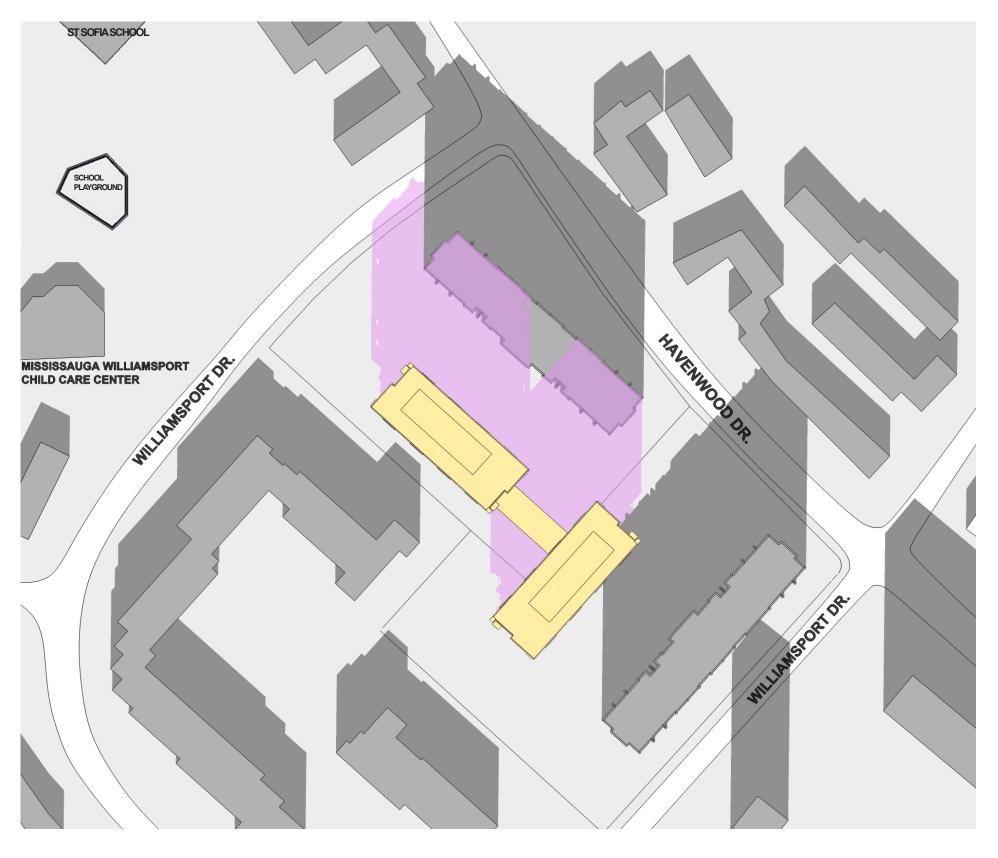
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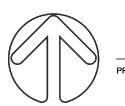
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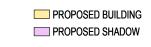
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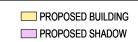




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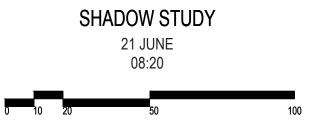


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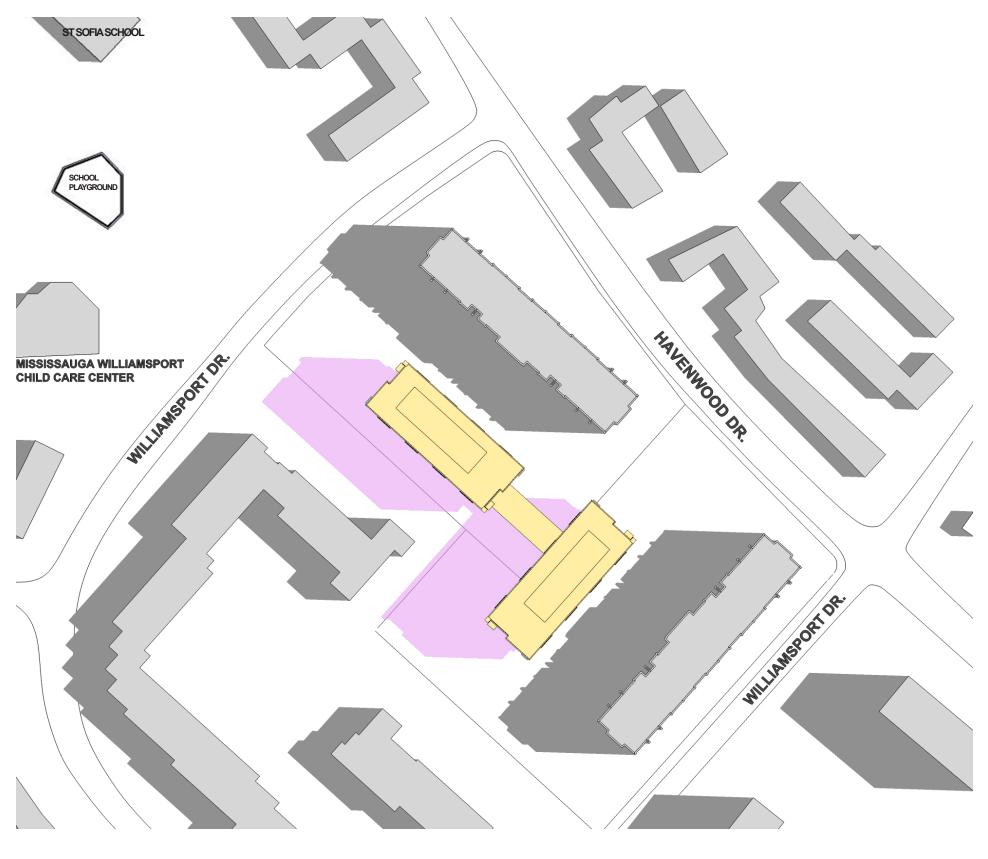




