

PRELIMINARY RESULTS EASTGATE SQUARE 75 CENTENNIAL PARKWAY NORTH

HAMILTON, ONTARIO

AI CFD PEDESTRIAN WIND COMFORT ASSESSMENT

PROJECT #2300777

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SUBMITTED TO

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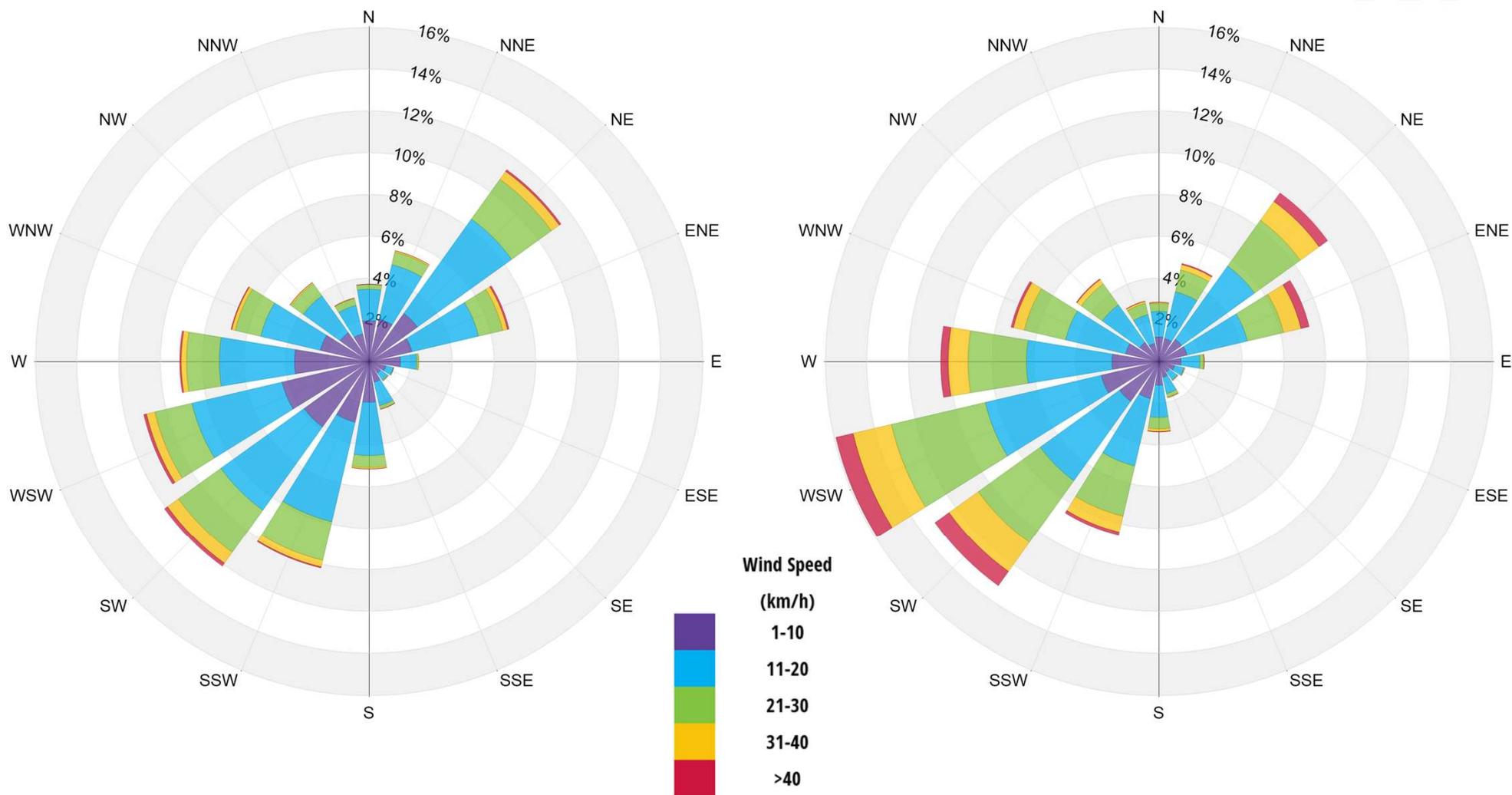


