



#20-177

169 WYSE ROAD

SHADOW STUDY

2021

FINAL REPORT
JULY 6, 2021

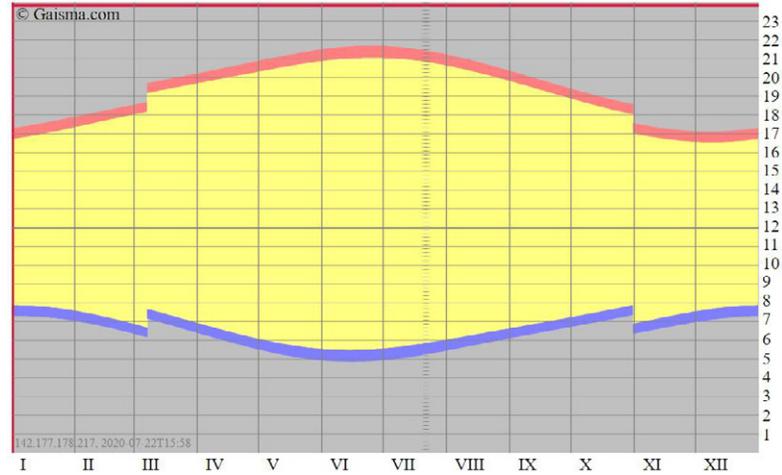
submitted by:

fathom

fathom

A 3D computer model was created of the new building adding digital terrain data from local LIDAR and simplified models of existing buildings using GIS building footprint data. Existing building heights were confirmed and modelled as part of the simulation. Trees were not included in the simulation so we would expect much more shade in the summer as a result of trees. The simulation provides an accurate impression of shade from the new building and changes to the hours of sunshine at ground level. There would be more sunlight at 4-5' off the ground than is depicted by the model, the the model is a good representation of a worst case scenario.

2020 Sun Graph for Halifax



DARTMOUTH NS WIND DATA

The building was simulated at the 3 key periods (summer solstice, equinox and winter solstice) to assess the shade impacts throughout the year at the extremes. At Summer Solstice, the sun rises at 5:28am and sets at 9:02 pm for a total sunlight length of 15.34 hours. At Equinox, the sun rises at 7am and sets at 7:12 pm for a total sunlight length of 12.12 hours. At Winter Solstice, the sun rises at 7:48am and sets at 4:17 pm for a total sunlight length of 8.49 hours.

Figure 1 shows the summer solstice (June 21) conditions when the sun is at its highest angle in the sky. A portion of the block to the southwest of the building will be in shade from sunup at 5:28am till about 7-8am in the morning. The mature trees in this neighbourhood already cast shadow at this time of the morning over much of the same area. By about 9am there will be no shade impacts from the building on surrounding properties until about 3pm. From about 3 till sundown, the building will cast shade on 4 properties along Wyse Road. Generally speaking, there are some morning impacts along Pelzant until about 8am and then minor impacts for the remainder of the day.

Figure 2 shows the Equinox (Sept 21 and March 21) conditions when the sun is at its midpoint angle in the sky. At this time of the year the sun rises in the due east and sets