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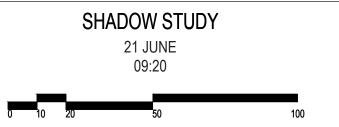


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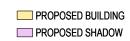
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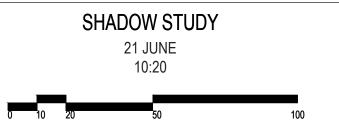


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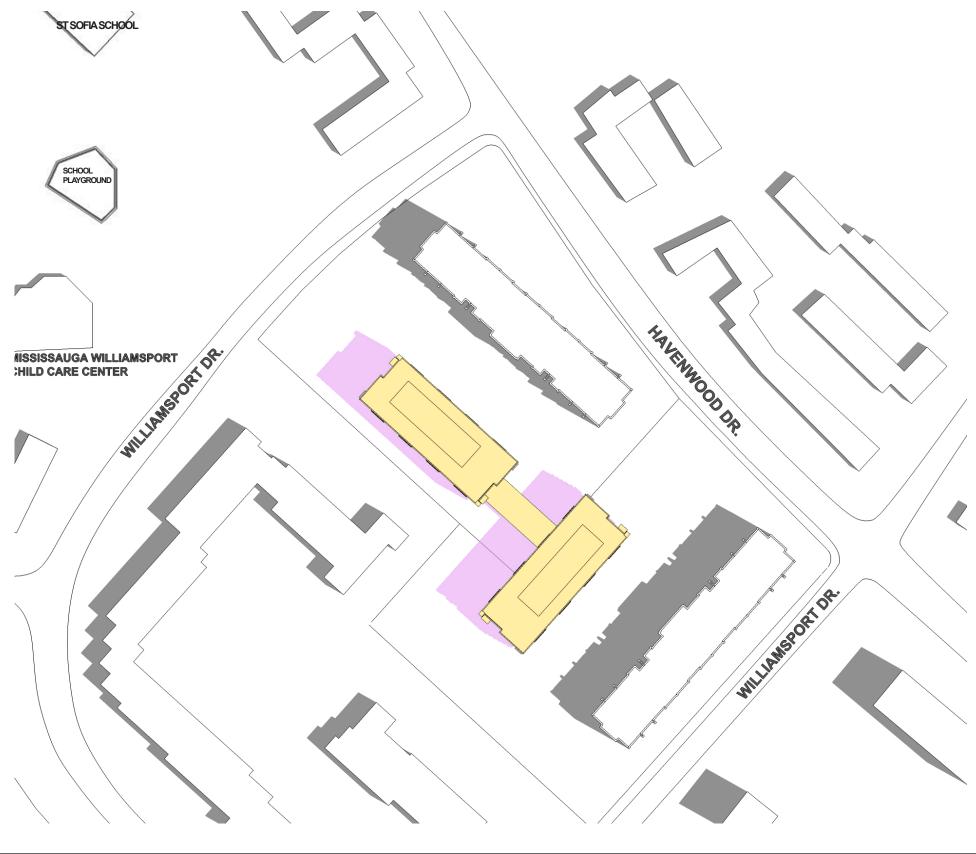
