

SUN & SHADOW STUDY

PICKERING HARBOUR REDEVELOPMENT VISION

591 LIVERPOOL ROAD, PICKERING

PREPARED FOR: PICKERING HARBOUR COMPANY LTD.



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Description
PROJECT No.:
DATE:



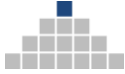
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1.0

INTRODUCTION

The Biglieri Group Ltd. (“TBG”) has been retained by Pickering Harbour Company (“PHC”) to prepare Official Plan Amendment and Zoning By-law Amendment applications to support a proposed mixed-use development on the lands municipally known as 591 Liverpool Road in the City of Pickering.

The purpose of this Study is to satisfy Policy 15.5A (iii) of the Pickering Official Plan that requires “a shadow study” prepared by qualified experts, as scoped or expanded as a result of the pre-submission consultation, to be submitted at the time of an application for Official Plan Amendment and Zoning By-law Amendment.

The Terms of Reference for this Study was provided to TBG from the City of Pickering and is described as a technical document that provides a visual model and written description of the impact of shadows cast by a proposed development on adjacent parks, schools, buildings and properties. These studies are done to evaluate the impact of shadows at various times of day, throughout the year.

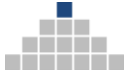
A Shadow Study is required for applications for development over 13 metres (4 storeys) in height.

The Terms of Reference is as follows:

- The Study should include:
 - all streets, lots, blocks, parks, schools and open spaces as well as buildings to a distance adequate

- to show the shadow impacts during requested times;
- the shadow conditions from other abutting buildings; and,
- shadow diagrams with a reference base plan plotted at a standard metric scale with a bar scale on each sheet.
- Test Times:
 - Shadow tests should be done for March 21, June 21, September 21 and December 21 at the following hours: 9:18 am, 11:18 am, 1:18 pm, 3:18 pm, 5:18 and 7:18 pm (if before sunset). Additional times may be requested to respond to specific site contexts.
- Format of the Study:
 - a written summary of the study and the sun/shadow impacts of the development;
 - images of shadow tests using models, either real or digital, that clearly indicates the development site, its boundary, the foot print and mass of buildings within the test site and the shadow effect on abutting buildings, land parcels, streets, public parks, schools and accessible open spaces;

This Study has been prepared in accordance with these requirements.



2.0 SITE LOCATION AND CONTEXT

2.1 The Subject Site

The Subject Site represents the parcel at 591 Liverpool Road and the City-owned parking lot lands to the immediate south. The City of Pickering has provided authorization for our client to include their lands as part of the visioning exercise for this waterfront node. The Subject Site has a total area of 2.42 hectares, or 6 acres. The property has a total frontage of approximately 86.84 metres on Liverpool Road. The Frenchman's Bay Marina office and boat storage yard currently occupy the Site (**Figure 1**).

2.2 Surrounding Area

The immediate surrounding area consists of medium and low density residential, commercial uses along Liverpool Road and open space associated with parks and the lands adjacent to Frenchman's Bay and Lake Ontario.

To the immediate North (**Figure 2**) of the Site is a residential development by Marshall Homes consisting of three-storey live/work townhouses with parking provided in the rear of the development. Northeast of the site is a Regionally owned and operated Pumping Station.

To the immediate East (**Figure 3**) of the Site is the Provincially Significant Wetland associated with the Frenchman's Bay Postal Wetland Complex. Further east is the Pickering Nuclear Generating Station owned and operated by the Ontario Power Generation.

To the immediate South (**Figure 4**) of the Site is Lake Ontario and the Boardwalk along Pickering Harbour with a footbridge providing pedestrian access to millennium square and the beaches and boardwalk along Lake Ontario.

To the immediate West (**Figure 5**) of the Site is Nats Marina Supplies and the Waterfront Bistro Restaurant. Further west is Frenchman's Bay which has boat docking facilities located along the eastern edge owned and operated by the Frenchman's Bay Marina, The Lake House and Nats Marina.

