

31 July 2014

OUR REF: TO3157TOW

Urban Capital Property Group,
10 King Street East, Suite 810,
Toronto, ON M5C 1C3

Attention: Mr. David Wex, Partner

Dear Sir:

Re: Smart House Ottawa (488-500 Bank Street at Flora Street)
Transportation Overview

1. Introduction

The subject property is located at the southwest quadrant of the Bank/Flora intersection in the Centretown Community of Ottawa. The proposed development is comprised of 4,350 ft² of ground floor retail and 151 residential units (121 studio units, 10 one-bedroom units, 2 one-bedroom plus study, and 18 two-bedroom units). The assumed date of occupancy is 2016. The local context of the site is provided as Figure 1 and the Site Plan is provided as Figure 2.

The zoning for the combined properties is understood to be Traditional Main Street. As such, and given its location abutting Bank Street within the Inner Area, there is a strong desire to provide minimal on-site parking for the retail and residential components.

Figure 1: Local Context



The City of Ottawa has requested that a Transportation Memo/Overview be prepared in support of the Site Plan Application that builds upon the earlier transportation analysis completed in July 2012 as part of the previous Zoning Application. In addition to an update on the projected site traffic generation (reflecting the change in units from 95 standard condominium units to approximately 151 studio/one and two-bedroom units), other transportation issues to be addressed as part of this assessment include:

- The location and design of the proposed garage ramp;
- On-site parking layout; and
- Vehicle circulation.

Comment will also be provided on parking demand/supply as the updated proposal provides a total of 23 parking spaces for both residential and retail land uses.

Vehicular access to the site is proposed via a driveway to/from Flora Street, which is a local road that operates one-way eastbound linking Bronson to Bank. Therefore all inbound traffic must travel through the unsignalized Kent/Flora intersection to the west, and all outbound traffic must travel through the signalized Bank/Flora intersection to the east.

2. Existing Transportation Conditions

Sidewalks are currently provided on both sides of Bank Street and Flora Street adjacent to the site. Pedestrian volumes on the west side of Bank Street near the site are in the order of 600 pedestrians over an 8-hour period. Pedestrians crossing Bank Street at Flora Street appear to favour a crossing of the south leg of the intersection versus the north leg (335 pedestrians versus 180 pedestrians over an 8-hour), which is likely a reflection of the bus stop location to the south.

There are currently no dedicated **cycling facilities** in the immediate area. However, the Ottawa Cycling Plan (OCP) identifies O'Connor Street to the east as a planned Segregated Bike Facility (Phase 1), and Arlington Street to the south, forming part of the *Centretown Neighbourhood Bikeway*, as a planned Shared Use Lane Facility (Phase 3). Bicycle activity on Flora Street is noted to be approximately 70 bicycles over an 8-hour period, whereas two-way bicycle volumes on Bank Street are 440 bicycles over the same period.

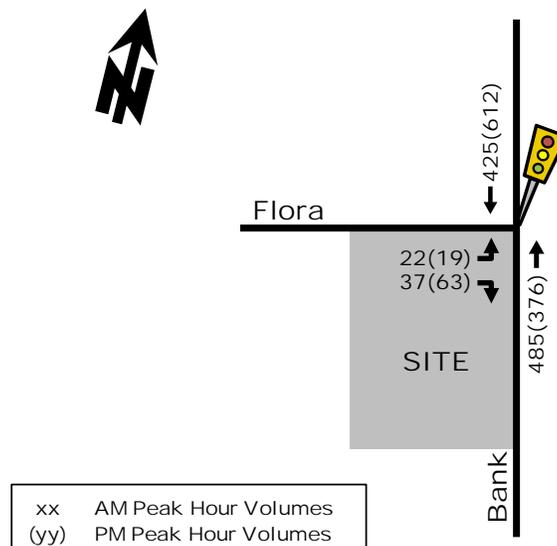
Transit service is provided on Bank Street in the form of OC Transpo Routes No. 1 (South Keys to Wellington Street and beyond) and Route No. 7 (Carleton U to St. Laurent Transitway). The southbound bus stop is located approximately 50 m away between the Bank/Flora and Bank/Arlington intersections, and the northbound stop is located directly across the street from the proposed development.

On-street parking is not permitted on Flora Street along the site's frontage – there is no parking on the south side and a loading zone on the north side. There is also no on-street parking permitted on Bank Street along the site's frontage. One hour Pay-and-Display parking (9:00am-3:30pm) is available further north on Bank Street, and one-hour parking (7:00am-7:00pm) is available on sections of Flora Street west of Bank Street.

