

March 5, 20178

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CONTACT

Rob LeBlanc
president
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Re: Robie South Shade Study

Dear Justine;

This letter outlines the results of the shade impact study attached. The development consists of a 26 and 20 storey double tower development with a 4 storey street wall at the corner of Robie and College Street. This study uses the existing buildings surrounding the development as part of the shade analysis. A similar large scale development is proposed just north of this development but shadows from that development were not considered as part of the analysis. Ekistics completed that shade study about a year ago.

Landscape Architecture

Planning

Architecture

Civil/Transportation Engineering

For the shade study, a 3D computer model was placed in real-world space and assessed on an hourly basis for the winter solstice (Dec 21), Summer Solstice (June 21) and Equinox (Sept 21 and March 21) periods. These simulations provide a good overview of the best case conditions (summer solstice where the sun is high and shadows are short) and worst case scenario (winter solstice where days are short, sun angles are low and shadows are long). The white lines show the impact from the proposed building at different times of the day.

Winter Solstice (Dec 21): In the winter, sunrise is at 7:48 am and sundown is at 4:37 pm giving only about 8 hours of sunlight. At 8am and 4pm the shadows are so long (sun angle so low) that even a tree can shade an area for very long distances up to 10x the height of the object. In a downtown, the impacts of any building on these hours should be discounted because virtually everything is in shade from surrounding buildings and trees. The shade diagram confirms that the corner of Coburg and Spring Garden will be impacted for a little over an hour at 8am-9:30 with shadows stretching about 2-3 blocks in length. The building will create shadows on the north side of Spring Garden Road throughout the day but much of this is already in shade from the existing buildings on the south side of Spring Garden. The shadows will impact some sun on the south faces of the professional Centre and Embassy Towers. The shadows will not impact Public Gardens.

Equinox (Sept 21 and Mar 21): In the equinox sunrise is at 7:00 am and sundown is at 7:22 pm giving only about 12 hours of sunlight. At 8am and 7pm the shadows are so long (sun angle so low) that even a tree can shade an area for very long distances up to 10x the height of the object. In a downtown area with large existing towers, the shadows from existing buildings can be pronounced in the morning and evening. The shade diagram confirms that the morning shadows extend up to Edward Street from sunrise till about

9am, and Robie Street is impacted till about 11am. From 11-12 the shadows will extend across to the north side of Spring Garden Road but after that time, there is no more impact on the sidewalk than what is currently occurring as a result of existing buildings. The shade will impact Carleton Street from 3pm till sundown. adding no more than an hour of additional shade from the existing buildings that are there today. There are no shadows cast on the Public Gardens from this development in the equinox.

Summer Solstice (Jun 21): In the summer, sunrise is at 5:29 am and sundown is at 9:04 pm giving about 15.5 hours of sunlight. At 6am and 9pm the shadows are so long (sun angle so low) that even a tree can shade an area for very long distances up to 10x the height of the object. The shade diagram shows that at from sunup to about 8am, the shadows will reach Edward Street. Robie Street will be in shadow up to about 11am. After 11am, the shadows do not even reach Spring Garden Road. Carleton Street starts to become shaded from 3-5 pm. There are no shade impacts on the public gardens.

Despite the two tall towers, the impacts on shade are minimal with the exception of impacts on the western residential neighbourhoods and Dalhousie campus in the early morning hours during the equinox.