Figure 1 - Site Aerial



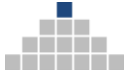


Figure 2 – North – Nautical Village



Figure 4 – South – Millenium Park



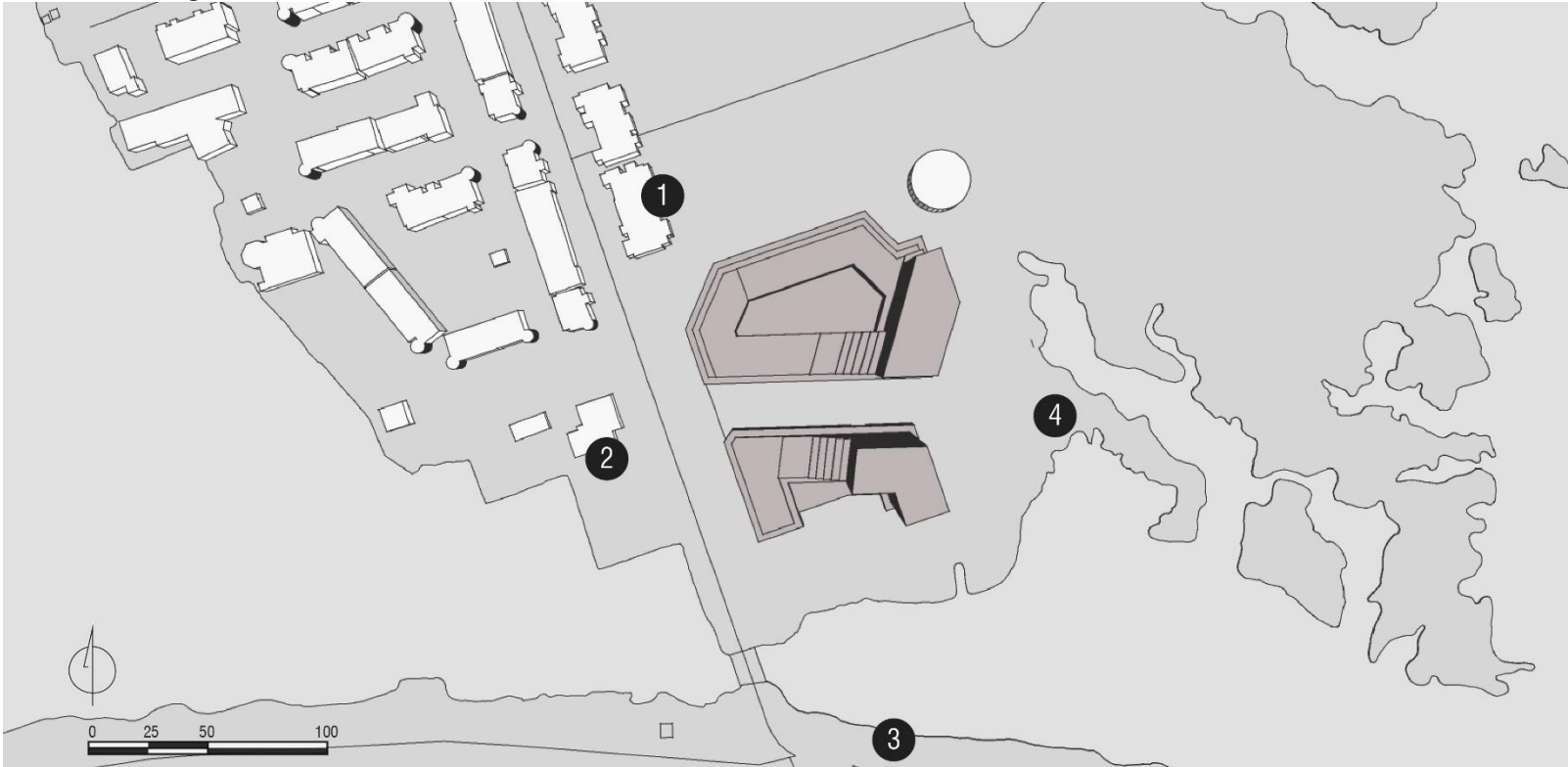
Figure 3 – East – Wetland Complex



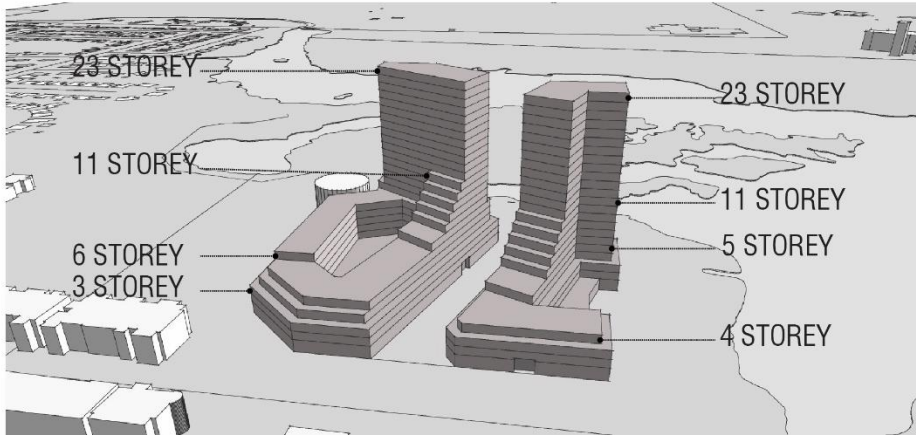
Figure 5 – West - Waterfront Bistro Restaurant

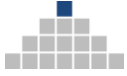


Figure 6 – Massing Reference Plan



- 1 Nautical Village
- 2 Waterfront Bistro Restaurant
- 3 Millenium Park
- 4 Wetland Complex





3.0 SHADOW ANALYSIS

The following visuals include all streets, lots, blocks, parks, schools and open spaces as well as buildings to a distance adequate to show the shadow impacts during requested times. The shadow conditions from other abutting buildings have been included. Shadow diagrams have been prepared with a reference base plan (**Figure 6**) plotted at a standard metric scale with a bar scale on each sheet.

The following test times have been used:

- March 21, June 21, September 21 and December 21 at: 9:18 am, 11:18 am, 1:18 pm, 3:18 pm, 5:18 and 7:18 pm (if before sunset).