According to the most recent data provided by the City of Ottawa (August 2012), average daily **traffic volumes** on Flora Street (approaching Bank Street) are currently in the order of 800 vehicles. During the commuter peak hours, the westbound volume is approximately 60 veh/h and 80 veh/h in the morning and afternoon peak hours, respectively. Throughout the day, close to 75% of the approaching vehicles turn right from Flora Street onto Bank Street. Note that there are no turning movements onto Flora Street (from Bank Street) as it is one-way westbound. Average daily traffic volumes on Bank Street adjacent to the site are currently in the order of 6,000 vehicles. Peak directional volumes on Bank Street are approximately 510 veh/h and 675 veh/h during the morning and afternoon peak hours, respectively. These peak hour traffic volumes are illustrated in Figure 3, and included as Appendix A.



Figure 3: Existing Weekday Peak Hour Traffic Volumes



3. Traffic Generation

The site was at one time occupied by a two-storey glass and paint store, which has since relocated to a new facility on Woodward Drive (close to Maitland Avenue).

To estimate site traffic generation for the new land use, appropriate trip generation rates for these land uses were obtained from the 9th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual and are summarized in Table 1.

Table 1: ITE Trip Generation Rates

Land Use	Data Source	Trip Rates	
		AM Peak	PM Peak
High-Rise Condominium	ITE 232	$T = 0.34(\text{du});$ $T = 0.29(\text{du}) + 28.86$	$T = 0.38(\text{du});$ $T = 0.34(\text{du}) + 15.47$
Specialty Retail Centre ¹	ITE 826	$T = 1.36(X);$ $T = 1.20(X) + 10.74$	$T = 2.71(X);$ $T = 2.40(X) + 21.48$
Notes: T = Average Vehicle Trip Ends du = Dwelling Units X = 1000 ft ² Gross Floor Area 1. Rates for specialty retail during the AM Peak is assumed to be 50% of the PM Peak			

As ITE trip generation surveys only record vehicle trips and typically reflect highly suburban locations (with little to no access by travel modes other than private automobiles), adjustment factors appropriate to the more urban study area context were applied to attain estimates of person trips for the proposed development. This approach is considered appropriate within the industry for urban infill developments.

To convert ITE vehicle trip rates to person trips, an auto occupancy factor and a non-auto trip factor were applied to the ITE vehicle trip rates. Our review of the available literature suggests that a combined factor of approximately 1.3 is considered reasonable to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%. As such, the person trip generation for the proposed site is summarized in Table 2.

Table 2: Modified Person Trip Generation

Land Use	Data Source	Area	AM Peak (persons/h)			PM Peak (persons/h)		
			In	Out	Total	In	Out	Total
High-Rise Condominium	ITE 232	151 units	17	77	94	53	33	86
Specialty Retail Centre	ITE 826	4,350 ft ²	11	10	21	18	23	41
Projected 'New' Persons Trips			28	87	115	71	56	127

Note: 1.3 factor to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%

The person trips shown in Table 2 for the proposed site were then reduced by modal share values based on the 2011 TRANS O-D survey to reflect the proposed type of residential units, the amount of parking being provided, and the site's location and proximity to employment, shopping uses and transit availability. Based on the foregoing factors, for the residential land use a 75% non-auto component has been used (i.e. 75% of residents will not use automobiles). Modal share values, including a reduction for 'pass-by' trips, for the proposed retail land use are summarized in Tables 3 and 4.

Table 3: High-Rise Condominium Trip Generation

Travel Mode	Mode Share	AM Peak (persons/h)			PM Peak (persons/h)		
		In	Out	Total	In	Out	Total
Auto Driver	20%	4	16	20	11	7	18
Auto Passenger	5%	1	4	5	3	2	5
Transit	40%	7	31	38	21	13	34
Non-motorized	35%	5	26	31	18	11	29
Total Person Trips	100%	17	77	94	53	33	86
'New' Residential Vehicle Trips		4	16	20	11	7	18

Table 4: Specialty Retail Trip Generation

Travel Mode	Mode Share	AM Peak (persons/h)			PM Peak (persons/h)		
		In	Out	Total	In	Out	Total
Auto Driver	25%	3	3	6	5	6	11
Auto Passenger	5%	1	0	1	1	2	3
Transit	20%	2	2	4	3	4	7
Non-motorized	50%	5	5	10	9	11	20
Total Person Trips	100%	11	10	21	18	23	41
Less Retail 'Pass-by' (30%)		-1	-1	-2	-2	-2	-4
'New' Retail Vehicle Trips		2	2	4	3	4	7

The following is a summary of potential two-way vehicle trips to/from the proposed development.