Aerial View of the Existing Site and Surroundings
Source: Google Earth

AI for Wind Simulation

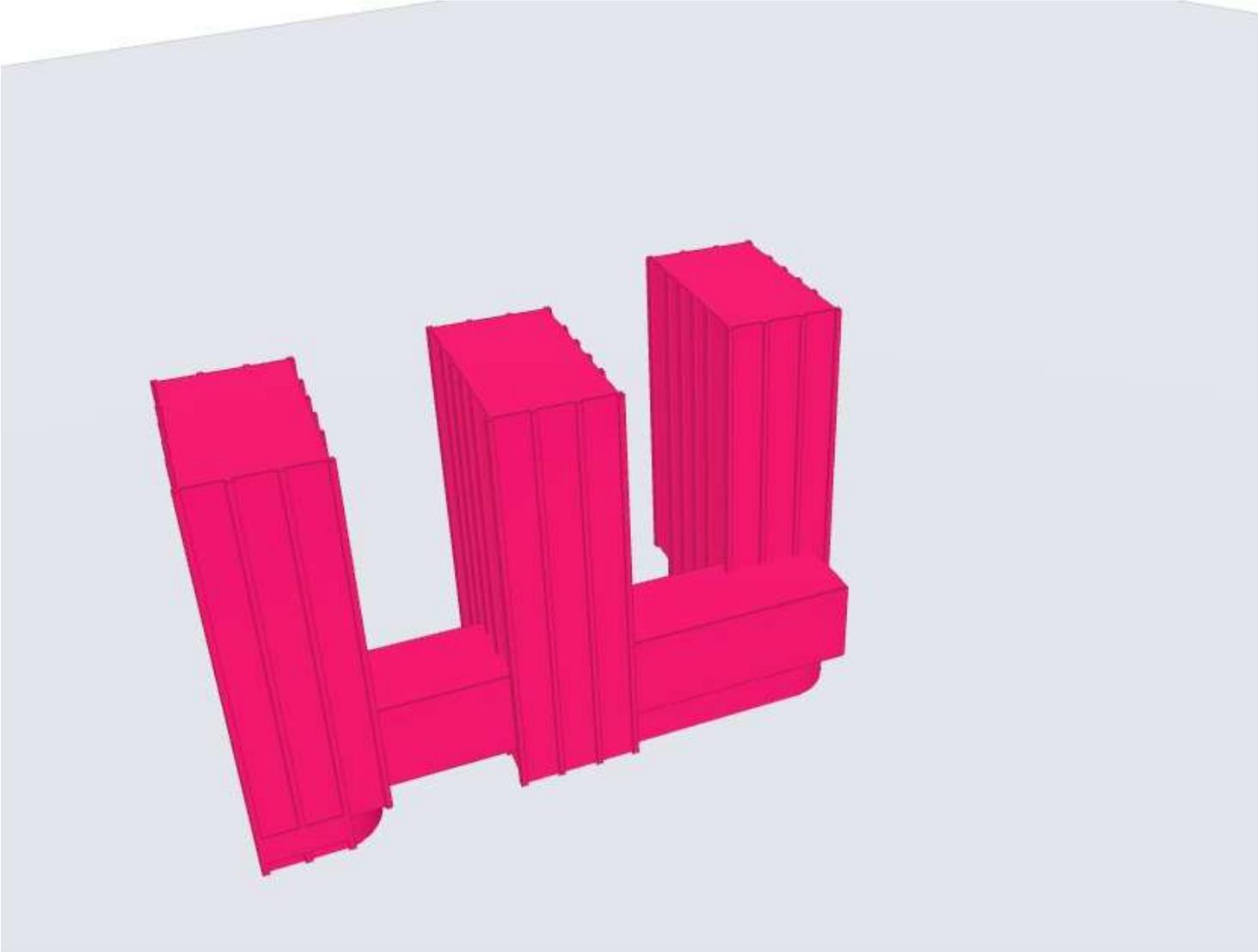
AI Orbital Stack is a machine learning tool developed by RWDI and trained using 50 years of project data to generate an early prediction of the problematic areas across the entire study domain. The AI tool allows for the local surrounding buildings to be acknowledged in the predictions, as well as the approaching atmospheric boundary layer. The tool is able to infer the results from its database to create estimates of wind comfort conditions at an appropriate level of accuracy for this level of analysis.

Wind safety issues, which relate to transient, higher-speed gusts, are discussed qualitatively, based on the AI predictions and our extensive wind-tunnel experience for similar projects. In order to quantify the transient behavior of wind and refine any conceptual mitigation measures, a more detailed assessment would be required using either boundary-layer wind tunnel or transient computational modeling.



Directional distribution of wind approaching Hamilton International Airport (1994-2024)