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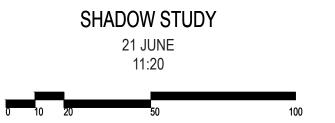
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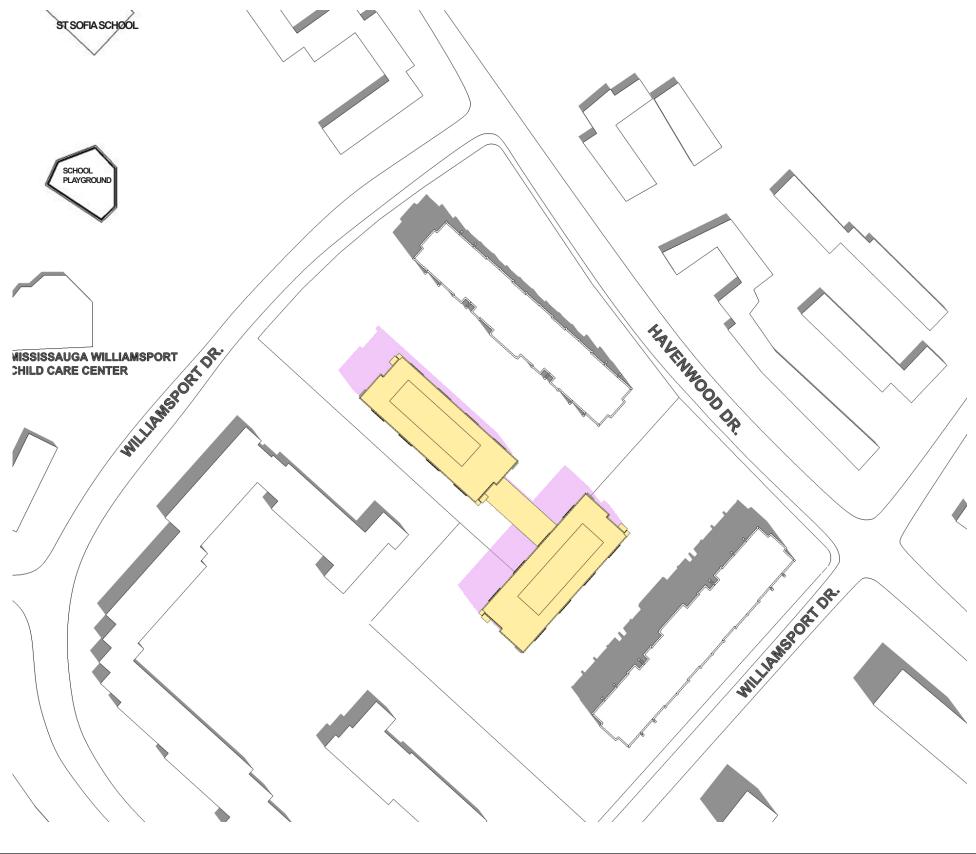
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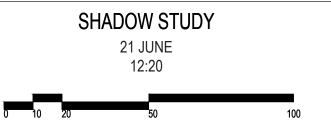
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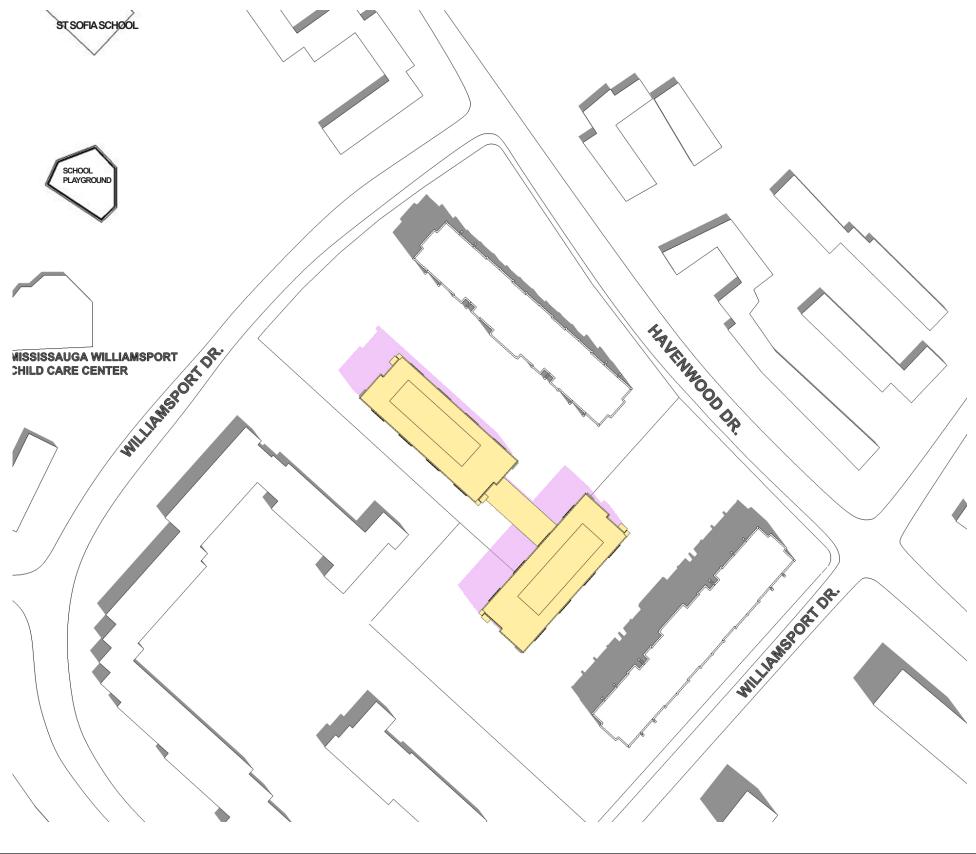




