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DESIGN IMPACT ANALYSIS

PROPOSED DEVELOPMENT

175 Catherine Street South
Hamilton, Ontario

KNYMH File # 21039

Prepared by:
KNYMH INC.

Date: September 11, 2023

DESIGN IMPACT ANALYSIS

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DOCUMENT REVISION HISTORY:

Version	Revision Date	Revision Summary	Tracking
1.0	2023.09.11	ISSUED: Initial report	1139.247

DISCLAIMER:

The Design Impact Analysis involves subjective analysis and exploration of design concepts and their potential impact. The interpretations, opinions, and conclusions presented within the report are subjective and based on individual perspectives. They do not represent universally accepted design principles or practices.

While KNYMH strives to provide accurate and up-to-date information, we make no warranties or representations regarding the completeness, accuracy, reliability, or suitability of the information. The information may contain errors, omissions, or inaccuracies, and we disclaim any liability for such instances.

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SECTION 1.0 - DESIGN OBJECTIVE

The objective of this report is to analyse the impact of a proposed development upon the adjacent properties, streets, and public spaces at the above noted location. We will discuss and comment upon the impact associated with the architectural form and massing of the proposed development upon the adjacent properties.

The main goals of the design impact analysis are:

- 1) Assess and quantify the potential impacts on the surrounding environment and stakeholders, such as residents, businesses, and public spaces.
- 2) Identify potential conflicts or concerns and inform design strategies to mitigate the impact effectively.

SECTION 2.0 - DESIGN EVALUATION METHODS

The graphic analysis which we present within this report is developed using computer generated modelling software in conjunction with satellite imagery, geospatial and survey information. Geospatial information is derived from a classified lidar point cloud.

North Orientation: The satellite imagery is aligned with True North using a variant of the original Mercator projection that is oriented along the Earth's polar axis, and the massing model is centred upon the UTM Grid North at the latitude and longitude specified. We have provided graphics along with a Site Plan and Satellite imagery of the surrounding area.

The visual impact photography of existing conditions presented in this analysis is based on a stationary perspective that would be experienced by a person standing at various station points / viewpoints within the public realm. This report may feature photographs from varying times of year due to time constraints. It is desirable to use photographs taken in winter during 'leaf-off' conditions for the purposes of illustrating worst case scenario and this is a consideration in the analysis of the site.

SECTION 3.0 - SITE CONTEXT

Location: Hamilton, Ontario, Canada

Geographic Coordinates:

Latitude: 43d 14' 30" N

Longitude: 79d 51' 00" W

SITE

The property is located in Hamilton, Ontario, northeast of the intersection between Catherine Street South and Forest Avenue. The subject land is a combination of two (2) lots, the property is currently zoned as 'E-3' High Density Multiple Dwellings and features an existing eleven (11) storey building that will be included as part of the proposed development. The combined area is 0.4531 hectares.

Neighbouring properties include:

2.1) TO THE EAST AND NORTHEAST (Study Area 1): The property abuts a high density residential area comprising primarily of three (3) storey dwellings. The adjacent property at #125 Forest Ave. features an apartment building with an approx. height of 31.37m. Further east is Walnut Street which features a pedestrian sidewalk along both sides.

2.2) TO THE NORTH AND NORTHWEST (Study Area 2): The property abuts Young Street which features a pedestrian sidewalk on both sides. Further north is a high density residential zone for the properties with frontage along Catherine Street. There is a Low density zoned area for the properties with frontage along Young & Augusta Street, this area is comprised primarily of two-three (2-3) storey dwellings. Both Young Street and Augusta Street features pedestrian sidewalks along the north and south side.

2.3) TO THE WEST (Study Area 3): The property abuts Catherine Street South which features a pedestrian sidewalk on both sides. Further west is a high density residential area comprising primarily of two-three (2-3) storey dwellings with a few buildings in the 30-45m height range.

TOPOGRAPHY

The subject lands and neighbouring parcels generally appear to be uniform in grade. For the purpose of this analysis the proposed development and adjacent properties are represented at the same elevation.

ARCHITECTURAL FORM

The proposed development consists of two (2) buildings upon the subject lands. The proposed development features a condominium building labelled as building type 'A' and an existing 11 storey building type 'B'. Building type 'A' is a twenty-four (24) storey building with a six (6) storey stepped podium that reduces toward Catherine Street.

Refer to "FIGURE 3.1 - SITE CONTEXT MAP" on page 3.