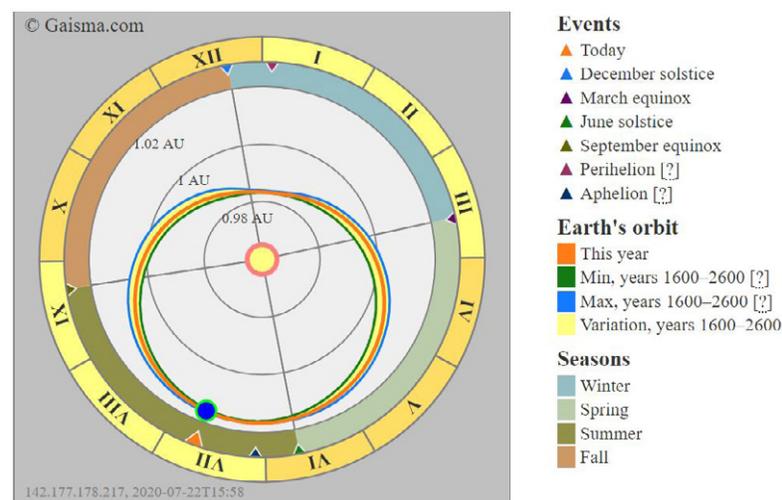
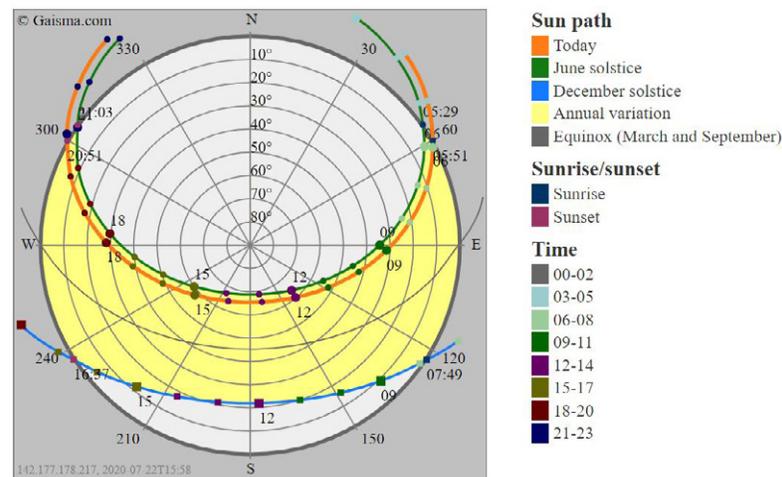