Table 5: Total Site Vehicle Trip Generation

Land Use	AM Peak (veh/h)			PM Peak (veh/h)		
	In	Out	Total	In	Out	Total
High-Rise Condominium	4	16	20	11	7	18
Specialty Retail	3	3	6	5	6	11
Retail Pass-by (35%)	-1	-1	-2	-2	-2	-4
Total 'New' Auto Trips	6	18	24	14	11	25



As shown in Table 5, the resultant estimated number of potential 'new' two-way vehicle trips generated by the proposed development is in the 25 veh/h range during both peak hours. This equates to less than 1 new vehicle to/from the site every 2 minutes during commuter peak hours, which will have no measurable impact on the existing intersection performance.

As mentioned previously, the total amount of proposed parking for the development is 23 spaces. This amount of parking represents approximately 1 parking space for every seven residential units. As it is reasonable to assume there will be traffic related to the proposed development that is not using the parking garage (i.e. drop-off/pick-ups, on-street parking for retail, etc.), the total projected peak hour site-generated traffic is slightly higher than the proposed amount of provided parking.

4. Impact Analysis

Total projected volumes associated with the proposed development were derived by superimposing 'new' site-generated traffic volumes (Table 5) onto existing traffic volumes (Figure 3). As mentioned previously, all inbound traffic must travel through the unsignalized Kent/Flora intersection to the west, and all outbound traffic must travel through the signalized Bank/Flora intersection to the east.

Given the above-noted distribution and the projected site-generated traffic volumes, the total westbound volumes along Flora Street approaching the Bank/Flora intersection (east of the site driveway) are projected to be approximately 80 veh/h and 95 veh/h during the morning and afternoon peak hours, respectively. West of the site a total of 65 veh/h and 95 veh/h are projected to travelling through the Kent/Flora intersection during the morning and afternoon peak hours, respectively. Peak directional traffic along Bank Street is projected to be approximately 515 veh/h and 685 veh/h during the morning and afternoon peak hours, respectively.

Given the context of the development, the traffic impact on the adjacent road network is considered insignificant and requires no mitigative measures.

5. Site Plan Review

This section provides an overview of site access, parking requirements and on-site circulation. The proposed Site Plan was previously illustrated in Figure 2.

Parking

A total of 23 parking spaces are proposed to serve the subject development of which 15 are proposed as residential parking spaces, 7 are designated as visitor parking spaces, and 1 is proposed as a VRTUCAR parking space (car sharing program). No retail parking is proposed. According the City's By-Law requirements, as the site is in a Traditional Main Street (TM) zone and as it is designated as mixed-use, the minimum required parking is 7 visitor parking spaces for the residential units. We are advised that no parking is required for non-residential uses. The parking supply is considered reasonable based on the type of residential units and the location of the development close to employment, shopping and transit.

As mentioned previously, on-street parking is not permitted on Flora Street along the site's frontage – there is no parking on the south side and a loading zone on the north side. There is also no on-street parking permitted on Bank Street along the site's frontage. One hour Pay-and-Display parking (9:00am-3:30pm) is available further north on Bank Street, and one-hour parking (7:00am-7:00pm) is available on sections of Flora Street west of Bank.



Site Circulation

With regard to on-site circulation, the proposed parking lot is laid out effectively, such that two-way traffic can be efficiently accommodated. The proposed drive aisle widths are noted as 6.7 m, which meets the City's By-Law requirements.

With regard to the parking space dimensions, 11 parking spaces are noted as being 2.6 m in width and 5.2 m in length and the remaining 12 parking spaces are noted as having widths ranging from 2.4 m to 2.6 m and lengths ranging from 4.6 m to 5.2 m. These dimensions satisfy the City's By-Law requirements, however, 4 narrow parking spaces are located next to walls, obstructing car doors, and as such these parking spaces may require widening to 2.6 m.

The ramp providing access to the lower level parking is noted as having a 16% grade with acceptable transition grades of 6% at the top of the ramp and 8% at the bottom of the ramp. This is considered acceptable provided signage prohibiting pedestrians from the ramp is installed. If exposed to weather, a subsurface melting device sufficient to keep the access ramp free of ice at all times is recommended.

Access Requirements

Based on projected volumes and proximity to adjacent intersections, additional traffic control/auxiliary turn lanes are not warranted or required at the proposed driveway connection.