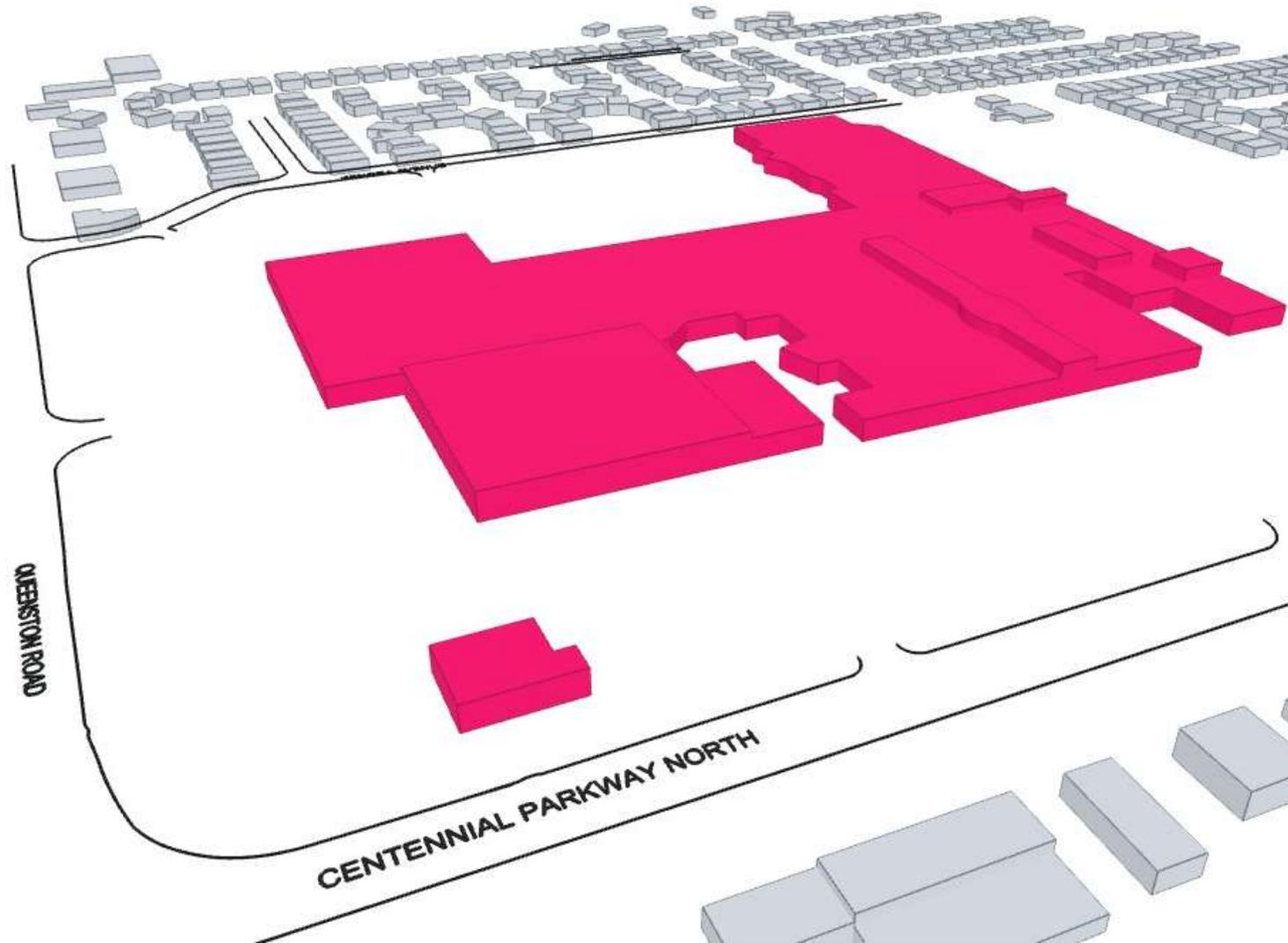
RESULTS



Computer model of the building

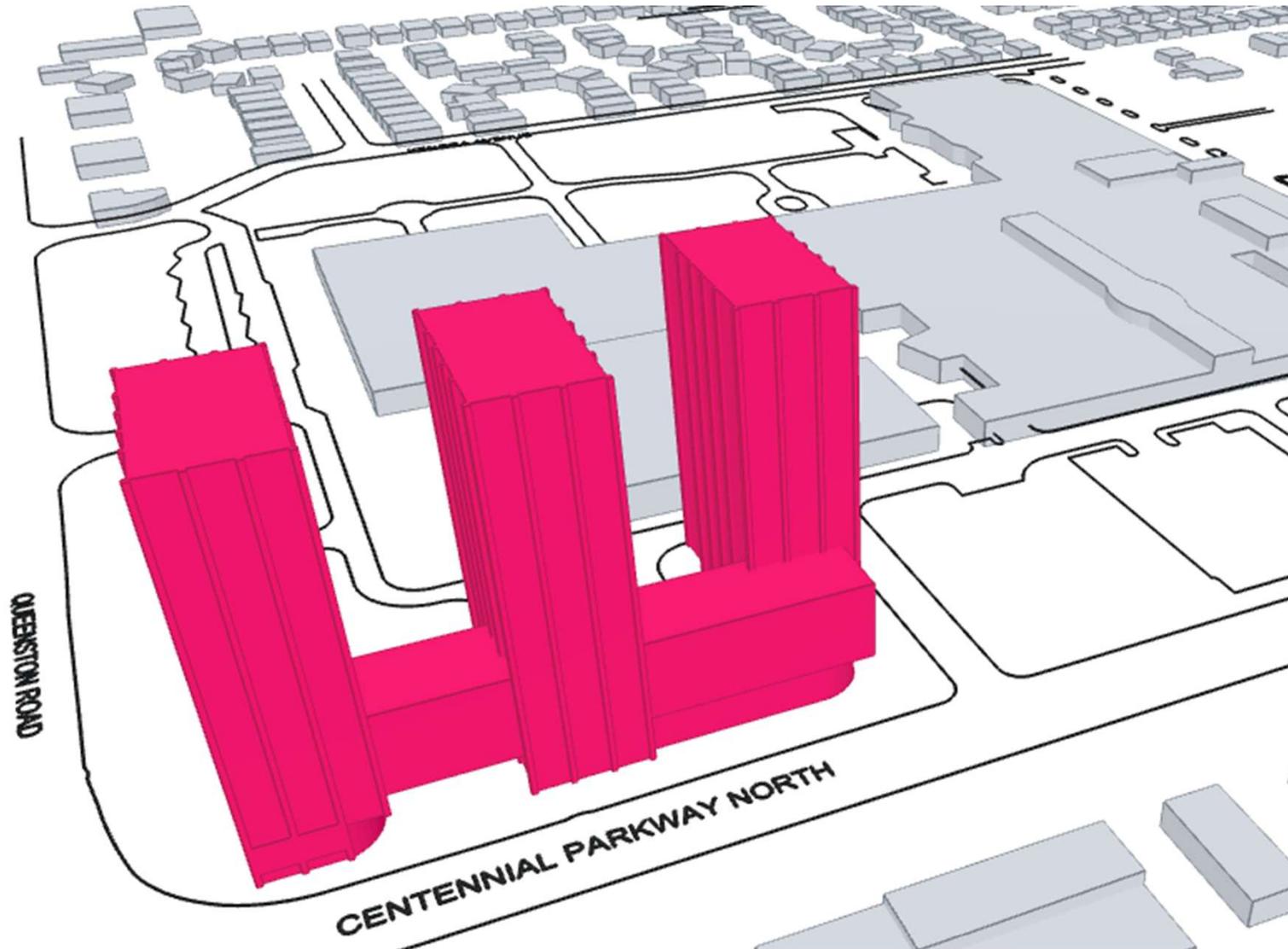


RESULTS



Computer Model of The Surrounds – Existing

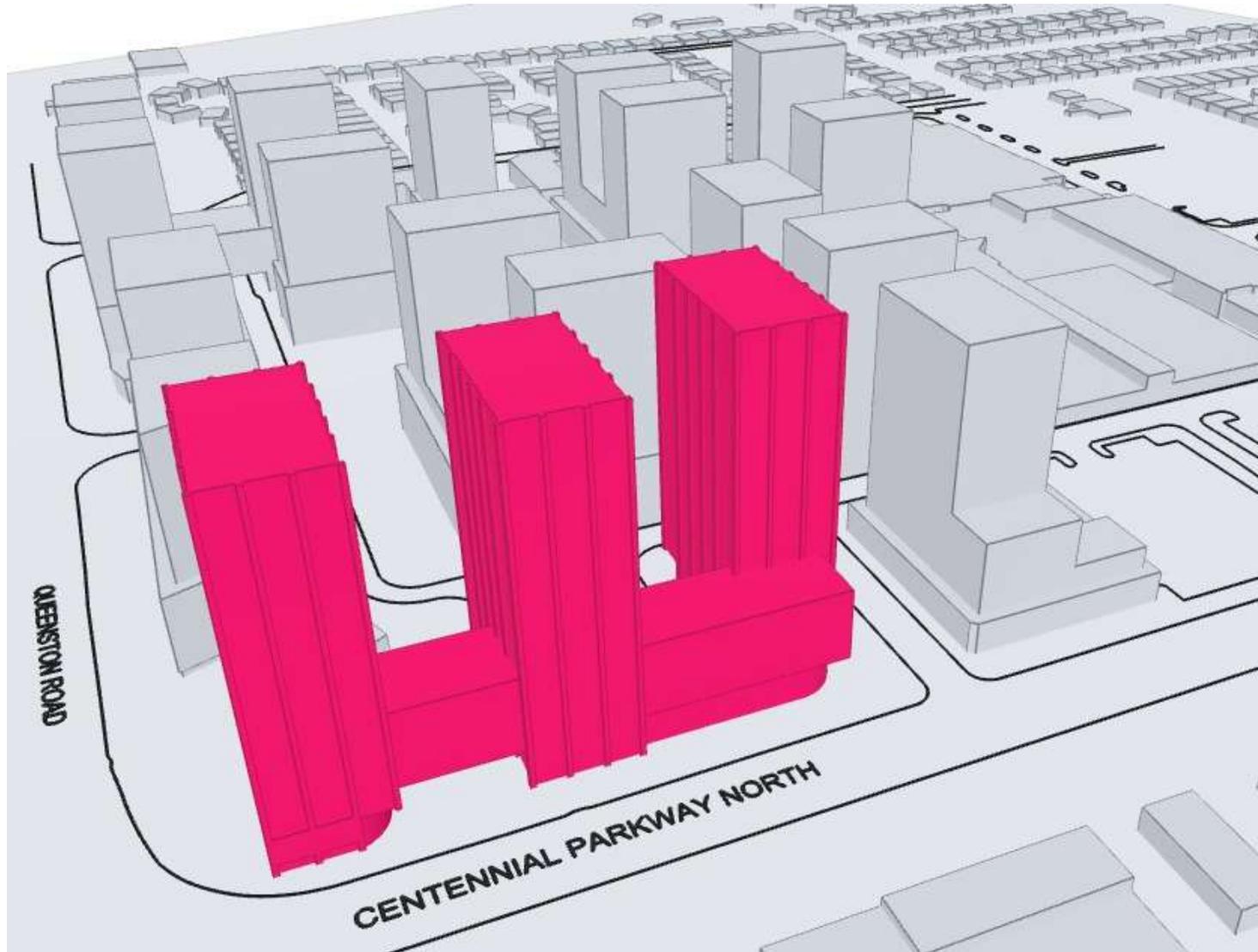
RESULTS



Computer Model of The Surrounds - Existing + Phase 1/Block M