3.1 March 21st Analysis

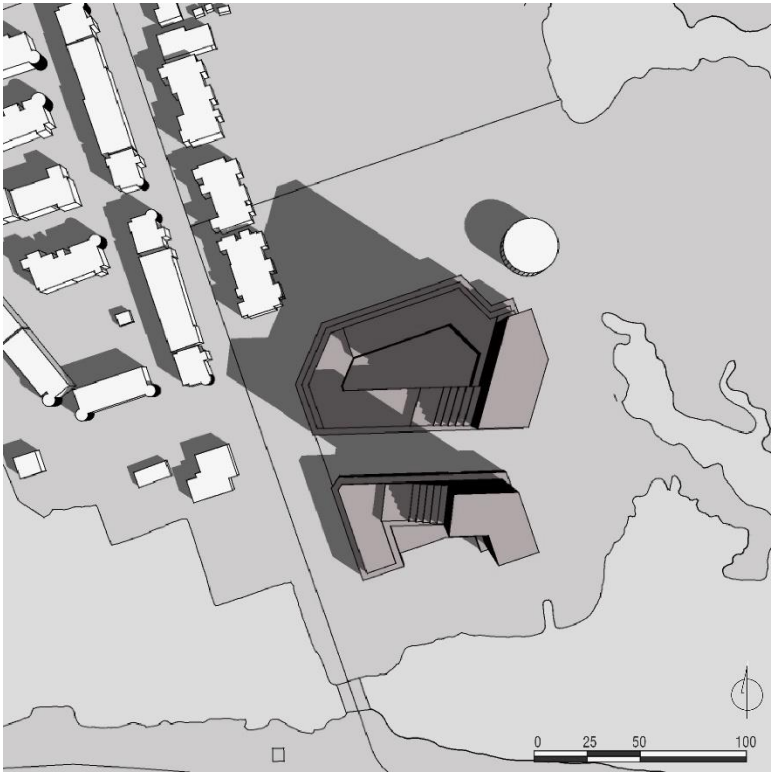


Figure 7 – March 21st at 9:18AM

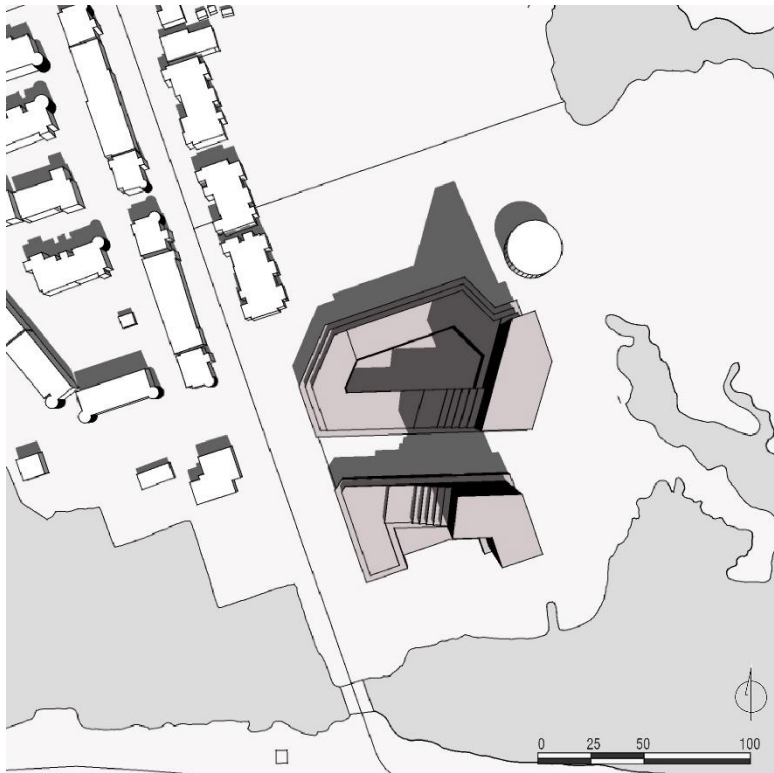


Figure 8 - March 21st at 11:18AM

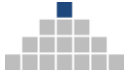


Figure 9 - March 21st at 1:18PM

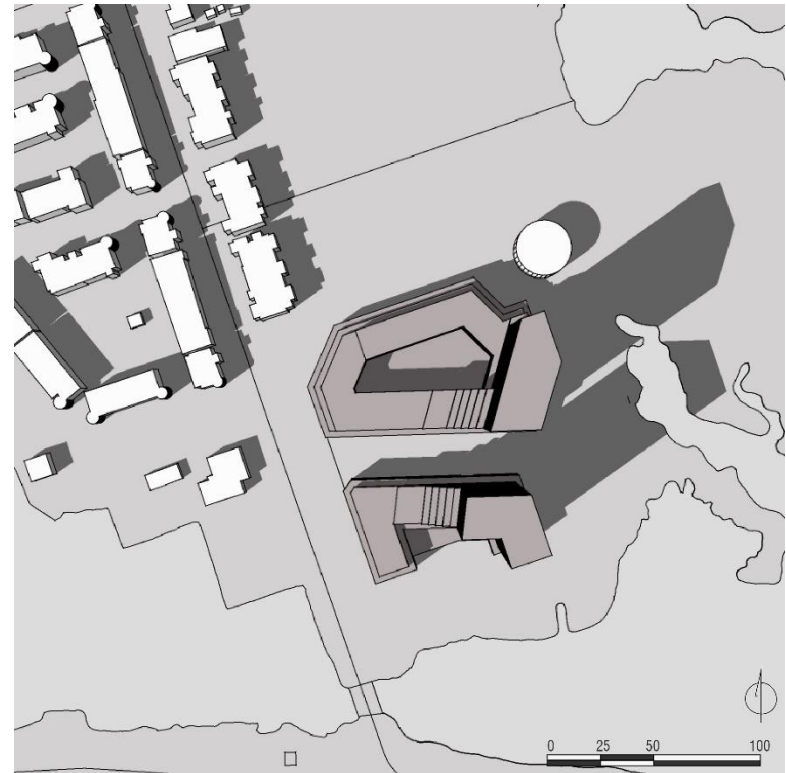
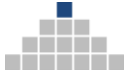


