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SHADOW IMPACT STUDY **REPORT**

1085 Clearview Avenue and 1082-1090 St. Matthews Avenue, Burlington

Date:
DECEMBER 21, 2018

Prepared for:
L!V Communities

Prepared by:
MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC)
7050 Weston Road, Suite 230
Woodbridge ON L4L 8G7
T: 905 761 5588 x213
F: 905 761 5589

Our File: 15226N

1.0

INTRODUCTION

MHBC has been retained by LIV Communities (hereinafter referred to as the "Applicant") to undertake a Shadow Impact Study in support of a proposal for the redevelopment of the properties municipally known as 1085 Clearview Avenue & 1082, 1086 and 1090 St. Matthews Avenue in the City of Burlington (hereinafer referred to as the "site" or the "subject lands"). The subject lands are generally bound by Clearview Avenue to the west, St. Matthews Avenue to the east and Masonry Court to the north.

The proposal consists of a 6-storey apartment with 160 residential dwelling units, one level of underground parking containing 154 parking spaces and 49 surface parking spaces in the side and rear yards.

Surrounding the site are the following uses:

NORTH: The site is adjacent to vacant lands to the north which are currently under construction, while the Aldershot GO Station and parking area are located further to the north.

EAST: A residential neighbourhood consisting of single detached homes is located directly east of the subject lands. Beyond this are Aldershot Park and Grove Park.

SOUTH: Immediately south of the subject lands is a residential community consisting of single detached homes. Further to the south, the lands fronting onto Plains Road East consist of a mixture of retail, service and residential uses.

WEST: A limited number of single detached homes are located directly to the west of the subject lands, with an office complex and range of businesses situated further west.

In undertaking the evaluation of the Shadow Study, this report has relied on the following information:

- Sun / Shadow Study by Kirkor Architects + Planners provided as **Appendix A**;
- Policy 2.5.2 (a) vii) – Housing Intensification of the in-effect City of Burlington Official Plan;
- Policy 7.3.2 (a) viii) – Existing Community Areas and Policy 12.1.2(1.2) xx) – Development Applications of the draft proposed City of Burlington Official Plan;
- City of Burlington Standardized Shadow Impact Criteria as discussed in **Section 3.0** of this report.

2.0

PURPOSE AND INTENT

The purpose of this report is to undertake a Shadow Study to assess the impact of the proposed development shown in **Figure 1** on the surrounding areas. This Shadow Study has relied on the City of Burlington Standardized Shadow Impact Criteria, the details of which are expanded on in **Section 3.0** of this report.

