

URBAN DESIGN BRIEF

550 LANCASTER INC. C/O CORLEY DEVELOPMENTS INC.

528, 544 & 550 LANCASTER STREET W, KITCHENER

DESTINATION, COMMUNITY, CONNECTION

MAY 2022 (REVISED MARCH 2023)



CONTENT

| | | |
|-------------------|--|-----------|
| 1.0 | INTRODUCTION & NEIGHBOURHOOD CONTEXT | 1 |
| 1.1 | INTRODUCTION | 1 |
| 1.2 | SUBJECT LANDS & CONTEXTUAL ANALYSIS | 1 |
| 2.0 | PROJECT VISION & DEVELOPMENT CONCEPT | 4 |
| 2.1 | PROJECT VISION & DESIGN OBJECTIVES | 4 |
| 2.2 | DEVELOPMENT CONCEPT | 6 |
| 3.0 | DESIGN PRINCIPLES & URBAN DESIGN GUIDELINES | 14 |
| 3.1 | DESIGN RESPONSE TO CITY OF KITCHENER POLICIES AND GUIDELINES | 14 |
| 3.2 | CPTED CONSIDERATIONS | 30 |
| 4.0 | MICROCLIMATE IMPACTS | 31 |
| 4.1 | MICROCLIMATE IMPACTS | 31 |
| 5.0 | CONCLUSION | 33 |
| 5.1 | CONCLUSION | 33 |
| APPENDIX A | WIND STUDY | |
| APPENDIX B | SHADOW STUDY | |
| APPENDIX C | OVERLOOK ANALYSIS | |

SECTION 1

1.1 INTRODUCTION

MHBC Planning has been retained by 550 Lancaster Inc. c/o Corley Developments Inc. to prepare an Urban Design Brief for the redevelopment of properties municipally known as 528, 544, and 550 Lancaster Street West, Kitchener, Ontario (hereinafter referred to as the “subject lands”).

The subject lands have a total area of 1.67 hectares (4.13 acres) and are currently occupied by three residential dwellings, located on the east side of Lancaster Street West north of the intersection of Lancaster Street West and Bridgeport Road East. The lands are designated as Mixed Use in the City of Kitchener Official Plan and are located within an Urban Corridor as identified on the Urban Structure Map in the Official Plan.

Urban design is an important component of city planning and goes beyond just being concerned for the visual and aesthetic quality and character but is also considered with the functionality and compatibility of development and how it contributes to complete and healthy communities that are safe, attractive, thriving, innovative and inclusive.

The purpose of this Urban Design Brief is to describe the physical arrangement of the development proposal, provide insight as to why certain design decisions are appropriate given the site specific context and how the proposal is consistent with and supportive of City of Kitchener policies and design directives. This design brief has been prepared in accordance with the urban design comments from the “Record of Pre-Submission Consultation” meetings held on May 14, 2019 and April 15, 2021.

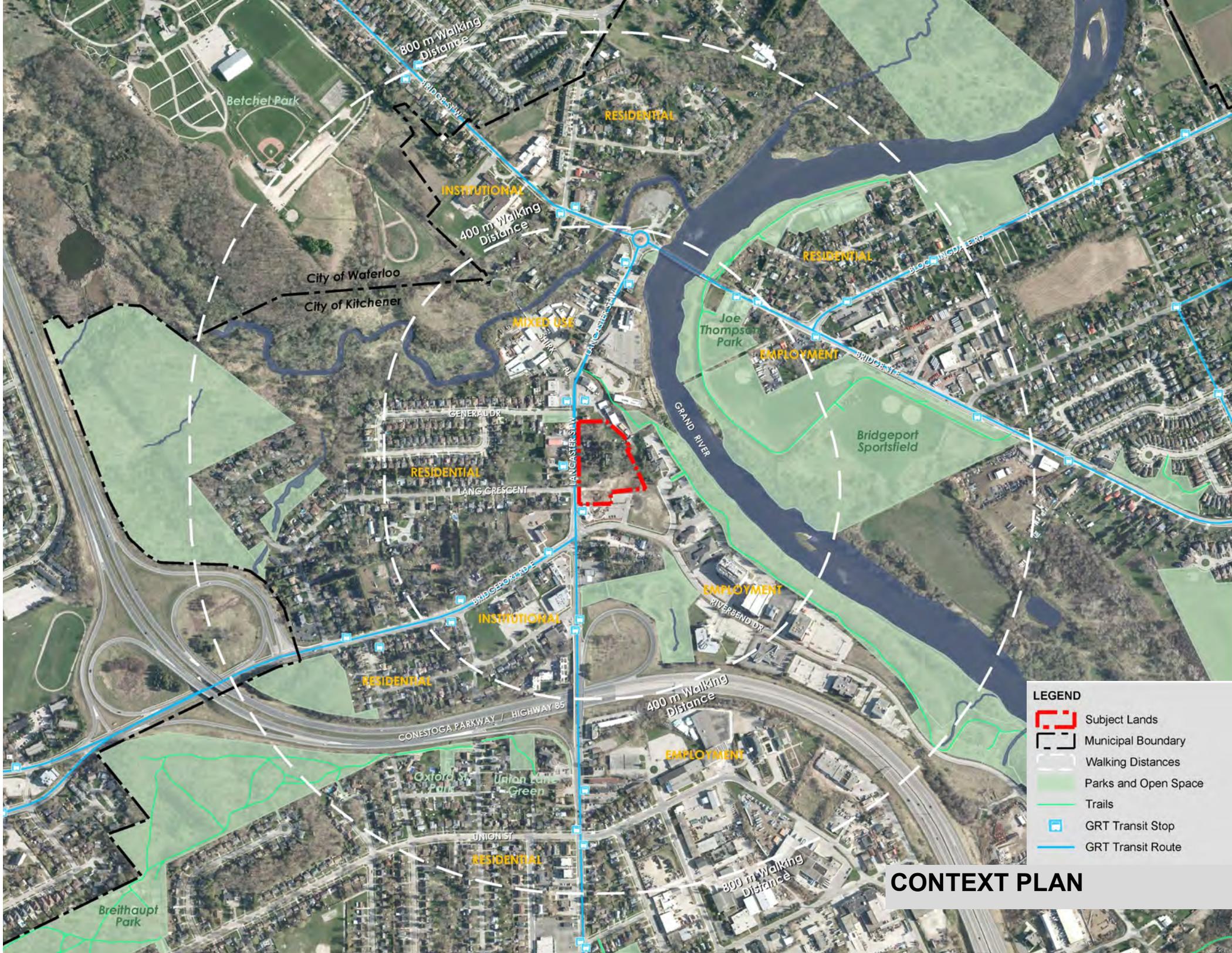
1.2 SUBJECT LANDS & CONTEXTUAL ANALYSIS

The subject lands are located within the Bridgeport West community, near the municipal boundary of the City of Kitchener and the City of Waterloo, and just two blocks north of Conestoga Parkway and located on the Lancaster Transit Corridor. Four existing transit stops are located on Lancaster Street West less than 250 metres or a minute walk from the subject lands.

Currently occupied by three large lot residential dwellings, the subject lands are made up of three parcels that have a combined area of approximately 1.67 hectares (4.13 acres). The subject lands are triangular in shape with approximately 135 metres of frontage on Lancaster Street West with a maximum lot depth of approximately 136 metres.

The subject lands slope significantly from the highest grade near the intersection of Lancaster Street W and Bridgeport Road to the lowest grade near the intersection of Lancaster Street West and General Drive.

The lands are located within an designated Urban Corridor, adjacent the Lancaster Transit Corridor, and planned to function as the gateway to Bridgeport West. Lands designated urban corridors and adjacent to transit corridors are planned to support primary intensification within the urban boundaries. This stretch of Lancaster Street West is an important thoroughfare and gateway to the community of Bridgeport West and should provide height and densities supportive of planned higher-order transportation.



City of Waterloo
City of Kitchener

LEGEND

- - - Subject Lands
- Municipal Boundary
- Walking Distances
- Parks and Open Space
- Trails
- GRT Transit Stop
- GRT Transit Route

CONTEXT PLAN

800 m Walking Distance

INSTITUTIONAL

400 m Walking Distance

RESIDENTIAL

MIXED USE

RESIDENTIAL

EMPLOYMENT

RESIDENTIAL

INSTITUTIONAL

EMPLOYMENT

RESIDENTIAL

400 m Walking Distance

EMPLOYMENT

RESIDENTIAL

300 m Walking Distance

Breithaupt Park

Betchel Park

GRAND RIVER

Bridgeport Sportsfield

Oxford St Park

Union Lane Green

Joe Thompson Park

GENERAL DR

LANG CRESCENT

BRIDGEPORT RD

CONESTOGA PARKWAY / HIGHWAY 85

UNION ST

LANCASTER ST

LANG CENTER SW

BLOOMINGDALE RD

BRIDGE ST

RIVERBEND DR

LANCASTER ST

UNION ST

SECTION 1

The subject lands are designated Mixed Use in the City of Kitchener Official Plan, and zoned Mixed Use Two (MIX-2) with special provision 49 in the City's Zoning By-law 2019-051. Special provision 49 permits a maximum floor space ratio of 4.0.

Uses that immediately surround the subject lands include the following;

NORTH: Lands north of the subject property are characterized by a variety of retail, restaurant and other commercial uses. The Lancaster Smoke House and Golf's Steak House are located on the east side of Lancaster St. heading towards Bridge Street.

EAST: Directly to the east are Business Park employment lands largely developed with office and service commercial uses. Further east approximately 200 metres from the subject lands is the Grand River with an extensive network of walk/cycling trails with connections to the broader trail network.

SOUTH: A Tim Horton's restaurant with drive-through facility is located directly south of the subject lands at the northeast intersection of Lancaster Street West and Bridgeport Road. Southwest of the subject lands at the northwest intersection of Lancaster St. W and Bridgeport Road land uses include a religious institution and lands currently under development to expand the institutional use with combined non-profit housing.

WEST: Lancaster Street West forms the western property boundary. Properties facing east adjacent Lancaster Street West are largely developed with single-detached residential dwellings. A number of office/commercial uses are located further northwest.

SECTION 2

2.1 VISION & DESIGN OBJECTIVES

The project team envisions a unique mixed use development on the subject lands, sensitive to the adjacent low-rise residential neighbourhood, while achieving a transit supportive density and urban form. The vision for the development is to create a contemporary expression and celebration of the Grand River community through architectural design that provides a ‘Gateway’ to the Lancaster Urban Corridor and new transit focused neighbourhood planned.

The vision and proposed redevelopment of the subject lands inspires to influence future redevelopment in the area.

The following design objectives provide direction that have guided the proposed development:

- Provide for development that will be supportive of transit investment in the Region and alternative transit modes, and will encourage future residents to walk to and from nearby residential, commercial, office and retail uses, services and public amenities.
- Create a strong visually appealing street edge along Lancaster Street West that will improve the streetscape and encourage active transportation modes in this location. This includes working with the existing grades to ensure retail uses on Lancaster Street West have direct access to the public sidewalk and enhanced landscaping along the public street frontage.
- Design buildings that face Lancaster Street West to be sensitive to the residential uses on the opposite side of Lancaster. Units with individual at-grade entrances within the podium of buildings on Lancaster achieve this objective.
- Introducing additional building height within lands designated urban corridor and adjacent a designated transit corridor in a manner that is sympathetic to surrounding uses.

Directing the tallest buildings where impacts on low rise residential areas are minimized.

- Achieve a high-quality of architectural design and construction that is innovative and timeless, contributing positively to the area and Kitchener’s identity. Encourage contemporary architecture that complements rather than competes with the surrounding development.
- Provide a development that, through the combination of massing, orientation, enhanced landscape design, pedestrian entrances, mid-block connections, architectural elements, detailing, and material selection, will result in a positive pedestrian experience along the adjacent street frontage, between buildings, and within the planned open spaces.
- Design a high quality pedestrian realm focused around the connections to the open space network and proximity to the Grand River. Encourage additional retail and mixed use opportunities along Lancaster Street West.
- Create a development which incorporates sustainable design principles and techniques.

SECTION 2

2.2 DEVELOPMENT CONCEPT

The subject lands present a re-development opportunity along a major arterial corridor, supported by a mix of both established service and prestige employment lands uses in close proximity. The existing large lot residential dwellings comprising the site assembly represent an under utilization of lands situated amidst some of Kitchener-Waterloo's most abundant parkland, trails and vistas/connections to the Grand River. The subject lands are well connected to a number of long-standing commercial establishments which have been recognizable in the community for many years.

The proposed development represents a significant investment opportunity in the Lancaster Street Mixed Use Corridor. The proposed mixed use building along the street frontage will include design elements that contribute to the character of the corridor. Enhanced streetscaping will also be considered to further enhance the character and enforce the design vision to provide a gateway to the Lancaster Urban Corridor.

Building A is subject to approved site plan SP19/108/L/BB, construction of which has begun.

Site Design

The proposed "campus style" site plan concept proposes to orient the building mass towards Lancaster Street West which will support the Lancaster Intensification Corridor and become a gateway to "Lancaster on the Grand".



Ground floor commercial uses will be proposed in the central tower identified as building B oriented parallel to Lancaster Street West. All buildings will be designed with a podium base of varying heights to create a pedestrian scale built form adjacent the public realm.

The goal of the development is to act as a focal point within the Lancaster Urban Corridor and provide exceptional views of the Grand River and surrounding environment. The careful placement of buildings within the campus site will reinforce the purpose to become a place to celebrate the beauty of the Grand River. The campus site is designed as a family of buildings with a sense of scale and proportion utilizing like elements with large windows to maximize natural light penetration and bring the outside in.

SECTION 2

Built Form

The proposed tall buildings (buildings B, C, D and E) would be classified as a 'large slab' in accordance with the City of Kitchener's Design Guidelines for Tall Buildings. Given that the subject lands' geometry and surrounding context, the proposed slender slab is an appropriate design solution.

The "base", the ground floor, of each of the proposed tall buildings will have a floor-to-ceiling height of 5 metres compared to the 3 metre upper floors. The base floor will be treated with a cladding to provide rounding and distinction from the upper floors. Architectural treatment to the ground floor combined with the active uses of the building entry and the live/work units will support a pedestrian-friendly public realm along Lancaster Street West.

The building mass of each of the tall buildings will be mitigated through cladding, design articulation, large rhythm of windows, balcony projections, use of light and colour, and vertical and horizontal architectural elements. The "top", the mechanical penthouse, will be clad in the materials utilized throughout the buildings design. Setback from the overall building mass, the mechanical penthouse will denote the top of the towers.



Density

The development proposal has a GFA 125,379 m² and will feature a total of 1281 units across five buildings. There will be a mix of units on each floor including one bedroom units, two bedroom units, and two bedroom plus den units. With a subject lands area of 16,767 m², the proposed development has a FSR of 7.47.

Height and Massing

The massing proposed provides a contextually sensitive transition of building heights on the subject lands. Building height is proposed to transition from a 6 storey podium adjacent the Lancaster Street interface, to a 12 storey residential tower, and ultimately to a maximum building height of 34 storeys at the rear of the subject lands.

The multifaceted articulated building facades respond to the



SECTION 2



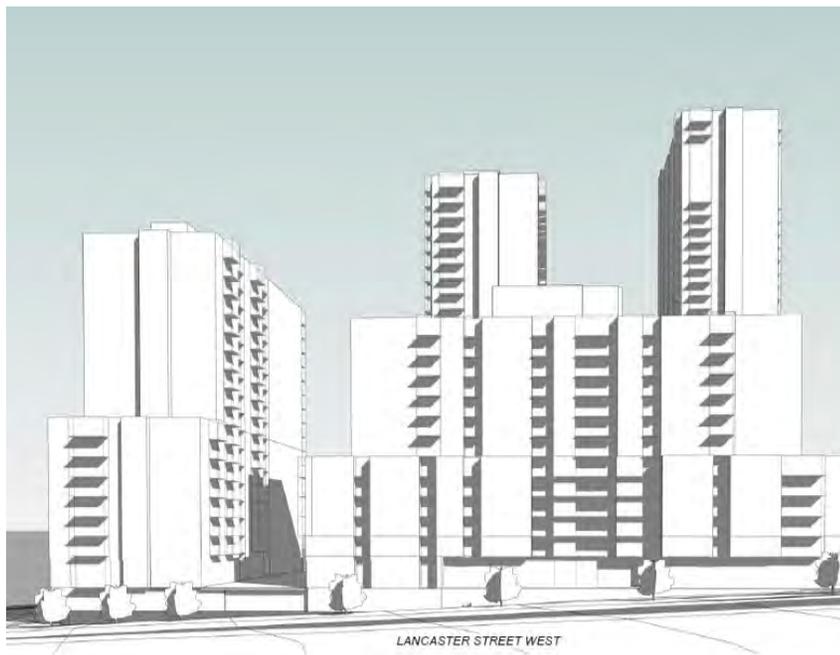
scale of the community at different levels by breaking down the urban building typology through a clear reading of a base, middle and top.

Siting and Setbacks

Buildings B and E are proposed to be orientated parallel to the Lancaster Street West frontage with a 1.5 metre building setback post the future road widening allowance. Sideyard setbacks will be provided for buildings A, C, and E. Both of the proposed towers in building C and D are setback from the rear property line adjacent open space lands, the Walter Bean trail, and Grand River. The proposed four storey podium level of buildings C and D is proposed with no setback from the rear property line in certain locations. The design of the façade will ensure all structured parking proposed adjacent the interface is screened from the public realm. The grading of the subject lands has been considered and incorporated into the design of the structured parking area to establish an appealing interface design.

Style and Articulation

The proposed buildings will reflect a contemporary architectural style defined using high quality materials and architectural detailing. Awning and balcony projections will be utilized to provide dimension and articulation while breaking up the mass of the proposed buildings horizontally as well as vertically. The detailed building design of each building will be identified and determined through future site plan applications to be prepared for each phase of future development.



Massing Model Lancaster Street West View

SECTION 2

Amenity Space

The proposed development is committed to providing a variety of high quality and meaningful amenity areas sufficient for all potential residents in the form of common amenity area (indoor and outdoor), as well as private amenity areas in the form of individual patios and balconies.

The location of the subject lands is under supplied in park space, the proposed amenity areas will act as important features for accommodating active and passive recreation opportunities in the area.

A large outdoor rooftop amenity area is proposed to provide opportunities for general amenity area and children's play facilities for the proposed mixed-use development. Further indoor amenity area is provided with direct access to the outdoor amenity area, and extends the potential amenity opportunities for residents of all ages and abilities, in all seasons. The detailed design of the amenity areas will be completed through the site plan approval process and will provide consideration for a variety of actives to support universal and age friendly design principles and promote positive multi-generational social interactions.

The below precedent images identify a variety of design

elements and principals to be employed in the detailed design of common amenity areas, and provide a range of active to passive uses. Design features that provide robust amenity spaces suitable for all ages and abilities are to be considered.

Connections, Access and Public Realm

Two points of access on Lancaster Street West will be proposed, one of which utilizes the access off of the former unopened road allowance of Lang Crescent.

A pedestrian access is proposed through building B near the midpoint of the building. The entrance is proposed to lead to a large lobby, a large vestibule and an exterior canopy to delineate the entrance and provide weather/wind protection. The ground floor live/work units will have individual entrances directly onto Lancaster Street West. Individual pathways will lead from the public sidewalk to each entrance.

Parking

Dedicated space for secure bicycle storage will be provided within the basements of the proposed buildings. Parking is proposed to be provided in the form of one level of underground parking below the two proposed apartment buildings fronting Lancaster Street West. A shared below grade multi-level parking structure accessed at the northerly entrance



SECTION 2

is also proposed. The total proposed parking ratio is 0.7 spaces/unit. All parking spaces provided at ground level throughout the property will be accessed from the southerly entrance opposite Lang Crescent and will be well screened from Lancaster St. West.

The reduced parking rate is supported through the findings of the Transportation Impact Study and Parking Study (TIS) prepared by Paradigm Transportation Solutions in support of the complete application submissions. The TIS provides parking demand forecasts through the identification of an area specific auto ownership rate for apartment dwellers and proxy site data collected to provide an indicator of the parking demand for the type of development and demographics of residents.

The reduced parking rate is reflective of the buildings location relative to existing and planned transit and the proposed implementation of a number of Transportation Demand Management (TDM) measures including consideration for:

- Enhanced pedestrian and cycling connections provided to existing pedestrian, transit and cycling facilities and throughout the subject lands. The enhanced streetscape and all pedestrian connections are to be well lit and designed in compliance with AODA standards;
- Providing short-term and long-term bike parking that exceeds the minimum requirement;
- Unbundling parking through the implementation of a paid-parking operation to lease parking spaces separately from the cost to rent a unit;
- Dedicating parking spaces for the use of a car sharing service;
- Travel planning, education and promotion through the provision of welcome packages provided to residents

outlining the available transit routes and active transportation options. A travel plan is intended to engage and educate residents on the available sustainable modes of travel and how to overcome perceived obstacles. General education of all modes of transportation is a key component to TDM success.