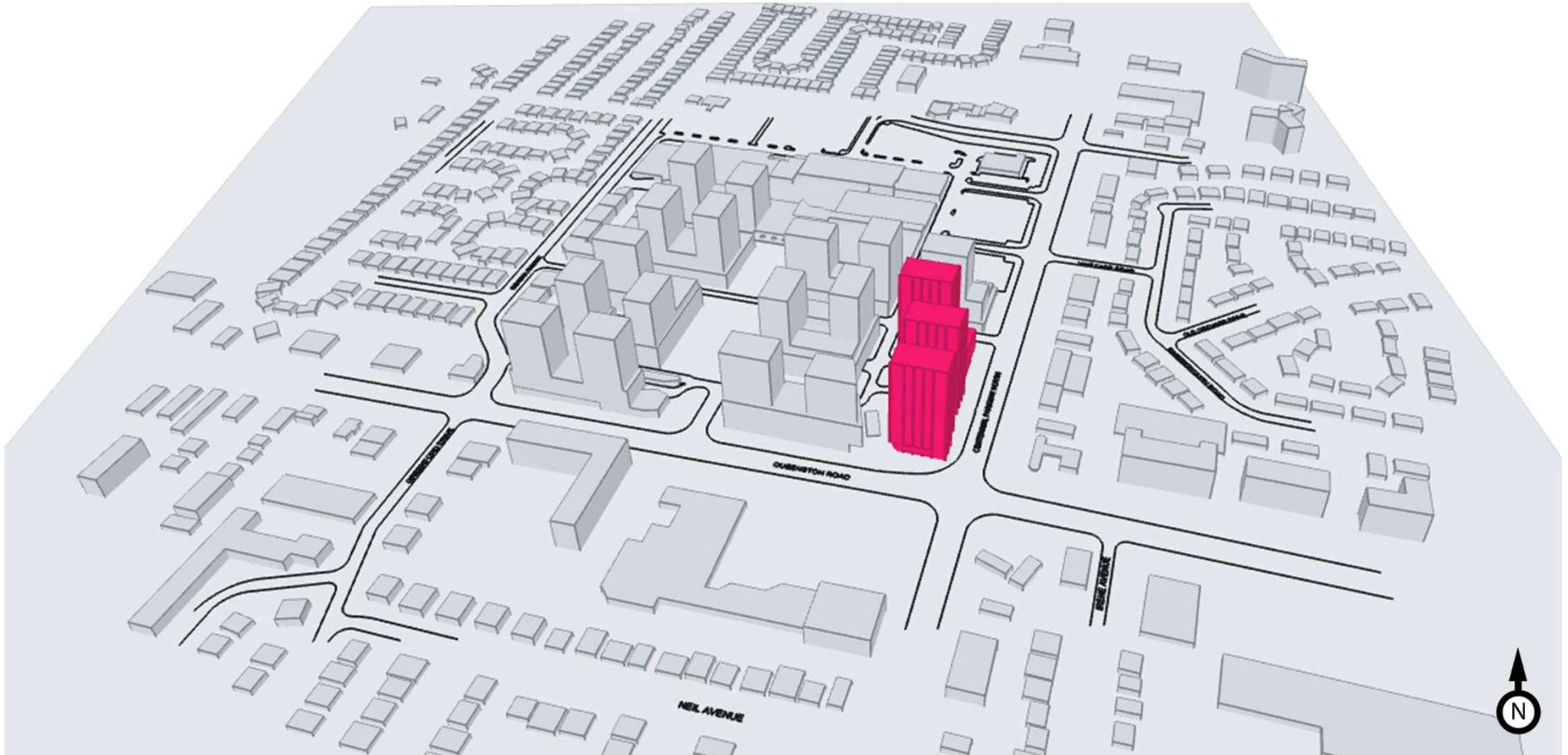
RESULTS



Computer Model of The Surrounds – Existing + Phase 1/Block M and Full Masterplan

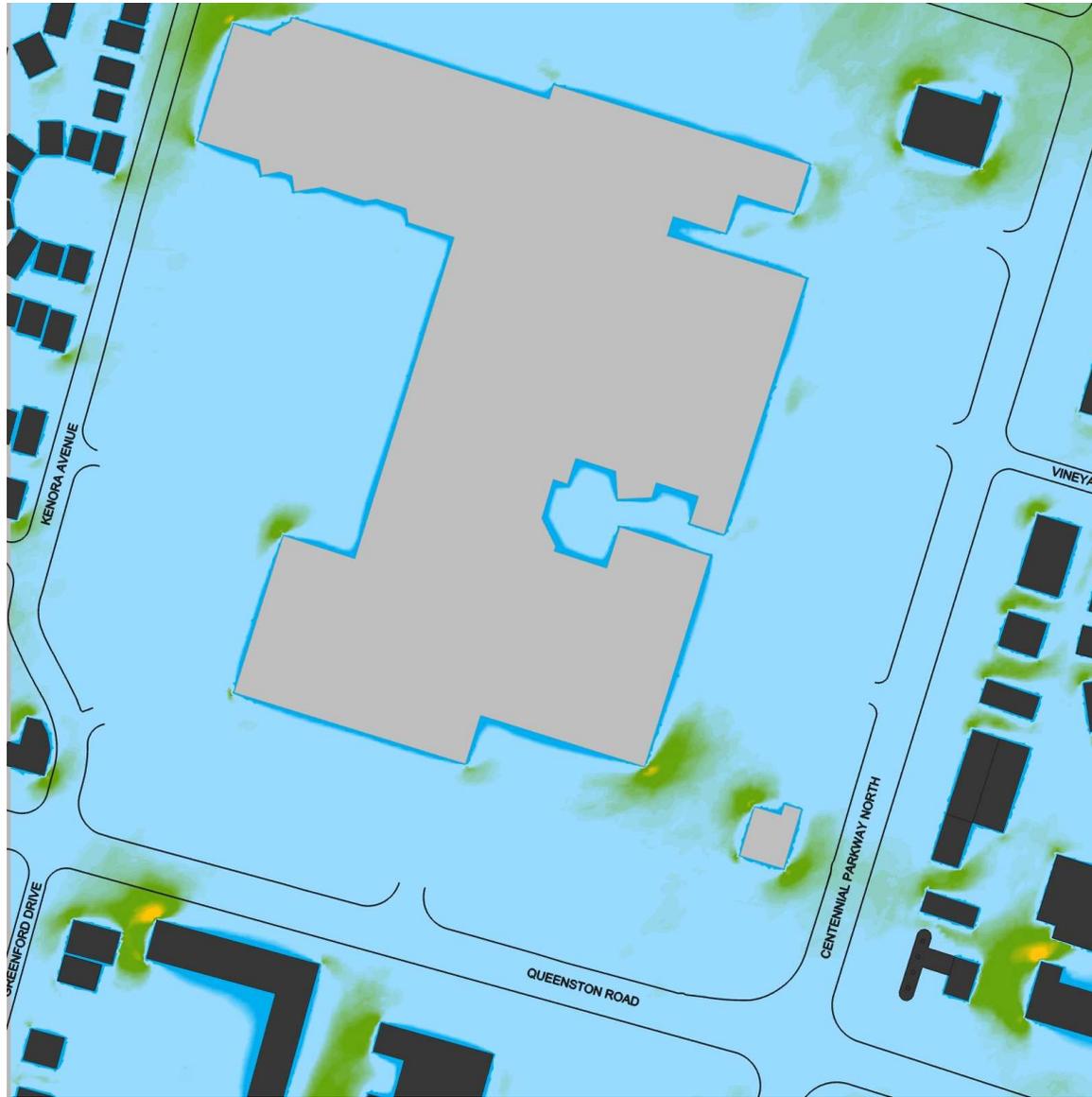


RESULTS



Computer Model of The Surrounds – Existing + Phase 1/Block M and Full Masterplan