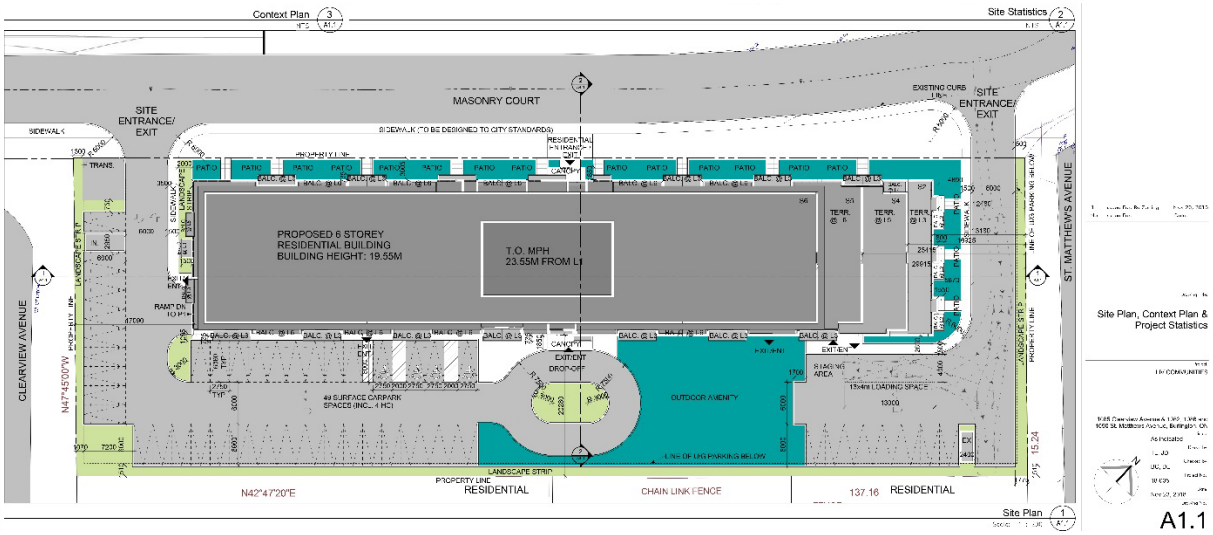


Figure 1 – Proposed Development. Site Plan by Kirkor Architects + Planners

This Shadow Study meets the in-effect City of Burlington Official Plan requirement to mitigate the impact of shadow in relation to housing intensification within established neighbourhoods. Policy 2.5.2 (a) vii), states the following considerations:

> Significant sun-shadowing for extended periods on adjacent properties, particularly outdoor amenity areas, is at an acceptable level.

This Shadow Study also meets the draft City of Burlington Official Plan requirement of Policy 7.3.2 (a) (viii) regarding development in Existing Community Areas which requires consideration of:

> Implementing measures that adequately limit any resulting shadowing, and uncomfortable wind conditions on the streetscape, neighbouring properties, parks and open spaces and natural areas.

Further, Policy 12.1.2(1.2) xx) of the draft Official Plan requires a shadow analysis plan be submitted with development applications for proposals within Existing Community Areas.

3.0 METHODOLOGY

In undertaking and evaluating potential shadows on the site and surrounding areas, this report applied the following methodology and approach.

3.1 Shadow Study Criteria

The City of Burlington provides Standardized Shadow Impact Criteria that outline the shadow schedule that shadow plan submissions must adhere to. The testing timeframes used for this report are based on a schedule of 1 hour increments which allow for a rigorous assessment of shadow impact throughout the day. The testing dates and evaluation method allow for the ability to quantify the shadow impact as it moves across a property. Together, the testing times and evaluation method are appropriate and comprehensive for the evaluation of shadow impact.

3.2 Testing Times

The evaluation of acceptable solar access will rely on 1 hour increments between the timeframes of 9:30 a.m. and 6:30 p.m. These timeframes will be applied equally to the following dates:

- June 21st (Summer Solstice)
- December 21st (Winter Solstice)
- March/September 21st (Spring and Fall Equinoxes)

Although not specifically required in the City of Burlington Standardized Shadow Impact Criteria, an analysis of shadow impact during the Fall Equinox has also been provided as part of this report, which will mirror the impacts of the Spring Equinox.

3.3 Evaluation of Potential Impacts

The evaluation of the Sun / Shadow Study in **Appendix A** will determine whether acceptable sun-shadowing levels are available on sensitive uses namely:

- Neighbouring streets; and
- Surrounding low-rise residential properties.

If circumstances where less than 3 hours of solar access occur, an evaluation of the site-specific context can be taken into consideration to determine reasonable protection of solar access.

3.4 Building Massing

This Shadow Study is based on the preliminary massing model prepared at the time of submission. It is acknowledged that the design and articulation of the built form will be finalized at a later stage. The shadow impact analysis provides a clear assessment of the proposed building height, massing and orientation for the purposes of this submission to the City of Burlington.

It is noted that the shadow impact of accessory structures is generally not included in typical evaluations as their impact is minimal. Should future accessory structures or building protrusions, such as balconies, rooftop structures, retaining walls, etc., be introduced, the shadows cast by these structures would be minimal but may be evaluated as required at the detailed Site Plan Approval stage.

4.0

EVALUATION

The following are the findings resulting from the analysis of the Sun / Shadow Study for the proposed development. The image documentation of the Sun / Shadow Study can be found in **Appendix A** of this report.

The evaluation of shadow impact on sensitive uses focuses on: A) the streets bordering the subject lands, particularly Masonry Court and St. Matthews Avenue, and B) the existing low-rise residential properties adjacent the site.

Neighbouring Streets

The proposed development will have minimal shadow impact on the neighbouring streets surrounding the subject lands.