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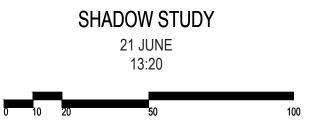
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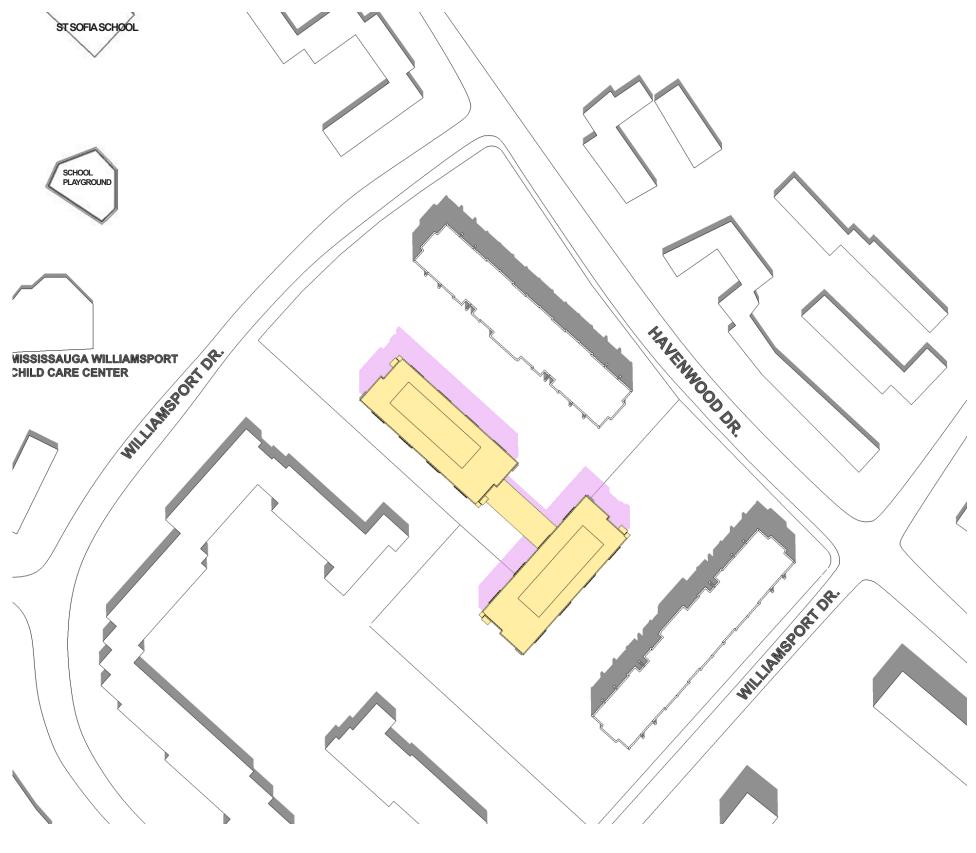




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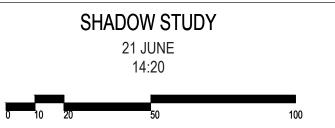
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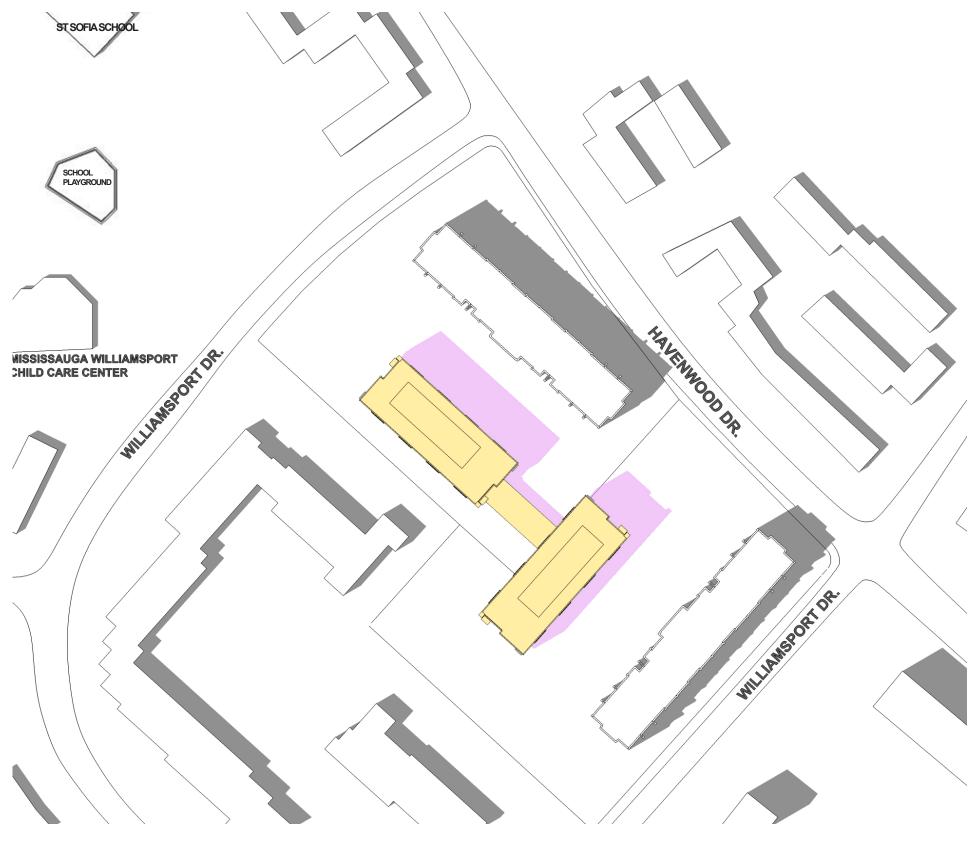