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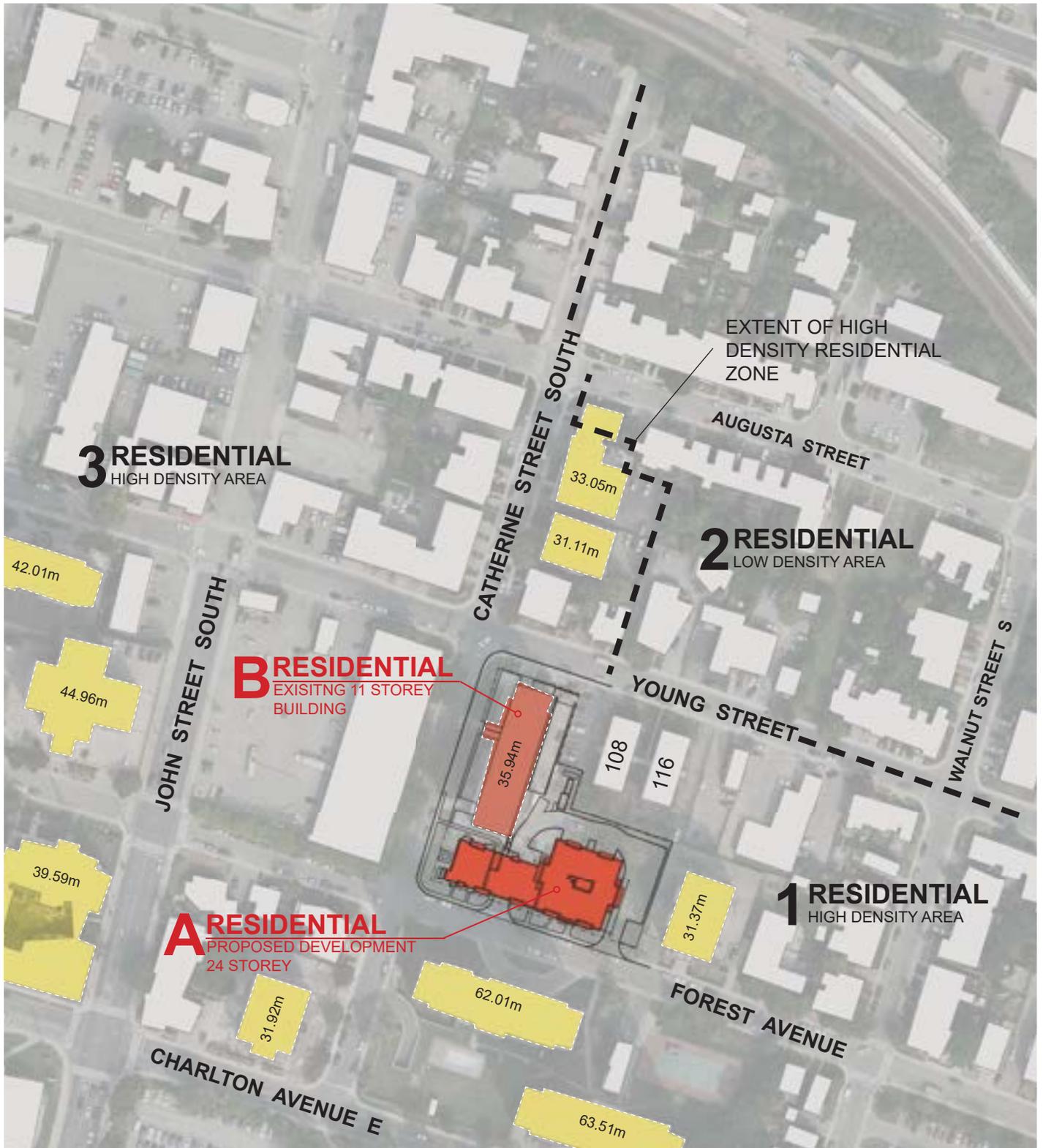


FIGURE 3.1 - SITE CONTEXT MAP

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W



SECTION 4.0 - METHOD OF ANALYSIS

Shadow Impact

Geographic Coordinates: Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W

Standard Time: UTC -5:00

Daylight Savings Time: UTC -4:00

Test Dates and Times: Refer to "APPENDIX 1.0 - SHADOW IMPACT SCHEDULE" on page A1-1

SECTION 4.1 - IMPACT ASSESSMENT CRITERIA

The graphic analysis and impact assessment which we present within this report is developed with the following criteria specified in the:

'Terms of Reference: Development Application Guidelines : Sun Shadow Study Appendix "B31" to report PED22112(d) developed by the City of Hamilton. [October 2022]'

Impact Criteria (Private Realm – Outdoor Amenity):

Shadows from proposed development shall allow for a minimum of 3 hours of sun coverage between 10:00 a.m. and 4:00 p.m. as measured on March 21st.

Impact Criteria (Public Realm – Public sidewalks, Outdoor Amenity):

Shadows from proposed development shall allow for a minimum of 3 hours of sun coverage between 10:00 a.m. and 4:00 p.m. as measured on March 21st.