Fire and Safety

The arrangement of the parking area with two access from Lancaster Street West provides for adequate fire access to the subject lands.

The buildings and parking area will be sufficiently lit with building and landscape lighting to ensure safety and security across the proposed development.

Garbage

On-site waste disposal will be provided by indoor collection areas within each building. The location of these areas will ensure convenient access for residents and commercial uses. A private waste disposal contract is anticipated to maintain and service the indoor collection areas.

Landscaping

The site plan will feature enhanced landscaping utilizing both hard and soft landscaping elements to soften the hardscapes of urban living.

The design of the buildings ground floor will ensure a positive relationship with the public realm and an attractive and engaging streetscape along Lancaster Street West. All proposed materials will be high quality and tactile. Large sections of glazing will ensure activity and permeability on the street, creating an engaging visual experience.

SECTION 2

The proposed architectural treatment to the ground floor combined with the active uses of the building entry and the live/work units will support a pedestrian-friendly public realm along Lancaster Street West.

Shadow Impacts

A shadow study has been submitted with the application and is included in Appendix B. Given the buildings location on the south side of Lancaster Street West, there will be minimal shadowing impacts on the streetscape along Lancaster Street West.

The shadow analysis illustrates the conditions by season and provides that during the summer solstice, the adjacent properties will be minimally impacted by shadows from the proposed buildings. During the spring and fall equinox the adjacent residential lots maintain at least 5 hours of direct sunlight.

Wind Impacts

The Boundary Layer Wind Tunnel Laboratory (BLWTL) was engaged to carry out an initial high-level assessment of the expected pedestrian winds around the subject lands. A summary of the report is provided in section 4.1 of this brief, the complete report is attached as Appendix A.

BLWTL's assessment of proposed pedestrian level wind impacts provides the development is not expected to have a significant influence to winds on neighbouring properties. Wind mitigation measures will be recommended to provide refuge from wind speeds generated by westerly winds around the proposed towers. Additional detailed wind analysis will be undertaken at the final site plan stage.

Transition and Compatibility

Building B which flanks Lancaster Street has been designed at the lowest height at 12 storeys with a 6 storey podium and 3.0 meter stepback to the tower. Building E which is located at the north end of the site and is perpendicular to Lancaster Street has been designed to accommodate a 7 metre stepback from the 6 meter podium to the 18 storey tower. A total of 20 Live/Work units are proposed within buildings B and E and units fronting Lancaster Street will have direct access via the public sidewalk and an internal walkway along the Lancaster Street frontage. Two taller apartment buildings at 26 and 34 storeys with 8 storey podiums are proposed at the rear of the property where grades drop, offering a transition of heights from the Lancaster Street West frontage to the rear of the property.

The massing and placement of the proposed buildings creates a transition from the existing neighbourhoods to the planned higher density re-development of the lands.

The proposed development includes architectural innovation and expression, and will provide a unique built form in the neighbourhood. The architectural design employed is proposed to be a contemporary style that will be complementary and a positive addition to the planned Lancaster Transit Corridor, and within an area designated Urban Corridor comprised of commercial retail, employment, institutional, multiple residential, and single detached residential dwelling uses. The proposed development will improve the streetscape and will also enhance the surrounding public realm.

The proposed development is designed to compliment the low density residential community opposite the Lancaster Street West interface, while providing an intensification of the site.



Conceptual Elevation (Subject to Change)

The Lancaster Street West interface is an important aspect of the overall design. Buildings with frontage on Lancaster Street West will be designed to activate the streetscape, support the proposed transportation infrastructure and compliment the character on this street. Podiums with at-grade Live/Work units and streetscaping will be incorporated into the design for buildings fronting Lancaster Street West as illustrated in the above conceptual rendering.

The above conceptual elevation illustrates how the grade changes will be incorporated into the development.



Conceptual Rendering (Subject to Change)

View of Building A, B, and E as seen from Lancaster Street West. Building E is seen in the background. The above rendering illustrates the tower stepbacks along Lancaster and the podium base.

Podiums surrounding the public realm reinforce the pedestrian scale.



Conceptual Rendering (Subject to Change)

View of Building C, D, and E as seen from the northeast on the Bridgeport Road Bridge. The orientation and placement of the buildings will capitalize on the views of the Grand River. The above rendering illustrates the architectural projections designed to animate the facades and provide articulation of the development in the skyview.

SECTION 3

3.1 DESIGN RESPONSE TO CITY OF KITCHENER POLICIES AND GUIDELINES

The City of Kitchener Official Plan and City of Kitchener Urban Design Manual provide urban design policies and directives relating to development in this area of the City. The following section of this Urban Design Brief reviews design policies and directives applicable to this Site and provides an analysis with regards to how the proposed design responds to the policies.

3.1.1 CITY OF KITCHENER OFFICIAL PLAN (2014)

The subject lands are located within the Built Up Area in the City of Kitchener. The subject lands are currently designated Mixed Use in the City of Kitchener Official Plan. The subject lands are within a designated Urban Corridor as identified on the Urban Structure plan of the Official Plan.

Section 11 of the City of Kitchener Official Plan contains Urban Design Policies. It is intended that the Urban Design Policies will provide guidance and direction as the City grows, develops and evolves. The following section provides a summary of how the proposal meets the relevant policies from Section 11 (Urban Design) of the current Official Plan:

11.C.1.11 Streetscape: The City will support the character of streets through the coordination of site, building and landscape design on and between individual sites with the design of the street.

Design Response: *New landscaping will be provided along the Lancaster Street West frontage. Access to the site is provided by two vehicular accesses from Lancaster Street West. Service access is internalized to ensure the streetscape is animated and not broken-up by entrances. The proposed building façades will be oriented to the street and activate the public realm which further enhances the streetscape. Active commercial uses are proposed at grade.*

11.C.1.13, 14 & 15 Safety: The City will apply Crime Prevention through Environmental Design principles in the review of new developments, redevelopments and infrastructure projects to implement crime prevention strategies that will enhance the effective use of the space. Where feasible and in compliance with the other policies of this Plan, the City will ensure that the efficiency of emergency medical, fire, and police services be considered in the design of communities, neighbours and individual sites. Development applications will be reviewed to ensure that they are designed to accommodate fire prevention and timely emergency response.

Design Response: *General CPTED considerations are analyzed in section 3.2 of this Brief. The subject lands are located in a built up area within close proximity to emergency services. Emergency services vehicles will be able to access the development from the surrounding and internal road network and the buildings will be designed in compliance with the Ontario building Code including aspects related to fire prevention suppression. The proposed amenity areas, walkway, and parking is located in a highly visible location with sufficient eyes on the areas from surrounding buildings.*

11.C.1.16 Universal Design: The City will encourage new sites to be designed, existing sites to be redeveloped, the public realm

SECTION 3

and community infrastructure to be planned to be barrier-free and universally accessible by all citizens. In this regard, the City will enforce the Ontario building Code and other accessibility related legislation and regulations.

Design Response: *The development is designed with accessibility in mind and in compliance with the Ontario Building Code in this regard. Pedestrian walkways will incorporate appropriate ramping if needed. Barrier free spaces will be provided throughout the site. Cross-walks demarcated with different materials and sidewalks at crosswalks will have tactile warning surfaces.*

11.C.1.22 Shade: The City will require the provision of shade, either natural or constructed, to provide protection from sun exposure, mitigate the urban heat island, and reduce energy demands provided it does not generate unacceptable adverse impacts.

Design Response: *Shade will be provided from architectural details incorporated into the building design, trees, and landscape features on site and in the surrounding area. The angled walls of the building will also provide shade at various times throughout the day to balconies, terraces, and entrances. Surface parking areas will be broken up to reduce amount of asphalt and provide as much landscaping as possible*

11.C.1.30 Site Design: Policy 11.C.1.30 includes a number of factors to be considered through the Site Plan Control Process.

Design Response: *The various considerations included in Policy 11.C.1.30 will be addressed through the proposed design of the site, including improvements to the aesthetic quality of the site from the public realm; the provision of safe, comfortable and functional site circulation and lighting; and the provision of landscaping which*

enhances the proposed buildings and the streetscape.

11.C.1.31 - 11.C.1.33 Building Design, Massing and Scale Design: The Official Plan contains three policies related to Building Design, Massing and Scale Design. These policies encourage redevelopment projects to create attractive streetscapes and to contribute to rich and vibrant urban places. These policies encourage attractive building forms, facades and roof designs which are compatible with surrounding buildings. For new development, the policies encourage development which is compatible with the neighbourhood context and contributes to neighbourhood character, particularly if located within close proximity of a recognized cultural heritage resource. Architectural innovation and expression is also encouraged.

Design Response: *The proposed development includes architectural innovation and expression, and will provide a unique built form in the neighbourhood. The architectural design employed is proposed to be a contemporary style that will be complementary and a positive addition to the planned Lancaster Transit Corridor, and an area designated Urban Corridor comprised of commercial retail, employment, institutional, multiple residential, and single detached residential dwelling uses. The proposed development will improve the streetscape and will also enhance the surrounding public realm. The proposed development is designed to compliment the low density residential building designs adjacent in Lancaster Street West interface, while providing an intensification of the site. The massing of the buildings is designed to accommodate the change in grade across the subject lands and provide a transition in height to maintain compatibility adjacent to surrounding land uses.*

SECTION 3

3.1.2 CITY OF KITCHENER URBAN DESIGN MANUAL—2019

In September 2019 Council for the City of Kitchener approved a new Urban Design Manual which contains City-wide design guidelines as well as more specific guidelines that apply to various types of development and/or various locations within the City.

The Urban Design Manual (UDM) consists of three parts. Part A contains guidelines for various land uses and built forms. Part B: Design Briefs contains supplementary guidelines completed through other studies. There are no Part B guidelines applicable to the subject site. Part C contains design standards. Applicable sections were reviewed during preparation of the development proposal.

Applicable guidelines from Part A are to be referenced in an Urban Design Report accompanying a Development Application, where required. For the purpose of this Brief we have reviewed the most relevant sections of the Design Manual: City-wide Design; Nodes & Corridors; and Design for Tall Buildings.

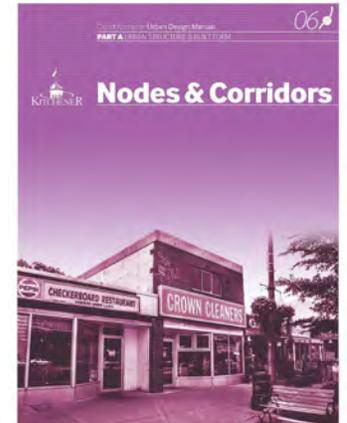
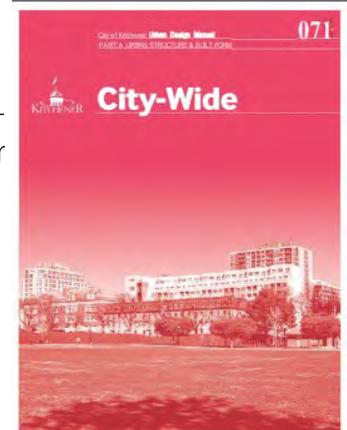
Section 9: Design for Tall Buildings is most applicable to the proposed development and the guidelines are reviewed in their entirety below. *Section 1: City-wide Guidelines* and *Section 6: Nodes & Corridors* are also applicable, however, there are a number of overlapping directives and guidelines from *Section 9: Design for Tall Buildings*.

CITY-WIDE DESIGN GUIDELINES

The purpose of the City-Wide Design section of the Urban Design Manual is to set forth the universal design expectations which apply to all of Kitchener. This Section includes urban design objectives that are relevant to all geographies and building typologies and is divided into two sections: Community Design and Site Design. For the purpose of this brief we have focused on the Site Design guidelines which includes guidelines related to Built Form, Shared Spaces and Site Function with sub-categories within each of these two sections.

The Concept Site Plan design has appropriately considered the **Built Form (Massing)** guidelines as follows:

- The proposed development focuses height and mass where it provides the best public realm opportunities while minimizing impacts on surrounding lands. As part of the overall development scheme, the tallest buildings are proposed to be located along the rear eastern edge of the property. Building A and Towers B and E, located along Lancaster have the lowest proposed heights of the development.





Conceptual Rendering (Subject to Change)

- Proposed buildings will be located to allow for a substantial public realm opportunity.
- Massing techniques will be incorporated into each building including projections, recesses, variation in colour, materials and texture, all of which help to reduce and diversify the massing of each building.
- The buildings will be designed as slender towers with a defined podium to enhance the public realm along surrounding public streets.
- The overall site is designed to create visual interest and to reinforce a human scale. This will be done through the creation of podium units along Lancaster Street West with individual at-grade entrances and a stepback above the podium base. Podium units have also been incorporated into buildings C and D.
- Primary building entrances will be located visible from and directly accessible from the public street.

- All building elevations will be designed to provide transparency, architectural continuity and visual interest. No blank walls will be proposed. As a result of proposed windows and balconies there will be sufficient natural surveillance onto surrounding public streets and future proposed shared spaces.

The Concept Site Plan design has also considered the **Built Form (Materials & Uses)** guidelines as follows (it is noted that detailed design will be further refined through the site plan process required for each phase of development).

- All proposed buildings feature a contemporary design, meaning the buildings will be designed with a present-day building style, with varied architectural details, materials, colours and textures.
- Active uses (including residential and commercial units directly accessible from the street) will be proposed on the ground floor along the Lancaster Street West facing

SECTION 3

elevations.

- A range of unit types and sizes will be proposed.
- The design of buildings provides for pedestrian weather protection including covered building entrances.

The Concept Site Plan design has considered the **Shared Spaces (Landscaping and Lighting)** as follows (it is noted that detailed landscape plans will be required for each phase of development).

- Vegetation will be selected with regard to their tolerance to urban conditions including road salt and drought.
- Landscape and hardscape elements will be designed to provide colour, having regard for seasonal changes.
- Landscape areas will be provided between the buildings and the sidewalk. Where trees will be provided within landscaped areas, adequate soil volumes will be proposed.
- Lighting will be designed according to City standards and will be designed to minimize glare and light spilling onto surrounding areas.
- Lighting will be designed appropriate to the street character with a focus on pedestrian areas, including building entrances.
- Energy-efficient lamps will be used and over lighting will be avoided.

The following describes the development proposal relative to the **Site Function (Vehicular Access & Parking and Driveway)** guidelines:

- The site is designed with reductions in parking and incorporation of TDM measures to reduce the demand of

private automobiles.

- Parking is provided in the form of surface parking as well as located underground or within building podiums.
- Conveniently accessible and easily visible locations will be proposed for bicycle parking. This includes secure indoor bicycle parking.
- The design within the underground parking structure will avoid the creation of entrapment areas and dead end parking aisles.
- The two driveway accesses to the proposed development are located off of Lancaster Street West and provide direct access from the street to the surface parking area and underground parking structure entrances.
- Proposed driveways do not conflict with transit stop locations.

TALL BUILDING DESIGN GUIDELINES

The Design Guidelines for Tall Buildings provides a set of targets and design elements that generally represent good design practice when dealing with tall buildings. However, the guidelines also recognizes that there is no “one-size-fits-all” set of standards and good design for tall buildings must be approached as a “best-fit” analysis and solution.

The guidelines state that *“it is the City’s intention to use these guidelines to generate constructive discussion and provide a framework against which to consider and test individual site restrictions, broader contexts, and design aspirations. The City wants to encourage creative solutions to problems and deliver innovation*

SECTION 3

and design excellence. Therefore the expectation is not for every project to meet every guideline in all cases. A project may fall short (within reason) of a guideline if it compensates by exceeding targets for other (related) guidelines, or if the project demonstrates justifiable design solutions to achieve a guideline's intention through other means. The City also recognizes that in some cases, site-specific considerations may create conditions that cannot be anticipated within design guidelines; with proper justification, projects will be examined based on how well they are designed for these conditions, and not solely on which specific guidelines they are not able to meet. The Tall Building Design Guidelines should not be read in isolation of other in effect policies, regulations or design guidelines."

With this in mind, the following reviews the set targets and design elements as defined in the guidelines and identifies where the proposed design addresses those targets and the justification for the proposed design solution. Text in *italics* is a copy of the guideline or target.

Built Form

Base Design

A tall building's base includes the ground floor and any additional floors with a direct relationship to the streetscape and public realm. Design the base to prioritize pedestrian utility, comfort and safety. Bases should feature a high percentage of transparency. Bases should maximize connectivity and permeability at ground level, creating and reinforcing pedestrian & cycling connections. Fully integrate bases into the public realm. Avoid conditions such as 'tower in the park' or 'fortress' design.

- The proposal will have a defined a base that is directly adjacent to the street with minimal setback. The proposed lobby and live-work units in building B will front directly onto Lancaster Street West, providing active uses and a

high degree of transparency to support pedestrian comfort and safety. The base will provide for a human-scaled interface with the streetscape and will provide a transitional space from the outside to inside.

Bases should not exceed 70 metres in overall building length. Buildings longer than 70m should demonstrate enhanced streetscaping, materials and building articulation. Provide visual variety through well-articulated massing and high quality materials.

- The building bases proposed will be less than 70 metres in length. Enhanced streetscaping, material selections, and projections will help to minimize any concerns of a long monotonous façade.

Provide protection from harsh weather.

- Canopies, awnings, and architectural projections will be utilized over primary buildings entrances throughout the proposed development.

Provide balconies for residential units along street-facing elevations. Consider outdoor amenity spaces for other uses along street facing elevations.

- Balconies will be proposed for all residential units facing out to Lancaster Street West.

Where it is not feasible to integrate 'back of house' activities underground or within the building mass, design these spaces using high-quality architectural elements and landscape design to screen these activities from public view and to limit unwanted activity.

- Utilities, parking and servicing will all be located away from the Lancaster Street West interface and screened from the public realm through the building placement and site design. Services will be integrated into the overall building and landscape design to mitigate negative impacts on the

SECTION 3

façade and subject lands.

Ground Floor

The lower 5m of a base forms the most immediate relationship of a building to the public realm and should be designed in all cases with high quality materials, highly articulated, engaging and visually expressive architectural features and human scaled massing. For tall buildings with retail or other active uses at grade, provide a ground floor height of 4.5m (minimum) to permit a variety of retail types and activities. Where a shorter ground floor height is proposed, the lower 5m (minimum) of the building is still to be considered critical to the public realm even if it includes part or all of the second storey. Design the ground floor to be comprehensively integrated with the surrounding streetscape and landscape to achieve a high quality pedestrian environment.

- The ground floor of the building is designed to ensure a positive relationship with the public realm and attractive and engaging streetscape along Lancaster Street West. The large floor-to-ceiling height of 5m will create a portion that is scaled to the street and overall building. All proposed materials will be high quality and tactile. Large sections of



Conceptual Rendering (Subject to Change)

glazing will ensure activity and permeability on the street, creating an engaging visual experience.

Tower-Size and Proportion

A Tower is the 'middle' component of a tall building, connecting the base to the top and housing the building's primary function. Towers are highly visible elements of the urban environment and must meet Kitchener's highest standards for design excellence. Compact Point towers are preferred for intensification areas and smaller sites, particularly within multi-tower proposals. The appropriateness of larger or slab-like forms will partially be a function of site size, shape and orientation, and whether a large tower can achieve good separation and compatibility while mitigating unwanted impacts. Height is also an important factor when determining an appropriate tower Size.

- The proposed slender slab design of the buildings is the most optimum design approach for the subject lands given the subject lands' geometry and context. Utilizing this form of development enables the design to maximize on the potential vistas and view corridors of the Grand River and open space network.
- The slab design allows building B to function like a Mid-rise Building along the Lancaster streetscape, filling the spaces between landmarks, and bridging lower density areas to high-density transit areas.

Mitigate the actual and perceived massing impacts of towers by breaking up their mass both horizontally and vertically, through the creative incorporation of changes in materials, balcony and floorplate design, architectural features and unit/amenity locations. Large Point Towers and Large Slabs must demonstrate significant design measures to reduce the visual impact of their mass.

- The mass of the building is articulated and mitigated

SECTION 3



Conceptual Rendering (Subject to Change)

through the creative horizontal and vertical offset placement of windows and balconies.

There are many factors shaping tower design. These guidelines can help determine at the schematic design stage what tower form is most appropriate on a given site. A similar GFA can result in different tower sizes depending on site size, location, costs, parking requirements etc. In order to provide the greatest variety of unit types, sizes and tenures, the City of Kitchener has not put a limit on floorplate size, given the other guidelines can be met.

- The proposed slender floorplate of the buildings optimizes the floor space ratio available for the subject lands while minimizing adverse impacts on adjacent lands.