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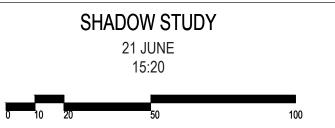
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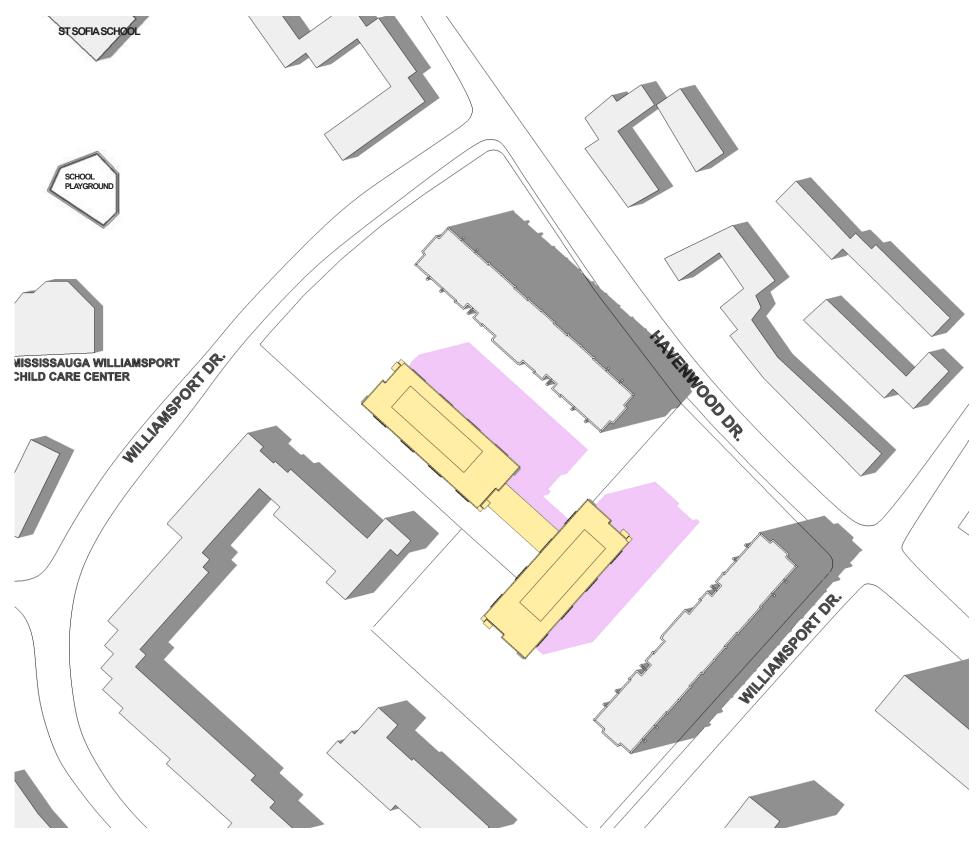