Sincerely,

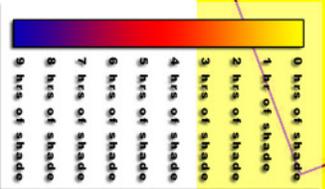
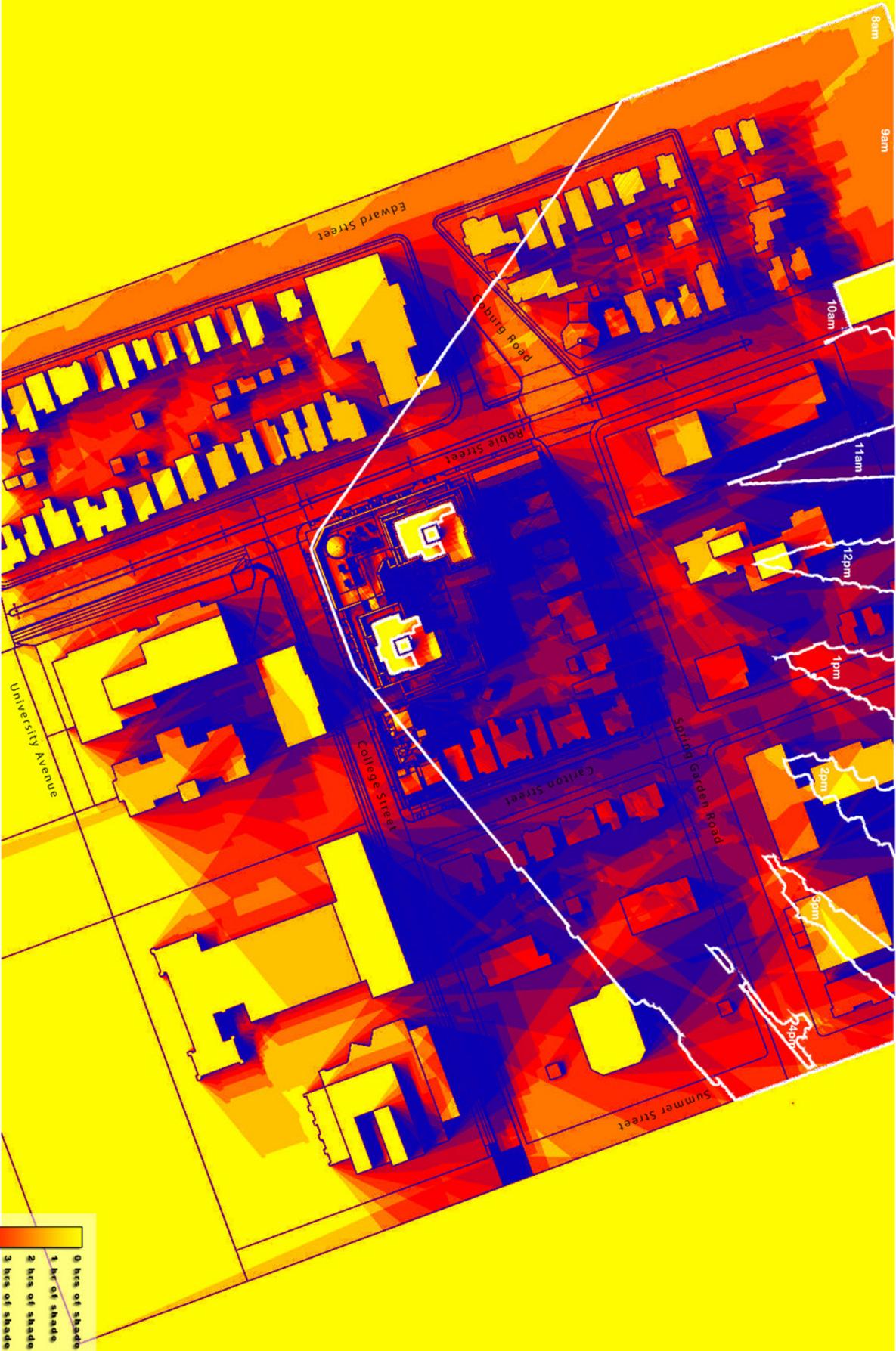
Originally Signed