RESULTS

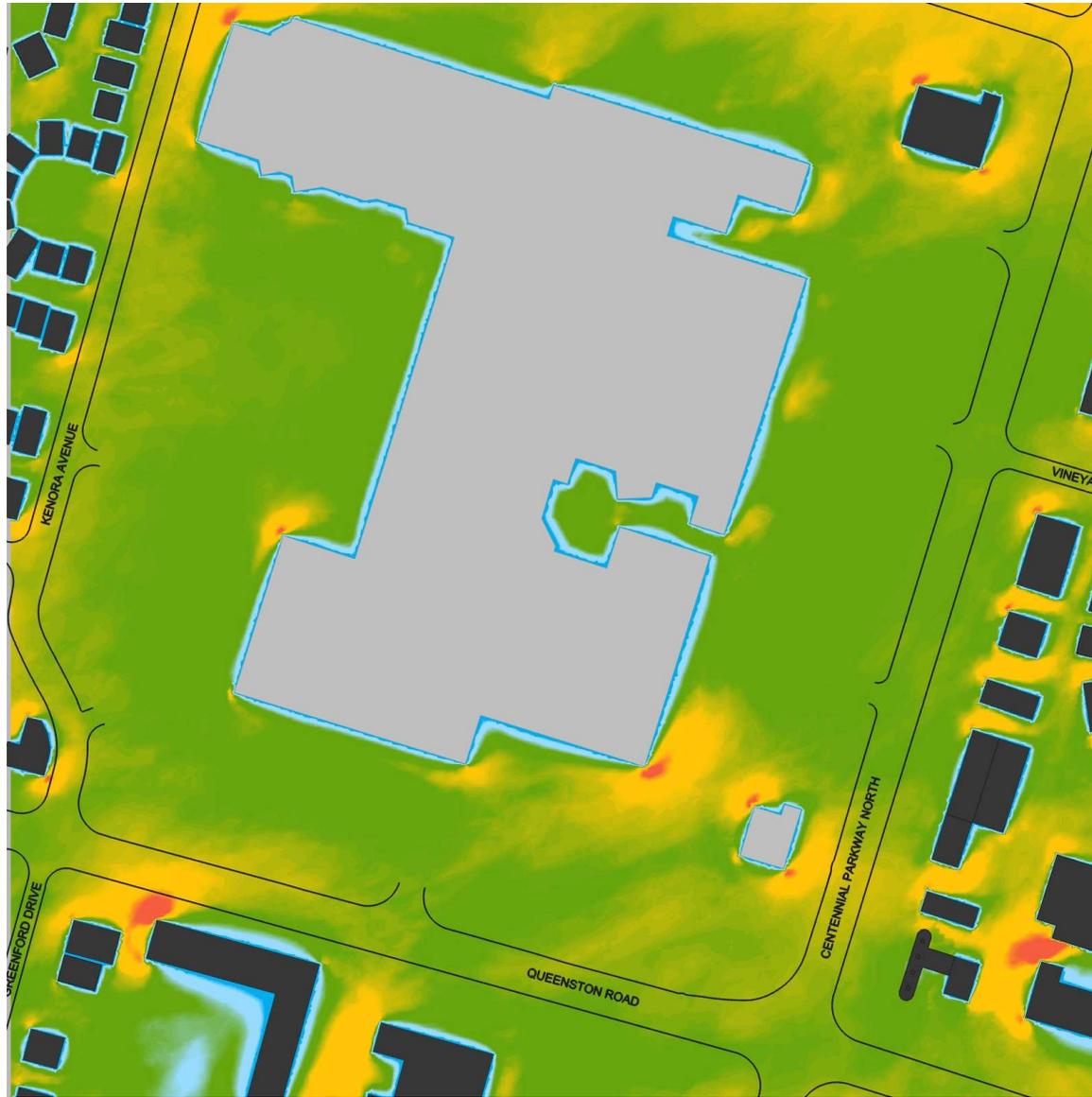


COMFORT: SITTING STANDING STROLLING WALKING UNCOMFORTABLE

Predicted wind conditions – Existing - Summer



RESULTS

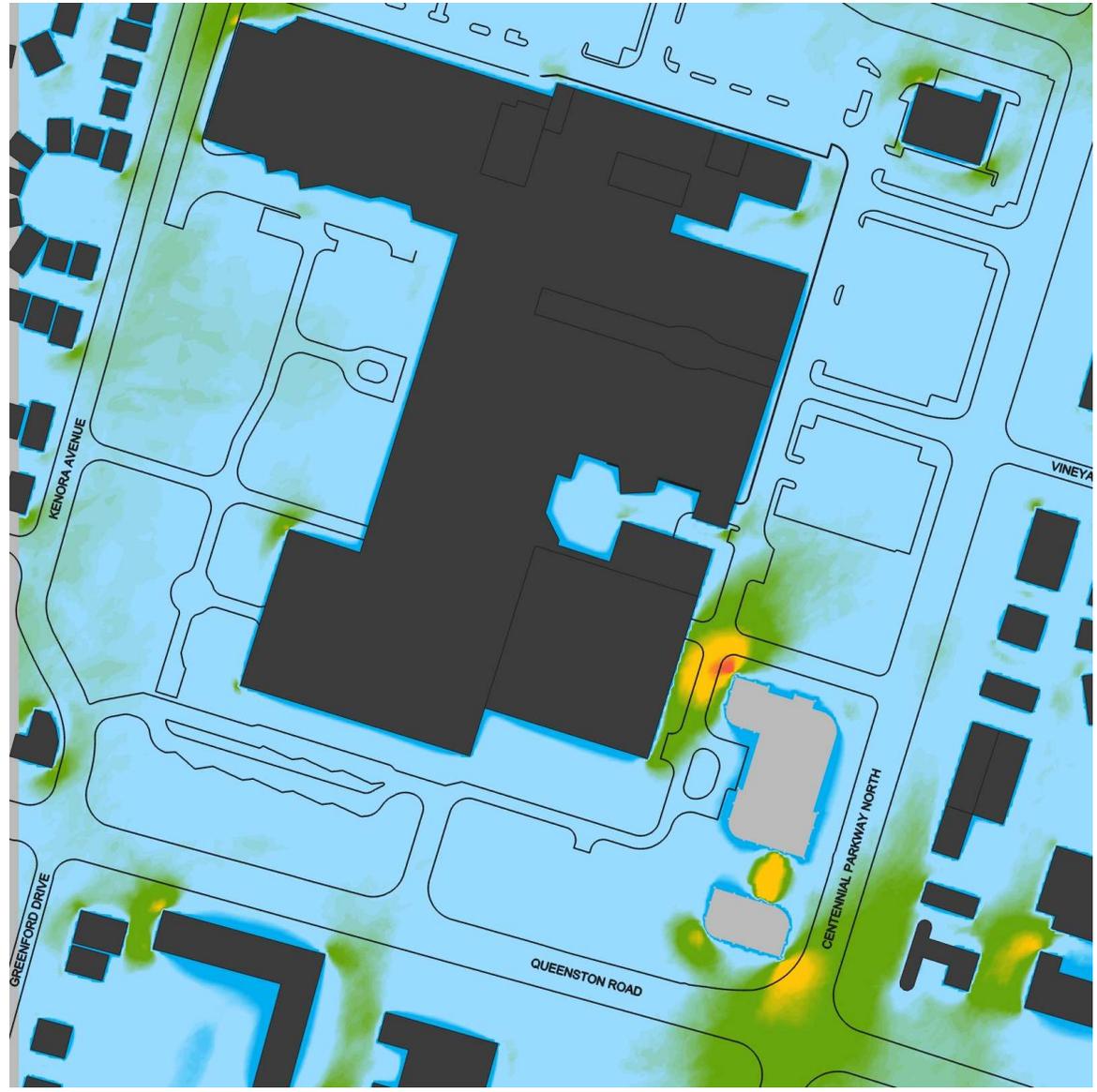