St. Matthews Avenue will have full solar access for nine consecutive hours between 9:30 a.m. and 6:30 p.m. for the Summer Solstice. During the Spring and Fall Equinoxes, St. Matthews Avenue will have full solar access between 9:30 a.m. and 4:30 p.m., with some shadows cast on the street and a few of the properties to the southeast after 5:30 p.m. During the Winter Solstice, a narrow shadow will be cast on St. Matthews Avenue between 1:30 p.m. and 6:30 p.m., with full solar access provided between 9:30 a.m. and 12:30 p.m. Generally, shadows on St. Matthews Avenue will be minimized due to the east-west orientation of the proposed development and the slender rectangular building envelope which steps down in height toward St. Matthews Avenue.

During the Summer Solstice, Masonry Court will have full solar access between 10:30 a.m. and 6:30 p.m. During the Equinoxes, Masonry Court will be in shade between 9:30 a.m. and 12:30 p.m., and will receive sunlight after 12:30 p.m. for the remainder of the day. Masonry Court will be in shade between 8:30 a.m. and 2:30 p.m. during the Winter Solstice, and will have solar access after 2:30 p.m. With the exception of the winter season when days are at their shortest, Masonry Court will have access to at least 3 hours of sunlight a day.

Shadow impact on Clearview Avenue will be negligible.

The design and orientation of the proposed apartment building will ensure that adequate solar access is achieved on neighbouring streets throughout the day and will lessen the shadow impact during each of the seasons.

Low-Rise Residential Properties

There will be limited shadow impact on the existing low-rise properties to the east and south of the proposed development. During the Spring and Fall Equinoxes, shadows will only be cast on some of the properties to the east and south after 5:30 p.m. During the Winter Solstice, a few properties to the east

along St. Matthews Avenue will be in shade at 3:30 p.m. until sundown. Outside of these times, full solar access will be maintained for properties east and south of the site for the remainder of the year.

As a result of the orientation of the proposed development, shadow impact on the existing low-rise residential properties to the west of the site will be negligible.

It is noted that, while the vacant property to the north of the site will be partially in shade during the morning hours of the Winter Solstice and Spring and Fall Equinoxes, this property will have at least 3 hours of solar access each day throughout the year.

The design and orientation of the proposed development significantly minimizes shadow impact on neighbouring properties and sensitive uses throughout the day and during each of the seasons.

5.0

CONCLUSION

Based on the evaluation undertaken in this report, it is concluded that there is an acceptable level of shadow impact from the proposed development relative to neighbouring streets and the low-rise residential properties surrounding the site. The proposed development orientation, building envelope and step down in building height toward St. Matthews Avenue maximizes compatibility with the surrounding area in terms of mitigating shadow impact.

It is our opinion that the proposed development results in acceptable levels of shadow on the site and surrounding land uses, and acceptable solar access has been maintained for the public realm and adjacent properties.

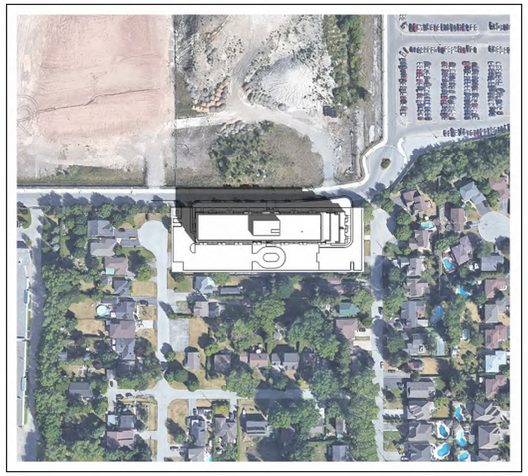
Yours truly,

MHBC

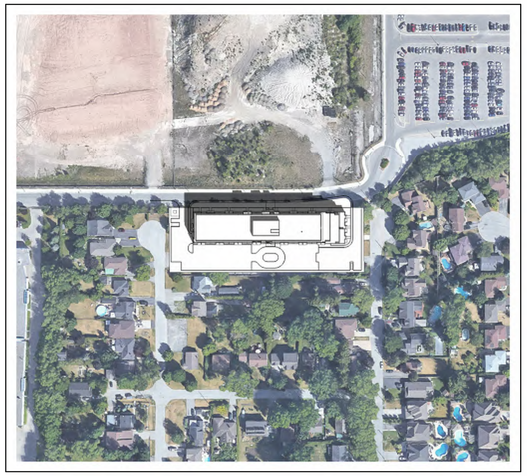
Eldon C. Theodore
MUDS, MCIP, RPP, LEED AP
Partner and Urban Designer