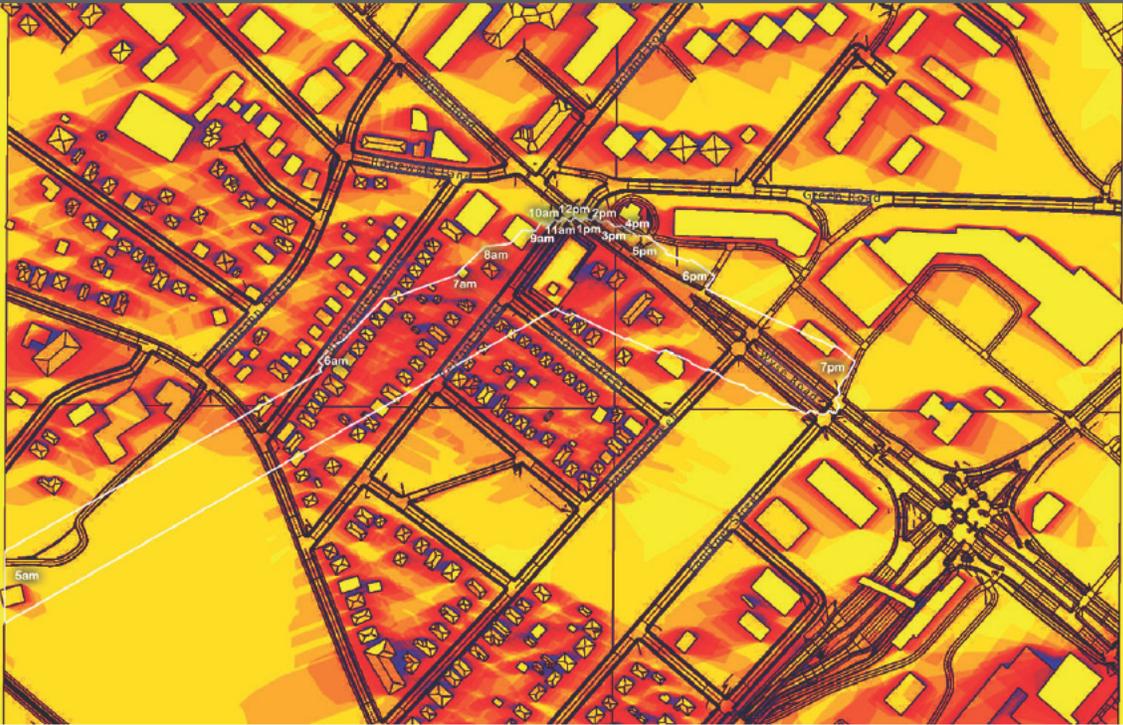
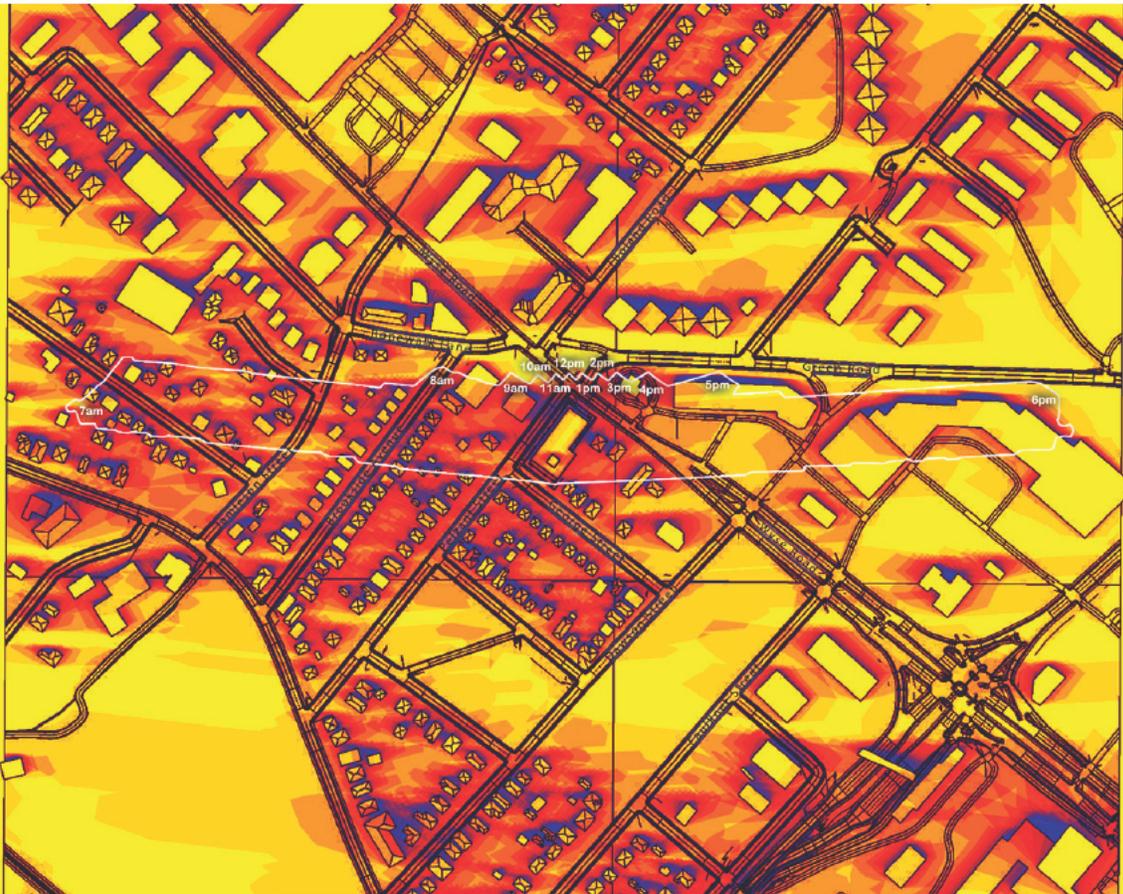