Figure 10 - March 21st at 3:18PM



Figure 11 - March 21st at 5:18PM



3.2 June 21st Analysis

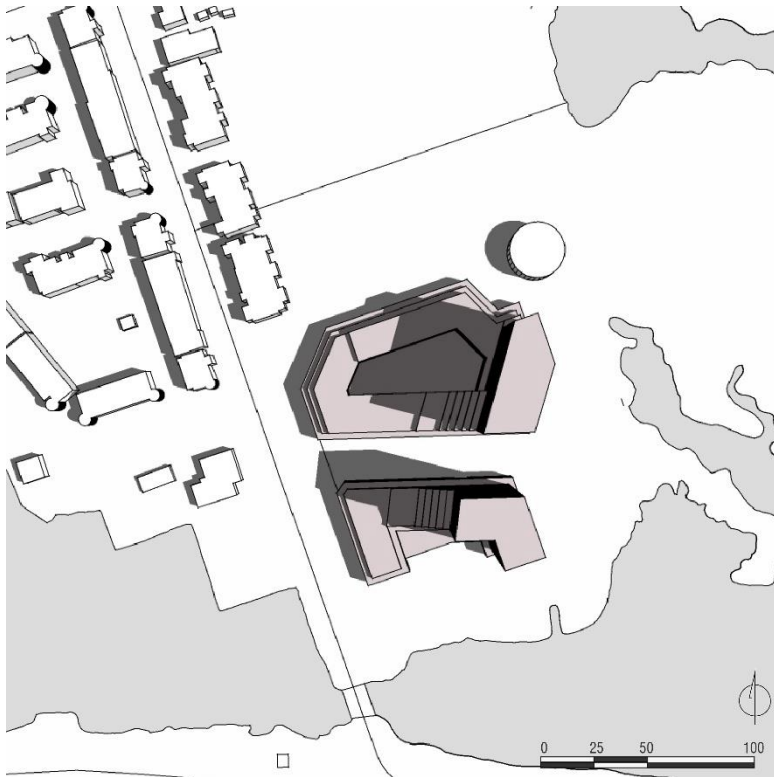


Figure 12 - June 21st at 9:18AM

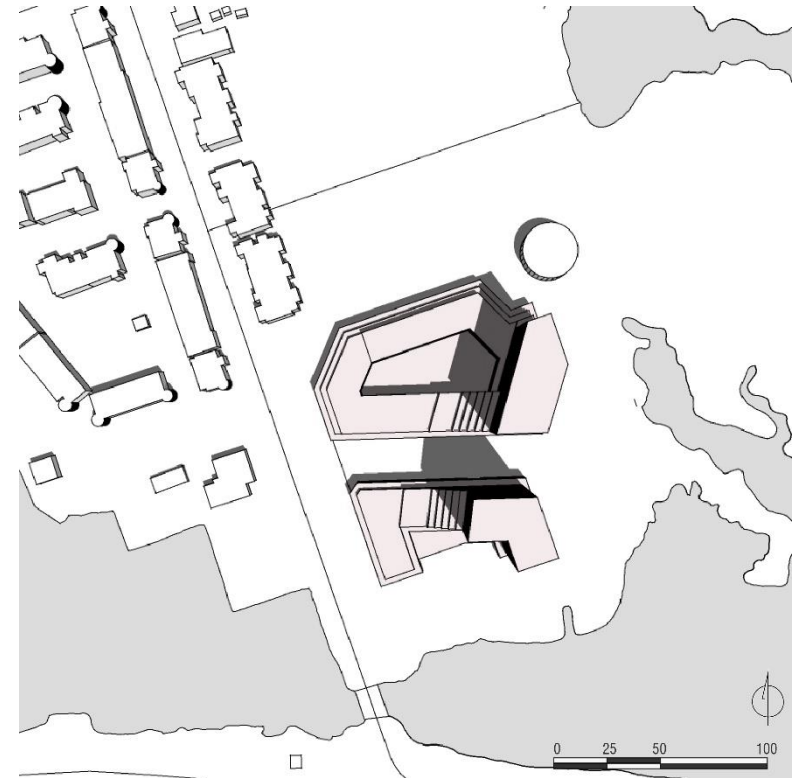


Figure 13 - June 21st at 11:18AM



