

SHADOW IMPACT ANALYSIS

PROPOSED DEVELOPMENT

**5 Storey Condominium
BALMORAL VILLAGE, BLOCK 2
COLLINGWOOD, Ontario**

KNYMH FILE # 19029

Prepared by:
Marc Begin
KNYMH INC.

December 6, 2019

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SHADOW IMPACT ANALYSIS

December 6, 2019

PROPOSED DEVELOPMENT**BALMORAL VILLAGE, BLOCK 2**
Collingwood, Ontario**1.0 PURPOSE:**

The purpose of this report is to analyse the impact of a proposed development upon the adjacent properties, streets, and public spaces at the above noted location. We will discuss and comment upon the impact of the massing of the proposed development upon the adjacent properties using a computer generated model for analysis of the proposed 5 storey building with a flat roof.

The project is a continuation of the Balmoral Village Development that has consisted of townhouses, semis and mid rise buildings built over multiple phases over the past few years.

We have provided shadow graphics overlaid onto Satellite imagery, of the surrounding area. As Collingwood does not have a specific requirement for shadow times, the requirement for the City of Burlington has been used.

The property is located in Collingwood, Ontario, on the South side of Harbour Street West.

2.0 DESCRIPTION OF THE SITE AND NEIGHBOURING PROPERTIES:**The Subject Property: (See Diagrams in Section 7.0)**

The subject property is zoned as "R4-4". The proposed building is a 5 Storey residential building on an underground parking structure. Due to the topography of the surrounding properties and the servicing requirements of the site the ground floor and parking will be raised at the North end along Harbour Street. This height difference to the street and adjacent properties has been taken into effect for the shadow lengths represented in the diagrams.

Neighbouring properties include:

2.1) TO THE WEST: The property abuts Balmoral Village Block 1, which is zoned R3 and consists of 1 and 2 storey Townhouses and Semi Detached dwellings. These were constructed as the 1st Phase of the Balmoral Village Development.

2.2) TO THE NORTH: The property abuts Harbour Street West. Further North, across the street, area various 1 and 2 storey townhouse blocks zoned R3-32.

2.3) TO THE SOUTH: The property abuts Sutton Lane. Further south across the street is Balmoral Village Block 1, which is zoned R3 and consists of 1 and 2 storey Townhouses and Semi Detached dwellings. These were constructed as the 2nd Phase of the Balmoral Village Development.

2.4) TO THE EAST: The property abuts Kimberly Lane. Further east across the street is Balmoral Village Block 3, which is zoned R4-3 and Block 4 which is zoned R4-5. Block 3 is slated for a future Commercial building while Block 4 consists of 2 4 storey midrise buildings.

3.0 METHOD OF ANALYSIS:

The method of analysis will be a discussion of the impact the development of the 5 Storey development fronting Harbour Street West has on the adjacent properties and the public realm. The summary is within Section 6.0.

The graphic analysis which we present within this report is developed using a computer generated modelling program in conjunction with satellite imagery and survey information.

Geographic Coordinates: Latitude 44.50 North, Longitude 80.24 West

Standard Time: UTC -5:00

Daylight Savings Time: UTC -4:00

Test Dates: March 21, June 21, and December 21

Test Times: 930am, 1100am (June only), 1230pm, and 330pm

The diagrams enclosed illustrate shadow patterns for 3 times of day on 3 specific days of the year, which reflect the solstice through the 4 seasons of the year. Generally speaking the analysis of the shadow diagrams identifies the typical shadows, which are cast in a Spring / Fall, Summer and Winter periods.

The following analysis of the shadow plans will discuss the shadow pattern for each of the dates and times and will identify characteristics of those shadows and the anticipated impact upon the immediate site and neighbouring sites with specific concern for amenity spaces and predominantly pedestrian utilized areas which may be impacted by the proposed development.

4.0 SHADOW IMPACT ANALYSIS OF THE PROPOSED DEVELOPMENT

4.1 SPRING & FALL EQUINOX SHADOWS: (MARCH 21 • Diagrams 7.03.21.930 through 7.03.21.1530)

A summary of the Spring and Fall shadow effect on the subject property and surrounding area is following. It should be noted that the Fall and Spring are the “moderate” in terms of the annual shadows. The times for this period are under Eastern Daylight Savings Time.