FIG 8.
SUMMER
SOLSTICE
(JUNE 21)



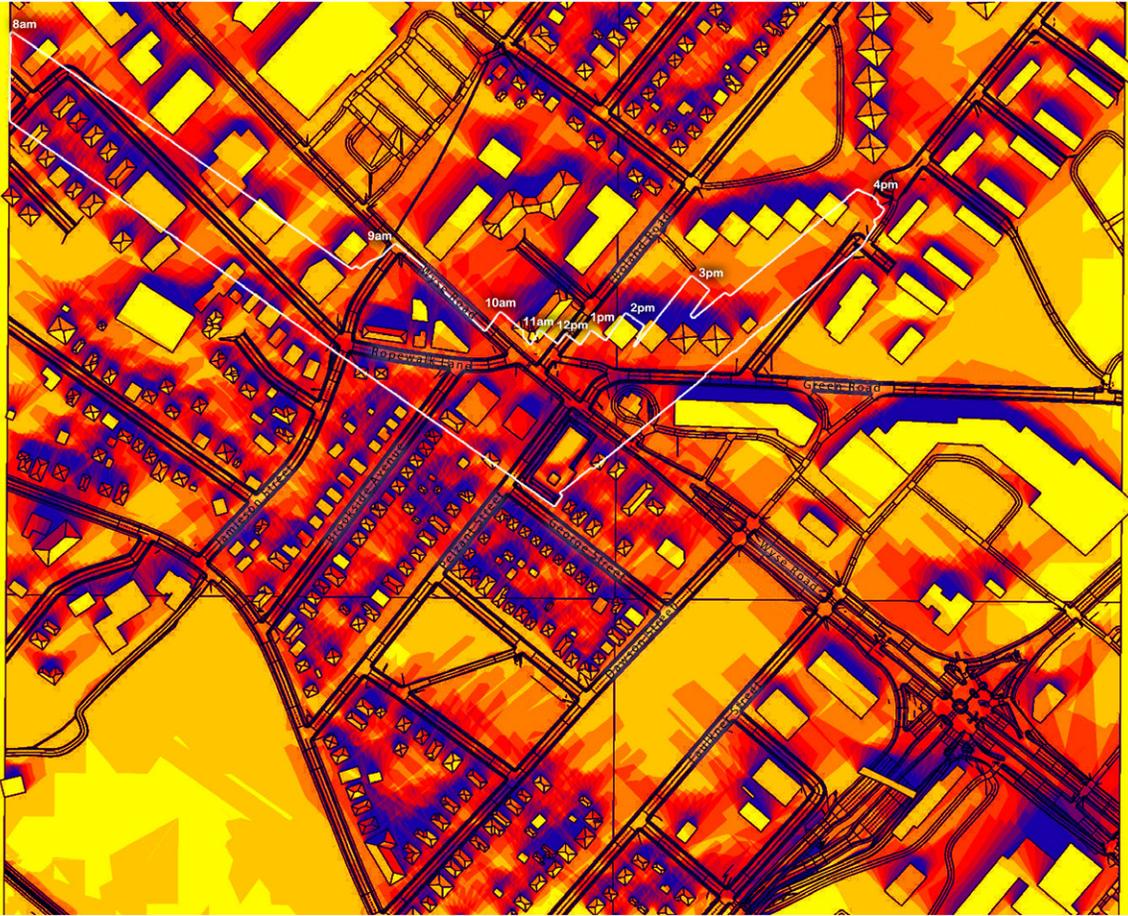
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 hours of shade

FIG 9.
EQUINOX
(SEPT 21
& MAR 21)



0 1 2 3 4 5 6 7 8 9 10 11 12 hours of shade

FIG 10.
WINTER
SOLSTICE
(DEC 21)



in the due west. Properties to the west of the new building will be impacted from sunrise up till about 9am then there are no impacts on surrounding properties again till about 3pm. After 3pm, shade from the building will be cast on a few of the commercial properties on Wyse Road just east of the building.

Figure 3 shows the winter solstice (Dec 21) conditions when the sun is at its lowest angle in the sky and the daylight time is the shortest. Though the shadows are longer due to the low sun angle, the impact angle is much reduced. The north-west side of the building facing Rosedale and Jamison Street will have shade impacts from sunup (7:48am) till about 10am. There will be no impacts on surrounding properties until about 2pm. At 2pm until sundown (4:17pm), there will be some shade impacts on the Housing Nova Scotia properties to the north-east of the new development.

Generally speaking, the building has some brief early morning shading to the neighbourhood to the south-west but very minor impacts to other surrounding properties. The shadows do not impact any of the identified parks in the centre plan Schedule 27 map (shown on the next page).