COMFORT: SITTING STANDING STROLLING WALKING UNCOMFORTABLE

Predicted wind conditions - Existing - Winter



RESULTS

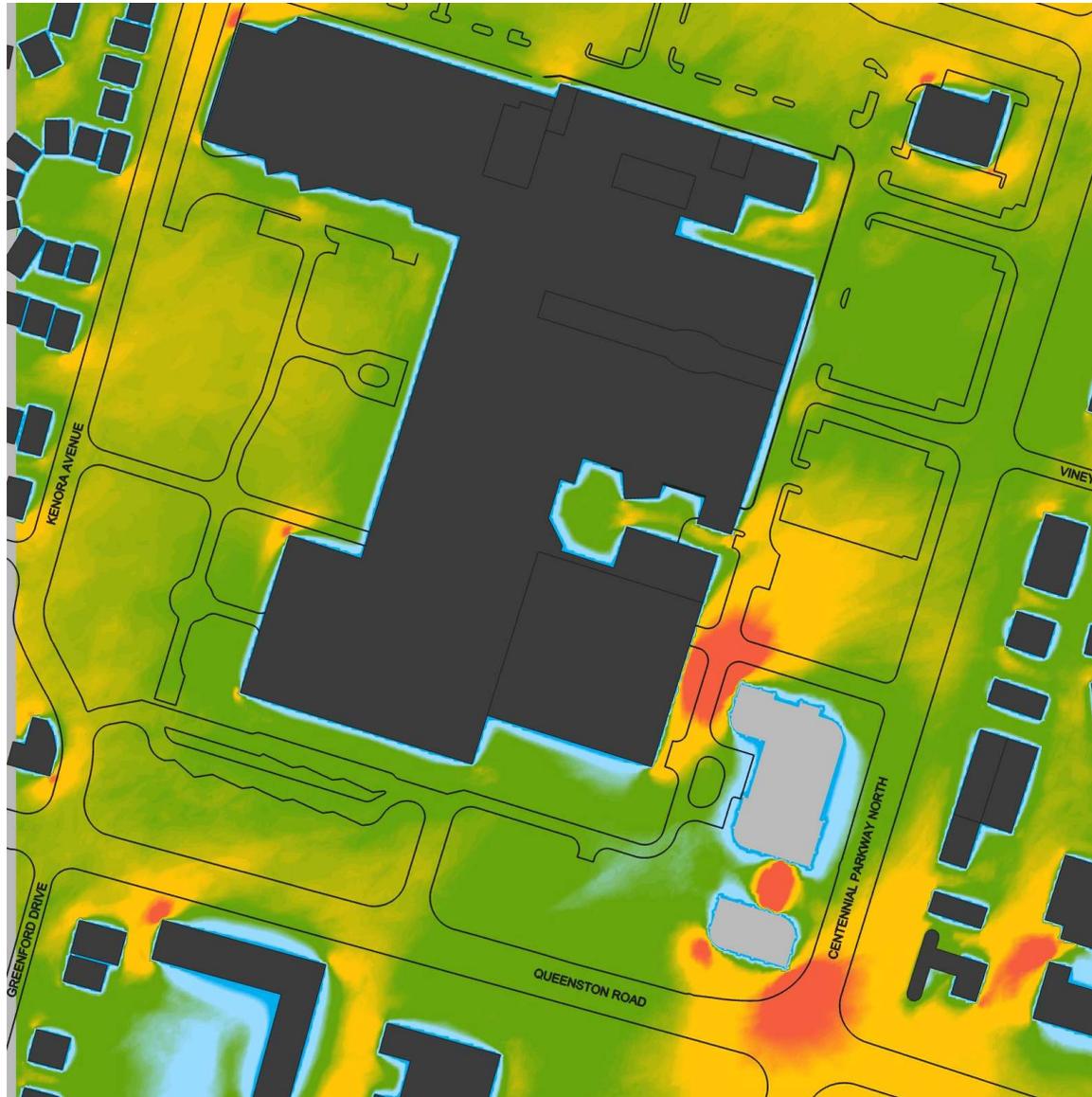


COMFORT: SITTING STANDING STROLLING WALKING UNCOMFORTABLE

Predicted wind conditions – Existing + Phase 1/Block M - Summer



