



425-471 CARLAW AVENUE

SUN AND SHADOW ANALYSIS

July 2022

This Shadow Study has been prepared by Urban Strategies on behalf of Choice Properties Limited Partnership ("Choice Properties") in support of a TOC application to permit the redevelopment of 425-471 Carlaw Avenue, collectively the Site.

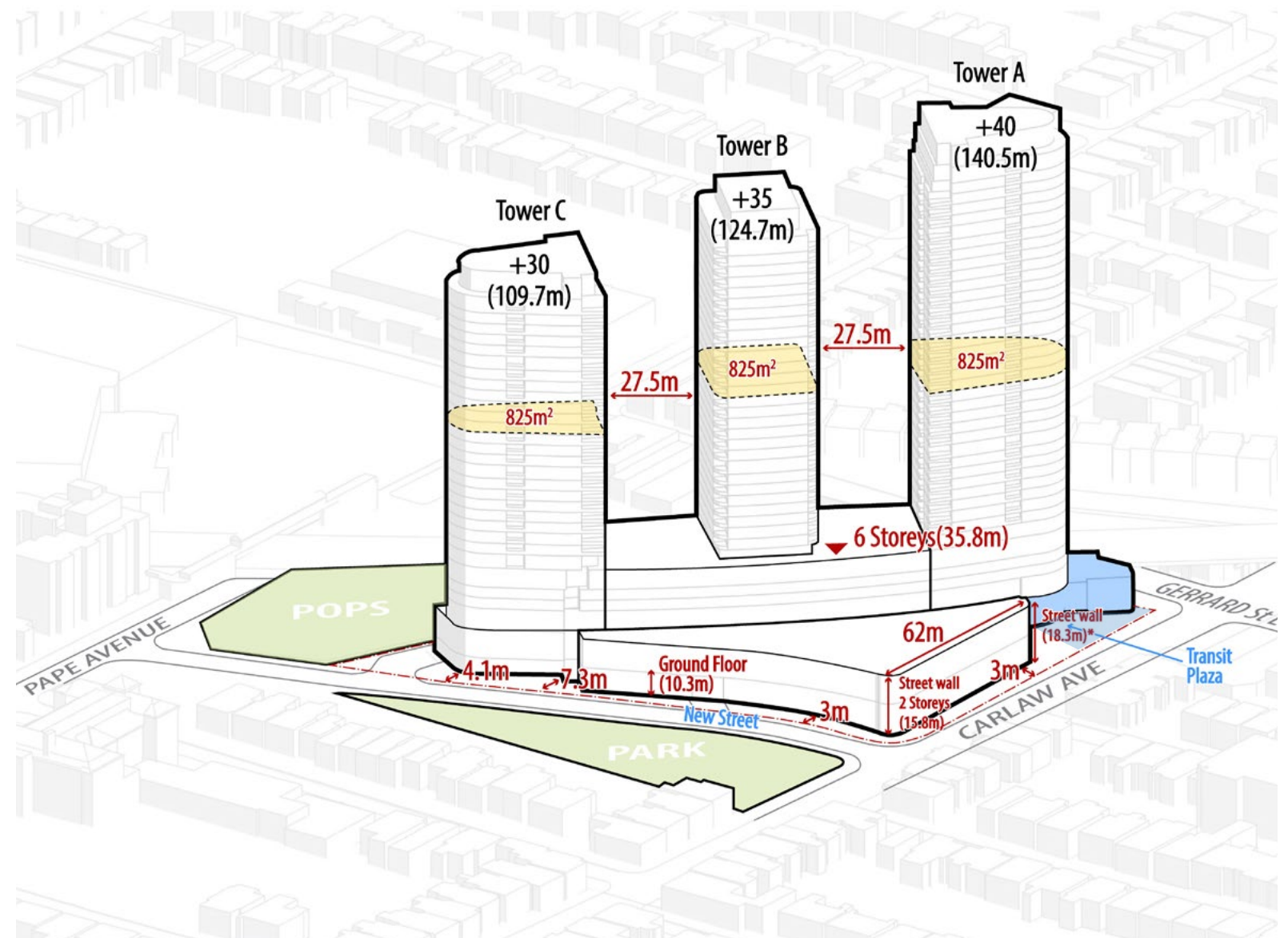
1.1 OVERVIEW OF THE PROPOSED DEVELOPMENT

The Proposed Development will transform Site into mixed-use, transit-oriented development with direct connections into the new Gerrard Station while achieving a range of city building and urban design objectives.

At the Site's north end, there will be a new 3,370 m² public park that will provide much-needed open space in the Riverdale neighbourhood. South of the park is the New Street, which will have an 18.5m right of way and provide a connection from Pape Avenue to Carlaw Avenue. Across from the park and on the south side of the New Street will be the development site situated north of the rail corridor abutting the new transit station. On top of the rail corridor and tunnel will be a 5,619 m² publicly accessible open space (POPS) that will provide a connection from the Site into the building. The new public park and POPS account for 44% of the development site.

