

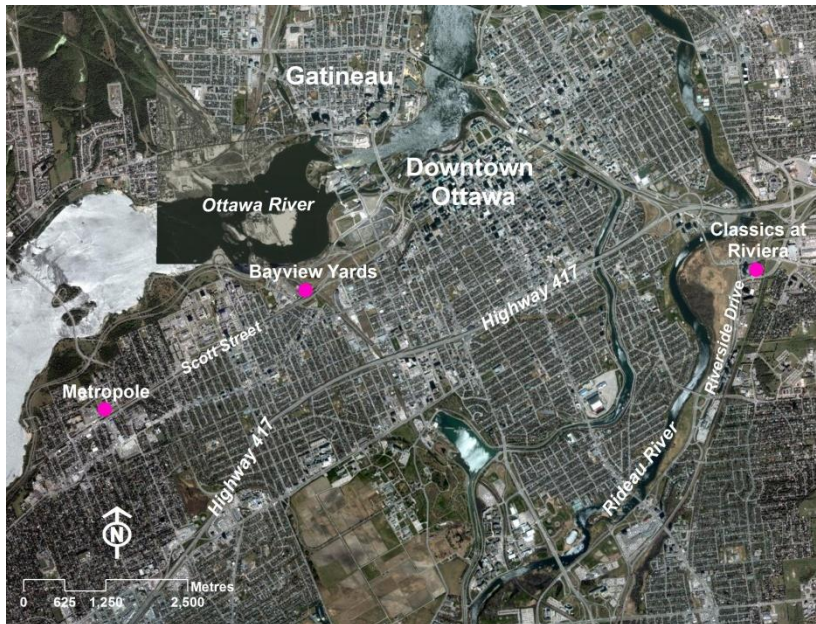
From Low-Rise to High-Rise: A Comparison of Techniques for the Integration of Tall Buildings into Three Suburban, Transit-Adjacent Locations in Ottawa

Jennifer Grove, April 2013

Executive Summary

Introduction

This report compares two transit-adjacent high-rise buildings located in suburban neighbourhoods in Ottawa: the Metropole (32 stories), beside Westboro transit station, and the Classics at Riviera apartment building at 1480 Riverside Drive (29 stories), beside the



Source: ArcMap Satellite Imagery (2013)

Hurdman Bus Rapid Transit (BRT) station. The report will evaluate how both buildings are designed to integrate into their surrounding environment by analyzing building elements such as height, spatial separation, floor plate sizes and façade articulation, as well as the impacts these towers have on the public and private realms in terms of shadow, wind, views and privacy. The findings are used to determine whether the Bayview Yards, a suburban site at the western edge of downtown Ottawa and adjacent to the Bayview BRT station, is an appropriate location for a high-rise building. The findings are also used to make recommendations for a potential high-rise building at this site.

Context

Beginning in 2013, the City of Ottawa will be converting its current BRT system into a Light Rail Transit (LRT) line, while maintaining local bus routes (Ottawa, 2012d). The City has established areas around each station where transit-supportive, higher intensity and mixed-use development is planned to occur, including high-rise development. This will be guided by a series of transit-oriented development (TOD) plans produced for each station by the City (Ottawa, 2012d).

The location and design of high-rise buildings are also regulated by Ottawa's Official Plan, Secondary and Community Design Plans for specific neighbourhoods, the Zoning By-law, and urban design guidelines, particularly the Urban Design Guidelines for High-Rise Housing. These documents address building heights, location, profile, compatibility and transition to surroundings.

The Metropole

The Metropole is a 32-storey building commissioned by Minto Developments, located in the suburban neighbourhood of Westboro, approximately 6 kilometres west of the downtown core. While there are a few high-rise buildings in the area, Westboro is primarily a low-rise residential community consisting mainly of single family homes. The Metropole is the tallest visible building in the vicinity. It is situated on an arterial road and located 200 metres east of the Westboro transit station. It is on a property designated as General Urban by Ottawa's Official Plan, meaning that a mix of uses are permitted within the area, but their location, scale and type are regulated through zoning.



The Classics at Riviera

The Classics at Riviera is a gated condominium complex located on the north side of Riverside Drive, a major arterial road, in the suburban neighbourhood of Riverview. It is situated approximately 4 kilometres southeast of the downtown core. For the most part, development in the area is low-rise, but there are a number of high-rise buildings and

complexes found throughout. The Classics complex includes three high-rise buildings, where 1480 Riverside Drive is the tallest at 29 stories. It is directly adjacent to the Rideau River, the Rideau River Park and the CN Railway, and is located 350 metres east of the Hurdman BRT station. It is on a property designated as a Mixed-Use Centre by Ottawa's Official Plan, meaning as the area grows, the City hopes to see compact, mixed-use and transit oriented development occur. Although the complex was developed to stand alone, the area is part of a current TOD plan which may help reposition it in a more structured environment in the future.



The Bayview Yards

The Bayview Yards are located south of the Ottawa River, approximately 5 kilometres west of the downtown core. They are directly adjacent to the Bayview BRT station, which intersects with Ottawa's O-Train and is a major transfer point along the Transitway. The Yards currently consist of vacant and underutilized properties, which are the focus of the Community Design Plan study for the Carling-Bayview Light Rail Transit Corridor (Ottawa, 2012a). The objective of this plan is to incorporate high densities, a mix of uses, community amenities and open

spaces within the Bayview Yards and surrounding area in order to attract people to live, work and visit (Ottawa, 2012a).