Figure 14 - June 21st at 1:18PM

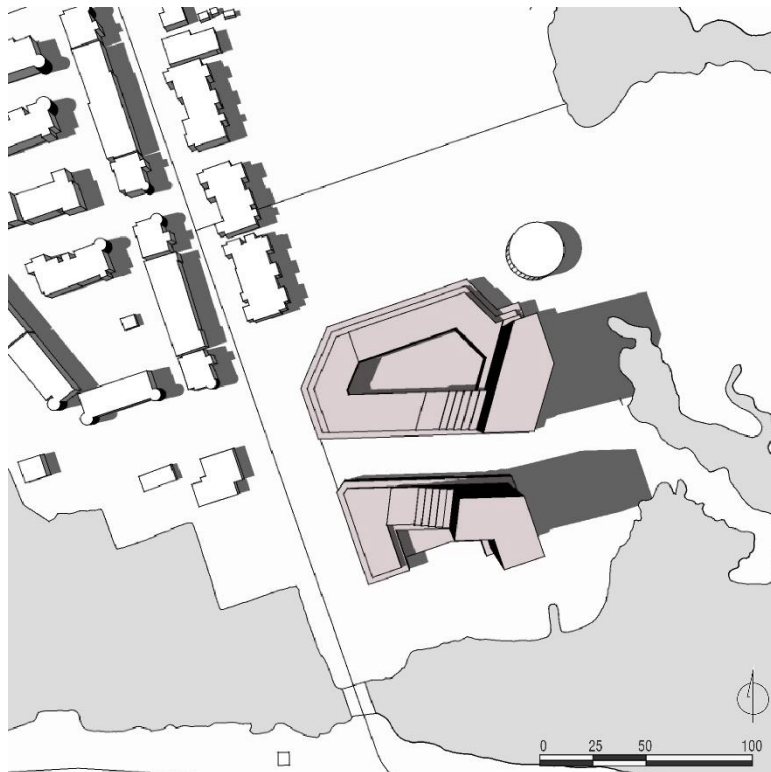
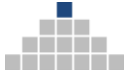


Figure 15 - June 21st at 3:18PM



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Figure 16 - June 21st at 5:18PM