Tower-Relative Height

Relative Height, or a tower's height when compared to neighbouring towers or existing or planned surrounding context, is an important factor in tall building design. For towers adjacent to lower-rise surrounding areas the towers must demonstrate compatibility with their surroundings and transition in height and scale through

appropriate design of the project's built form. If a site does not allow for sensitive transition between a tower and lower-rise neighbourhoods it may not be suitable for a tall building.

- The proposal recognizes that the tallest towers and highest density developments will be immediately adjacent transit corridors, and development should transition down from the designated corridor to lower density residential areas. The design solution of employing the tallest buildings at the rear of the subject lands provides the greatest amount of separation possible from the single family homes adjacent to the subject lands on the Lancaster Street West interface. Overlook is minimized by facing the residential units towards the street where possible and orienting the massing of the towers to provide maximum building separation. Impacts of wind and shadowing will be mitigated through the site and building design such that no negative impacts are anticipated from the proposed development on adjacent residential land uses.

SECTION 3

Separation

Separation refers to the physical and perceived space between a tower and its surroundings. Achieving adequate separation requires a unified design approach related to Physical Separation and Tower Overlook. Physical Separation is the measured setback in metres from a tall building tower's faces to its side and rear property lines, or to the centre line of an abutting lane, trail or easement.

- The proposed separation between building B and the centerline of Lancaster Street West meets the separation guidelines and is compatible with adjacent built forms as Lancaster Street West has a planned right of way width of 26.213 metres. The separation from building B to the existing dwellings on the opposite side of the Lancaster Street West interface will mitigate shadow impacts.
- The proposed separation between building C and the adjacent lands to the south is below the recommended

separation distance. The lands south of the subject property are zoned for employment use and as such, the intent of the physical separation guidelines (to not preclude future development) can be maintained. As such the reduced separation is justified and meets the intent of the guidelines as the required zoning setbacks will be maintained and the physical separation will not impose additional constraints on the development ability of adjacent lands to the south.

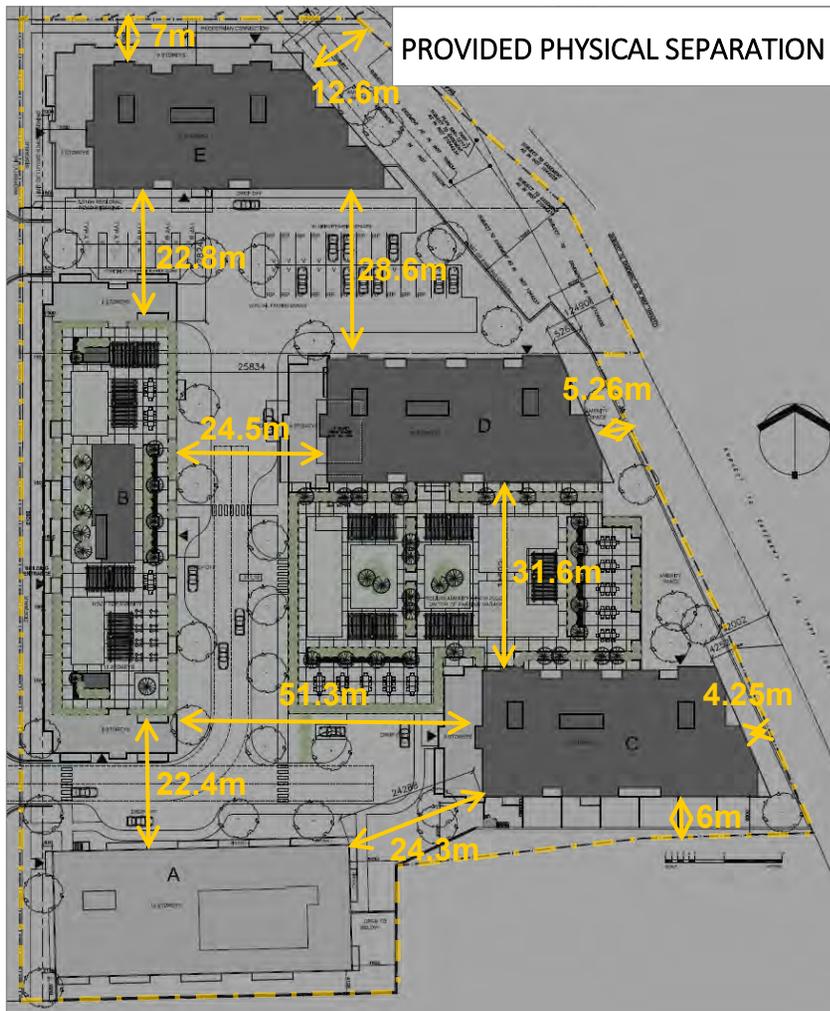
- The built form and placement of balconies and other architectural features provides for a compatible transition from building C to the adjacent lands south of the subject lands.
- The distance proposed from the rear of buildings C, D, and E to the eastern property line adjacent the Walter Bean Trail and open space lands is proposed less than the recommendations. The proposed rear lot line separation aligns with the intent of the guidelines as the adjacent

| RECOMMENDED PHYSICAL SEPARATION (BASED ON GUIDELINE CALCULATIONS) | | | | | | | | |
|--|---------|------------|---|---|------------------------------|----------------------------|------------------------------|------|
| Tower B | | | Recommended Physical Separation / Proportion | Combined Recommended Physical Separation | | Provided Separation | % Compliance | |
| Height | 42.60 | HxL 200 | 14.42 | 29.38 | North - Tower E | 22.80 | North - Tower E | 78% |
| Length | 67.70 | | | 34.65 | East - Tower D | 24.50 | East - Tower D | 71% |
| Width | 22.00 | L/W | 3.08 | 23.12 | South - Tower A | 22.40 | South - Tower A | 97% |
| Area | 1489.40 | | | 14.42 | West - Lancaster Street West | 16.11 | West - Lancaster Street West | 112% |
| Tower C | | | Recommended Physical Separation / Proportion | Combined Recommended Physical Separation | | Provided Separation | % Compliance | |
| Height | 106.90 | HxL 200 | 26.08 | 46.31 | North - Tower D | 31.60 | North - Tower D | 68% |
| Length | 48.80 | | | 26.08 | East - Property Line | 4.25 | East - Property Line | 16% |
| Width | 22.50 | L/W | 2.17 | 26.08 | South - Property Line | 6.00 | South - Property Line | 23% |
| Area | 1098.00 | | | 34.78 | West - Tower A | 24.30 | West - Tower A | 70% |
| Tower D | | | Recommended Physical Separation / Proportion | Combined Recommended Physical Separation | | Provided Separation | % Compliance | |
| Height | 82.90 | HxL 200 | 20.23 | 35.19 | North - Tower E | 28.60 | North - Tower E | 81% |
| Length | 48.80 | | | 20.23 | East - Property Line | 5.26 | East - Property Line | 26% |
| Width | 22.00 | L/W | 2.22 | 46.31 | South - Tower C | 31.60 | South - Tower C | 68% |
| Area | 1073.60 | | | 34.65 | West - Tower B | 24.50 | West - Tower B | 71% |
| Tower E | | | Recommended Physical Separation / Proportion | Combined Recommended Physical Separation | | Provided Separation | % Compliance | |
| Height | 58.20 | HxL 200 | 14.96 | 14.96 | North - Property Line | 7.00 | North - Property Line | 47% |
| Length | 51.40 | | | 14.96 | East - Property Line | 12.60 | East - Property Line | 84% |
| Width | 22.00 | L/W | 2.34 | 35.19 | South - Tower D | 28.60 | South - Tower D | 81% |
| Area | 1130.80 | | | 14.96 | West - Lancaster Street West | 20.11 | West - Lancaster Street West | 134% |

SECTION 3

lands are zoned open space and do not permit development. As such, the proposed development of the subject lands will not preclude adjacent lands from future development. Shadow impacts on adjacent open space lands are mitigated through building orientation and massing.

- The proposed separation between building E and the centerline of Lancaster Street West meets the separation recommendations.
- The proposed separation between building E and the adjacent residential dwelling to the north is below the recommended separation distance. The size of the adjacent parcel precludes the ability of the land to support a tall building. As such the reduced separation is justified and meets the intent of the guidelines as the required zoning setbacks will be maintained and the physical separation will not impose additional constraints on the development ability of adjacent lands.
- The proposed built form including the placement of balconies and other architectural features as well as enhanced sideyard landscaping will provide for a compatible transition from building E to the existing single detached dwelling to the north.



SECTION 3

- As illustrated in the Shadow Study, the proposal provides sufficient separation to mitigate adverse shadow impacts on adjacent land uses.

Overlook

Overlook is the overlap that exists between two neighbouring towers. Acceptable maximum overlook is determined based on the physical separation distance calculation. Where physical separation is calculated greater than 14 metres, the guidelines provide a maximum recommended overlook of 30%.

- The following table summarizes the percentage of overlook proposed between the towers on site.

OVERLOOK (CONCEPT SITE PLAN)

| | Overlook to B | Overlook to C | Overlook to D | Overlook to E |
|---------|---------------|---------------|---------------|---------------|
| Tower B | - | 12% | 33% | 79% |
| Tower C | 37% | - | 45% | 0% |
| Tower D | 100% | 45% | - | 23% |
| Tower E | 31% | 0% | 22% | - |

- The overlook analysis attached as Appendix C provides a detailed analysis of the proposed development and overlook considerations. The proposed development will mitigate the impacts of overlook through privacy screening as well as the strategic placement of windows and balconies. Wind and shadow impacts will not negatively impact adjacent land uses.

Placement

Placement refers to a tower's Position and Orientation on its site relative to other towers, its base, its surrounding context and open spaces. Placement should also factor in Tower Size, Separation, Relative Height and Overlook as part of a comprehensive tall building design. Good Placement helps to minimize undesirable impacts on amenity spaces and the public realm. Diverse Placement amongst neighbouring and nearby towers prevents the creation of unwanted canyon effects and helps to avoid the creation of a homogeneous or visually lifeless skyline. Good Placement is highly dependent on each site's specific context and should be evaluated as achieving a 'best fit' on a site-by-site basis. Proper placement also maximizes compatibility within a tower's greater urban context, including surrounding neighbourhoods and the Kitchener skyline. A tower should step back from its base a minimum of 3m along any street-facing elevation, except where zoning may require otherwise.

- Buildings B and E will be placed directly adjacent to Lancaster Street West and will help to define an urban street wall which is currently lacking along this important gateway stretch of Lancaster Street West.



SECTION 3

Top Design

A well designed top integrates mechanical and occupied/programmed penthouses, amenity spaces, building signage and telecommunications equipment as part of a coherent architectural expression that formally resolves the tower design and completes the visual, architectural and urban form of the project as a whole. A tower top includes any rooftop elements above the highest occupied floor, but can also incorporate an appropriate number of upper-level tower floors to provide quality material and massing transitions, additional stepbacks, further articulation to the floor plate and other design elements which add to the expression of the building and its perception from the public realm.

- The top of the proposed buildings will be proposed to be defined by a mechanical penthouse that is offset from center and steps back from the main building form. It will be clad with the materials used within the base and tower, creating a defined and grounding top shape for the building.

Streets and Open Space

Safety

Design tall buildings to provide natural surveillance by employing high percentages of glazing, active uses at ground level, and windows and balconies with views onto the public realm, particularly along Base storeys. Create a connected pedestrian environment by avoiding physical/visual barriers and potential entrapment areas (dead-ends, hidden and/or fenced in areas). Back of house areas should be well-lit. Use lighting and landscaping to maximize safety and comfort.

- The building is designed to provide natural surveillance through large amounts of glazing at grade, active uses at grade, and balconies reaching out into the public realm.

The pedestrian environment will be connected and well-lit along all sides of the building.

Public and Private Open Spaces

Public and Private Open Spaces are communal areas which contribute to the quality and character of the environment in and around a tall building. They facilitate physical, recreational and social activity, incorporate green and landscaped areas into urban life and provide valuable uses for building occupants and the public. Tall building development requires a mixture of both private and public open spaces. The location, type, size and intended use of open spaces on a tall building site can vary depending on community need, building uses and site characteristics. Publicly accessible open spaces can be large or small, and should be flexible in their design to adapt to various programming opportunities and seasonal conditions.

- Private and common amenity areas will be proposed to accommodate passive recreational activities and seating for residents.

Open spaces should prioritize pedestrian comfort and safety, universal accessibility, and high standards for design. Provide open spaces with weather protection while preserving access to sunlight and air movement. Connect new open spaces to existing parks, pedestrian connections and natural areas. Create different types and sizes of parks and open spaces to support district, neighbourhood and local activities that contribute to placemaking and a connected public realm.

- Each ground floor live/work unit will feature an exclusive use terrace. Each residential unit will feature an exclusive use balcony and or terrace. Additional amenity space will be provided through roof top terraces provided on the proposed building podiums. At grade amenity area will also be provided.

SECTION 3

Create mid-block connections where appropriate to facilitate pedestrian movement. Include amenity spaces for occupants. These should be communal spaces for outdoor activity such as rooftop terraces, courtyards, or urban green spaces. Where non-commercial ground floor units are present, define the threshold between private residential uses at grade and the public realm through measures such as streetscaping, landscaping and elevation changes.

- The Lancaster Street West public/private realm interface will be defined utilizing landscaping elements and features to delineate the private ground floor terraces and sidewalk connections to Lancaster Street West.
- Two mid-block connections are proposed on either side of building B. The southern connection to the subject lands proposes to utilize the access off of the former unopened road allowance of Lang Crescent.

Public Realm

The Public Realm connects a tall building to its greater urban environment and includes pedestrian connections and open spaces. Good public realm design integrates the building successfully into the local urban fabric. Design the public realm to be Human-Scaled, Varied, Visually Appealing and Landscaped.

Provide high-quality, sustainable streetscape and landscape design by:

- ⇒ Protecting existing natural features and providing sufficient soil depth, volume and growing medium for new trees;
- ⇒ Providing unobstructed, accessible and high quality pedestrian pathways and seating areas;
- ⇒ Providing energy efficient, pedestrian-scaled lighting.
- ⇒ Providing pedestrian-oriented street furnishings, public art, and interactive features.
- ⇒ Design streetscapes to satisfy the needs of a diverse range of users by providing access, safety, comfort, mobility, and leisure

for people of all ages and abilities.

- ⇒ Design streetscapes to optimize the pedestrian experience for any time of day or night, local or seasonal weather conditions, nearby activities and events, and other immediate contextual considerations.
- ⇒ Ensure weather protection elements, such as overhangs and canopies, are well-integrated into the building design, detailed and scaled to support the streetscape, and positioned to maximize function and pedestrian comfort.
- The proposal will provide an enhanced streetscape design. The proposed active uses on the ground floor will encourage animation of the public realm and facilitate direct pedestrian access to the uses. The materials and fixtures of the enhanced landscape design will further provide a high-quality streetscape.

Mid-Block Connections

On larger sites, use existing or create new publicly accessible mid-block pedestrian connections.

- Two mid-block connections will be proposed on either side of building B. The southern connection to the subject lands proposes to utilize the access off of the former unopened road allowance of Lang Crescent.

Views and Skylines

Tall buildings should protect, enhance and create view corridors and vistas. When a tall building frames an important view from the public realm, ensure that the view is maintained, and where possible, enhanced.

- The proposed building will help to define a street wall for Lancaster Street West and create an enhanced view corridor into the Bridgeport West area.
- The existing view corridor towards the Grand River will be

SECTION 3

enhanced through the development of the subject lands. The built form and design will be inspired by the opportunity to celebrate the views and vistas from the subject lands to both natural and cultural heritage features within the surrounding area.

Compatibility

Scale and Transition

Proper compatibility creates harmonious relationships between a tall building and its surroundings. Complement adjacent built form through compatible height, scale, massing, and materials. Sensitively transition to surrounding urban contexts, accounting for both the existing context and the planned vision for an area. Implement Setbacks (from property lines) and Stepbacks (from the edge of the base to upper-level base storeys, the tower, and top features). Tall buildings should not interrupt or impose upon an existing or planned neighbourhood character or the public realm.

- Ground floor commercial uses will be proposed in the central tower identified as building B, oriented parallel to Lancaster Street West. Three taller apartment building heights are proposed.
- The tallest towers identified as buildings C, D and E are oriented to the rear of the property, and will be well setback from Lancaster Street West as well as other surrounding land uses. Building E is oriented parallel to Lancaster Street West, the stepback of the proposed tower is reflective of the building height proposed.
- The massing and placement of the proposed buildings, the placement of windows, balconies and patios, and enhanced landscaping will create a transition from these existing neighbourhoods to the planned higher density re-development of the lands.

Implement design cues (materials, architectural features, colours, rhythms) from good surrounding built form. Tall buildings should be contemporary and not replicate existing or historical architectural styles.

- The proposed tall buildings will be a contemporary style that will create a juxtaposition and interest adjacent to the older, century homes.
- The proposed development is designed to compliment the low density residential building designs adjacent in Lancaster Street West interface, while providing an intensification of the site.

All tall buildings should have a human-scaled relationship to the public realm.

- The proposed buildings have provided a human-scaled first floor design that will integrate well with the public realm.

In areas with existing or planned tall and/or mid-rise buildings, Relative Height, Separation, Overlook, creative tower Orientation, compact floor plate size and point-tower form should all be considered as factors contributing to good compatible design. It is important to respond to a new tall building's place within the greater context of the city as a whole. Tall buildings create substantial viewsheds, are visually prominent, occupy key locations, are often visible and perceivable from significant distances and contribute to a city's skyline. Where the nature, size, shape or context of a parcel makes achieving good separation and compatibility impractical or impossible, that site may not be suitable for a tall building.

- The proposal is consistent with the planned vision for this area as defined in Official Plan. The proposal will be integrated well with the existing context while providing densities supportive of planned transit on the Lancaster Transit Corridor. The proposal will not cause any issues with future new buildings related to height, separation, or

SECTION 3

overlook. The proposed buildings will help to establish a more urban, transit supportive environment along Lancaster Street West, creating a strong gateway to the Bridgeport West community and designated urban corridor.

Heritage

Locate and design tall buildings to respect and complement the scale, character, form and siting of on-site and surrounding cultural heritage resources. Conserve and integrate built heritage resources into tall building developments in a manner that conforms to heritage conservation policies, principles, standards and guidelines.

- The lands municipally addressed as 544-546 Lancaster Street West contain two existing residential dwellings. Although the property is not 'listed' or designated under the Ontario Heritage Act, the existing residential dwellings have been identified by the City of Kitchener as having potential cultural value.
- The Heritage Impact Assessment (HIA) prepared by MHBC Planning in support of the complete application provides the property located at 544-546 Lancaster Street West is not considered a significant Cultural Heritage Landscape.
- The current site plan concept proposes to relocate and preserve the existing identified cultural heritage dwellings to a location within close proximity to the site. A strong focus on visibility of the front elevations will ensure the integrity and attributes of the dwellings are maintained and conserved. The preparation of the Heritage Impact Assessment will also serve in documenting the history of the property.

Sustainability

Tall buildings help shape their environment for decades to come.

Design for flexibility in anticipation of future change through unit type variety, size and adaptability to new uses.

- The proposed commercial units will be designed to provide for adaptability and change over time. Like many of the single family homes found along Lancaster Street West today that are now used for commercial/retail purposes, these Live/Work units have the floor space and ceiling heights to be used for commercial/retail uses now and in the future.

Employ high quality design, materials and construction practices that can withstand changing climate conditions and which encourage building longevity. Use natural and passive techniques for lighting, ventilation, summer cooling and winter heating. Utilize building envelope design and materials that limit thermal bridging and heat loss.

- The proposed building recognizes our changing climate and support a more sustainable form of living. The building materials and construction will be of a high quality to ensure the building is sound and will have a long usable life. Natural and passive means for lighting, venting, and heating will be considered in the buildings' design with large operable windows and surrounding ambient heating. The proposed building envelope designs will limit thermal bridging and heat loss. High efficiency LED lighting will be used throughout the interior and exterior of the building.

A green roof can help minimize surface runoff, reduce urban heat island effect, provide noise insulation, improve local air quality, and contribute to the aesthetic of rooftop amenity space. Provide light-coloured and/or green roofs to reduce solar heat absorption and energy demand.

- A green roof is being considered as part of the resident's

SECTION 3

roof top amenity, as is a light-colour roof membrane.

Provide low impact stormwater management techniques where possible, including porous paving materials, landscaped areas, and vegetative swales. Provide water efficient and drought resistant landscaping by using native planting materials and low impact development practices. Explore opportunities for water collection and reuse.

- The landscaping elements being considered for the development will be drought resistant, including those anticipated as part of the green roof.
- Hardscape design is anticipated due to the constrained areas for planting available.
- Infiltration galleries designed under the surface parking will provide the opportunity for water collection and surface water recharge.