The driveway connection to/from Flora Street is located at the western extent of the property, thereby maximizing the distance from the signalized Bank/Flora intersection (approximately 25 m to the STOP bar). This distance from Bank Street meets the City's Private Approach By-Law requirements. It should be noted that the proposed site driveway is located less than 3.0 m from the property line, which does not satisfy the City's Private Approach By-Law requirements. However, given the low vehicle volumes projected to/from the parking garage, the ramp's transition grades, and the desire to maximize the distance of the site driveway from the Bank/Flora intersection, this location is considered both safe and acceptable.

Bicycles

A total of 156 indoor bicycle parking spaces and 4 outdoor bicycle parking spaces are proposed to serve the development, which exceeds the City's minimum By-Law requirements. The proposed location of bicycle parking is close to the main entrance of the building and should be well-lit. This amount of bicycle parking will help reduce the number of drivers travelling to/from the proposed development.

6. Transportation Demand Management

The following is a summary of planned/candidate Transportation Demand Management (TDM) initiatives that will help to minimize reliance on private automobile (i.e., reduce parking demand) and encourage active/alternative travel modes:

- The property is located within very close proximity to local transit service (*bus stops are located within 50 m*);
- Convenient and protected secure bicycle parking facilities are being proposed on-site (*the Site Plan indicates 156 spaces are to be provided inside and 4 outside*);
- Consider providing bicycle repair facility in the building (*note that there are options nearby at Foster's Sports Centre at 305 Bank Street, and re-Cycles Community Bicycle Shop at 473 Bronson – both are approximately 0.5 km away*);
- Consider providing bike-share opportunities for those that do not own bicycles (and possibly supply helmets for use);



- Consider designating a TDM Coordinator;
- Consider directing new residents to property website that provides information on alternative travel modes/options;
- Proposed in-house car sharing opportunities. There is currently a VRTUCAR Station (Station #82) located at 68 Flora, which is directly adjacent to the subject property. The subject development is proposing a dedicated vehicle parking spot in the parking garage to maintain this VRTUCAR Station; and
- Consider removing the subject property from the list of properties eligible for the City of Ottawa Residential Parking Permit Program¹.

7. Findings and Conclusions

Based on the foregoing analysis of the proposed site, the following transportation-related findings and recommendations are offered:

- The existing traffic volumes along one-way Flora Street during the commuter peak hours are approximately 60 veh/h and 80 veh/h in the morning and afternoon peak hours, respectively, in the westbound direction;
- Peak directional volumes on Bank Street are approximately 510 veh/h and 675 veh/h during the morning and afternoon peak hours, respectively;
- Site traffic travelling to the proposed development must travel through the unsignalized Kent/Flora intersection to the west, and all outbound traffic must travel through the signalized Bank/Flora intersection to the east;
- The proposed development is projected to generate approximately 25 veh/h during both the weekday morning and afternoon peak hours. This equates to less than 1 new vehicle every 2 minutes during peak hours, which is considered to be a negligible increase in traffic;
- Based on the additional projected site-generated traffic, future traffic volumes along Bank Street and Flora Street are projected to be similar to existing conditions;
- A total of 23 parking spaces are proposed to serve the subject development which satisfies By-Law requirements based on the TM zoning for the subject mixed-use development. Given the type of residential units and the location of the development, the parking supply is considered reasonable;
- The proposed amount of bicycle parking supply exceeds the By-Law requirements for this development;
- The ramp providing access to the lower level parking is noted as having a 16% grade with acceptable transition grades;
- The site driveway connection is considered safe and acceptable; and
- TDM initiatives will help minimize reliance on private automobile and encourage active/alternative travel modes.

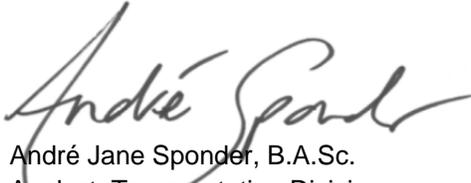
¹ The purpose of the Program is to provide eligible residents with special privileges related to parking on designated portions of a street or streets in that area. In general, the permit allows those eligible to park for periods in excess of the otherwise stipulated parking period for their street(s), and to be exempt from the overnight parking ban during the winter months, subject to some limitations and conditions



Based on the foregoing, the proposed development fits well into the context of the surrounding area, and its location and design serves to promote use of walking, cycling, and transit modes, thus supporting City of Ottawa policies, goals and objectives with respect to redevelopment, intensification and modal share.

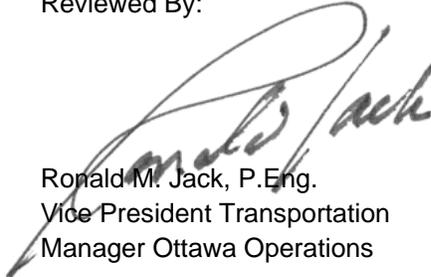
Therefore, approval of the proposed 488-500 Bank Street mixed-use development is recommended from a transportation perspective.