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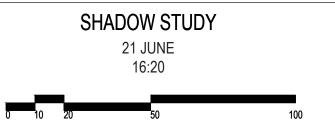
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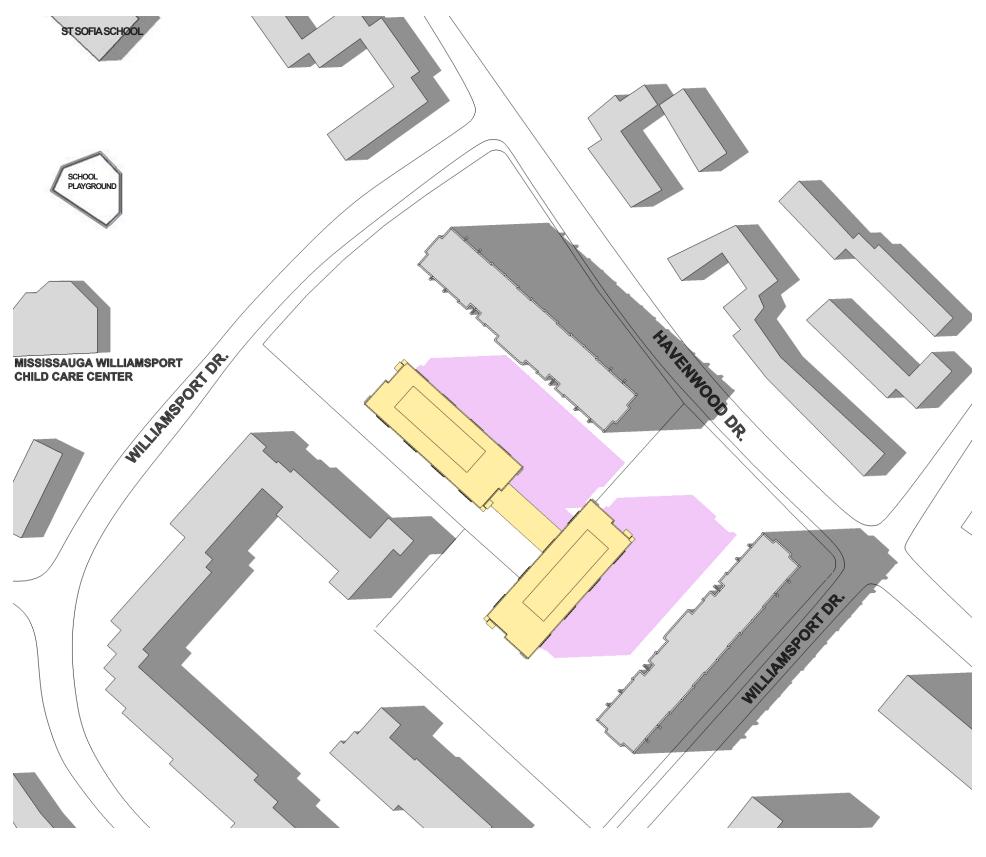
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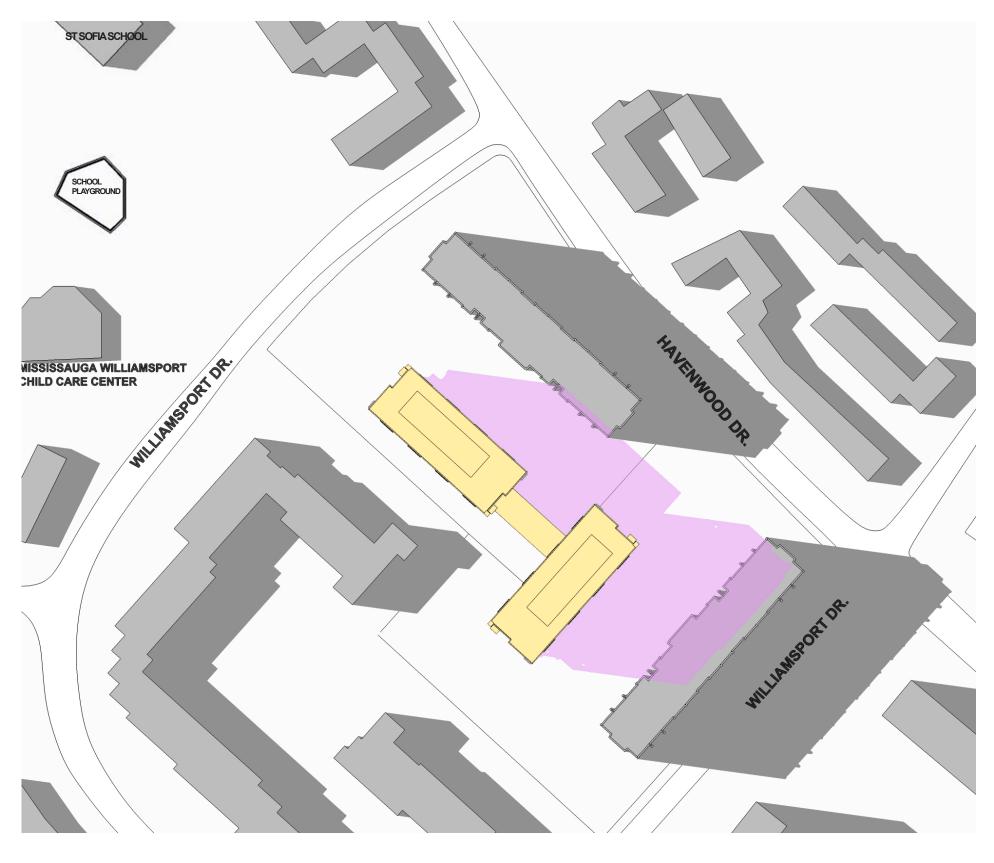
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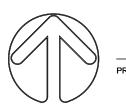
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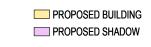




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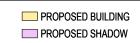




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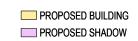
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## SHADOW STUDY 21 SEPTEMBER







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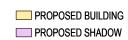