Daytime bird strikes generally occur from ground level to tree top level, while migratory birds are attracted at night to tall structures that are excessively lit. Design tall buildings to minimize bird collisions with glass. Avoid untreated reflective glass or clear glass that reflects trees and sky. Glass should have visual markers and any reflection should be muted within the first 12 metres of building height.

- Bird friendly design treatments will be incorporated into the detailed building design for glazing below 12 meters.

Minimize light pollution through the use of dark sky/nighttime friendly compliant practices. Locate and manage lighting to reduce reflections that may cause confusion for migratory birds.

- The proposed site lighting will be designed to mitigate light pollution created from the development.

Provide on-site facilities for handling, storing and separating recyclable and solid waste. Consider facilities for the separation and

collection of organic waste.

- On-site waste and recycling storage facilities will be proposed in the form of indoor waste collection areas in each building, serviced by private contract.

Microclimate refers to the environmental impacts created by a tall building. Kitchener features hot, humid summers and cold, dry winters. The city has prevailing westerly winds, and the angle of the sun's path and its intensity varies significantly throughout the year. The Kitchener street network and parcel fabric is an organic grid, creating many different orientations for buildings. It is important to design with these varied conditions in mind and to understand the microclimatic effects created by tall buildings.

This includes sunlight/shadowing, heat island effects, wind conditions and snow disposition as well as cumulative effects created by multiple adjacent structures. Provide both a sun/shadow analysis and a wind study to demonstrate how a proposed development is designed to mitigate unwanted microclimatic impacts. Design a built form that provides sunlight access to the public realm during the winter months, shaded areas for the summer months, and comfortable, safe wind conditions year round.

- The proposed development has consideration for shadow impacts and wind conditions and the buildings' placement, orientation, and design will mitigate the adverse effects of these conditions.
- The required shadow analysis is attached as Appendix B.
- The required wind study is attached as Appendix A.

Maintain daily access to at least 5 hours of cumulative direct sunlight to nearby sidewalks and open spaces under equinox conditions, beginning with sidewalks located on the opposite side of adjacent ROWs.

- The shadow analysis attached as Appendix B demonstrates

SECTION 3

the proposed development will maintain at least 5 hours of direct sunlight to adjacent lands, sidewalks, and open spaces.

Skyview is the amount of sky that can be seen from public open spaces, above and between buildings. Utilize the design tools presented in this document to preserve access to skyview.

- A number of public open spaces are within proximity of the subject lands. Most notably is the Grand River located just east of the subject lands separated by the Walter Bean public use trail. The proposed development will be visible from public open spaces. The massing and placement of the proposed development will ensure access to skyview is preserved.

In summary, the Concept Site Plan was prepared with consideration of the City's Tall Building Guidelines and the proposed redevelopment of this site can generally meet the intent of the guidelines through its placement of towers with appropriate separation distances, regulation of floor plate size, minimization of overlook, consideration of shadow and wind impacts. Planning Staff will continue to apply these guidelines, as well as other policy direction, throughout the site plan review processes for this site. Changes to the ultimate building footprints and orientation may evolve through the site plan process but the general location of towers is intended to remain consistent with the Concept Site Plan.

SECTION 3

3.2 CPTED CONSIDERATIONS

The proposed development is designed with consideration of the basic concepts of Crime Prevention Through Environmental Design (CPTED).

NATURAL SURVEILLANCE

Natural surveillance occurs by designing the placement of physical features, activities and people in such a way as to maximize visibility and foster positive social interaction among legitimate users of private and public space. It is directed at keeping intruders under observation based on the theory that a person inclined to engage in criminality will be less likely to act on their impulse if he or she can be seen. The proposed development achieves natural surveillance by:

- Maximizing the number of "eyes" watching the site by creating a visual connection and maintaining unobstructed views from within the building to the exterior, as well as, between the street, the sidewalk, and the building.
- Proposing spaces and uses that are capable of generating activity (amenity area, unit patios and balconies).
- Placing windows along all sides of the building that overlook landscaped areas, public sidewalk and parking areas.
- Designing lighting plans that avoid creating blind spots and ensuring potential problem areas will be well lit (pedestrian walkways, stairs/ramps, entrances/exits, parking areas, recycling areas, etc.).

ACCESS CONTROL

Access control is achieved by clearly differentiating between public space and private space. The principal of access control is directed at decreasing crime opportunity. The overall goal with this CPTED principle is not necessarily to keep intruders out, but to direct the flow of people while decreasing the opportunity for crime. The proposed development achieves access control by:

- Providing clearly identifiable, points of entry to each building/dwelling unit.
- Creating well-defined site entrances for vehicular and pedestrian access

TERRITORIAL REINFORCEMENT

Territorial Reinforcement is the intentional design of the site to create a "border" between private and public property. These measures are not meant to prevent anyone from physically entering, but to create a feeling of territoriality and send a message to offenders that the property belongs to someone. The proposed development achieves the principle of territorial reinforcement by:

- Clearly delineating private from public property via: pavement treatments, entry treatments, landscaping, signage, etc.
- Delineating desired pedestrian and vehicular circulation.

MAINTENANCE

The other key aspect of CPTED is property maintenance; on the premise that good maintenance practices and upkeep send the message that the property is cared for on a regular basis. Following construction of the development, management by a condominium corporation or property management company will ensure that the buildings and grounds will be well maintained.

SECTION 4

4.1 MICROCLIMATE IMPACTS

In support of the proposed re-development of the subject lands a pedestrian wind study and shadow study have been completed. The findings of these studies are summarized as follows:

WIND STUDY

A Pedestrian Level Wind Preliminary Impact Assessment (March 26, 2021) was prepared by BLWTL in support of the original concept plan and as part of the complete planning applications. An updated Pedestrian Level Wind Preliminary Impact Assessment, dated March 30, 2023, has been prepared by BLWTL in support of the revised site design and concept plan. The March 30, 2023 BLWTL report is attached as **Appendix A**.

The wind study's qualitative assessment is made in context of the proposed buildings configuration in relationship with existing surroundings and provides a high-level description of potential wind conditions related to pedestrian comfort, identifies areas of accelerated flows, and presents conceptual mitigation strategies. A brief summary of the Wind Study's conclusions are provided below.

While the development is not expected to have a significant influence to winds on most neighbouring properties, (i.e. the comfort categorization of adjacent properties is expected to remain similar to that for the existing configuration), areas to the east of Building C can experience the effects of downwash from Building C.

The main public street level areas along Lancaster Street are expected to experience wind conditions consistent with the

intended usage during summer months; this includes the entrances and sidewalks. During the winter months, the proposed street line tree planting is an important feature to mitigate downwash effects and maintain comfort levels suited for the intended usage.

Specific entries and areas throughout the development site have been identified in the wind assessment that are expected to benefit from some modest amounts of mitigation.

The spacing between Buildings B and E, Buildings A and C, and Buildings A and B is such that accelerated flows that are generated can impact local comfort without effective mitigation.

The following pages provide examples of wind mitigation measures that can improve wind conditions at grade adjacent to the public realm and near building entrances, as well as within above grade podium amenity spaces. These mitigation measures are to be considered in the detailed landscape and building designs completed as part of the site plan approval process.

It is noted the qualitative results of the wind assessment are not to replace a detailed quantitative study(s) required for future planning stages of the development. Future wind tunnel testing will be critical to evaluate winds in some of the complex flow areas and understanding of the downstream extent of these winds around the taller buildings.

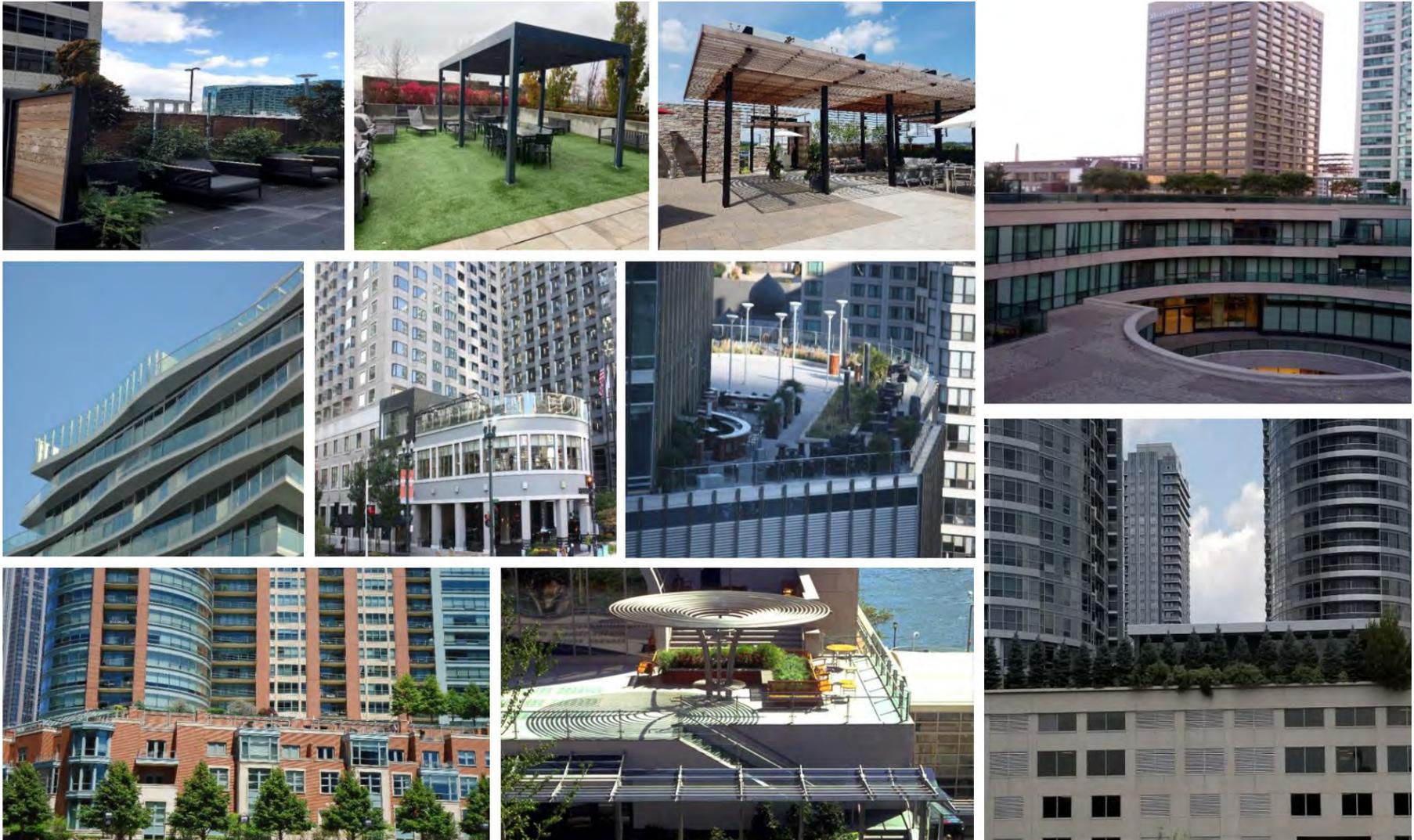
It is proposed that additional quantitative wind study(s) are completed in support of future site plan approvals such that detailed facade and landscape designs can be considered in the analysis.

SECTION 4



WIND CONTROL MEASURES - AT GRADE BUILDING ENTRANCES AND PUBLIC REALM INTERFACE

SECTION 4



WIND CONTROL MEASURES - AMENITY AREAS

SECTION 4

SHADOW STUDY

The shadow impact analysis has been prepared to better understand the impact of the proposed development and to demonstrate negative impacts on surrounding land uses is mitigated. The shadow study diagrams are included as **Appendix B**. Overall the result of the proposed development is that all adjacent properties and public streetscapes will continue to experience full sun for at least two consecutive time periods.

March/September 21: During the spring and fall months shadow impacts on adjacent lands is most significant early in the morning and late into the evening. By 12:00pm the shadows will be mostly internalized within the site and to the non-residential land uses north of the subject lands.

June 21: Summer months are typically when outdoor amenity areas are used the most. Properties west of Lancaster Street West continue to experience some shadows in the morning, with the longest morning shadows around 8:00 am. By noon the shadows will be mostly internalized within the site and within the abutting road right-of-way. In the afternoon time periods shadows continue to have minimal impact on surrounding properties. Longer shadows in the late afternoon

mostly impact non-residential properties and areas already impacted by shadows from existing buildings. Shadow impacts are not anticipated to impact any adjacent lands for more than four consecutive hours.

December 21: A number of the properties surrounding the subject lands experience shadows for the December time periods tested, in large part based on the length of shadows in winter months. The majority of impacted properties remain those properties located north of Lancaster Street West. Generally shadow impacts are deemed more acceptable in winter months as people are less likely to use their rear yard space during winter months and winter shadows do not impact private gardens/landscaping.

The shadow study diagrams demonstrate that the height and location of the building will not generate unacceptable amounts of shadows on adjacent lands, and on lands designated Low-Rise Residential.



SECTION 5

5.1 CONCLUSION

The proposed development will conform to the City of Kitchener's Official Plan policies and urban design objectives as well as the site specific goals and objectives identified in this Brief. Overall, the proposed redevelopment represents a significant investment in Kitchener and will create new residential units in a landmark development, all of which contribute positively to the neighbourhood.

The Concept Site Plan presented in this Urban Design Brief will contribute positively to the City of Kitchener and will act as a gateway into the Bridgeport West community.

In summary, the proposed redevelopment will:

- Capitalize on the existing location of the subject lands with views and vistas of the Grand River and located adjacent/near major employment within the Region;
- Provide for intensification that is sensitive to the surrounding context;
- Result in a pedestrian friendly development that supports active transportation while supporting existing and planned transit services, thereby minimizing future occupants' reliance on the automobile.
- Introduce unique and interesting architecture to emphasize the development as a 'landmark' within Kitchener.
- Create strong visually appealing street edges.
- Increase the variety and viability of the Lancaster Transit Corridor as a destination for residents, employers, employees, and visitors by contributing to the mix of uses

in the broader area. The proposed development is a true 'mixed use development' with uses that include residential, office, retail, and open space.

- Define the Lancaster Street West street edge by incorporating high quality architectural detailing and contemporary design combined with high quality landscaping and active ground floor uses.

In our opinion the proposed site development is appropriate for this location and will contribute positively to the character and built form of this gateway site adjacent planned transit in the City of Kitchener.

The development supports the objectives of the City's Official Plan to achieve a high standard of urban design, architecture and place-making that contributes positively to quality of life, environmental viability and economic vitality. The proposal supports the City's overarching design directives by proposing a development that will reflect a high standard of design excellence; is visually distinctive creating an identifiable sense of place; is human-scaled, safe, secure and walkable; respects and enhances adjacent natural areas; is mutually supportive with the adjacent multi-residential development and existing single family homes, and; minimizes and mitigates adverse impacts.

This brief concludes that the proposed design has considered and achieves the intent of the urban design policies outlined in the Official Plan and design directives from the Urban Design Manual and therefore should move forward through the Site Plan Process.

Conceptual Rendering (Subject to Change)



APPENDIX A

WIND STUDY



Boundary Layer Wind Tunnel Laboratory

**Pedestrian Level Wind
Preliminary Impact Assessment
528-550 Lancaster Street West,
Kitchener, Ontario**

March 30, 2023

BLWTL Project No. 21L060

Submitted To:

550 Lancaster Inc.
c/o Corley Developments Inc.
621 Clarke Road
London, Ontario
N5V 2E1

Submitted By:

The Boundary Layer Wind Tunnel Laboratory
The University of Western Ontario
Faculty of Engineering
London, Ontario
N6A 5B9

Peter Case, Director (Operations)



*The Boundary Layer Wind Tunnel Laboratory
Western University
1151 Richmond Street, London, Ontario, Canada N6A 5B9
Tel: (519) 661-3338; Fax: (519) 661-3339
Internet: www.blwtl.uwo.ca; E-mail: info@blwtl.uwo.ca*

1 REPORT OVERVIEW

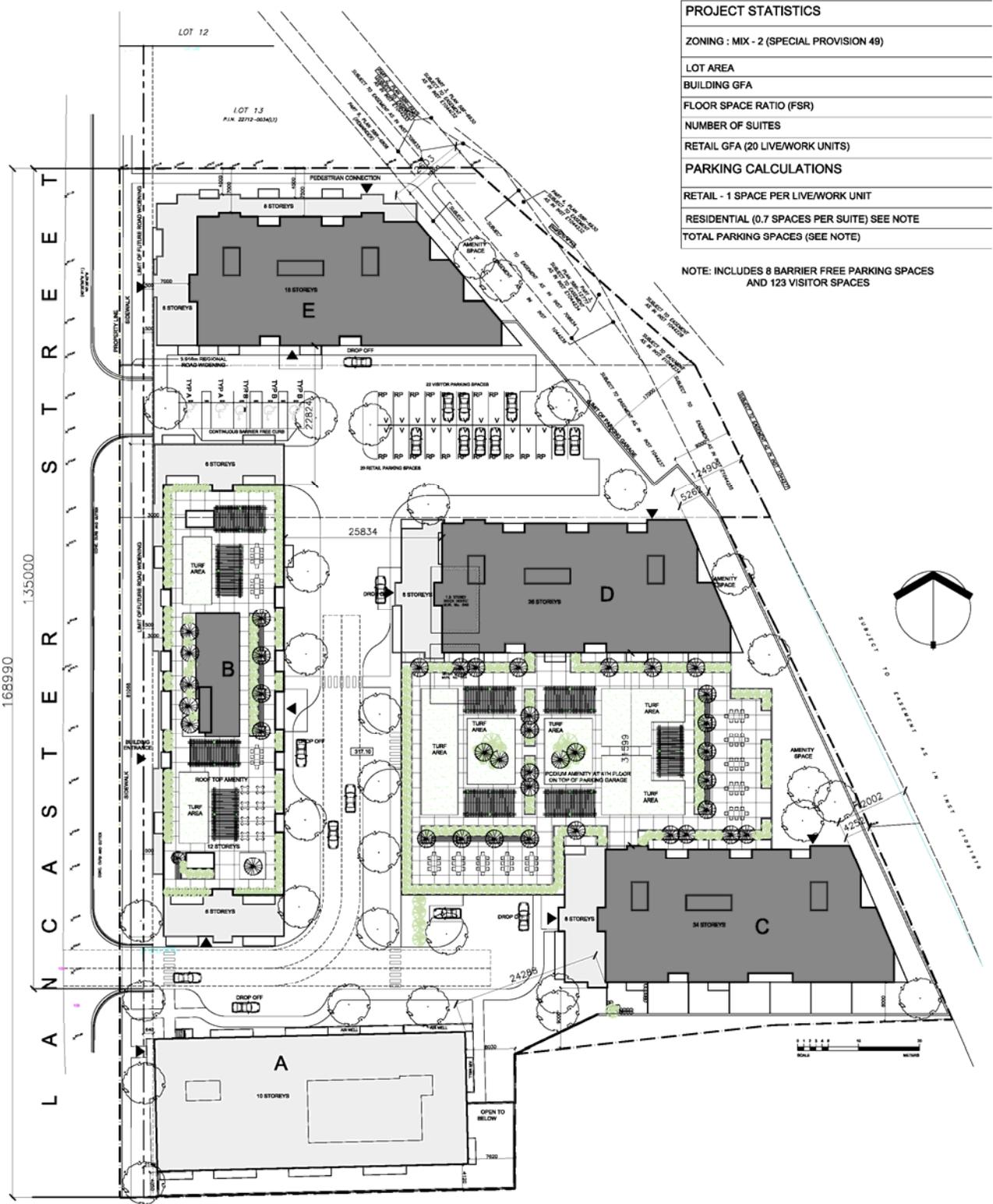
This study for the development at 528-550 Lancaster Street West in Kitchener was initiated by 550 Lancaster Inc. The BLWTL was engaged to carry out an initial high-level assessment of the expected pedestrian winds around the 528-550 Lancaster Street W site in Kitchener, and the impact of the proposed development to comfort conditions. This qualitative approach provides a description of potential wind conditions related to pedestrian comfort, identifies areas of accelerated flows, and presents conceptual mitigation strategies. This assessment is based on drawings received by BLWTL March 27, 2023.

The proposed development consists of 5 apartment buildings ranging from 10 to 34 stories covering a plot with overall dimensions of about 200m x 130m as shown in the site plan (see Figure 1). Building A is 10 storeys; Building B is 12 storeys; Building C is 34 storeys; Building D is 26 storeys; Building E is 16 storeys. Building A is identified as existing (under construction) and is not directly evaluated in this scope of work.

This report provides a qualitative street-level, wind environment assessment with a focus on pedestrian level comfort. For this qualitative assessment, the local wind climate is examined in relation to the buildings' location and draws upon experience obtained from related microclimate analyses. Together, this provides the basis to carry out this desktop analysis that is intended to provide a summary of the pedestrian level comfort conditions anticipated around the proposed development.