Impact Criteria (Public Realm – plazas, parks, open spaces, school yards & playgrounds):

Shadows from the proposed development shall allow for a minimum of 50% sun coverage at all times of the day as measured on March 21st.

SECTION 5.0 - GENERAL OBERVATIONS

SECTION 5.1 - SHADOW IMPACT ANALYSIS

A summary of the shadow effect of the proposal upon the surrounding area. This commentary will discuss the impact of the proposed building's shadows upon properties at the north, east and southeast side of the subject property. The impact is studied at the specific time period and assessment criteria noted in SECTION 4.1 - IMPACT ASSESSMENT CRITERIA and APPENDIX 1.0 - SHADOW IMPACT SCHEDULE of this document of the proposed development. The times for this period are under Eastern Daylight Time.

SUN / SHADOW STUDY: (FIGURE A1.1 - SHADOW IMPACT GRAPHICS MARCH 21)

Study Area (3) Impact : Shadow impacts residential properties between John Street and Catherine Street at the beginning of test period, clear of properties by 12:26am test time.

The opposing pedestrian sidewalk on the west side of Catherine Street is clear of shading at 12:26pm test time, the adjacent sidewalk along Catherine clear of impact by 1:26pm.

Study Area (2) Impact : Shadow impacts residential property at #108 Young Street at 12:26pm then #116 Young Street at 2:26pm and continues for the remainder of the test period. No impact observed on the residential properties north of Young Street.

The opposing pedestrian sidewalk on the north side of Young Street is impacted by shading at 2:26pm test time and continues to end of test period. The adjacent sidewalk along Young Street is impacted at 1:26pm test time and continues for the remainder of the test period.

Study Area (1) Impact : No impact observed in study area.

SECTION 6.0 - SUMMARY OBSERVATIONS

REGARDING SHADOW IMPACT OF DEVELOPMENT UPON THE SURROUNDING AREA

The shadow impact on public sidewalks, plazas, parks, school yards and non-residential outdoor amenity areas on March 21.

- The shadow analysis demonstrates during the test periods the public sidewalks will experience long periods of continuous sunlight with no impact from the proposed development meeting and exceeding the criteria of 3 hours between 10:00 a.m. and 4:00 p.m.

The shadow impact on residential amenity spaces on March 21.

- The residential amenity spaces in the surrounding area will experience long periods of continuous sunlight with the exception of #108 Young Street. The rear yard of the residential property at #108 Young Street will experience just over the acceptable criteria of 3 hours between 10:00 a.m. and 4:00 p.m. However, there exist mature deciduous trees in the rear yard of #108 Young Street that currently impact the property in a similar manner.

The shadow impact on of public plazas, parks and open spaces, school yards and playground areas at all times of day on March 21.

- The shadow analysis demonstrates the proposed development is under the maximum 50% area coverage criteria for public parks and school yards during the test periods.

The proposed development presents the ideal building typology for this site and mitigates sun shading impact upon the neighbouring residential properties and the public realm. This building form and orientation optimizes the coverage area to adjacent parks and school yards. Based upon the analysis we suggest that the proposed design will not have a significant negative effect on the surrounding neighbourhood.

In our opinion, this development is compatible with the area and does not have a significant effect on the existing neighbourhood in general.

Sincerely,
KNYMH Inc.

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APPENDIX 1.0 - SHADOW IMPACT SCHEDULE

Test Dates : March 21

Test Times: Hourly intervals starting 1.5 hours after sunrise and ending 1.5 hours before sunset.

Test time interval is based on Solar Noon and terminates at nearest time to period end or start for each of the test dates.

References:

'Terms of Reference: Development Application Guidelines : Sun Shadow Study Appendix "B31" to report PED22112(d) developed by the City of Hamilton. [October 2022]'

Sunrise and Sunset information: <https://www.timeanddate.com/sun/>

MARCH 21	
Sunrise (+1.5)	7:20 AM (8:50)
Sunset (-1.5)	7:33 PM (6:03)
Solar Noon	1:26 PM
Test Times	
	8:26 AM
	9:26 AM
	10:26 AM
	11:26 AM
	12:26 PM
	1:26 PM (SN)
	2:26 PM
	3:26 PM
	4:26 PM
	5:26 PM

FIGURE A1.1 - SHADOW IMPACT GRAPHICS MARCH 21

SUN/SHADOW STUDY: (MARCH 21 • SPRING)