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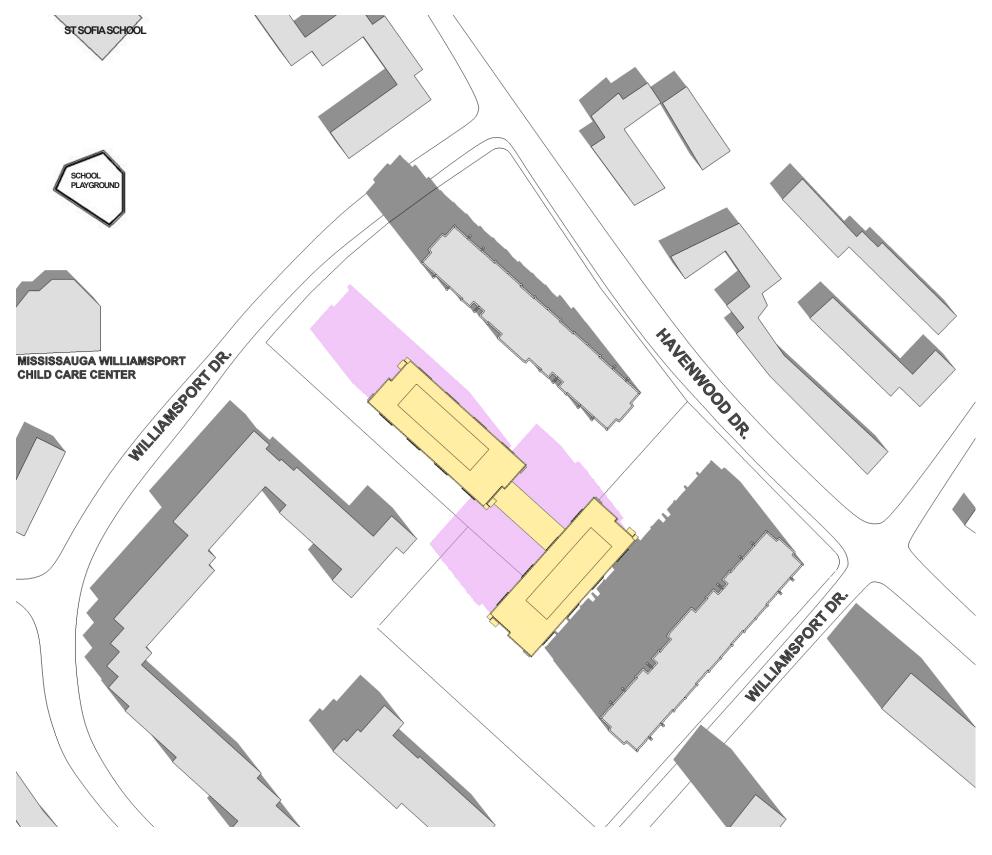
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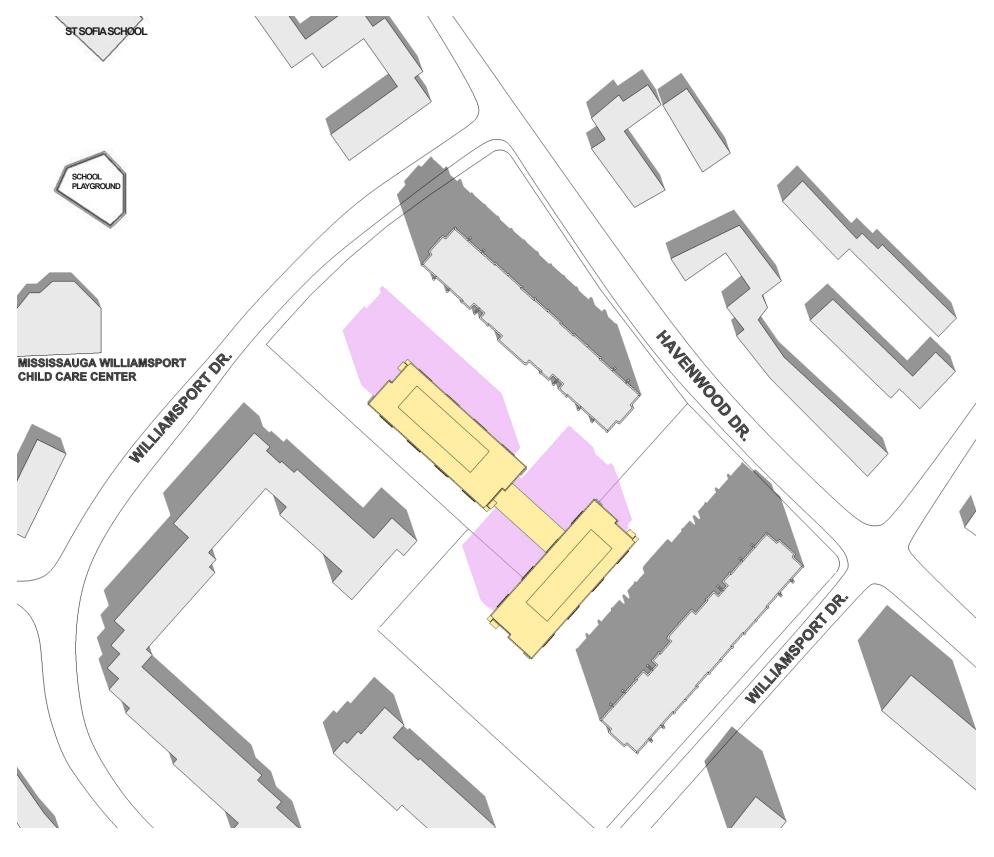
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## SHADOW STUDY 21 SEPTEMBER 11:12



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## **SHADOW STUDY** 21 SEPTEMBER