It should be noted that the introduction of a high-rise building development in a relatively suburban environment will invariably create local wind speed-ups for some wind directions. With that expectation, the focus is to identify and develop strategies to make wind conditions suitable for the intended usage for the affected area. For example, entry areas should have a comfort category consistent with standing activities, while sidewalks should meet the condition of being comfortable for walking.





| PROJECT STATISTICS | |
|---|--------------------------------|
| ZONING : | MIX - 2 (SPECIAL PROVISION 49) |
| LOT AREA | |
| BUILDING GFA | |
| FLOOR SPACE RATIO (FSR) | |
| NUMBER OF SUITES | |
| RETAIL GFA (20 LIVE/WORK UNITS) | |
| PARKING CALCULATIONS | |
| RETAIL - | 1 SPACE PER LIVE/WORK UNIT |
| RESIDENTIAL (0.7 SPACES PER SUITE) SEE NOTE | |
| TOTAL PARKING SPACES (SEE NOTE) | |

NOTE: INCLUDES 8 BARRIER FREE PARKING SPACES AND 123 VISITOR SPACES

Figure 1 Development Layout (Site Plan) at 528-550 Lancaster Street W



Site Specific Information

The site is readily accessed by continuing about 0.5km north along Lancaster Street W when coming off The Conestoga Parkway (Highway 85). The existing site is located on the east side of Lancaster Street W and just west of the Grand River. It is presently the location of several private houses.

The site is situated in suburban environment for all approach wind directions. Locally, open field areas include the Bridgeport Sportsfield located across the Grand River to the east of the site. The approach from the site down to the River is characterized by a 60ft embankment.

More broadly, to the north, west, and south, buildings are largely comprised of 1 and 2 storey homes. Across the River to the east is a suburban development which opens up further to the east. Figure 2 shows aerial views looking over the site location. Beyond these areas, some 5-7 km away in most directions, the terrain opens up to a more expansive open country exposure.

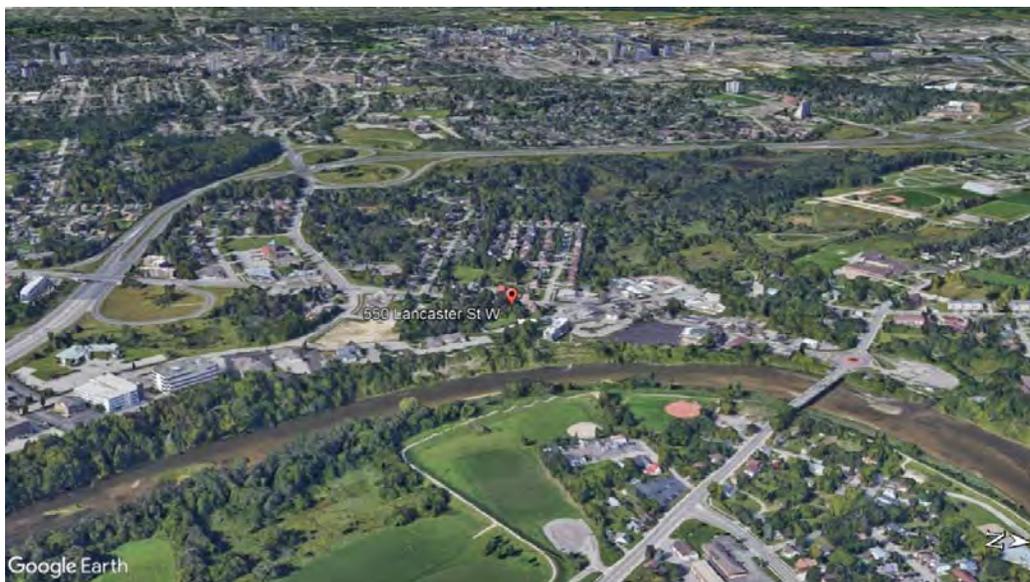
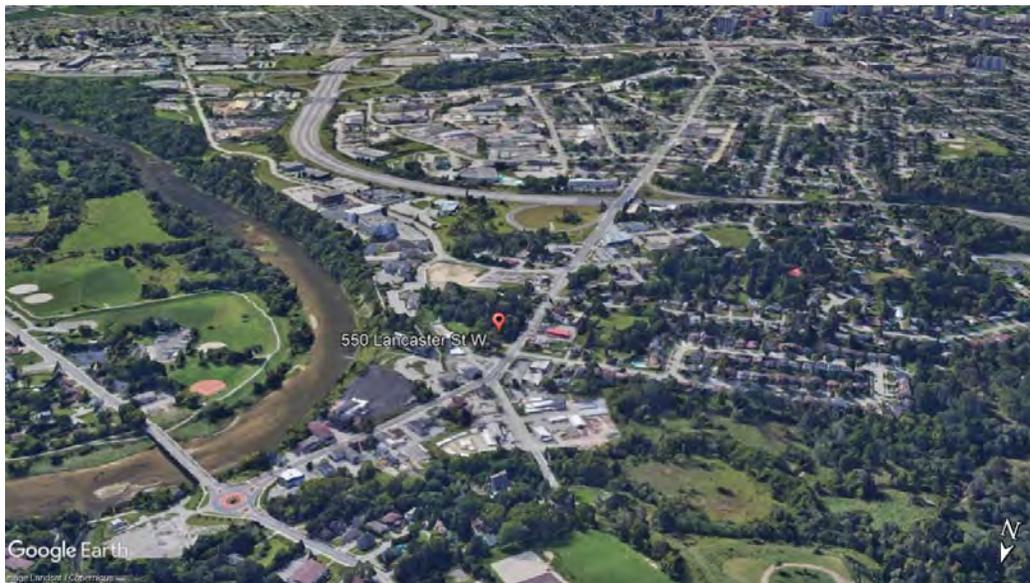


Figure 2: Aerial view looking southeast over site (top) and west over site (bottom) (images courtesy of GoogleEarth™)

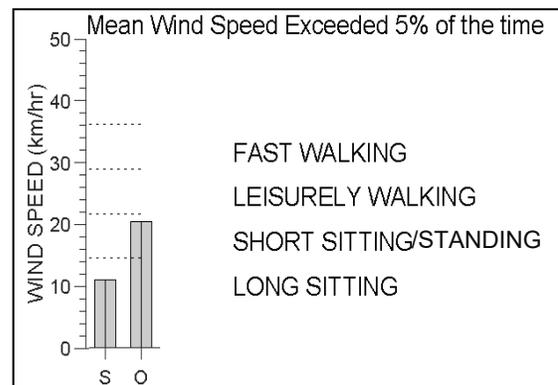


2 Assessment of Wind Conditions

2.1 General

The criteria used at the BLWTL for the assessment of pedestrian comfort are categorized by typical types of activity (walking, standing, sitting). In general, wind conditions suitable for walking are appropriate for sidewalks and parking areas. At entrances, lower wind speeds that are comfortable for standing are preferred. For amenity spaces, including public terraces, it is often desirable to have lesser winds suitable for sitting or long-term standing, depending on the intended use. If the criterion for walking is not satisfied, then an area is classified as uncomfortable for the intended usage. These criteria are more fully described in Appendix A, along with some other general details relevant to a pedestrian wind speed assessment, including a description of directional winds by season for the Kitchener-Waterloo area.

The adjacent insert shows the predicted wind speeds exceeded 5% of the time on an annual basis for typical suburban and open country locations in K-W. These are compared to the different comfort categories (further described in Appendix A). In terms of comfort, winds expected in a typical suburban (S) environment are expected to be suitable for long sitting and therefore suitable for most activities regardless of duration. In a typical open country (O) environment, the winds can be expected to be somewhat more intense and suited for standing or leisurely walking. In summer, predicted winds can be expected to be lower than the annual winds shown, while in winter months higher winds speeds can be expected.



Note that local winds will be influenced by their immediate surroundings. For example, a broad tall building will undoubtedly cause downwash winds, creating local wind speed-ups at ground level particularly at building corners. Appendix B shows images of some typical wind patterns around midrise and tall buildings.

2.2 Existing Wind Conditions

The property for the proposed development at 528-550 Lancaster Street West is currently the site of private homes and is largely covered in mixed deciduous and coniferous trees. It is surrounded by some more open lots. As the site is located in predominantly suburban environment, with a few nearby open fields, the site and nearby properties are largely expected to experience winds typical of a suburban environment. Nearby open parking lots and fields will experience winds approaching that of a typical open country exposure.

The nearby area is currently undergoing some development, and there are locally some open sites nearby which are not considered in the present evaluation.

Based on these surroundings, existing wind conditions on the site property and at adjacent properties are expected to be comfortable for standing in the summer, and for leisurely walking in the winter.



2.3 Predicted Wind Conditions – 528-550 Lancaster West Development

2.3.1 General

Locations of the site Buildings main public entrances are indicated in Figure 3. Approximate locations of main entrances directly off Lancaster Street are also indicated in Figure 4. It is understood that there will be street trees along Lancaster. Landscaping is also planned throughout the development site and around its perimeter. Landscaping will be instrumental in achieving desired comfort levels particularly in the winter season and along Lancaster Street. Trees, and planters, even when bare during winter months, can disrupt the effects of downwash winds at Street level.

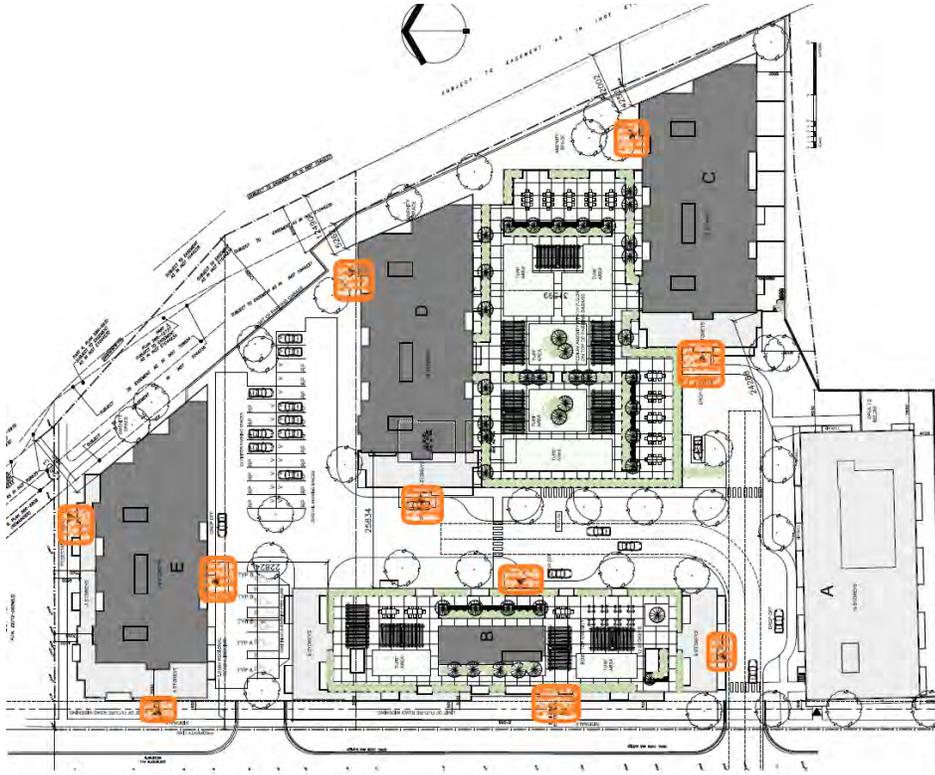


Figure 3 Site Plan indicating locations of entry/exit locations.



Figure 4 East Elevation (conceptual) view showing approximate locations for street level entrances.



Throughout the site of a multi-tower development, flow patterns can be complex. Figure 5 demonstrates some common influential wind patterns expected through the 528-550 Lancaster W site for different wind directions, and that can lead to locally accelerated wind flow at ground levels.

In addition to the general patterns, downwash effects along Lancaster Street can be expected for frequent southwesterly and northwesterly wind directions, as illustrated in Figure 6.

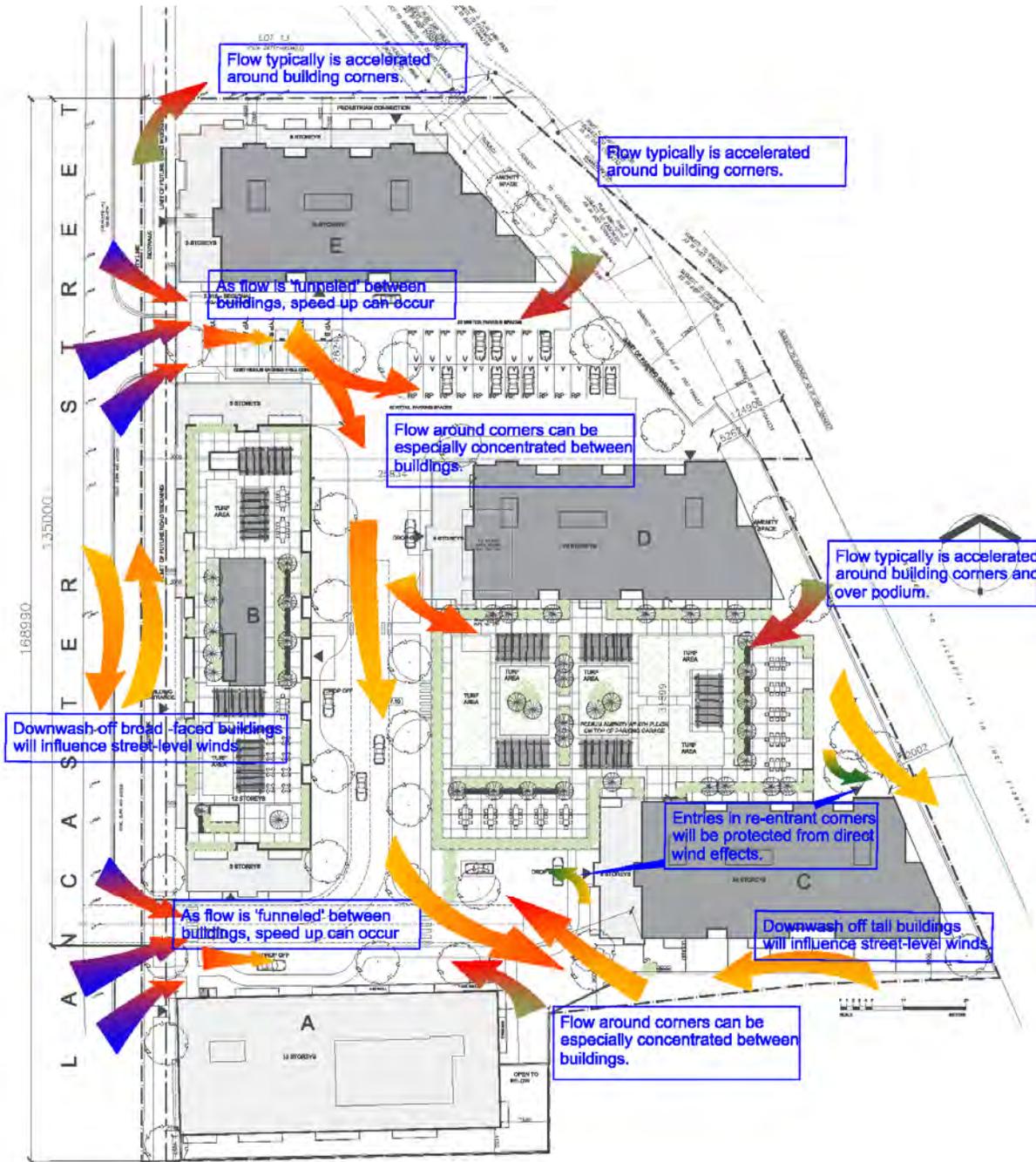


Figure 5 Illustration of select flow patterns can develop in and around site.



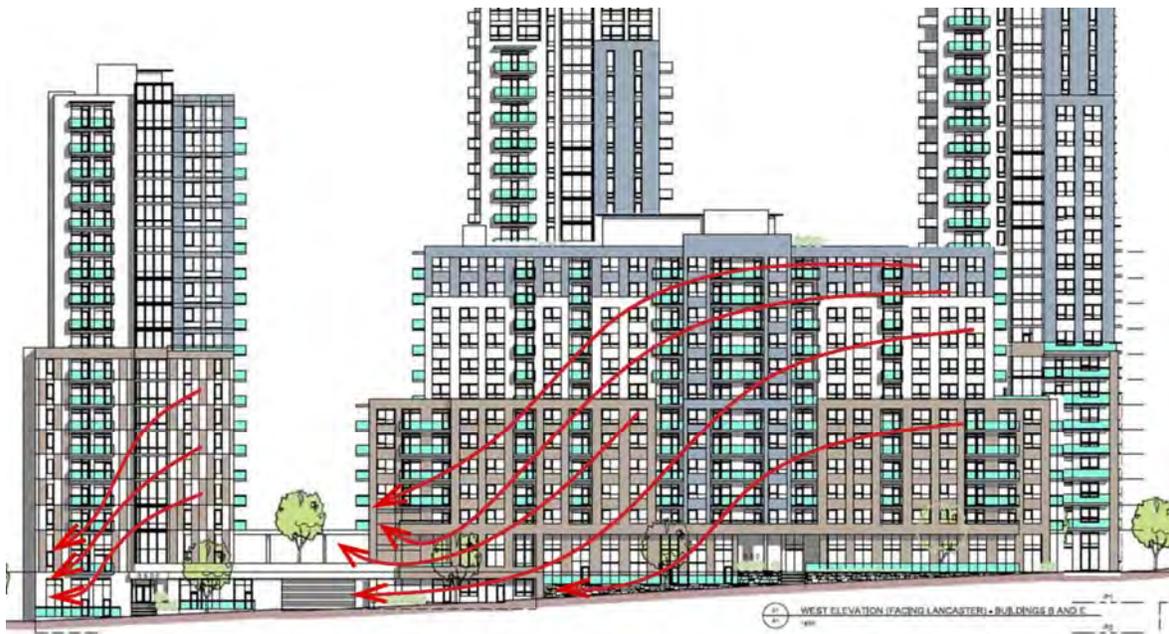


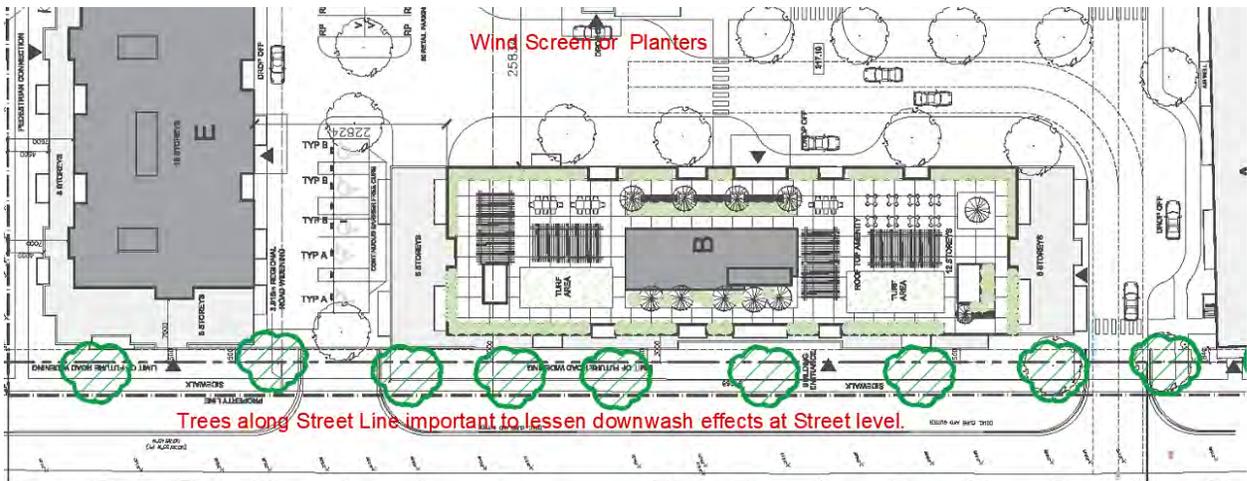
Figure 6 Illustration of select downwash effects for southwesterly (top) and northwesterly (bottom) wind directions.

2.3.2 Discussion of Expected Comfort Conditions

The below discussion highlights some areas where specific attention may be required to achieve the desired comfort levels, particularly during the winter months.