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Appendix A

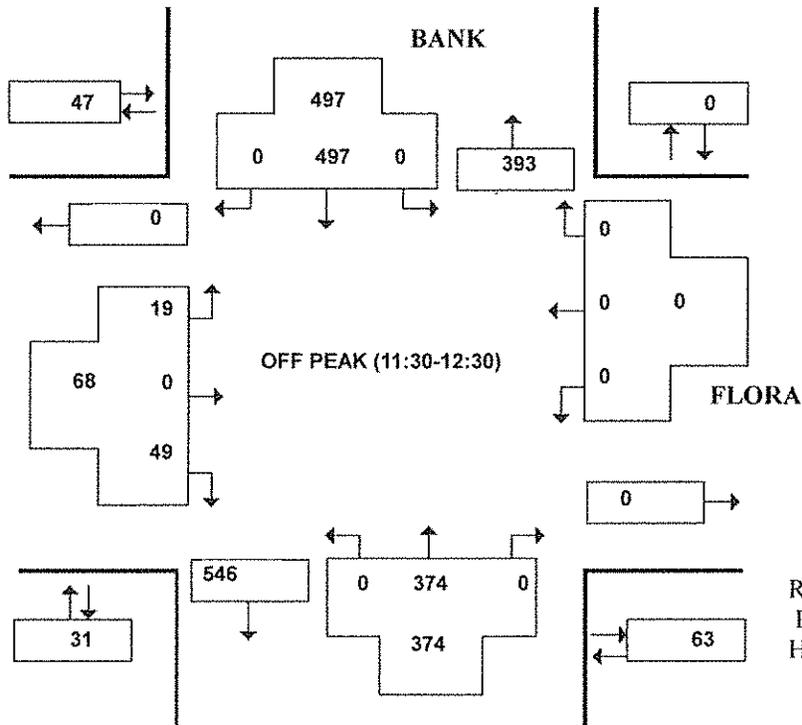
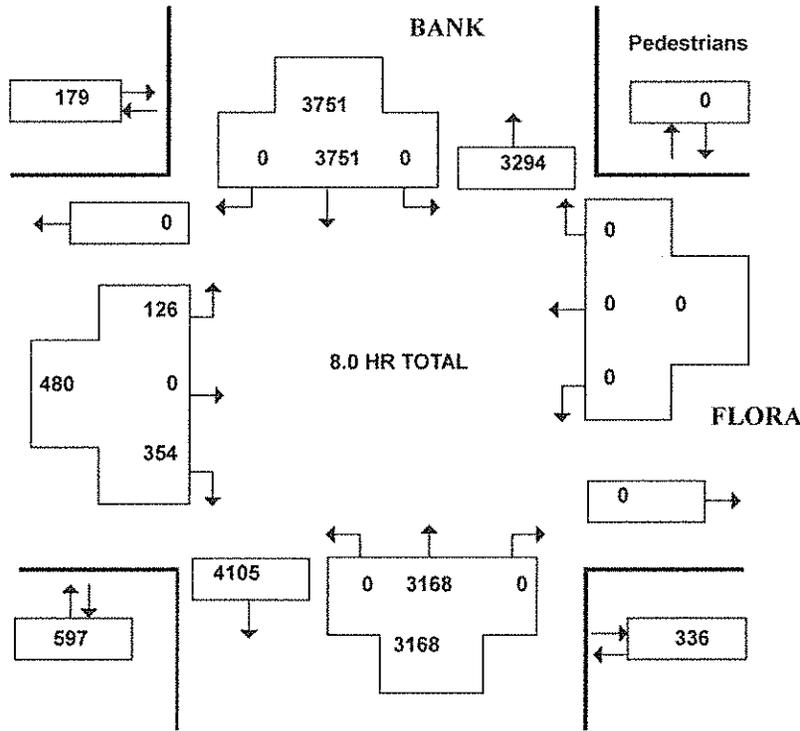
Current Peak Hour Traffic Volumes

BANK ST and FLORA ST
(ULRS Listing BANK & FLORA)

Survey Date: Tuesday 7 August 2012
 Conditions: dry
 Start Time: 0700

Total Observed U-Turns
 Northbound: 0 Southbound: 0
 Eastbound: 0 Westbound: 0

AADT Factor
 Tuesday in August is
 0.9



Refer to Summary
 Page for Survey
 Hours.