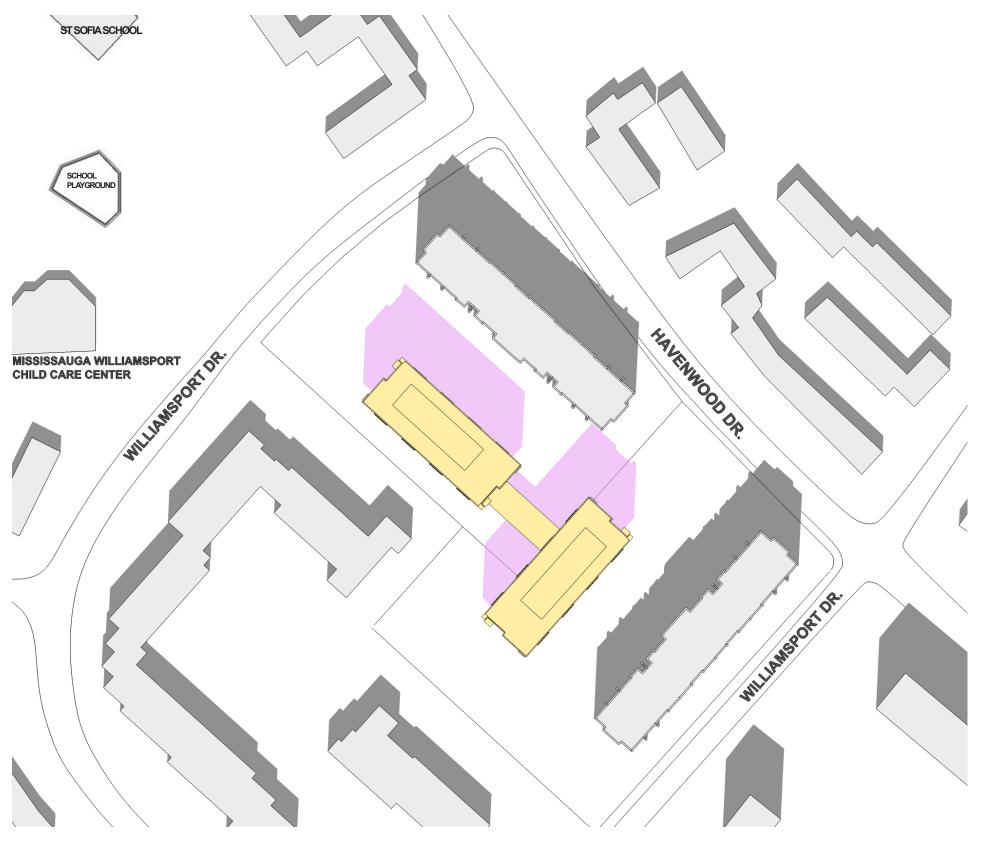




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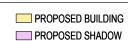
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## **SHADOW STUDY** 21 SEPTEMBER

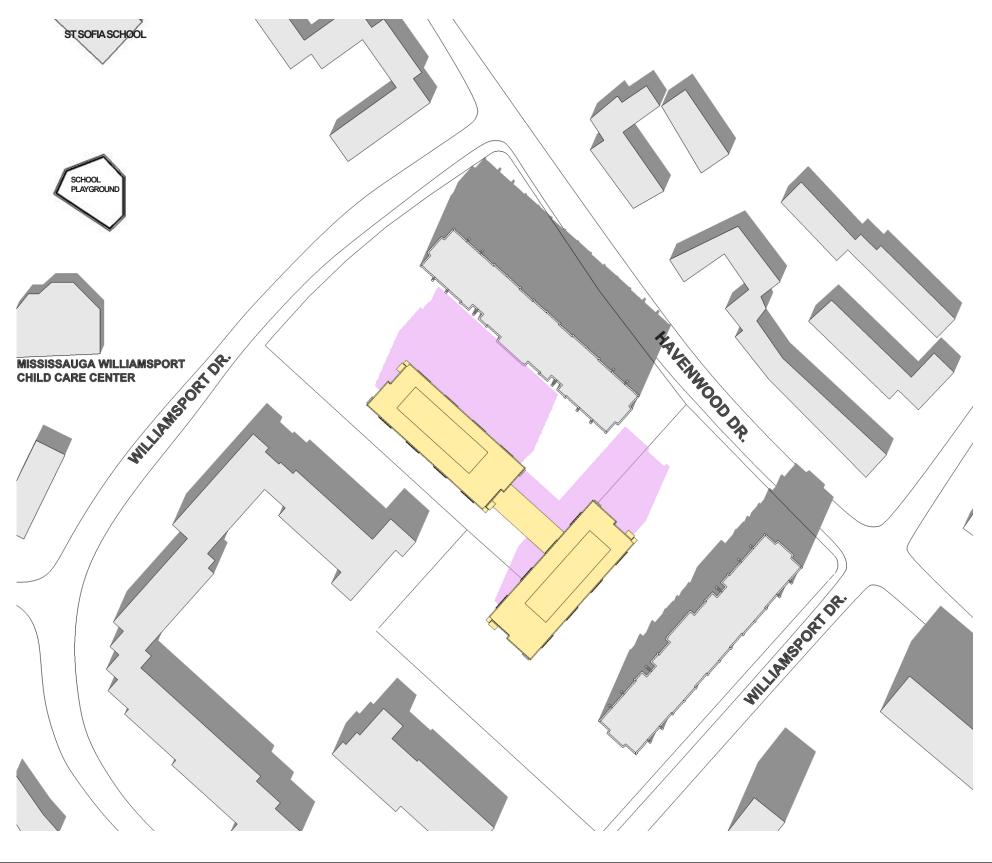
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## SHADOW STUDY

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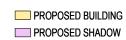
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## SHADOW STUDY

21 SEPTEMBER 17:12





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PROPOSED SHADOW

PROJECT No: 10887

MAY24, 2018

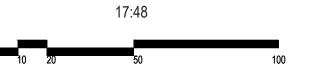




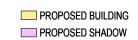
7th Floor-55 St. Clair Avenue West Toronto ON M4V 2Y7 Canada tel 416 596 1930 fax 416 596 0644 ibigroup.com

PROJECT TITLE 3480 HAVENWOOD DRIVE & 1485 WILLIAMSPORT ROAD MISSISSAUGA, ONTARIO

## SHADOW STUDY 21 SEPTEMBER







MAY 24, 2018