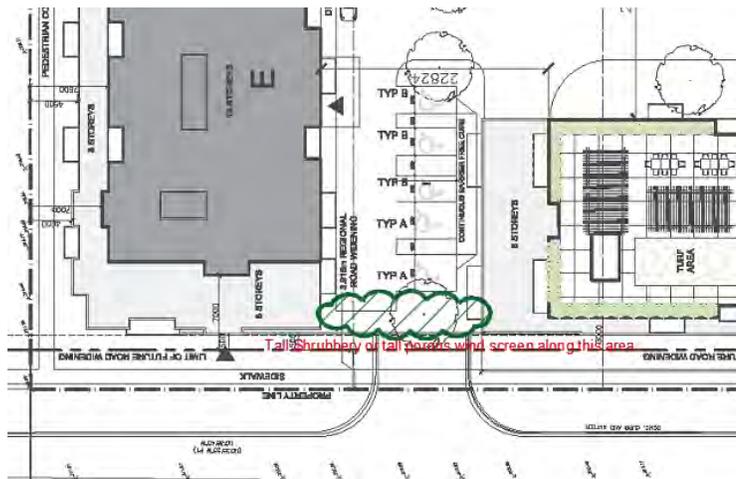
The following is an overview of some specific areas of attention:

1. Lancaster sidewalk: Prominently facing Lancaster, Buildings A, B, E can influence downwash at sidewalk levels. During the summer season, the sidewalk along Lancaster is expected to experience wind suitable for standing to leisurely walking, consistent with sidewalk usage. During the winter months, winds can be expected to increase. With the installation of street trees along Lancaster (see below image), the downwash winds at sidewalk level are expected to be sufficiently mitigated to keep the sidewalk in a comfort category for sidewalk usage (leisurely walking or better). Recent experience has suggested that even without foliage, deciduous trees can reduce ground level winds due to downwash up to 10%.



2. Parking Podium between B and E:

The area between Buildings B and E is expected to experience local speed-ups (approaching the fast walking category), especially for westerly winds flowing up and over and the parking garage entry/exit area and funneled between Buildings B and E. Along the top of this area, dense rows of moderately tall coniferous trees (min.15ft), (see Figure 7b for example) would be most effective. Also, equivalent tall railings or wind screens could be effective. Without effective mitigation this area and areas downstream can be uncomfortable for typical activities in both summer and winter.



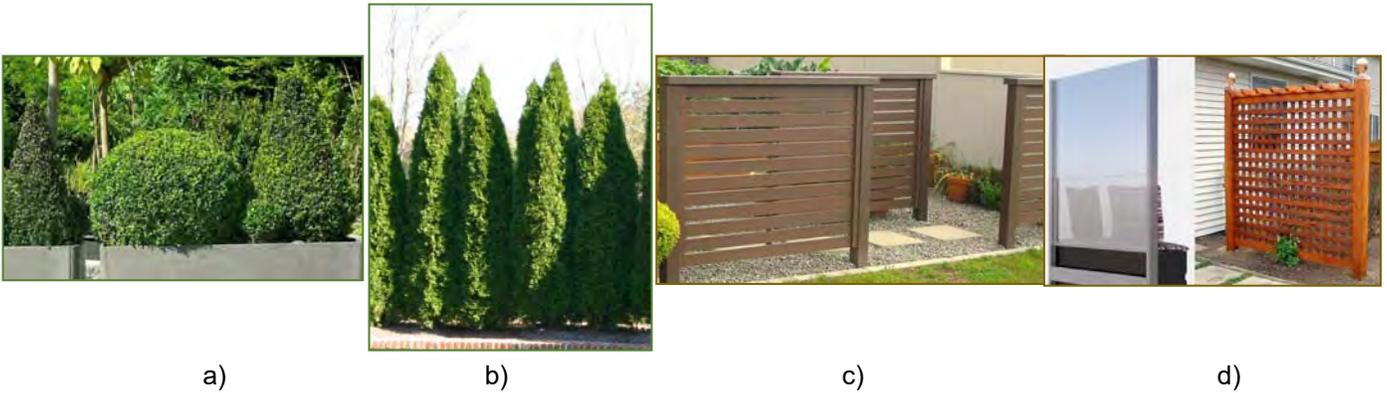
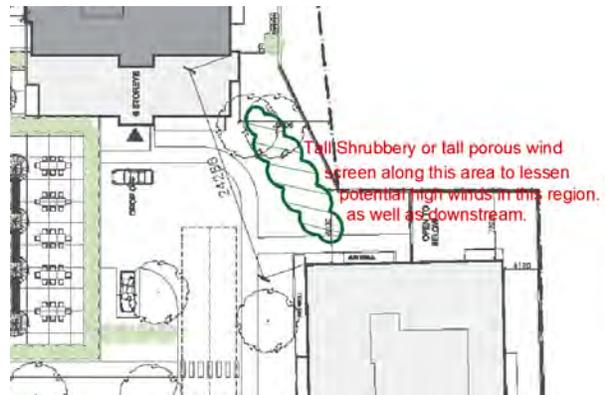


Figure 7 Sample landscape/hardscape features to mitigate local winds a) 3-5' planters with evergreen shrubbery, b) 6-10' evergreens in rows, c) and d) 6' (min) windscreens staggered or continuous.

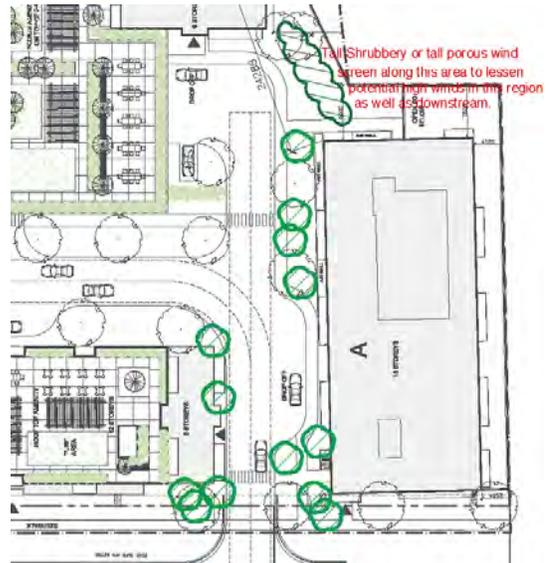
3. Area between Buildings A and C:

The area between Buildings A and C is expected to experience local speed-ups (approaching or exceeding the fast walking category), especially for westerly winds and for south-easterly winds being funneled between Buildings A and C. Along this area, dense rows of moderately tall coniferous trees (min.15ft), (see Figure 7b for example) would be most effective. Also, equivalent porous wind screens could be effective. Without effective mitigation this area and nearby areas downstream can be uncomfortable for typical activities in both summer and winter.



4. Channelled flow between Buildings A and B to C:

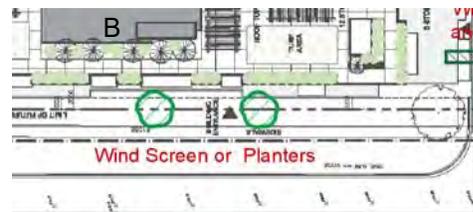
The area between Buildings A and B is conducive to producing accelerated winds, particularly for frequent westerly wind directions. These accelerated winds can be expected to persist along the north face of Building A and through to the space between Buildings A and C (see item 3 above). This being a driveway area can create difficulty in installing effective mitigation. Every effort should be made to put wind-impeding elements along this area to lessen the wind impacts, preferably in the form of tall coniferous shrubbery or trees.



5. Entries: Many primary entries are located away from corners and are expected to be comfortable for the intended usage year-round. The west entry of Building D likewise is susceptible to downwash winds propagating through the development. Likewise, the south entry to Building B is expected to be susceptible to westerly winds (as described in item 4 above), as winds are funnelled between Buildings A and B. The wind conditions at these entries should be mitigated (see Figure 7) with strategically placed elements flanking the area (see insets below). Mitigation, similar to that shown in Figure 7, flanking this entryway would improve conditions.



Given the broad extent of Building B, the main (west) entry can be impacted by downwash winds stream-lined along Lancaster. This entry should be flanked by wind-mitigation devices (Figure 7) or adequately set-back from the building face.



6. Northeast winds: Northeast winds are more prominent during winter months. These can cause locally accelerated flow at the SE corner of Building E, and the NW and SE corners of Building D. Local mitigation (see examples in Figure 7), along with tree locations per the site plan, should be considered to shield winds from this direction. Winds from this direction can be further accentuated as they blow along the Grand River and up over the high embankment on approach to the general site.
7. Roof-Top Amenity Terrace at 4th Floor: Local areas of the 4th level amenity terrace, atop 3 storey podium between Buildings C and D, can be susceptible to cornering winds around the adjacent Buildings. The site plan indicates extensive plantings around the perimeter and throughout this space. This is expected to be important to make this area suited for sitting during the summer months.
8. Building B Roof-Top Amenity Terrace at 13th Floor: Local areas of the 13th level amenity terrace, atop Building B, can be susceptible to local wind speed-ups over the top of the building. The site plan indicates extensive plantings around the perimeter and throughout this space. This, coupled with increased height railings or windscreens (6 feet) along the west side, is expected to be adequate to make this area suited for sitting during the summer months.
9. Adjacent Properties: For many adjacent areas, the comfort categorization of adjacent properties is expected to remain similar to that for the existing configuration. Nonetheless, for westerly winds, areas downstream (east) of Building C may experience increased winds. Modestly increased winds can be expected to the north and south of the development site for westerly wind conditions. This is not expected to impact the parking lot area or entry areas of the adjacent Tim Hortons to the south.



10. Building Corners: In general, all building corners can be expected to experience increased winds. Placement of evergreen shrubbery and planters can be effective at softening these effects, as well as act to keep pedestrian traffic away from high wind areas.

3 SUMMARY

The BLWTL was engaged to carry out an initial high-level assessment of the expected pedestrian winds around the 528-550 Lancaster Street W site in Kitchener, and the impact of the proposed development to comfort conditions. This qualitative approach provides a high-level description of potential wind conditions related to pedestrian comfort, identifies areas of accelerated flows, and presents conceptual mitigation strategies.

While the development is not expected to have a significant influence to winds on most neighbouring properties, i.e. the comfort categorization of adjacent properties is expected to remain similar to that for the existing configuration, areas to the east of Building C can experience the effects of downwash from Building C.

The main public street level areas along Lancaster Street are expected to experience wind conditions consistent with the intended usage during summer months; this includes the entrances and sidewalks. During the winter months, the street line tree planting is important to mitigate downwash effects and maintain comfort levels suited for the intended usage.

Specific entries and areas throughout the development site have been identified that are expected to benefit from some modest amounts of mitigation.

The spacing between Buildings B and E, Buildings A and C, and Buildings A and B is such that accelerated flows that are generated can impact local comfort without effective mitigation.

4 Applicability of Results

The assessments and recommendations in this report are based on the understanding of the proposed development as per site plans provided to the BLWTL in March, 2023. The qualitative assessment is made in context of the proposed building configuration in relationship with existing surroundings and the proposed buildings. This information cannot and should not be used for analysing building façade pressures, door pressures, exhaust re-entrainment, etc.

In the event of changes to the proposed development or proposed buildings around the development, the assessment made herein may be influenced. In the event of such changes, the BLWTL should be contacted to make an appropriate reassessment.

These qualitative results are not to replace a detailed quantitative study(s) required for future planning stages of the development. Future wind tunnel testing will be critical to evaluate winds in some of the complex flow areas and understanding of the downstream extent of these winds around the taller buildings.



APPENDIX A

GENERAL DETAILS PERTAINING TO THE ASSESSMENT OF PEDESTRIAN LEVEL WINDS AND COMFORT

A.1 Meteorological Data

Wind climate data are based upon wind records taken at the Region of Waterloo International Airport (ISD Station 713680) between 1976 - 2017. Figure A-1 shows the distributions of wind speed frequency by direction for the four seasons. For the spring and summer seasons westerly to north-westerly winds are predominant. During the autumn season and especially the winter season the winds from the south-westerly to westerly directions become relatively more predominant. The winds presented in the wind-rose data are measured at 10m. Representative ground level winds might then be expected to be somewhat lower than those indicated on the wind-rose in a uniform terrain. The wind climate at the site is dependent on wind direction and will be influenced by and dependent upon the terrain type over which it travels.

Figure A-1 shows the wind directionality for ranges of wind speeds. Stronger winds are indicated in the outermost contours. Winds over 40 km/hr are shown as the outermost colour zone in the contour plots. During the autumn, spring, and winter months winds over 40 km/hr are expected to occur about 3%, 4%, and 5% of the time, respectively. During summer months, a wind speed of 40 km/hr is expected to occur less than 1% of the time.

A.2 Criteria for Comfort Assessment

The criteria used at BLWTL for the assessment of pedestrian comfort are categorized by the following types of activity.

- **Standing, Sitting for long exposure (< 14 km/hr):** Wind felt on faces, leaves rustle slightly. Suitable for promenades, outdoor restaurants, or park benches where people may linger for long periods to eat, relax, or read a newspaper.
- **Standing, Sitting for short exposure (< 22 km/hr):** Leaves and small twigs in constant motion; wind extends light flags. These winds are comfortable for building entrances or bus stops where people are likely to linger for a short time.
- **Leisurely Walking (< 29 km/hr):** Raises dust and loose paper; small branches are moved. Wind speeds experienced are appropriate for activities which involve slow walking such as a leisurely stroll or window shopping.
- **Fast Walking (< 36 km/hr) :** Small trees in leaf begin to sway; can cause movement to hair and loose clothing. Areas experiencing these winds would be appropriate for sidewalks, parks, or playing fields where people are active with little notice of moderate wind activity and unlikely to be in one location very long.

Wind conditions are considered suitable for the corresponding activity if the wind speeds are expected to last 95% of the time. A designation as uncomfortable would exist for winds that fall outside these criteria.

Safety is also considered on the basis that winds, if sufficiently large, will affect a person's balance. If such wind events occur more frequently than suggested then the wind conditions would be considered unsafe. Where such conditions exist, mitigating or remedial measures would typically be required to improve conditions to acceptable levels.



A.3 Pedestrian Wind Speed Assessment - General Comments

In the assessment of winds particular to a site there are many variables that must be considered in predicting the wind speed and occurrence rates. These include but are not limited to: the aforementioned wind climate; the surrounding upstream terrain conditions; the juxtaposition and orientation of neighbouring buildings; and the geometry of the proposed buildings themselves. For a qualitative analysis, past analyses carried out for a number of buildings in various locations have afforded a good experience base which allows a knowledgeable assessment of wind conditions at and around the proposed development.

In general, suburban settings provide surface roughness that can moderate wind conditions downstream, while more open expanses allow the oncoming wind to travel unobstructed. Winds also have a tendency to accelerate up sloped or hilly terrain, the magnitude of which also depends on the level of vegetation on and around the embankment.

On a more local level, flow around an individual building is influenced by the building's orientation to the wind as well as the building height. Winds tend to accelerate locally around building corners as the wind tries to find a way around the obstruction. Buildings in close proximity and oriented at 90° to each other can 'funnel' local approach winds, thus accelerating the flow between the buildings. For mid-rise buildings, some wind can be redirected downward over the face of the building, accelerating around corners as it reaches the ground levels. However, strategically located canopies or podiums can be beneficial in deflecting these 'downwash' winds before reaching ground level, thereby improving pedestrian comfort.

With respect to wind, it can be expected that conditions will be calm directly in the lee of a building. It should be realized that in areas that may be exposed to the direct sun, particularly in the summer months, some breeze can be favourable to the overall area comfort. Furthermore, some gentle breezes in any area do afford an exchange of air, preventing heavy stale air to accumulate as might be the case in wind-quiet or dead zones.

The inclusion of any new development can be expected to ultimately alter the wind conditions at a site for specific wind directions and wind speeds as compared to the pre-development conditions. However, it is not practical to attempt to quantify the winds speeds in an area, given the number of variables involved, without an appropriate quantitative analysis.



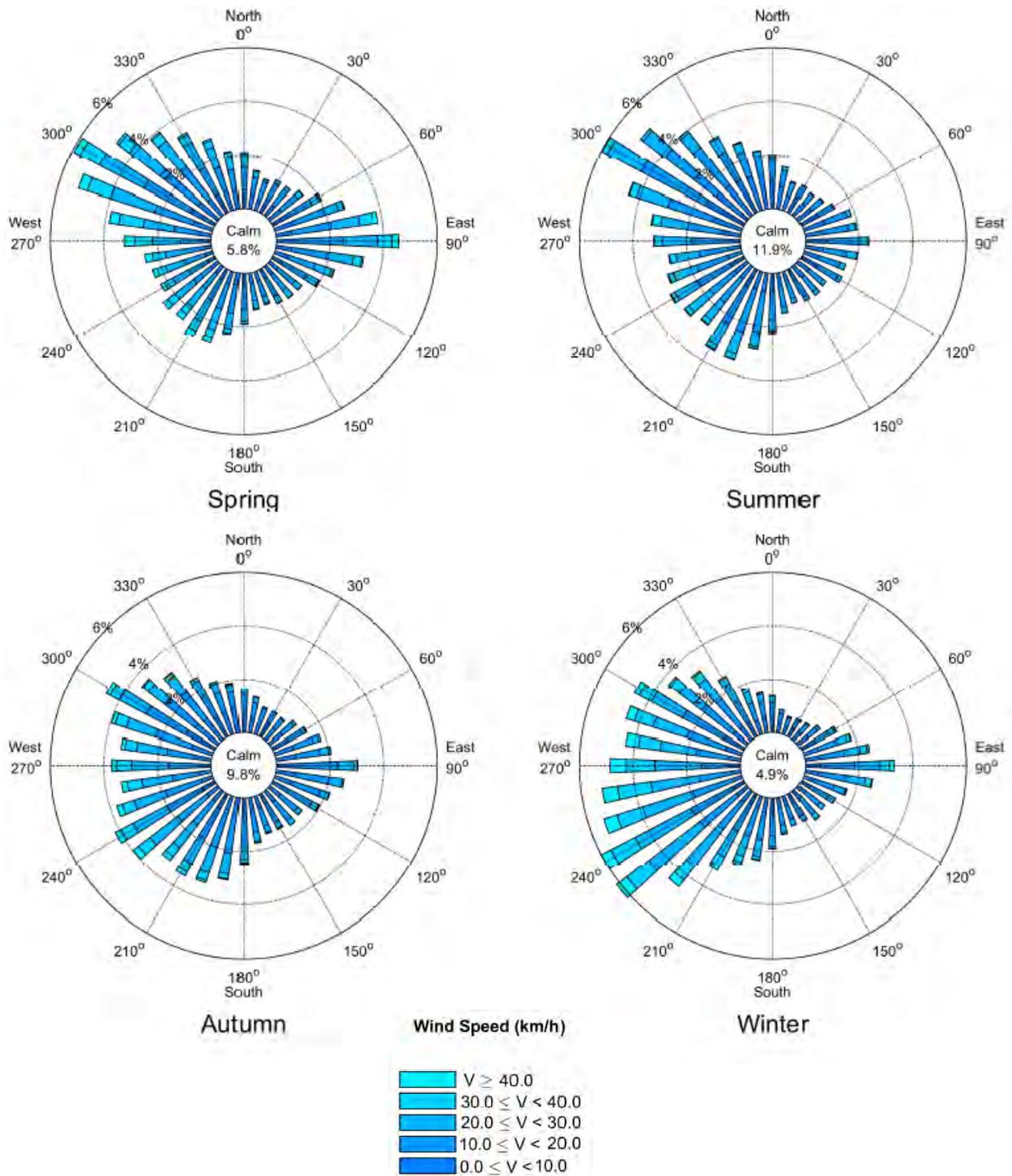
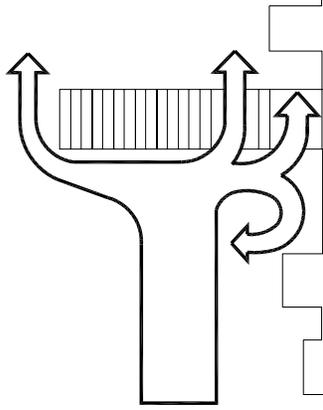


Figure A-1: Windroses showing directional distribution of seasonal wind (centered on a 10° sector): Based on data from Waterloo International Airport.