The development will include three residential towers on top of a two to six-storey podium. The towers are located and positioned to respond directly to the transit station. The tallest building, Tower A, at 40 storeys, is situated closest to the rail corridor and the transit station at Gerrard Street. This establishes a height peak at the transit station entrance. Towers B (35 storeys) and C (30 storeys) decrease in height from west to east toward the surrounding largely low-rise development. The towers have a floorplate of approximately 825m².

The redevelopment proposes a total gross floor area of 92,242 m², comprised of 84,432 m² of residential gross floor area and 7,810 m² of non-residential gross floor area. The Proposed Development includes 1,080 residential units in a range of unit sizes to provide diverse housing options on the Site.



1.2 PLANNING POLICY CONTEXT

Shadows and sunlight access are important design considerations for new developments. Policies pertaining to shadows are found in various policy documents and urban design guidelines. Below is a summary of the most relevant policies and design guidance.

Official Plan

- Policy 3.1.3.10b (OPA 480) - The tower portion of a tall building should be designed to limit shadow impacts on the public realm and surrounding properties.
- Policy 3.1.2.22d (OPA 480) - Outdoor amenity spaces should provide comfortable wind, shadow and noise conditions.
- Policy 3.2.3.3 (Parks and Open Spaces) - The effects of development from adjacent properties, including additional shadows, noise, traffic and wind on parks and open spaces will be minimized as necessary to preserve their utility.

It is acknowledged that there are also policies pertaining to Mixed Use Areas (4.5.2) which speak to locating and massing buildings to adequately limit shadow impacts on properties in adjacent lower-scale Neighbourhoods.

Tall Building Design Guidelines

- Guideline 1.4 - Locate and design tall buildings to protect access to sunlight and sky view within the surrounding context of streets, parks, public and private open space, and other shadow sensitive areas.
- Guideline 1.4a - Provide slender, point towers with generous separation distances, and limit or vary the height of towers, to retain sky view between buildings and reduce the size of shadows and length of time they are cast on a particular area. Consider the cumulative effect of multiple towers on resulting shadowing.
- Guideline 1.4c - Through a Sun/Shadow Study, demonstrate how the proposed tall building protects access to sunlight and seeks to adequately limit shadowing of neighbouring streets, properties, and open space, including shadow sensitive areas such as schoolyards, play fields, and cemeteries.
- Guidelines 3.2.1 - Recommends that tower floorplates be limited to 750 square metres in size, subject to flexibility for tall buildings greater than 50 to 60 storeys, and organized, located and articulated to minimize shadow impacts on surrounding streets, parks, open spaces and properties.

1.3 SUN AND SHADOW STUDY

This Sun and Shadow Study was conducted by Urban Strategies Inc. in support of the proposed development following the City of Toronto’s new Terms of Reference for Shadow Studies. The Study identifies the as-of-right shadows (12.0m building) and the new net shadows cast by the proposed development. The study also includes the Transit Station Area Boundary (in blue), and identified “Potential Transit-Oriented Development Blocks”. As described elsewhere in this report, it is our opinion that these blocks, through a future planning exercise, should be considered for land-use conversions to Mixed-Use to allow for higher density development. It is in the context of the new transit station and provincial direction for height and density at a station; the future change of those Blocks; and the broader station area change that the Choice heights respond to and are appropriate within. The shadow analysis should be reviewed in its entirety.

OFF SITE

On September 21st and March 21st, the Study indicates that there is shadowing of the Neighbourhood lands to the west and northwest throughout the morning, however, the shadows move quickly, and rarely linger on one lot for more than two hours, due in part to the greater tower separations and tower orientation. Generally, the shadows do not fall within the school site, however, at 12:18 there is a brief shadow cast on the front door and play yard area of the school. For the block to the north of the Site (Block 2), the proposed development will cast varying shadows throughout the day from 10:18 to 14:18. Again, it is our opinion that these lands should be considered as

future Mixed Use Areas and higher density sites. From 14:18 onwards the shadow generally falls on the rail corridor and the Mixed Use Areas to the east. At 18:18 the neighbourhood to the far-east is shadowed, however it should be noted that those Neighbourhood lots would be experiencing existing shadows at that time. On June 21st, the Study indicates improved shadowing to the west and north with only minor shadowing in the early morning on a select number of Neighbourhood lots from 9:18 and 10:18, by 11:18 there is only minor shadowing on the Potential Transit-Oriented Development Blocks. In the afternoon, the shadow generally falls within the site, and along the rail corridor. By 18:18, the shadow extends to the south side of Gerrard Street, but there is no net new shadow on Matty Eckler Playground.