Rob LeBlanc

Senior Planner, Ekistics Plan + Design

Robbie Street South

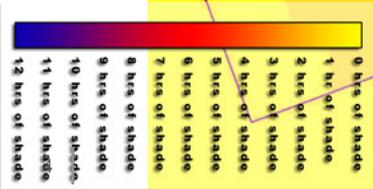
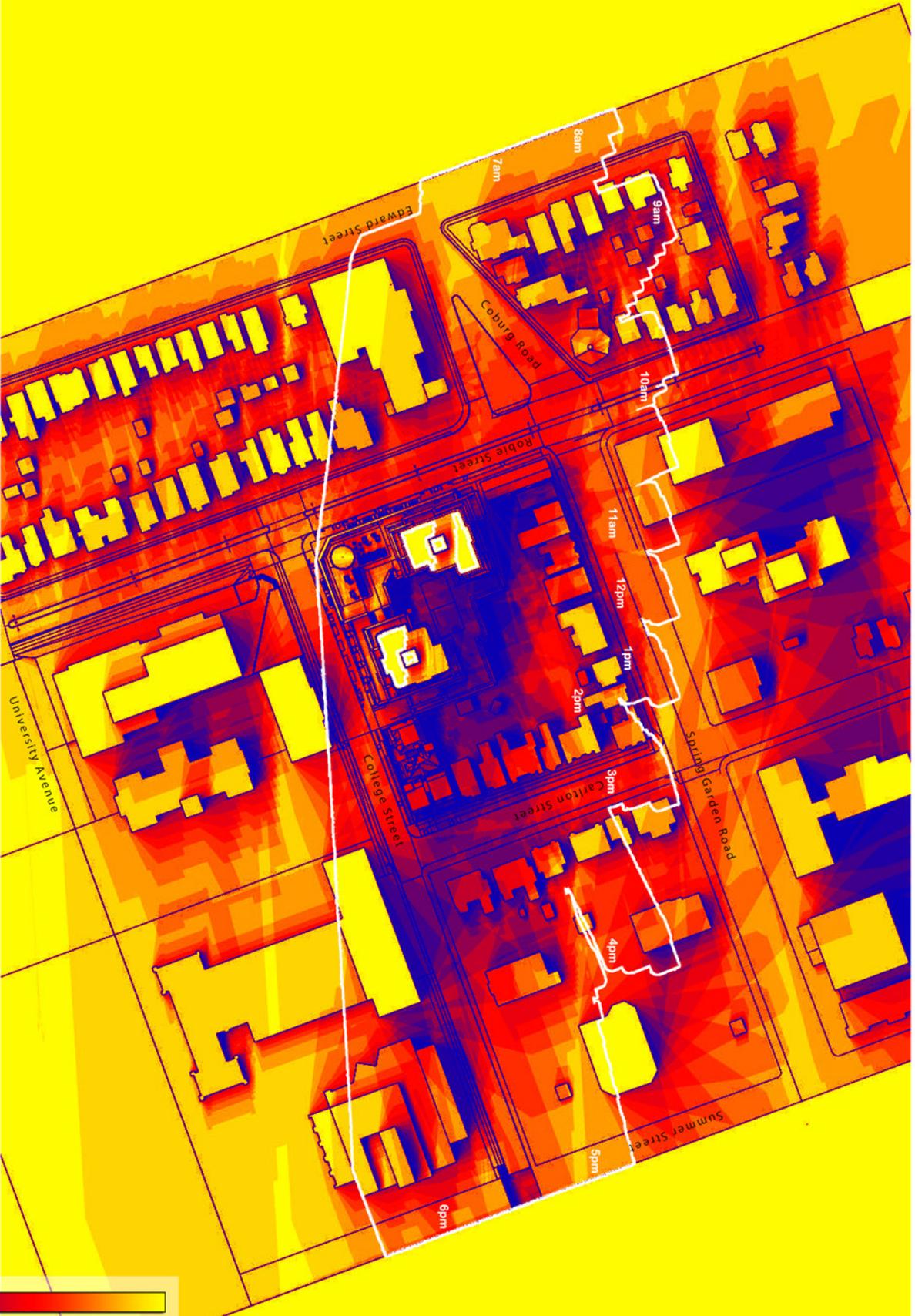
Shade Study
December 21



Robbie Street South

Shade Study

March & September



Robbie Street South

Shade Study

June 21