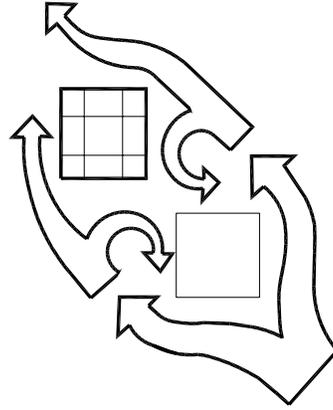
APPENDIX B

EXAMPLES OF WIND EFFECTS AROUND MIDRISE AND TALL BUILDINGS

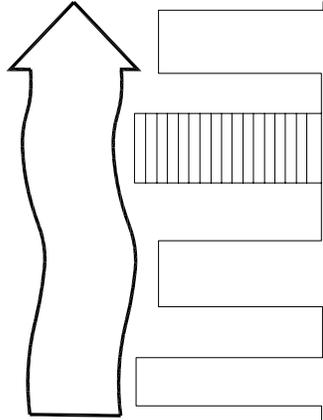




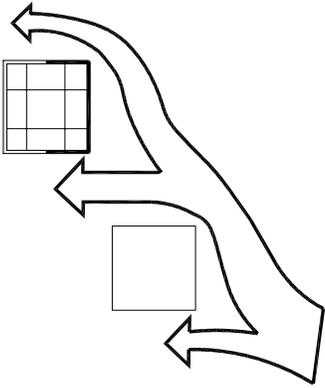
A BUILDING SIGNIFICANTLY TALLER THAN ITS SURROUNDINGS CAN EXPERIENCE HIGH WIND LOADS AND CONCENTRATE PEDESTRIAN LEVEL WINDS.



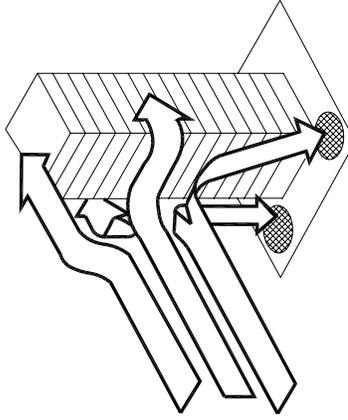
ADJACENT BUILDING PLACEMENT MAY PROTECT FROM HIGH WINDS REDUCING WIND LOADS AND PEDESTRIAN LEVEL WINDS.



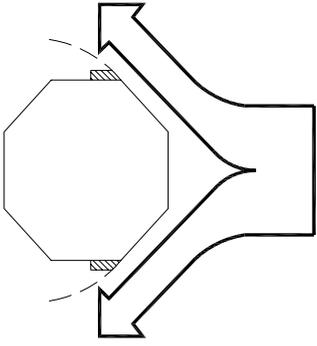
A BUILDING OF SIMILAR HEIGHT TO ITS SURROUNDINGS MAY BE PROTECTED FROM LARGE WIND LOADS AND CONCENTRATED PEDESTRIAN WINDS.



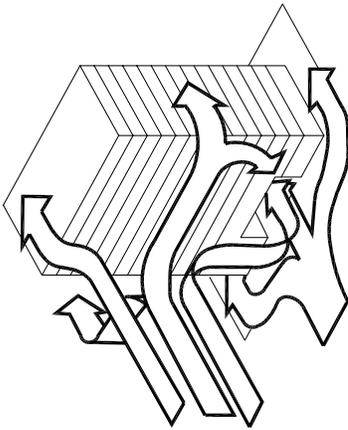
ADJACENT BUILDING PLACEMENT MAY DEFLECT WIND RESULTING IN HIGHER WIND LOADS AND PEDESTRIAN LEVEL WINDS



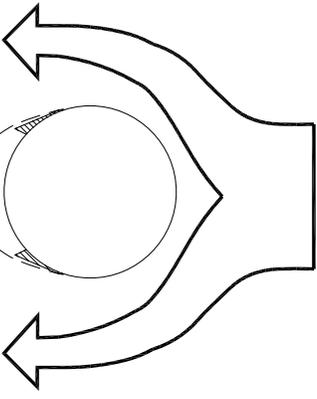
A TALL BUILDING CONCENTRATES WIND AT ITS BASE



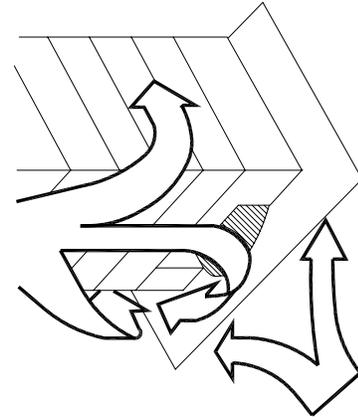
MULTI-SIDED BUILDINGS MAY NOT PERMIT FULL DEVELOPMENT OF LOCAL PRESSURES, FRAME LOADS, OR PEDESTRIAN LEVEL WINDS.



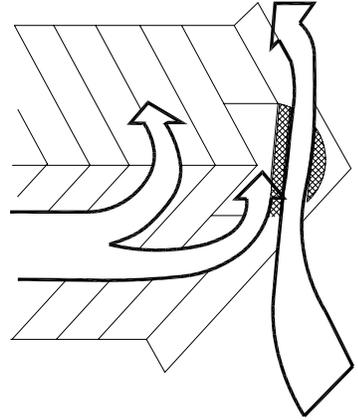
OPENINGS THROUGH A BUILDING AT THE BASE MAY INDUCE HIGH VELOCITIES IN THE OPENING.



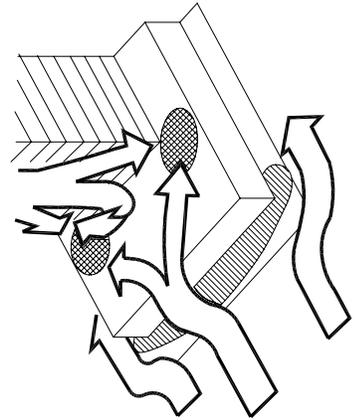
CIRCULAR BUILDINGS MAY REDUCE FRAME LOADS AND PEDESTRIAN LEVEL WINDS BUT INCREASE LOCAL CLADED LOADS AT THE POINT WHERE THE WIND SEPARATES FROM THE BUILDING.



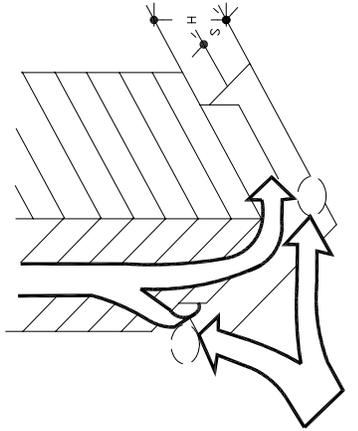
RECESSED ENTRY PROVIDES LOW WINDS AT DOOR LOCATIONS



CORNER ENTRY MAY ACCENTUATE WIND CONCENTRATION AT BUILDING CORNER



A LOW PEDESTAL BUILDING CONCENTRATES WIND ON THE ROOF NOT AT THE BASE



SETBACK ALL AROUND THE BUILDING MAY IMPROVE OR WORSEN WIND CONCENTRATION DEPENDING UPON S AND H



ALAN G. DAVENPORT WIND ENGINEERING GROUP
THE BOUNDARY LAYER WIND TUNNEL LABORATORY
THE UNIVERSITY OF WESTERN ONTARIO



WIND EFFECTS ON TALL BUILDINGS

| | | | | | | |
|-------------|------------|-------------|-----|------------|-----|-------|
| DRAWN BY: | DATE: | SCALE: | No. | ISSUE | CHK | DATE |
| PQ | July, 2004 | NTS | A | REVISION A | EH | 10/06 |
| CHECKED BY: | DWG NO: | PROJECT NO: | B | | | |
| TE | 01 | N000 | C | | | |

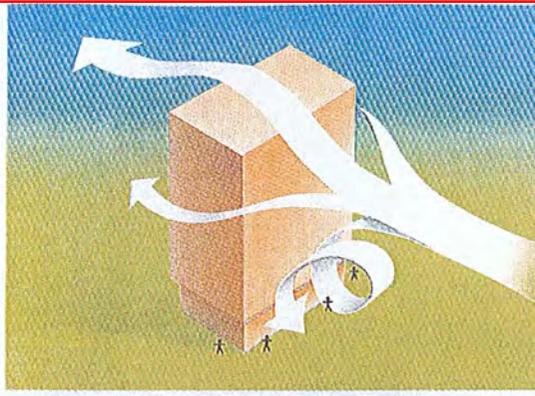
NOTES:
Source: Progressive Architecture

APPENDIX C

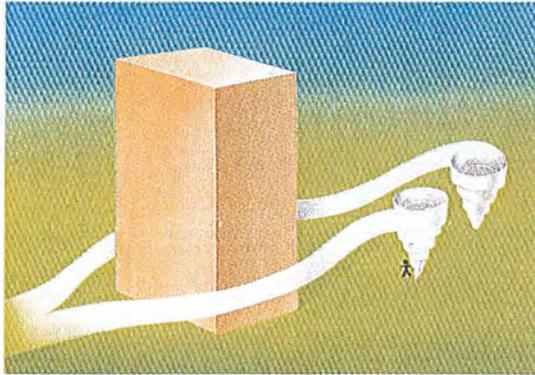
ILLUSTRATION OF SOME PROBLEMS AND SOLUTIONS TO WIND EFFECTS AROUND BUILDINGS



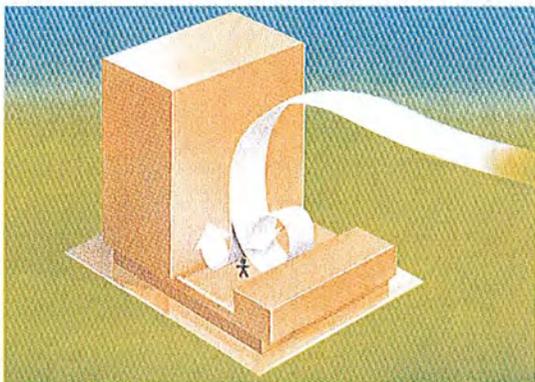
Problems



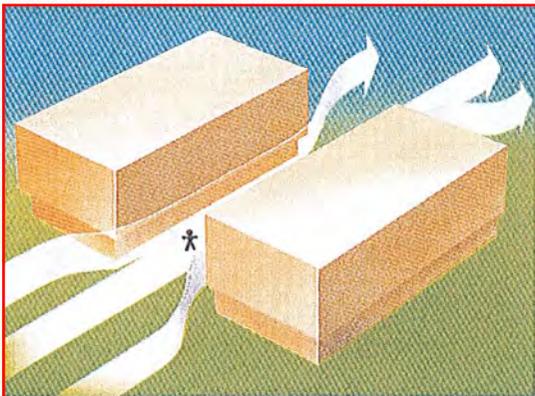
Downwash effect: wind is deflected to street level.



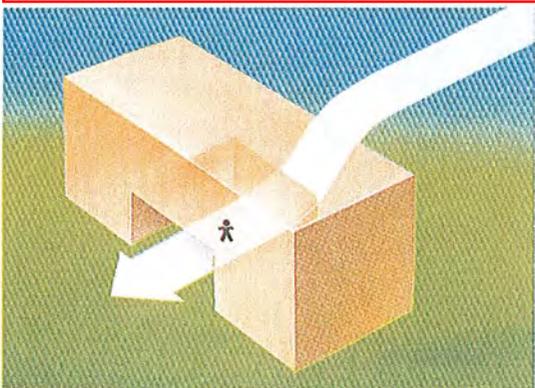
Karman vortex street: wind swirls after dividing around a building.



Confined horseshoe vortex: downwash curls upward on an adjacent building.



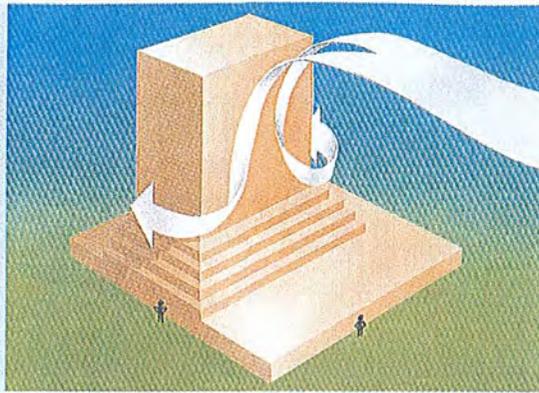
Venturi effect: wind accelerates to get through narrow openings.



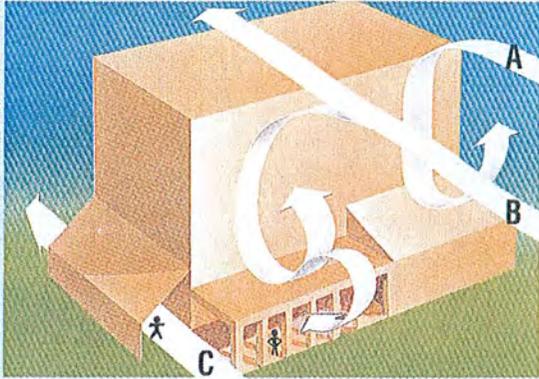
Passageway effect: wind accelerates to get through passages.

Solutions

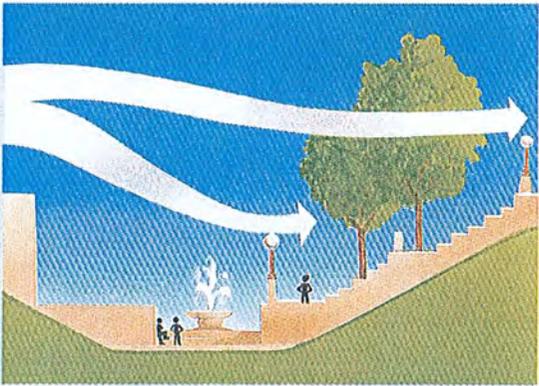
Stepped pedestal: downwash is prevented from reaching street level.



Covered walkways: (a) enclosed canopy deflects downwash; (b) open sides provide some breeze under the canopy; (c) canopy open at both ends is only a partial solution: if the wind direction is such that it blows right through, a venturi effect is created.



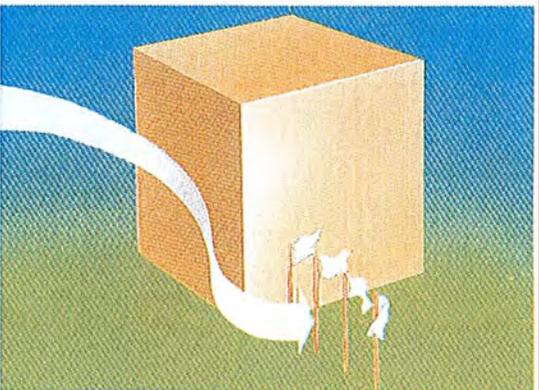
Recessed plaza: wind passes over lowered area.



Windscreens and landscaping: wind is broken up and pedestrians are introduced gradually to windy areas.



Public indicators: flags provide warning of unavoidable high-wind areas.



APPENDIX **B**

SHADOW STUDY

APPENDIX C

OVERLOOK ANALYSIS

This drawing, as an instrument of service, is provided by and is the property of DANIEL L. CUSIMANO, ARCHITECT.

The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify DANIEL L. CUSIMANO, ARCHITECT, of any variations from the supplied information.

This drawing is not to be scaled.

The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc., information shown on this drawing. Refer to the appropriate consultant's drawings before proceeding with the work.

Construction must conform to all applicable codes and requirements of authorities having jurisdiction.

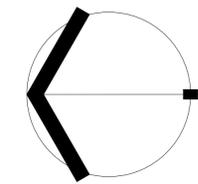
The contractor working from drawings not specifically marked "For Construction" must assume full responsibility and bear costs for any corrections or damages resulting from his work.

PRINT DATE:

2023-03-20

| LEGEND | |
|------------------|--|
| BUILDING A | — |
| BUILDING B | — |
| BUILDING C | — |
| BUILDING D | — |
| BUILDING E | — |
| GRADE ELEVATIONS | 319.00 |
| FINISHED GRADE | 317.10 |

SITE PLAN



| No. | DESCRIPTION | DATE |
|-----------|-------------|------|
| REVISIONS | | |

| No. | DESCRIPTION | DATE |
|-----|---------------------------------|------------|
| 5 | ISSUED FOR DPA/ZBA SUBMISSION | 2023-03-20 |
| 4 | REISSUED FOR DPA/ZBA SUBMISSION | 2022-11-28 |
| 3 | REISSUED FOR DPA/ZBA SUBMISSION | 2022-05-25 |
| 2 | ISSUED FOR DPA/ZBA SUBMISSION | 2022-05-06 |
| 1 | ISSUED FOR REVIEW | 2022-04-14 |



PROJECT: LANCASTER
550 LANCASTER STREET WEST
KITCHENER, ONTARIO

| | | |
|------------------|--------------------|--------------|
| DATE: MARCH 2023 | DWN. BY: MK/KSS/BW | CHK. BY: DLC |
|------------------|--------------------|--------------|

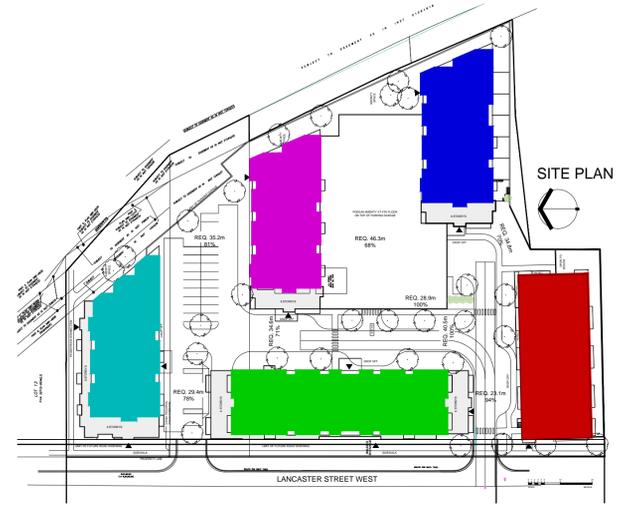
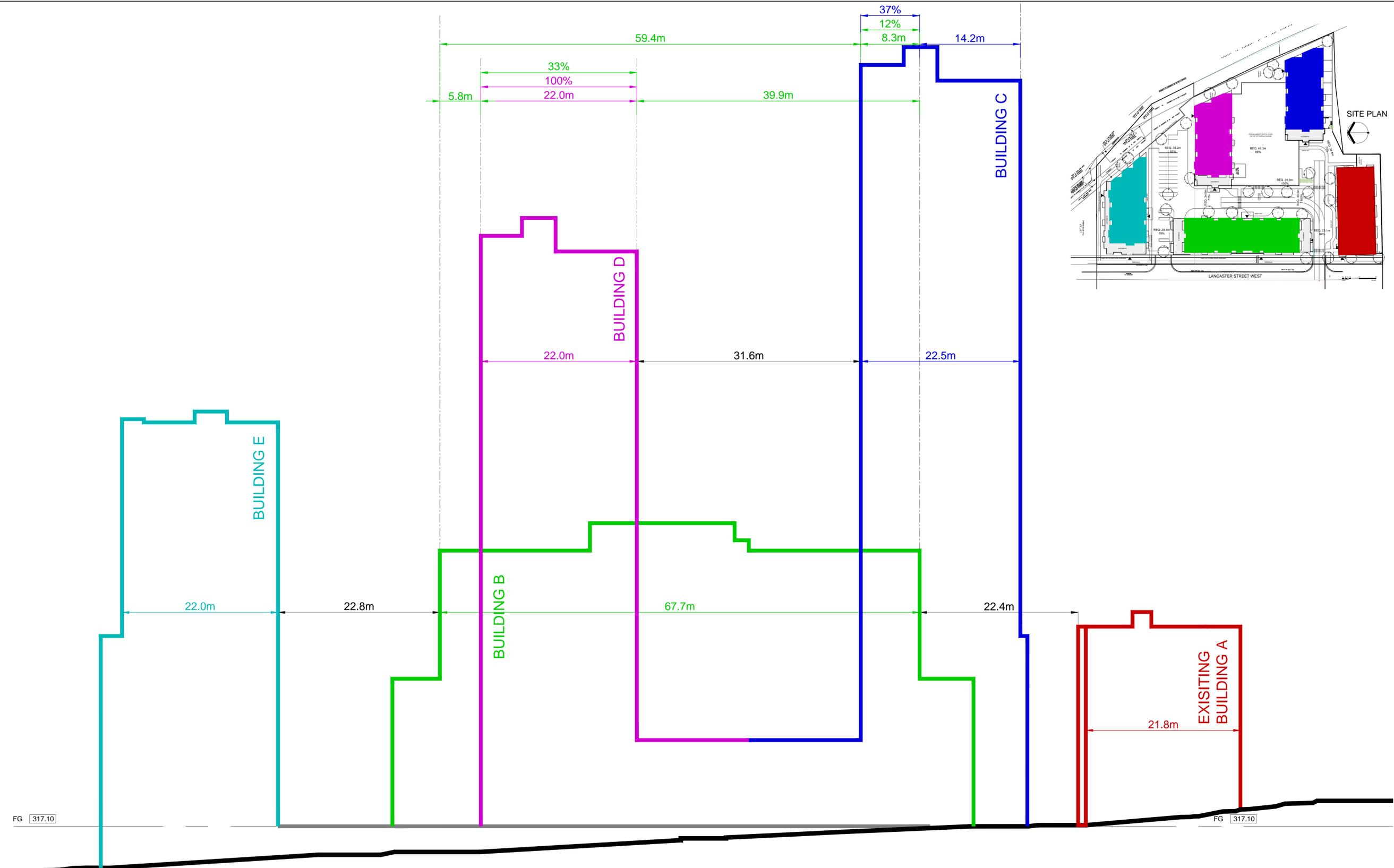
DRAWING TITLE: TBG / OVERLOOK SITE PLAN

| | |
|----------------|---------------------|
| SCALE: 1 = 250 | DRAWING No.: 0L-1.0 |
|----------------|---------------------|



1 TBG / TOWER OVERLOOK SITE PLAN

LANCASTER STREET WEST



This drawing, as an instrument of service, is provided by and is the property of DANIEL L. CUSIMANO, ARCHITECT.