4.1A 9:30am (Diagram 7.03.21.930)

The morning sun in spring / fall rotates approximately 183-degrees from east to west in 12-hours. It is low in the sky rising to approximately 22.47-degrees at this time of day.

- The shadow falls over the roofs and yards of the adjacent towns and semis to the west.
- The shadow falls over the sidewalk of Harbour Street West

4.1B 12:30pm (Diagram 7.03.21.1230)

The noontime sun in spring / fall is higher (approximately 45.48-degrees) in the sky and originates from near-south.

- The shadow falls over the sidewalk of Harbour Street West

4.1C 3:30pm (Diagram 7.03.21.330)

The afternoon sun in spring / fall is near its peak. It is approximately 38.96-degrees above the horizon and the shadows are still short at this time of day.

- The shadow falls over the sidewalk of Harbour Street West

4.2 SUMMER SOLSTICE SHADOWS: (JUNE 21 • Diagrams 7.06.21.930 through 7.06.21.1530)

A summary of the Summer Shadow affect is as follows. At this day the solar altitude is at a maximum; Shadows are minor and stay short. The times for this period are under Eastern Daylight Savings Time.

4.2A 9:30am (Diagram 7.06.21.930)

The morning sun is rising and already at 39.22 degrees at this time. The sun will rotate almost 250 degrees in the sky on this day over fourteen and a half hours.

- The shadow falls over the rear yards of the adjacent towns and semis to the west.

4.2B 11:00am (Diagram 7.06.21.1100)

This time has been added to illustrate the approximate time shadows leave the adjacent properties.

- The shadow stays on the subject property.

4.2B 12:30pm (Diagram 7.06.21.1230)

The noontime sun in summer is high in the sky (67.74-degrees) originating from the south at this time.

- The shadow stays on the subject property
-

4.2C 3:30pm (Diagram 7.06.21.1530)

The afternoon sun in summer is at its peak at about 56.73 degrees altitude. The sun appears to be shining from the southwest.

- The shadow falls slightly onto Kimberly Lane
-

4.3 WINTER SHADOWS: (DECEMBER 21 • Diagrams 7.12.21.930 through 7.12.21.1530)
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The next section provides a summary of the Winter shadow effect of the subject property upon the surrounding area. This commentary will discuss the impact of the 5-storey residential apartment building' shadows upon properties at the north, east and west sides of the subject property.

It should be noted that Winter Shadows are the "longest" in terms of the shadow length due to a very low sun angle, but shadows are present for the shortest period of time (hours in the day) due to very short days this time of year. The times for this period are under Eastern Standard Time (UTC -5:00).

4.3A 9:30am (Diagram 7.12.21.930)

The morning sun in winter rotates approximately 116-degrees from east to west in approximately 9-hours at this time of year. At this time the sun has an altitude angle of 13.23 degrees.

- The shadow falls across Harbour Street west onto the townhouses to the North.

4.3B 12:30pm (Diagram 7.12.21.1230)

The noontime sun in winter is still relatively low (23.31-degrees) in the sky and is located directly south of the subject property.

- The shadow falls across Harbour Street west onto the townhouses to the North.

4.3C 3:30pm (Diagram 7.12.21.1530)

The afternoon sun in winter is starting to descend and is 9.87 degrees above the horizon.

- The shadow by this time of day falls onto a portion of the parking lot of the adjacent mid rise development and onto Block 3 (the future commercial building).
 - The shadow falls across Harbour Street west onto the townhouses to the North.
-

5.0 GENERAL OBSERVATIONS: REGARDING THE 5 STOREY DEVELOPMENT

5.1 The major shadow affect in Spring and Fall is as follows:

- Properties to the North, South and East are unaffected.
- Shadow will move east to west along the Harbour Street West sidewalk throughout the day.
- Shadow will cast on rear yards of towns and semis to the east to approximately 1130am, but will remain clear after that.