ON SITE

PARK

The Study indicates that on September 21st and March 21st, the proposed new park and amenity area (3rd floor) will have intermittent shadows from 9:18 to 14:18, but will be shadow free for the remainder of the day. On June 21st, the park will experience more sunlight throughout the day, and will be shadowless by 13:18.

RAIL CORRIDOR POPS

The Study indicates that on September 21st and March 21st, the proposed POPS over the rail corridor will be shadow-free from 9:18 to 14:18 and then will generally be in shadow for the remainder of the early evening. On June 21st, the POPS will experience full sun throughout the day, and will have intermittent shadows from 15:18 to 18:18.

In summary, the Shadow Study shows that the proposed development shadows the existing Neighbourhood to the west and north, particularly in the mornings. However, as discussed elsewhere in the Planning Rationale prepared by Urban Strategies, the shadow study must be reviewed in the context of the broader change that this area should and will face in response to the transit-investment and the new Gerrard Station PMTSA, with recognition that the neighbourhood of today is not necessarily the neighbourhood of tomorrow.

The proposed development responds to the existing and planned context for the site by creating a transit node that will contribute to a walkable site compromised of a new park, new street and large POPS alongside other pedestrian and transit connections. While the height being introduced is greater than what currently exists in the area, the proposed development sets the stage for the future emerging context that will surround the new Gerrard Station. The height proposed is capped to limit shadows on the yard of the Pape Avenue Junior Public School located to the north of the site.

The proposed development will provide significant new housing, employment, retail and open space in the Riverdale neighbourhood, with transit- supportive density and design that prioritizes its integration with the surrounding community



Sun/Shadow Analysis Terms of Reference - Checklist

1. General	
A. Name of the Project: Choice Carlaw-G	B. Date: 07/21/2022
C. Address of Application: 425-471 Carlaw Avenue	D. Name of Consultant: Urban Strategies Inc.
E. Phone number and email of the Consultant: 416-340-9004; ijsquires@urbanstrategies.com	

2. Project Description	
A. Short Description of the Project: <small>The Proposed Development will transform Site into mixed-use, transit-oriented development with direct connections into the new Gerrard Station. At the Site's north end, there will be a new 3,370 m2 public park. South of the park is the New Street, which will have an 18.5m right of way and provide a connection from Page Avenue to Carlaw Avenue. Across from the park and on the south side of the New Street will be the development site situated north of the rail corridor abutting the new transit station. On top of the rail corridor and tunnel will be a 6,610 m2 publicly accessible open space (PCPS) that will provide a connection from the Site into the building. The development will include three residential towers on top of a two to six-storey podium. The towers are located and positioned to respond directly to the transit station. The tallest building, Tower A, at 40 storeys, is situated closest to the rail corridor and the transit station at Gerrard Street. This establishes a height peak at the transit station entrance. Towers B (35 storeys) and C (30 storeys) decrease in height from west to east toward the surrounding largely low-rise development. The towers have a footprint of approximately 9,200m2. The redevelopment encloses a total gross floor area of 99,202 m2, comprised of 66,432 m2 of residential gross floor area.</small>	
B. Number of buildings for this Application: 3	
C. Number of Floors : 40,35,30	D. Height in Metres : 140.5m;124.7m;109.7m
E. Did you submit the 3d Model for this project? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No File Format Submitted:	

3. Massing Information	
A. Software Used <input type="checkbox"/> SketchUp <input type="checkbox"/> Revit <input checked="" type="checkbox"/> Other If Other describe below: ArchiCAD	B. Terrain Corrected : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C. 3D Massing Context Tile Used (Open Data) – <i>Please provide date of obtaining data</i>	

4. Massing Model Location	
A. Coordinates Used: Longitude: 79°20'49.3" Latitude : 43°39'59.	B. Solar North Matches True North? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

5. Shadow Diagrams Information	
A. Are you fully compliant with all of the technical specifications in the Terms of Reference? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
B. Do the Shadow Diagrams use a standard metric scale? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
C. Are the Shadow Diagrams provided in Colour? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	



Sun/Shadow Analysis Terms of Reference - Checklist

D. Does the Shadow Diagrams use The City's Shadow Study Drawing Standards – Colour Analysis? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
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5. Shadow Diagrams Information – Continued	
D. Date Used for Shadow Analysis :	Year 2021 Month(s) March-21
E. Daylight Savings Time considered? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

6. General Comments
USI city model used

Declaration of Consultant	
I <u>Inger Squires</u> , (Print name) certify that I have examined the contents of the application, certify that the information submitted with it is accurate and concur with the submission of the application. Date: July 21,2022 <div><div>Inger Squires</div><div>Digitally signed by Inger Squires Date: 2022.07.21 11:59:00 -04'00'</div></div> Signature of Consultant:	

Please send the completed form with Sun Shadow Analysis package to:

If you require further assistance, please contact: Abdullah.diab@toronto.ca or Dulini.ratnayake@toronto.ca