The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify DANIEL L. CUSIMANO, ARCHITECT, of any variations from the supplied information.

This drawing is not to be scaled.

The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc., information shown on this drawing. Refer to the appropriate consultant's drawings before proceeding with the work.

Construction must conform to all applicable codes and requirements of authorities having jurisdiction.

The contractor working from drawings not specifically marked 'For Construction' must assume full responsibility and bear costs for any corrections or damages resulting from his work.

PRINT DATE:
2023-03-20



| No. | DESCRIPTION | DATE |
|-----------|-------------|------|
| REVISIONS | | |

| | | |
|---|-------------------------------|------------|
| 5 | ISSUED FOR DPA/ZBA SUBMISSION | 2023-03-20 |
| 4 | ISSUED FOR DPA/ZBA SUBMISSION | 2022-11-28 |
| 3 | ISSUED FOR DPA/ZBA SUBMISSION | 2022-05-25 |
| 2 | ISSUED FOR DPA/ZBA SUBMISSION | 2022-05-06 |
| 1 | ISSUED FOR REVIEW | 2022-04-14 |



PROJECT: LANCASTER

550 LANCASTER STREET WEST
KITCHENER, ONTARIO

DATE: MARCH 2023 DWN. BY: MK/KSS/BV CHD. BY: DLC

DRAWING TITLE:
**OVERLOOK ANALYSIS
BUILDING B & D
BUILDING B & C**

SCALE: 1 = 250 DRAWING NO.: OL-1.1

LEGEND

| | |
|------------|---------------------|
| BUILDING A | |
| BUILDING B | |
| BUILDING C | |
| BUILDING D | |
| BUILDING E | |
| P/S | PHYSICAL SEPARATION |
| HL | HEIGHT X LENGTH |
| FG | FINISHED GRADE |

NOTE: FINISHED GRADE = 317.10

OVERLOOK ANALYSIS BETWEEN BUILDING B & D

| OVERLOOK CALCULATION | | | |
|---|------------------|-----------------|--|
| BUILDING B | CITY RECOMMENDED | PROVIDED | |
| P/S = (HL)/200 = (42.6X 67.7) / 200 = 14.4m | OVERLOOK = 30% | OVERLOOK = 33% | |
| BUILDING B & D TOWER SEPARATION | 34.6m | 24.5m | |
| | | | |
| BUILDING D | CITY RECOMMENDED | PROVIDED | |
| P/S = (HL)/200 = (82.9X 48.8) / 200 = 20.2m | OVERLOOK = 30% | OVERLOOK = 100% | |
| BUILDING D & B TOWER SEPARATION | 34.6m | 24.5m | |

1 BUILDING B & D

OVERLOOK ANALYSIS BETWEEN BUILDING B & C

| OVERLOOK CALCULATION | | | |
|---|------------------|----------------|--|
| BUILDING B | CITY RECOMMENDED | PROVIDED | |
| P/S = (HL)/200 = (42.6X 67.7) / 200 = 14.4m | OVERLOOK = 30% | OVERLOOK = 12% | |
| BUILDING B & C TOWER SEPARATION | 40.5m | 51.3m | |
| | | | |
| BUILDING C | CITY RECOMMENDED | PROVIDED | |
| P/S = (HL)/200 = (106.9 X 48.8) / 200 = 26.1m | OVERLOOK = 30% | OVERLOOK = 37% | |
| BUILDING C & B TOWER SEPARATION | 40.5m | 51.3m | |

2 BUILDING B & C

OVERLOOK ANALYSIS BETWEEN BUILDING A & C

| OVERLOOK CALCULATION | | | |
|---|------------------|---------------|--|
| BUILDING A | CITY RECOMMENDED | PROVIDED | |
| P/S = (HL)/200 = (34.0 X 51.3) / 200 = 8.7m | OVERLOOK = 50% | OVERLOOK = 0% | |
| BUILDING A & C TOWER SEPARATION | 34.8m | 24.3m | |
| | | | |
| BUILDING C | CITY RECOMMENDED | PROVIDED | |
| P/S = (HL)/200 = (106.9 X 48.8) / 200 = 26.1m | OVERLOOK = 30% | OVERLOOK = 0% | |
| BUILDING C & A TOWER SEPARATION | 34.8m | 24.3m | |

3 BUILDING A & C

This drawing, as an instrument of service, is provided by and is the property of DANIEL L. CUSIMANO, ARCHITECT.

The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify DANIEL L. CUSIMANO, ARCHITECT, of any variations from the supplied information.

This drawing is not to be scaled.

The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc., information shown on this drawing. Refer to the appropriate consultant's drawings before proceeding with the work.

Construction must conform to all applicable codes and requirements of authorities having jurisdiction.

The contractor working from drawings not specifically marked 'For Construction' must assume full responsibility and bear costs for any corrections or damages resulting from his work.

PRINT DATE:
2023-03-20



| No. | DESCRIPTION | DATE |
|-----------|-------------|------|
| REVISIONS | | |

| | | |
|---|---------------------------------|------------|
| 5 | REISSUED FOR DPA/ZBA SUBMISSION | 2023-03-20 |
| 4 | REISSUED FOR DPA/ZBA SUBMISSION | 2022-11-28 |
| 3 | REISSUED FOR DPA/ZBA SUBMISSION | 2022-05-25 |
| 2 | ISSUED FOR DPA/ZBA SUBMISSION | 2022-05-06 |
| 1 | ISSUED FOR REVIEW | 2022-04-14 |

| No. | DESCRIPTION | DATE |
|------------|-------------|------|
| ISSUED FOR | | |



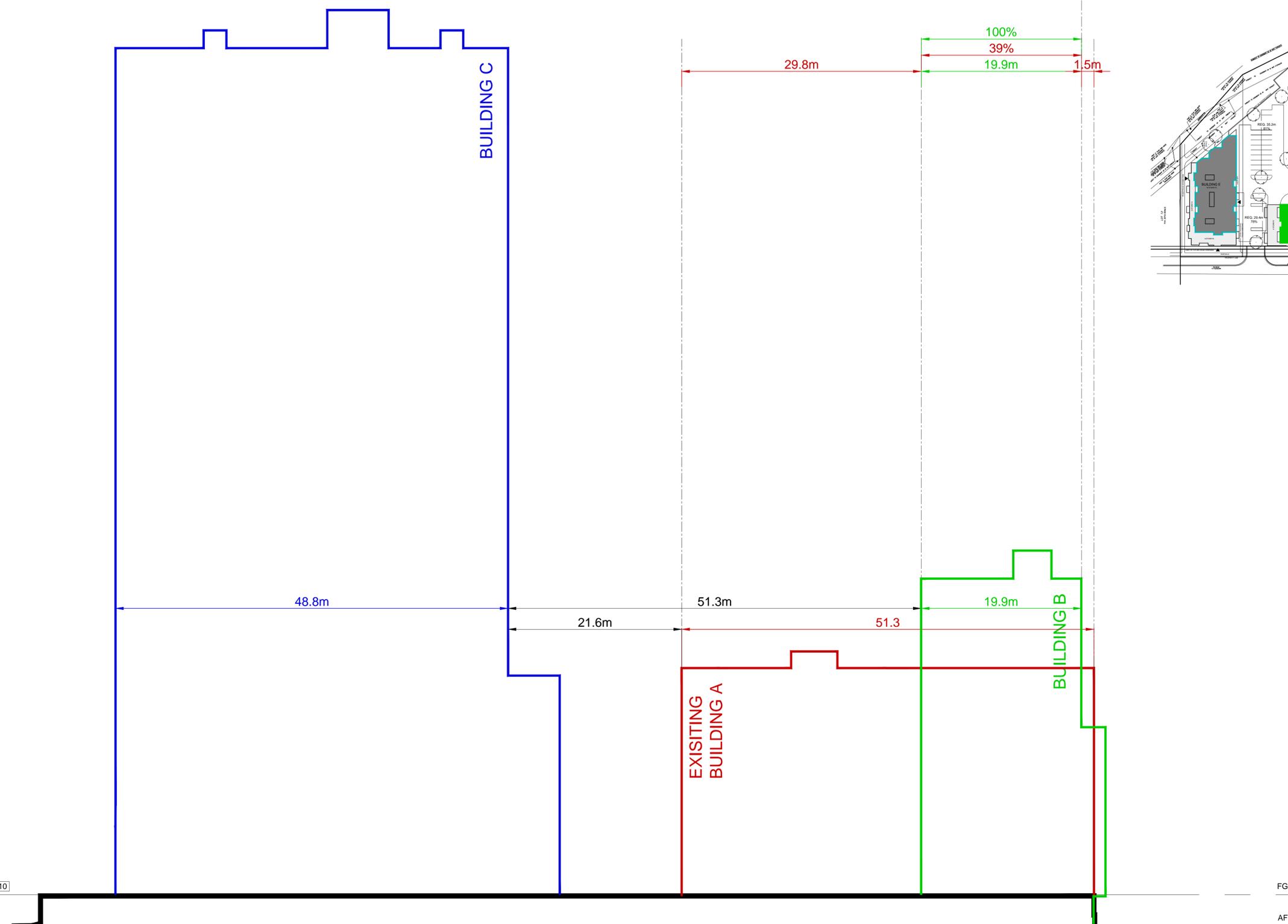
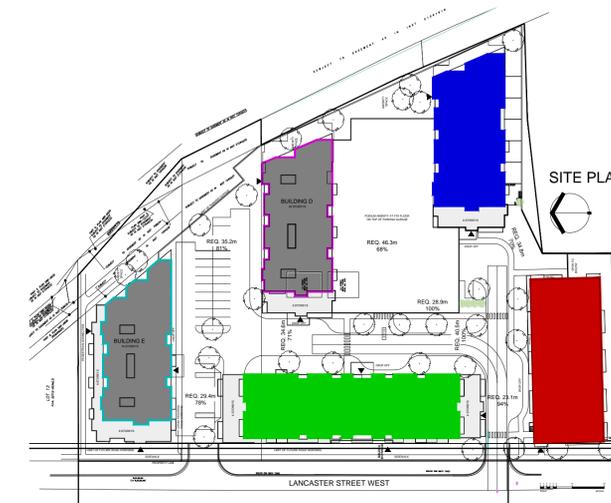
PROJECT:
LANCASTER

550 LANCASTER STREET WEST
KITCHENER, ONTARIO

DATE: MARCH 2023 DWN. BY: MK/KSS/BW CH'D. BY: DLC

DRAWING TITLE:
**OVERLOOK ANALYSIS
BUILDING B & A**

SCALE: **1 = 250** DRAWING No.: **0L-1.3**



LEGEND

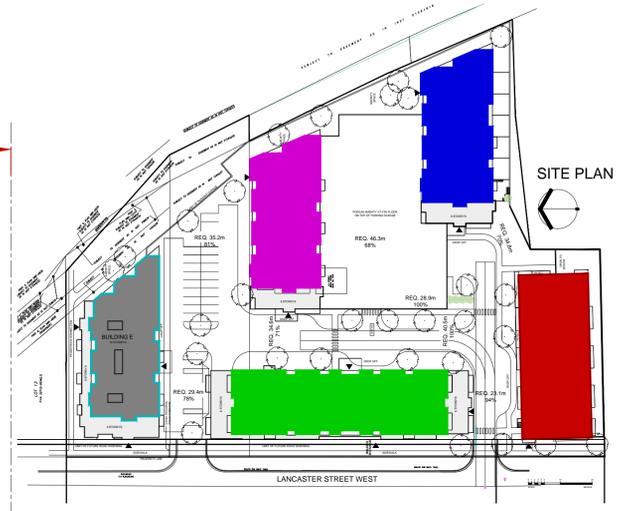
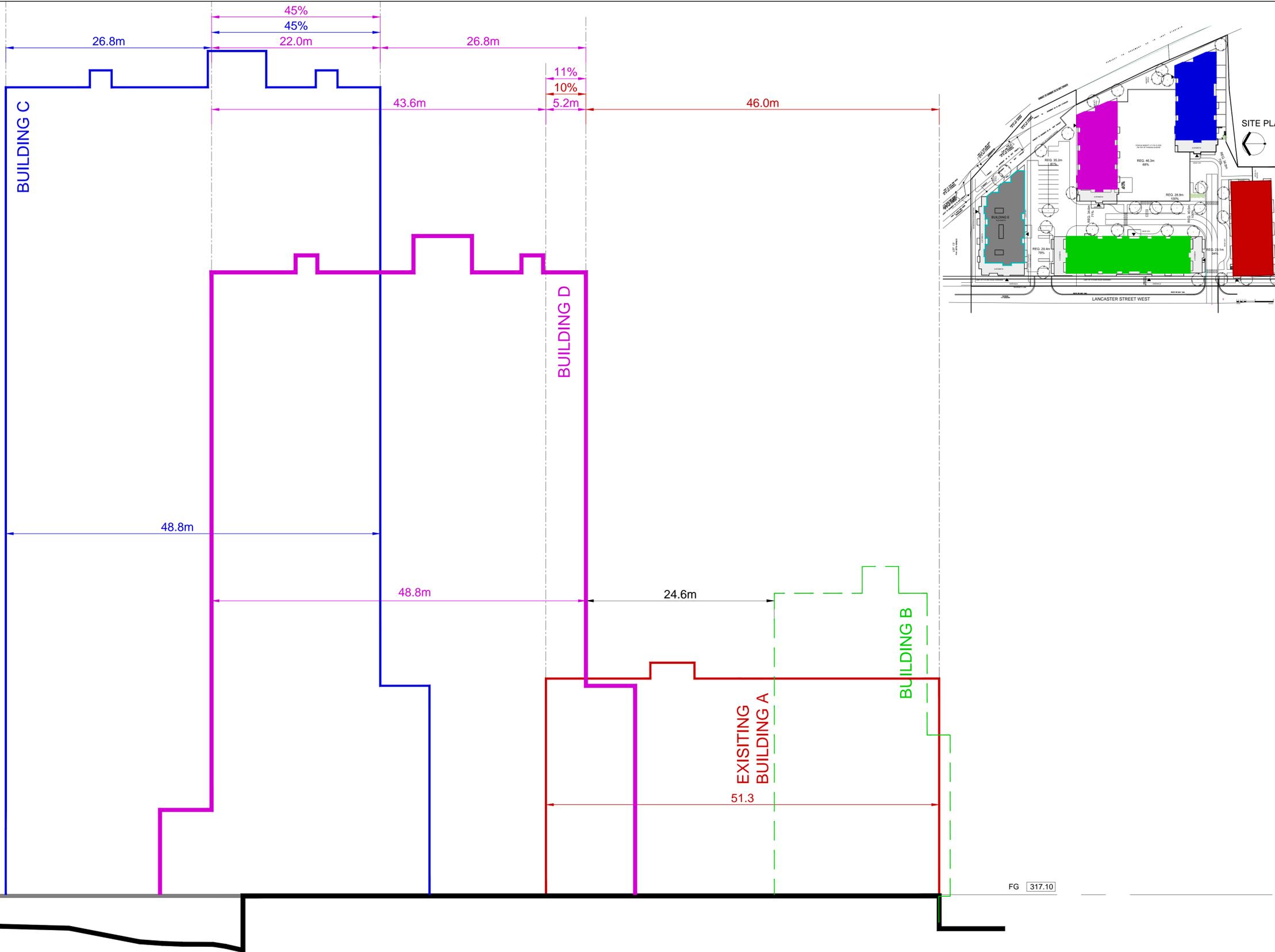
| | |
|------------|---------------------|
| BUILDING A | |
| BUILDING B | |
| BUILDING C | |
| BUILDING D | |
| BUILDING E | |
| P/S | PHYSICAL SEPARATION |
| HL | HEIGHT X LENGTH |
| FG | FINISHED GRADE |

OVERLOOK ANALYSIS BETWEEN BUILDING B & A

| OVERLOOK CALCULATION | | | |
|--|------------------|-----------------|--|
| BUILDING B | CITY RECOMMENDED | PROVIDED | |
| P/S = (HL)/200 = (42.6 X 67.7) / 200 = 14.4m | OVERLOOK = 30% | OVERLOOK = 100% | |
| BUILDING B & A TOWER SEPARATION | 23.1 | 22.4m | |
| | | | |
| BUILDING A | CITY RECOMMENDED | PROVIDED | |
| P/S = (HL)/200 = (34.0 X 51.3) / 200 = 8.7m | OVERLOOK = 50% | OVERLOOK = 39% | |
| BUILDING A & B TOWER SEPARATION | 23.1m | 22.4m | |

NOTE: FINISHED GRADE = 317.10

1 BUILDING B & A



This drawing, as an instrument of service, is provided by and is the property of DANIEL L. CUSIMANO, ARCHITECT.
 The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify DANIEL L. CUSIMANO, ARCHITECT, of any variations from the supplied information.
 This drawing is not to be scaled.
 The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc., information shown on this drawing. Refer to the appropriate consultant's drawings before proceeding with the work.
 Construction must conform to all applicable codes and requirements of authorities having jurisdiction.
 The contractor working from drawings not specifically marked 'For Construction' must assume full responsibility and bear costs for any corrections or damages resulting from his work.

PRINT DATE:
2023-03-20



| No. | DESCRIPTION | DATE |
|-----------|-------------|------|
| REVISIONS | | |

| | | |
|---|---------------------------------|------------|
| 5 | REISSUED FOR DPA/ZBA SUBMISSION | 2023-03-20 |
| 4 | REISSUED FOR DPA/ZBA SUBMISSION | 2022-11-28 |
| 3 | REISSUED FOR DPA/ZBA SUBMISSION | 2022-05-25 |
| 2 | ISSUED FOR DPA/ZBA SUBMISSION | 2022-05-06 |
| 1 | ISSUED FOR REVIEW | 2022-04-14 |

FG 317.10

FG 317.10

LEGEND

| | |
|------------|---------------------|
| BUILDING A | |
| BUILDING B | |
| BUILDING C | |
| BUILDING D | |
| BUILDING E | |
| P/S | PHYSICAL SEPARATION |
| HL | HEIGHT X LENGTH |
| FG | FINISHED GRADE |

OVERLOOK ANALYSIS BETWEEN BUILDING C & D

| OVERLOOK CALCULATION | | | |
|--|------------------|----------------|--|
| BUILDING C | CITY RECOMMENDED | PROVIDED | |
| $P/S = (HL)/200 = (106.9 \times 48.8) / 200 = 26.1m$ | OVERLOOK = 30% | OVERLOOK = 45% | |
| BUILDING C & D TOWER SEPARATION | 46.3m | 31.6m | |
| | | | |
| BUILDING D | CITY RECOMMENDED | PROVIDED | |
| $P/S = (HL)/200 = (82.9 \times 48.8) / 200 = 20.2m$ | OVERLOOK = 30% | OVERLOOK = 45% | |
| BUILDING D & C TOWER SEPARATION | 46.3m | 31.6m | |

OVERLOOK ANALYSIS BETWEEN BUILDING D & A

| OVERLOOK CALCULATION | | | |
|---|------------------|----------------|--|
| BUILDING D | CITY RECOMMENDED | PROVIDED | |
| $P/S = (HL)/200 = (82.9 \times 48.8) / 200 = 20.2m$ | OVERLOOK = 30% | OVERLOOK = 11% | |
| BUILDING D & A TOWER SEPARATION | 28.9m | 21.6m | |
| | | | |
| BUILDING A | CITY RECOMMENDED | PROVIDED | |
| $P/S = (HL)/200 = (34.0 \times 51.3) / 200 = 8.7m$ | OVERLOOK = 50% | OVERLOOK = 10% | |
| BUILDING A & D TOWER SEPARATION | 28.9m | 21.6m | |

NOTE: FINISHED GRADE = 317.10

1 BUILDING C & D

2 BUILDING D & A



PROJECT:
LANCASTER

550 LANCASTER STREET WEST
KITCHENER, ONTARIO

DATE: MARCH 2023 DWN. BY: MK/KSS/BW CH'D. BY: DLC

DRAWING TITLE:
OVERLOOK ANALYSIS BUILDING C & D BUILDING D & A

SCALE: 1 = 250 DRAWING No.: **OL-1.4**