Figure 17 - June 21st at 7:18PM

3.3 September 21st Analysis

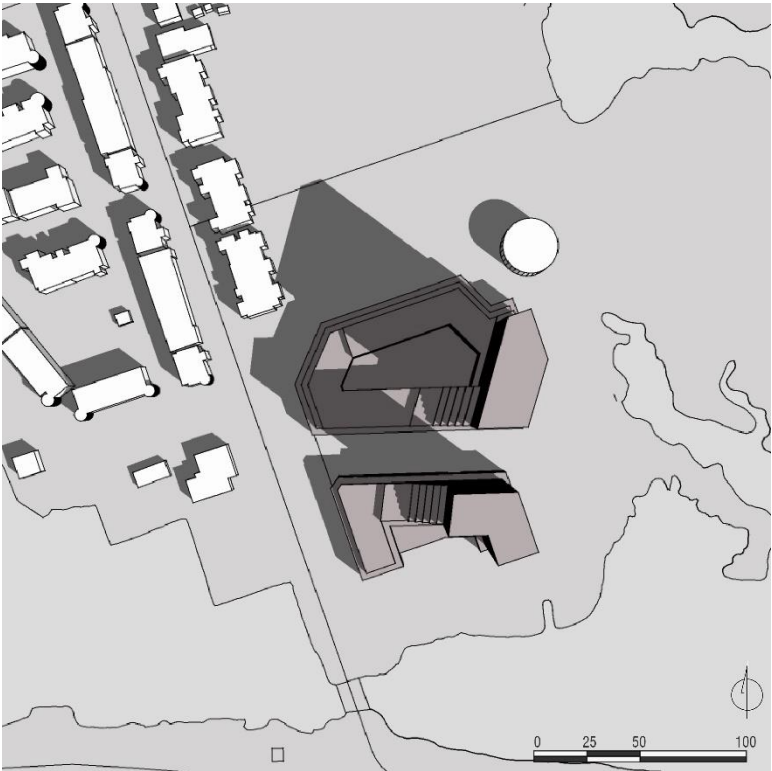


Figure 18 - September 21st at 9:18AM

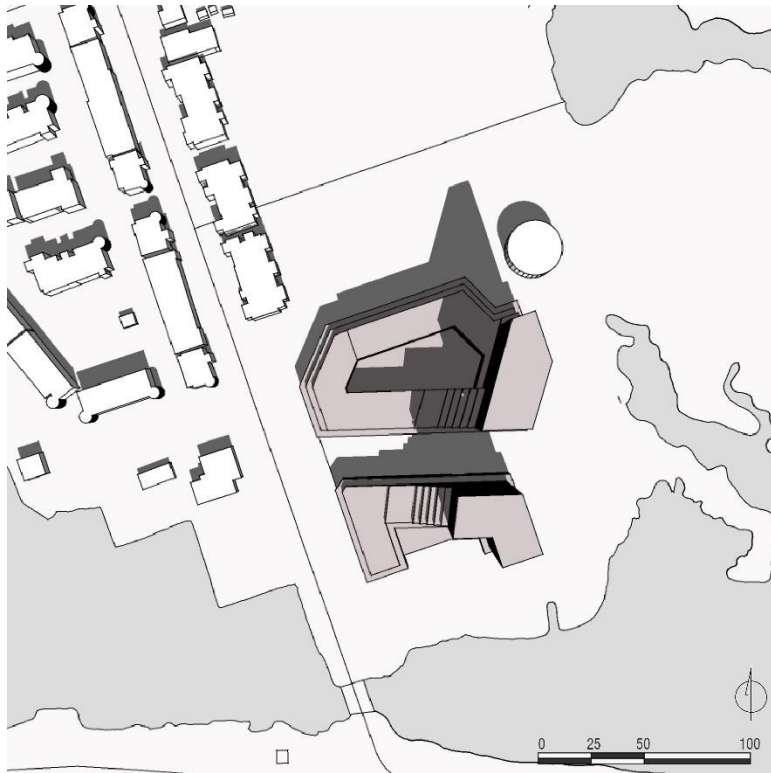
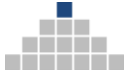


Figure 19 - September 21st at 11:18AM



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Figure 20 - September 21st at 1:18PM

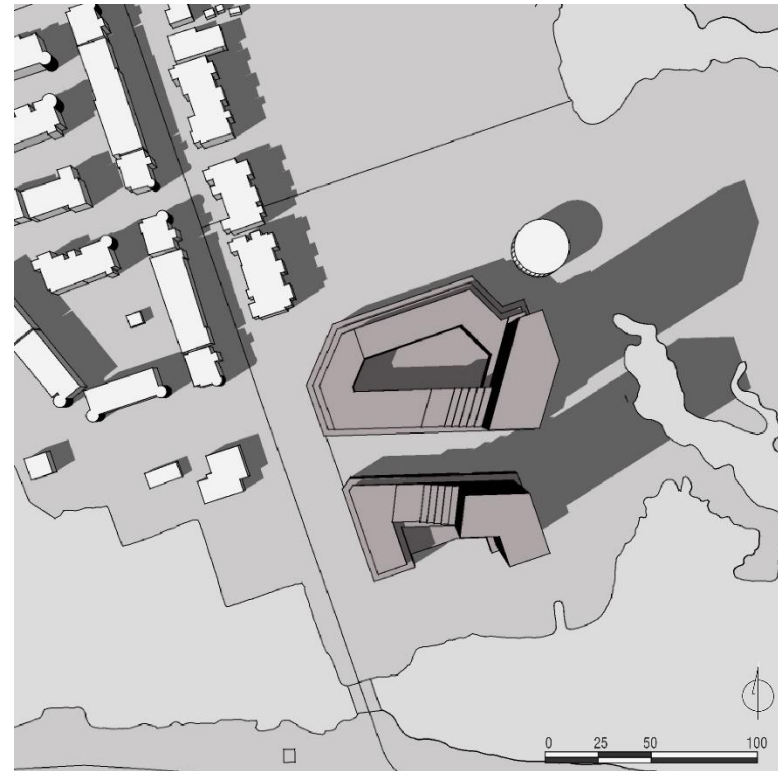
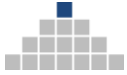