5.2 The major shadow affect in Summer is as follows:

- Shadow will fall mainly onto the subject property.
- No shadows on Harbour Street sidewalks
- Properties to the North, South and East are unaffected.
- Shadow will cast on rear yards of towns and semis to the east to approximately 11am, but will remain clear after that.

5.3 The shadows cast from this proposed Apartment buildings are largest in the Winter.

- Morning shadows regularly fall over adjacent properties to the West
- Shadows will move east to west along Harbour Street West and the townhouse properties to the North throughout the day
- Afternoon shadow will fall onto adjacent parking lot on commercial/midrise lands to the East
- Properties to the South are unaffected.

5.4 General Comment Regarding Shadow Affect based upon SITE DESIGN:

- With the buildings being situated well back of the East property line the buildings will cast shadows onto the adjacent property to the East only in the morning throughout the year, and no significant impact to the North, East or South.

6.0 SUMMARY OBSERVATIONS: REGARDING SHADOW IMPACT OF A 5-STOREY DEVELOPMENT ON THE NEIGHBOURHOOD

- Very minor impact to adjacent commercial zoned properties to the East
- It will have no impact to the south
- Minor impact to public sidewalk throughout the spring and fall.
- Minor morning impact to yards to the West, however with over 8 hours of sunlight remaining each day throughout spring to fall on these yards, there is no lingering negative impact. As this block of the Balmoral Village Development was proposed to feature an apartment building at time of purchase of the lots to the west, there would have always been an expectation of some shadow impact.

Based upon the analysis it is our opinion that the proposed development and its proposed location and height of 5 storeys will not have a negative effect on this neighbourhood.

Sincerely,

KNYMH Inc.
Marc Begin

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SECTION 7.0: APPENDIX "A"

SHADOW PLAN DIAGRAMS FOR THE 3 STUDY PERIODS

SECTION 7.0: 5 Storey Building Concept:

7.06. 21.0930 - 7.06. 21.1530 SHADOW PLANS AT SUMMER: June 21st

7.06. 21.0930 = 9:30 AM
7.06. 21.1100 = 11:00 AM
7.06. 21.1230 = 12:30 PM
7.06. 21.1530 = 3:30 PM

7.03. 21.0930 – 7.03. 21.1530 SHADOW PLANS AT SPRING(FALL): March 21st

7.03. 21.0930 = 9:30 AM
7.03. 21.1230 = 12:30 PM
7.03. 21.1530 = 3:30 PM

7.12. 21.0930 – 7.12. 21.1530 SHADOW PLANS AT WINTER: December 21st

7.12. 21.0930 = 9:30 AM
7.12. 21.1230 = 12:30 P4
7.12. 21.1530 = 3:30 PM

5 STOREY APARTMENT

CONTEXT PLAN

BALMORAL VILLAGE BLOCK 2,
COLLINGWOOD, ONTARIO

Project No. 19029



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5 STOREY APARTMENT

MARCH 21st @ 930am
BALMORAL VILLAGE BLOCK 2,
COLLINGWOOD, ONTARIO
Project No. 19029





5 STOREY APARTMENT

MARCH 21st @ 1230pm
BALMORAL VILLAGE BLOCK 2,
COLLINGWOOD, ONTARIO
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5 STOREY APARTMENT

MARCH 21st @ 330pm
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07.03.21.1530

5 STOREY APARTMENT

JUNE 21st @ 930am

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07.06.21.930



5 STOREY APARTMENT

JUNE 21st @ 1100am
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07.06.21.1100



5 STOREY APARTMENT

JUNE 21st @ 1230pm
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07.06.21.1230

5 STOREY APARTMENT

JUNE 21st @ 330pm

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5 STOREY APARTMENT

DECEMBER 21st @ 930am
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COLLINGWOOD, ONTARIO
Project No. 19029





5 STOREY APARTMENT

DECEMBER 21st @ 1230pm
BALMORAL VILLAGE BLOCK 2,
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5 STOREY APARTMENT

DECEMBER 21st @ 330pm
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