RESULTS

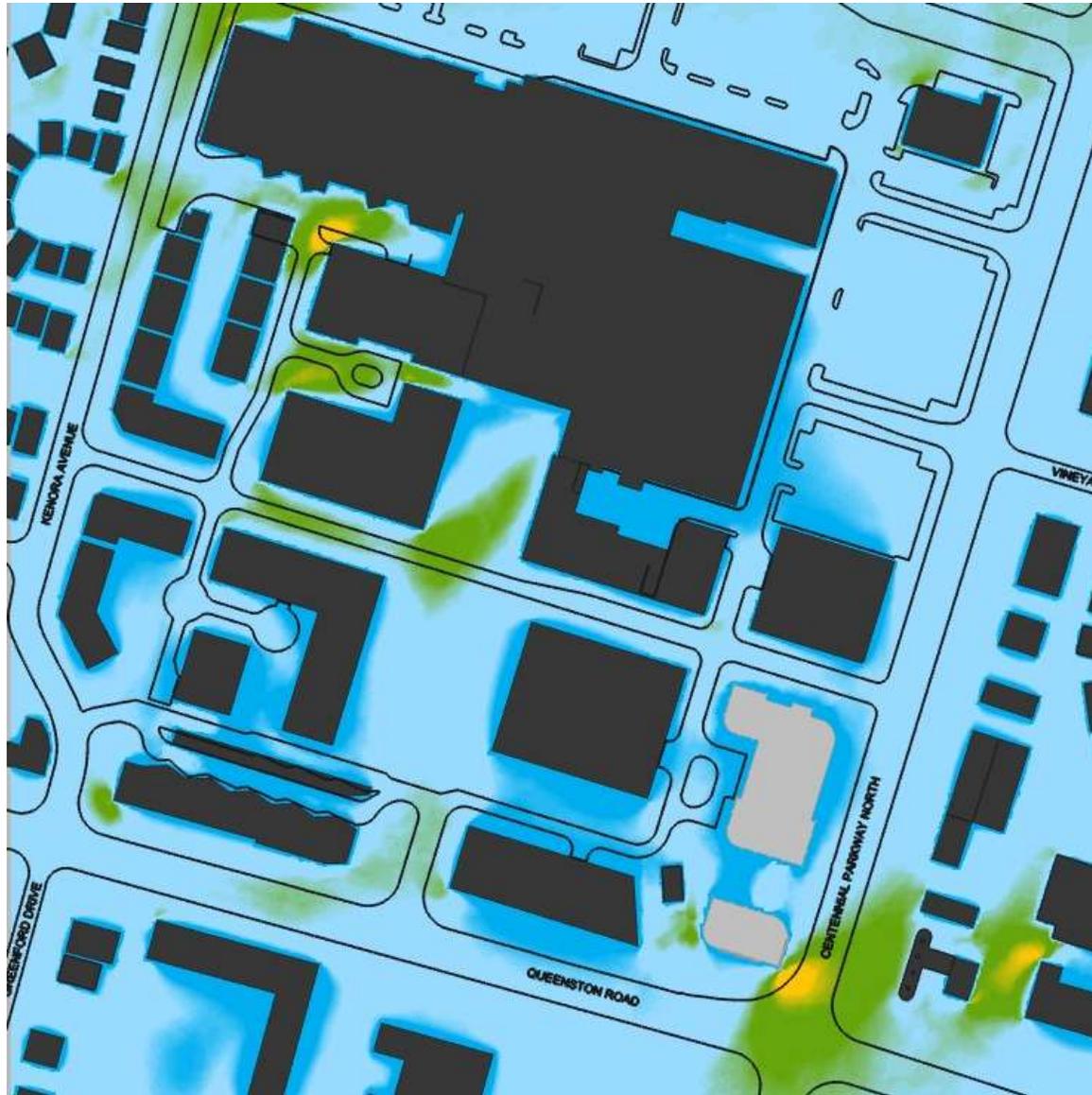


COMFORT: SITTING STANDING STROLLING WALKING UNCOMFORTABLE

Predicted wind conditions – Existing + Phase 1/Block M - Winter



RESULTS

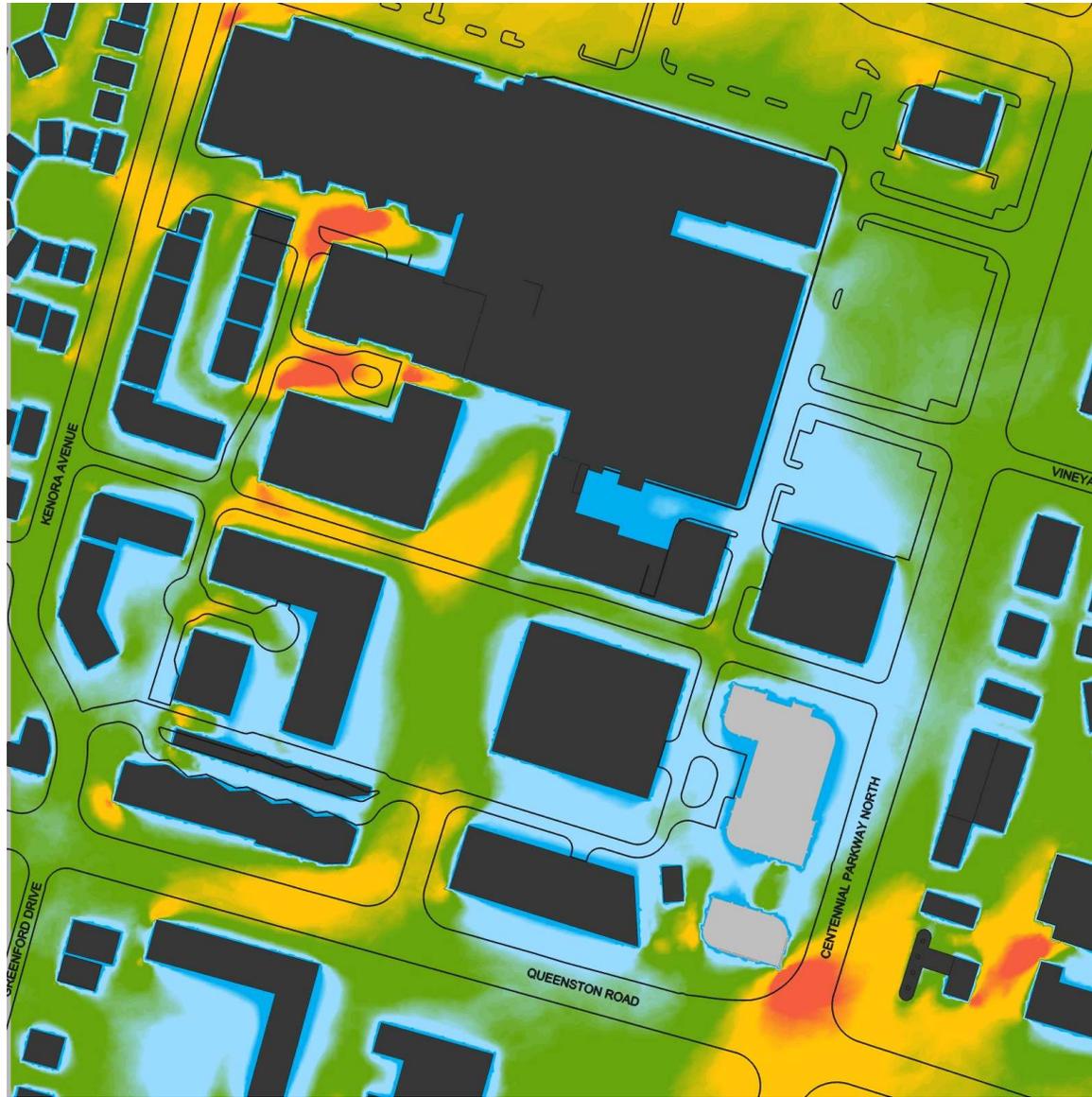


COMFORT: SITTING STANDING STROLLING WALKING UNCOMFORTABLE

Predicted wind conditions – Existing + Phase 1/Block M and Full Masterplan - Summer



RESULTS



COMFORT: SITTING STANDING STROLLING WALKING UNCOMFORTABLE

Predicted wind conditions – Existing + Phase 1/Block M and Full Masterplan – Winter