Figure 21 - September 21st at 3:18PM



Figure 22 - September 21st at 5:18PM



3.4 December 21st Analysis

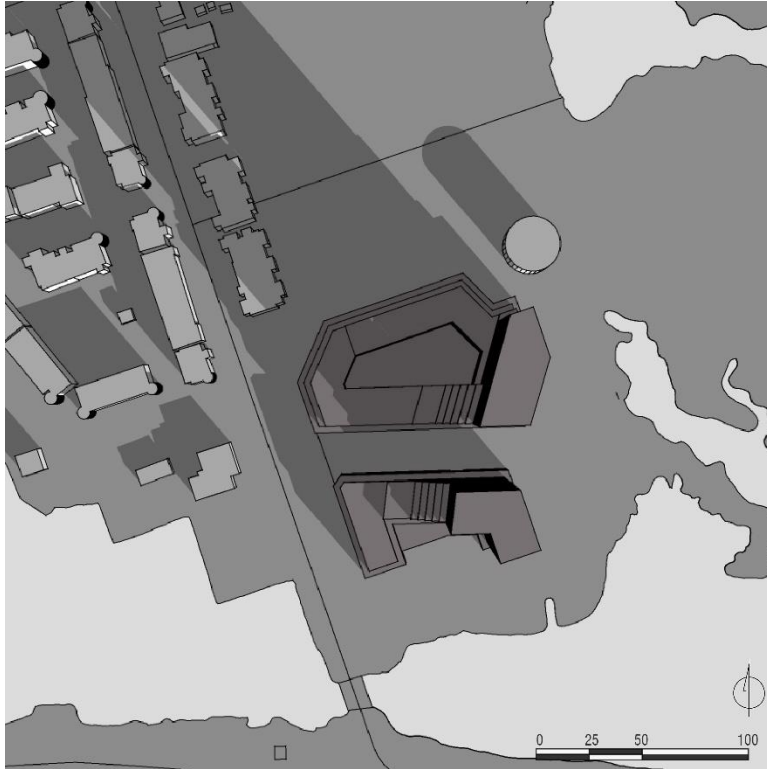


Figure 23 - December 21st at 9:18AM



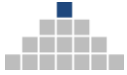
Figure 24 - December 21st at 11:18AM



Figure 25 - December 21st at 1:18PM



Figure 26 - December 21st at 3:18PM



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4.0 CONCLUSION

The shadow impacts of the proposed development on the surroundings as shown in this study is minimized by the orientation and position of the buildings. A gradual increase in height on the west-east direction and the tall buildings oriented to the south created more access to the sun inside and outside the property. During the days/times showed in this study, Liverpool Road has sidewalks and buildings with total access to the sunlight after 11.18AM on all days analysed. The promenade proposed on-site has at least one side (north) with access to the sun for more than 5 hours a day. In the summer (June 21st), shadow on the south side of the promenade creates more comfortable spaces on hot days.

Therefore, it is our professional opinion that the proposed heights of the proposed development are appropriate given the findings of this Study.

Respectfully submitted,
THE BIGLIERI GROUP LTD.

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Urban Designer

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