Jennifer Grove
BA (arch.), M.PL.
Planner and Urban Designer

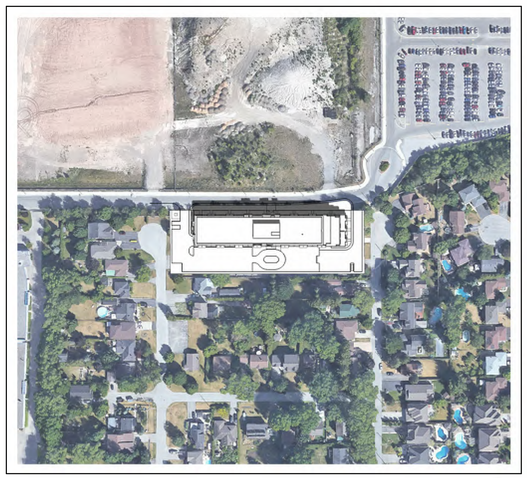
Appendix **A**



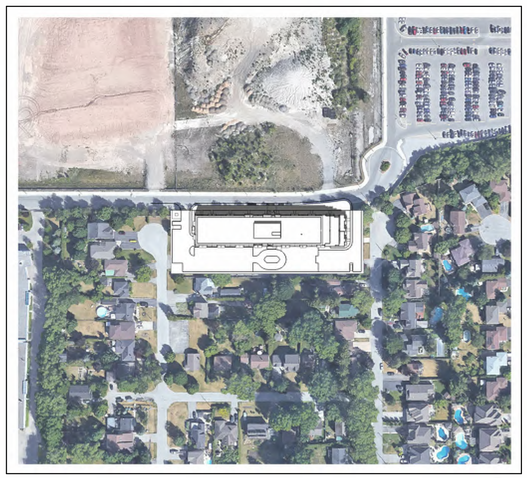
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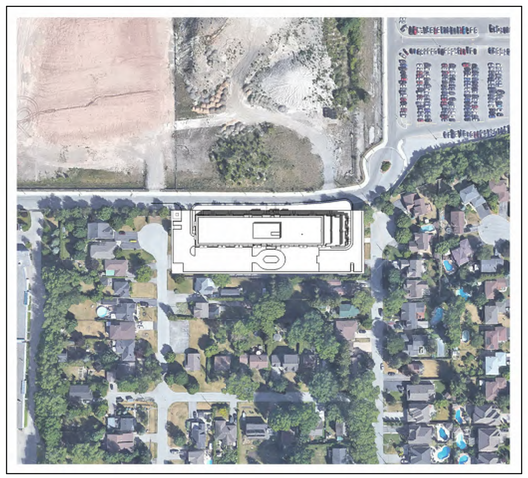
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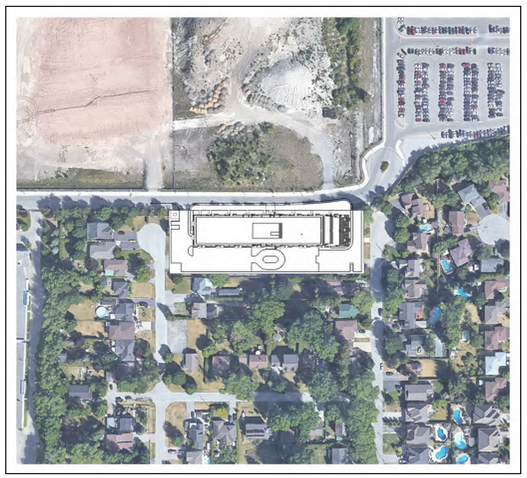
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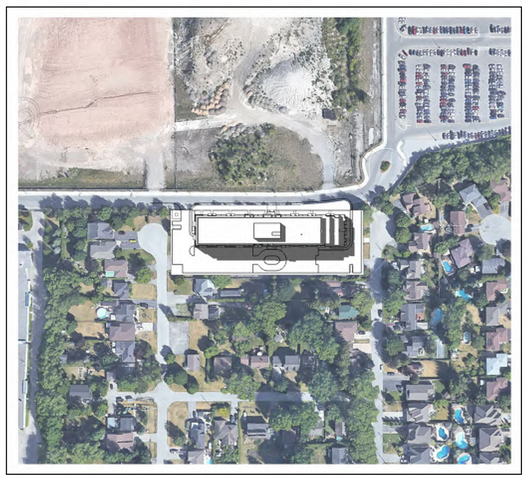