If you have any questions about this shadow report, please feel free to contact me at your convenience.

Sincerely,

[Redacted Signature]

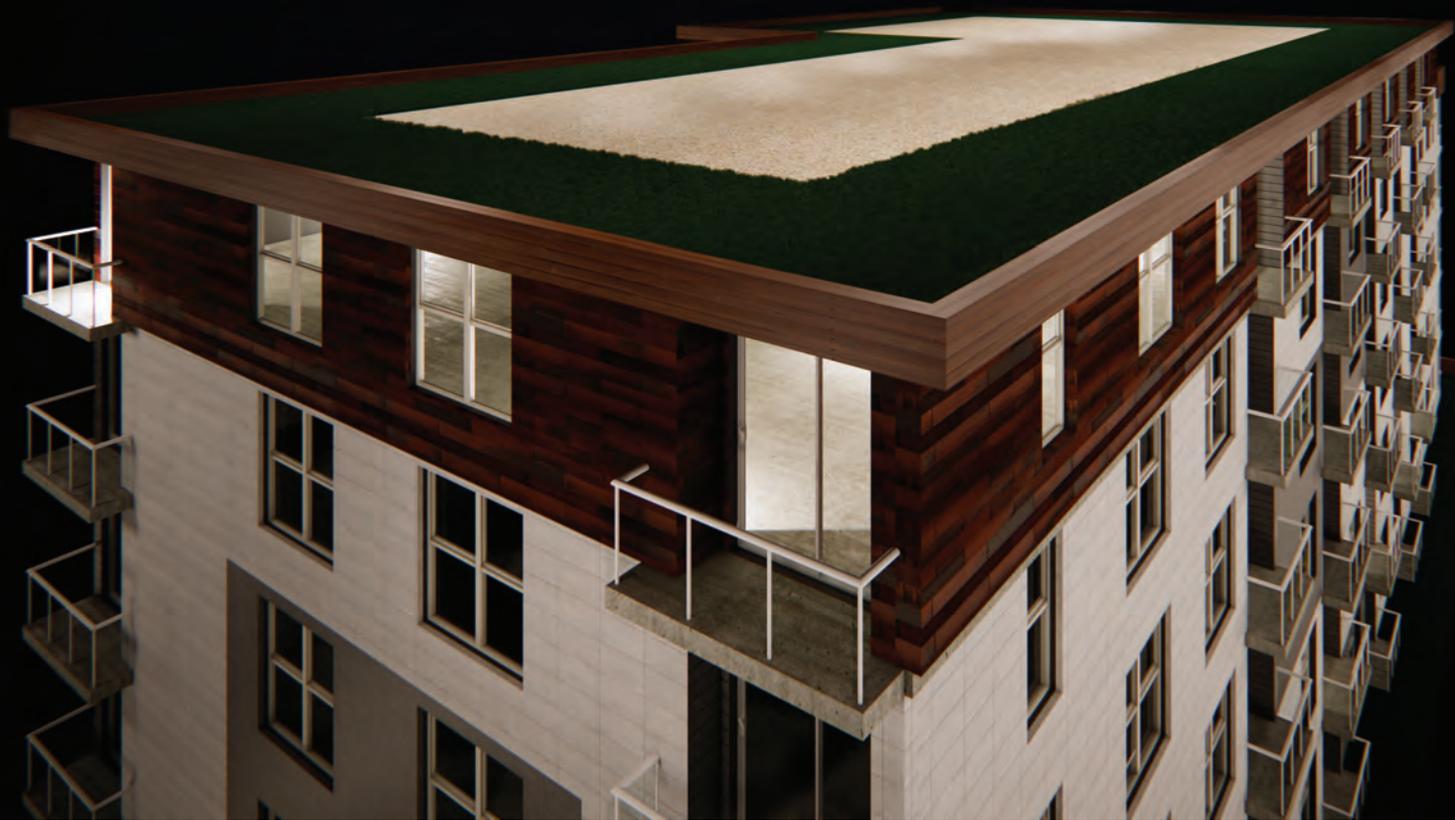
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