The Bayview Yards site differs from the locations of the Metropole and the Classics because it is planned to become an urban node in the future, whereas the others were done in isolation without any understanding of the long term evolution of their areas.

The Carling-Bayview LRT study has identified the area immediately west of Bayview station as a potential location for a high-rise building (Ottawa, 2012a). The main characteristics of this site are its proximity to a mobility hub, the amount of vacant space available for development, clear views to the Ottawa River and of the downtown skyline, and proximity to downtown, existing open spaces and community facilities.



Methods

This report employs a comparative case study method using two preselected sites in Ottawa. The study was carried out using four key research methods. The first was a literature review. The second was a comprehensive review of policy documents including official plans, zoning by-laws, urban design and other relevant guidelines regulating high-rise development from the cities of Ottawa, Toronto, Vancouver, Calgary and Nanaimo. The third was direct observation of the Metropole, 1480 Riverside Drive, the Bayview Yards site and their surrounding environments, including on-site observation, photographs, mapping and computer modeling. The final method of data collection was a series of interviews conducted with six stakeholders, including urban planners and urban designers from the cities of Ottawa, Toronto and Mississauga.

Analysis

This report examines six urban planning and urban design measures for both the Metropole and the Classics at Riviera: height, separation between adjacent buildings, floor plate sizes, step backs, façade and roofline articulation, and architectural detailing. It also looks at the following impacts on the private and public realms: shadows cast, level of sunlight, wind effects, obstruction of views, and privacy for adjacent properties. It then discusses the implications of the findings for the Bayview Yards site. The analysis does not examine each of these topics in extreme detail, but is instead based on more of a systematic comparison of the form and visible effects of the tall buildings.

Conclusions































The following charts summarize and compare the main strengths and weaknesses of the Metropole and the Classics. These

findings were used to make recommendations for the location and design of a high-rise building within the Bayview Yards.









Summary of Impacts on the Pedestrian and Private Realms









Evaluation Criteria	The Metropole	The Classics
Transition to Surroundings		
<ul style="list-style-type: none"> Oriented toward transit station Transition in height away from transit station Stepped down in height towards adjacent development Base is similar in height/proportion to neighbouring buildings Entrances are visible and directly accessible Entrances create a sense of arrival Amenity space is provided 		
Shadow, Wind and Natural Light Impacts		
<ul style="list-style-type: none"> Oriented to cast a narrower shadow Elongated floor plate is oriented north-south Floor plate is compact to cast a smaller shadow Upper stories stepped back to absorb downward wind drafts Architectural devices add to minimize wind effects 		
View Obstruction and Privacy		
<ul style="list-style-type: none"> Floor plate is compact to minimize view obstruction Separated from adjacent development to permit views through Compatible uses face each other Oriented away from nearby development for greater privacy Separated from adjacent development to mitigate overlooks 		
<p> Fully satisfies criteria Somewhat satisfies criteria Hardly satisfies criteria Does not satisfy criteria </p>		

Summary of Urban Planning Policy

Evaluation Criteria	The Metropole	The Classics
Heights		
<ul style="list-style-type: none"> Within 600m of rapid transit station Transition in height away from transit station Stepped down towards adjacent development Sited at edge of low-rise neighbourhood Minimized impact on nearby parks and open spaces 	    	    
Separation Distances		
<ul style="list-style-type: none"> Separated at least 25m from surrounding development Staggered/offset from surrounding development Separated from surroundings with buffers Avoids close balcony-to-balcony/window-to-window facings 	   	   
Floor Plate Sizes		
<ul style="list-style-type: none"> Floor plate does not exceed 750m² Floor plate is articulated at the building base Floor plate is articulated at the upper floors/roofline Floor plate is not repetitive or identical throughout 	   	   
 Fully satisfies criteria  Somewhat satisfies criteria  Hardly satisfies criteria  Does not satisfy criteria		

Summary of Urban Design Policy

Evaluation Criteria	The Metropole	The Classics
Step Backs		
<ul style="list-style-type: none"> Stepped back above the base Stepped back at upper storeys Step backs guided by angular planes Creates sense of enclosure at grade 	   	   

Evaluation Criteria	The Metropole	The Classics
Façade and Roofline Articulation <ul style="list-style-type: none"> Base, middle and top are clearly articulated Base is similar in height/proportion to neighbouring buildings Base has multiple entrances and access points from the street Base contains active uses Base is articulated with landscaping Roofline has distinctive profile against the skyline Facades include projections, material changes, solid-void interplay, etc. Blanks walls are minimized 		
Architectural Detailing and Material Quality <ul style="list-style-type: none"> Surfaces include material, texture and colour changes Building is highly transparent, especially at grade Additional architectural treatment added to entrance Weather protection measures added at grade 		
<p>  Fully satisfies criteria  Somewhat satisfies criteria  Hardly satisfies criteria  Does not satisfy criteria </p>		

Recommendations for the Bayview Yards

1. Incorporate an urban street grid, a mix of uses and building types, and high quality public spaces and amenities within the Bayview Yards to support high-rise development.
2. Limit building height to the 30 stories suggested in Ottawa's TOD plans for Train, St. Laurent and Cyrville stations, and have surrounding building heights transition away accordingly.
3. Connect the building to Bayview station through multiple pathways, including weather protected outdoor pathways and indoor walkways that connect to other land uses (such as office and retail).
4. Design the building in Bayview Yards based on the Vancouver model, with a clearly defined base.
5. Incorporate a mix of active uses within the building base.
6. Minimize setback distances from the street and have the building align with the street.