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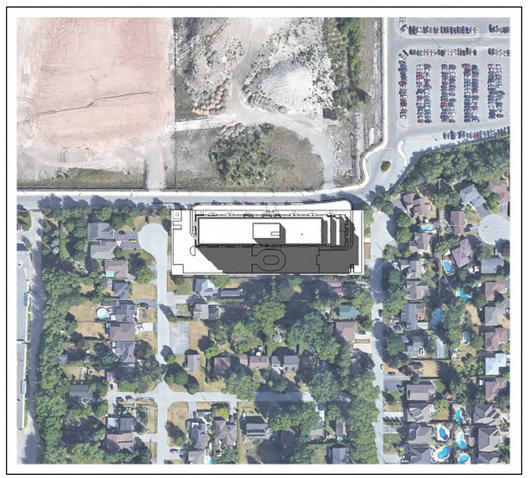
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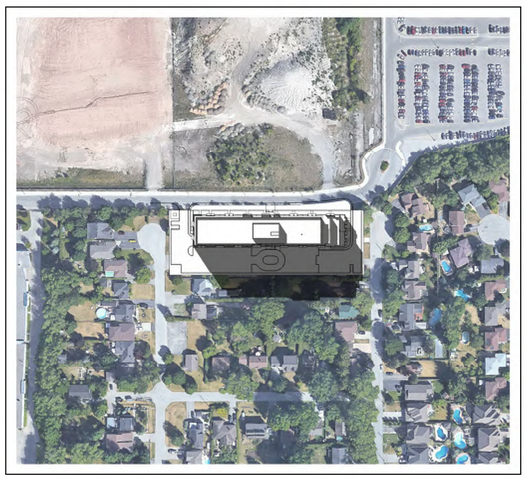
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LICENCE
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20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

