

April 13, 2018

HIP Developments Inc.
700 Rupert Street
Waterloo, ON N2V 2B5

Attn: Mr. Joel Doherty:

Joel.Doherty@hipdevelopments.com

**Re: 70 King Street North - Waterloo
Pedestrian Wind Assessment – Drawing Review & Addendum
Novus File No. 17-0036**

Dear Mr. Doherty:

At the request of HIP Developments Inc., this letter by Novus Environmental Inc. (Novus) provides our opinion on the potential affect the recent design changes to the proposed 70 King Street North development in Waterloo may have on the pedestrian wind conditions in the surrounding area. This letter is in the support of the re-submission for the Zoning By-Law Amendment (ZBA) application. Novus originally conducted a Pedestrian Wind Assessment in late 2017 for HIP Developments Inc. Our report of October 31, 2017 summarized the pedestrian wind comfort conditions surrounding the proposed development.

Our understanding is that the design of the 70 King Street West development has been modified since our original assessment. Updated architectural drawings (dated March 28, 2018) were compared to the drawings used for the original desktop assessment conducted in October 2017. In terms of potential influences on pedestrian wind conditions, the following relevant difference were noted between the two sets of drawings:

- Previously, Tower A was 16-storeys (58m) tall and Tower B was 22-storeys (77m) tall. Now, Tower A is 11-storeys (46m) tall and Tower B is 22-storeys (79m tall).
- The four-storey podium height was previously 23m; the podium height is now 21m.
- Reconfiguration to the layout of the ground floor plan has resulted in a shifting of entrances along King Street. For instance, the main entrance to Tower A moved slightly north and additional commercial entrances were added near the southwest corner.

- A curved facade has been added to the podium on Levels 2 through 4 along the west, north and east facades and a saw-tooth edge has been added along the south facade of these floors.
- The tower footprints have been modified from rectangular to trapezoidal. The towers have also shifted slightly atop the podium.
- The Level 5 amenity space has been reconfigured, removing most of the amenity space on the east portion of the podium. The amenity space is now between the towers, as well as along the north, west and south facades of Tower A.
- Outdoor amenity space is now included on the south side of Tower A at Level 5.
- A two-storey connection has been added between the two towers on Levels 10 and 11, at the north side of the towers.

From a wind perspective, the most significant change is the increase to the difference in height between Towers A and B, as well as the inclusion of a mass connecting the towers at Levels 10 and 11. By enlarging the size of the west facade of Tower B exposed to the prevailing westerly winds, more wind flows will be directed downwards on to the podium and into the landscape space on the south side of the podium. In addition, the mass connecting the towers will “squeeze” northwesterly winds beneath it, creating local accelerations between the towers. Thus, wind conditions in the landscaped space on the south side of Level 5 are expected to be comfortable for standing in the summer and leisurely walking in the winter. Similar wind conditions are expected on the north terrace on Level 5. On both terraces, landscaping, wind screens, and/or other terrace furniture can be included in order to improve wind conditions to be comfortable for sitting the summer.

The remaining alterations (such as the relocation of doors, the altered tower footprints, and the undulation of the podium facade) will have negligible influence on overall wind conditions at grade. Thus, the wind conditions described in our October 31, 2017 report are still applicable for the grade surrounding the proposed development. For instance, wind conditions at the northwest corner of the development (where the renderings show potential patio space) wind conditions are still expected to be conducive to standing in the summer and leisurely walking in the winter. Should the design team require a more quantitative opinion of wind conditions in this area, we recommend conducting additional analysis prior to Site Plan Approval.

Should you have any questions or comments, please feel free to contact me.

Sincerely,
Novus Environmental Inc.

Tahrana Lovlin, MAES, P.Eng.
Specialist, Microclimate

