

## SHADOW STUDY ANALYSIS

DATE	October 27 <sup>th</sup> , 2020
TO	City of Mississauga 300 City Centre Drive, Mississauga ON L5B 3C1
ATT	Planning & Building Department
FROM	James Fryett Architect Inc.
RE	15055 Erinview Redevelopment Shadow Studies Resubmittal

Accompanying this report, please refer to Shadow Study drawings A9.0, A9.1 & A9.2.

Shadow Studies have been prepared by James Fryett Architect Inc. utilizing Autodesk Revit 3D software to analyze the shadows of the existing building conditions at 2132 Dundas Street W. The software permits the following information to specifically be input into the program:

Latitude: 43 degrees 35' 20" N

Longitude: 79 degrees 38' 40" W

Astronomic North was provided through a survey of the property completed by Tarasick McMillan Kubicki Limited dated November 29<sup>th</sup>, 2016. This document provided an initial base with which to start modeling the built context of the site. Additionally, utilizing Existing Conditions Plans prepared by MTE Consultants, the modeling software was able to model existing topography and built form of the existing building on site, and proposed topography and building to populate the site in the future. The shadow studies were further enhanced by underlaying a map taken from Google Earth to provide graphical context of the surrounding site.

### EXISTING BUILDING:

June 21: Within the month of June, the shadows cast from the existing building do not pass the Line of Impact till 6:20pm in the evening, yet the shadows from the trees pass the Impact Line at 5:20pm. The shadows extend their onwards till past sunset at 9:03pm.

September 21: Within the fall, while the existing trees start to cast shadows on the Residential Private Outdoor Amenity Spaces at 3:12pm, the building shadow does not encroach the Line of Impact till approximately 4:12pm through till sunset at 7:18pm.

December 21: Within the winter period, mature trees begin to cast their shadows at roughly 2:17pm in the afternoon. At this point the existing facilities shadow has yet to hit the Line of Impact within the rear yards of the residences. The buildings shadow will not cross the Line of Impact till 3:15pm extending till sunset after 4:45pm in the evening.

## PHASE 2: FUTURE RETIREMENT & INDEPENDENT SENIORS LIVING

June 21: Within the summer, the shadow of the future building cross the Line of Impact at 5:20pm and the shadows are cast through till sunset at 9:03pm at night.

September 21: During the month of September, the future building's shadow crosses the Line of Impact at 4:12pm in the Residential Outdoor Amenity Spaces. The shadows will remain in the rear yards till sunset. 5 Storey Wing crosses into public realm between 3:12- 5:12pm along Fifth Line West.

December 21: Within December, the new Phase 2 structure will cast shadows that cross the line of impact for the residential homes from 3:12pm continuing till the sun has set. It will also cast a shadow onto 5th Line West from 3:12pm continuing till the sun has set. This is similar to the existing structure. We also don't meet our sun access factor but neither did the existing building during the month of December.

## ASSESSMENT:

In the month of June, both the existing conditions and the proposed building on the property do not meet the shadow impact criteria of the City of Mississauga. The existing mature trees have not permitted sun to be cast onto the residences rear yards for the same duration that the future development will cast. While this does not meet requirements, the shadow of the future building is maintaining the current shadows cast, while not increasing the amount of shadows.

Within the Fall, September 21, the 5 Storey wing facing Dundas Street will cast a shadow into the public realm of the opposite boulevard along Fifth Line West. There is no way to avoid these shadows casting on to the public realm during the 3:12pm to 5:12pm period.

Within the winter, December 21, the construction of Phase 2 will cast shadows into the neighbouring residential yards crossing line of impact at the time of 3:12pm onwards. This will also cast a shadow on to the east boulevard of 5th Line West from 3:12pm onwards. The existing building cast a similar shadow size over the residential yards and 5th Line from 3:12pm onwards as well. Thus the Phase 2 shadows will not create a greater adverse affect on the neighbouring residential yards when compared to the existing building. Thus, it is our assumption that since the shadow has not become greater during the month of December the new structure meets the shadow impact criteria for the future development.

SUMMARY:

The future development at 2132 Dundas Street W., will be a 5 Storey wing facing Dundas Street joined via link to a split 4 and 3 storey wing of the building parallel to the south property line adjacent to the rear yards of single detached homes along Herridge Dr.

The 5 Storey wing facing Dundas Street will cast a shadow into the public realm of the opposite boulevard along Fifth Line West. There is no way to avoid these shadows casting on to the public realm during the 3:12pm to 5:12pm period. But, our development has been designated as a High Density Residential and we don't cast a shadow into the public realm along Dundas Street between 9:12am - 11:12am. Therefore, the month of September meets the shadow impact criteria for both existing and future development. Phase 2 is preparing to commence construction.

The split 3-4 storey wing has completed construction. The shadows cast by this portion of the building are the shadows of concern within this analysis during the summer period at June 21. Yet the shadows cast by this wing of the building will not worsen the shadows that were already existing as a result of the adheres to the context of the site and shadows cast should not be of any concern.

Regards,

James E. Fryett  
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