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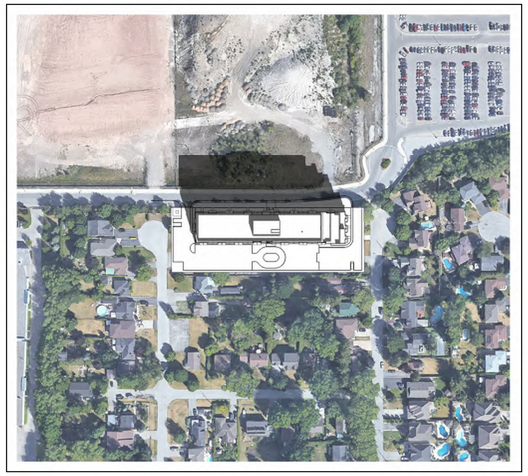
Sun/Shadow Study June

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Project No.: 18-035
Date: Dec 20, 2018
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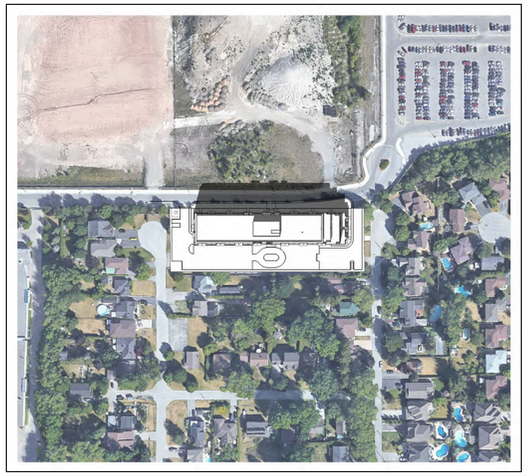
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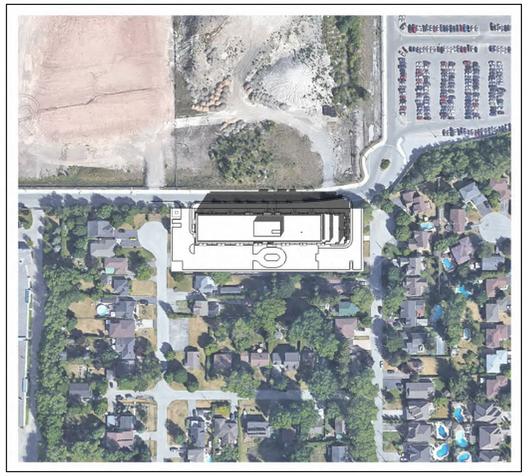
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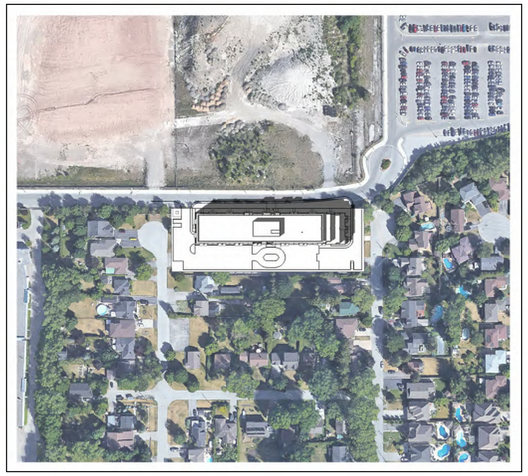
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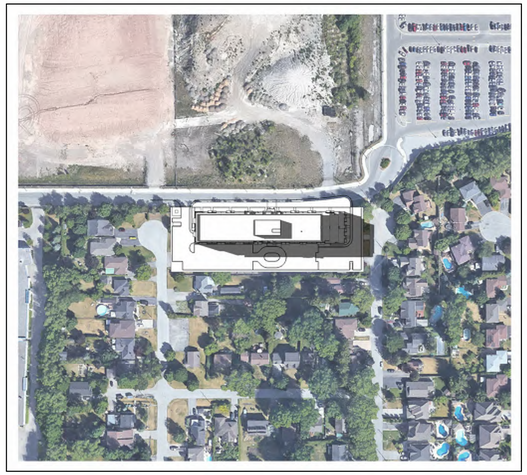
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20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

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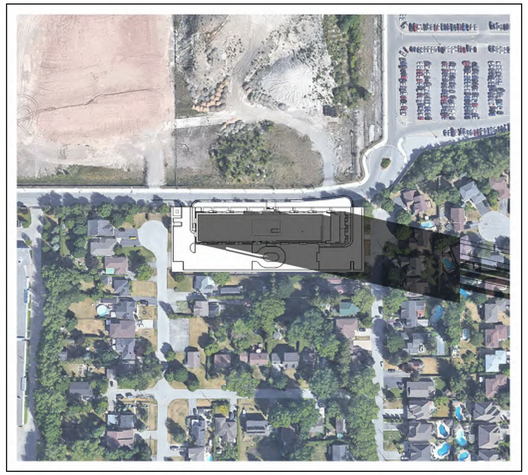
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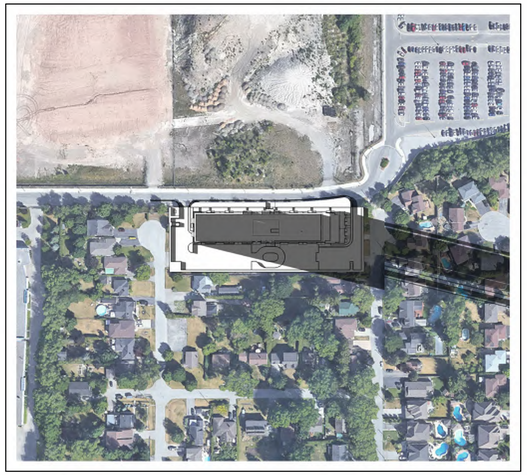
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TEL 416 665 6060 kirkorarchitects.com

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