A summary of the Spring shadow effect of the proposal upon the surrounding area. This commentary will discuss the impact of the proposed building's shadows upon properties at the north, east and southeast side of the subject property. The impact is studied at the specific time period and assessment criteria noted in SECTION 4.1 - IMPACT ASSESSMENT CRITERIA and APPENDIX 1.0 - SHADOW IMPACT SCHEDULE of this document of the proposed development. The times for this period are under Eastern Daylight Time. (UTC -4:00)



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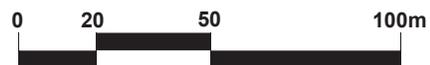
Date: September 11, 2023



MARCH 21, 8:26 AM

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W



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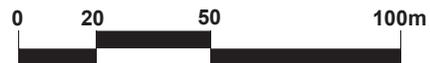
Date: September 11, 2023



MARCH 21, 9:26 AM

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W

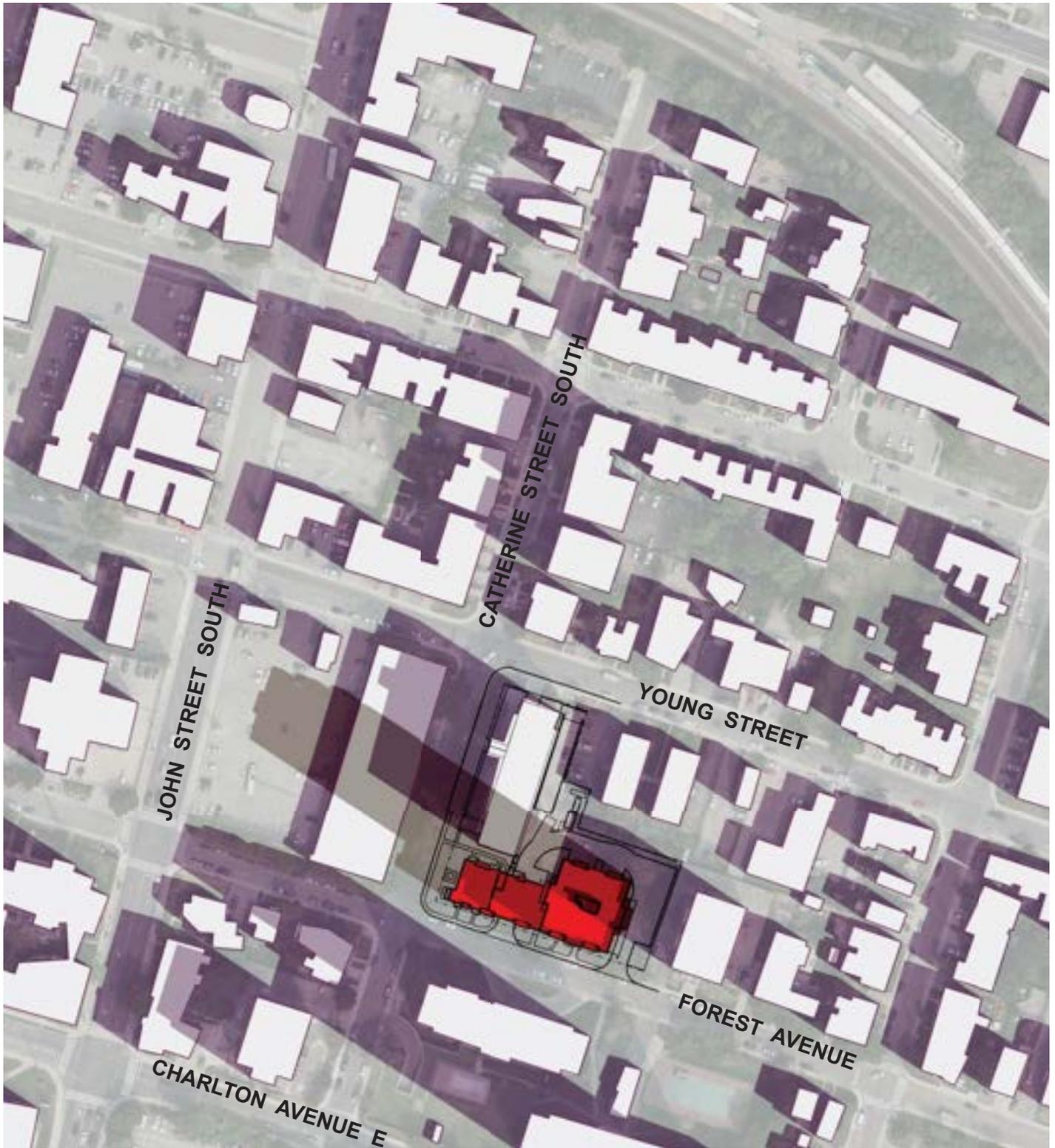


DESIGN IMPACT ANALYSIS

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Date: September 11, 2023



MARCH 21, 10:26 AM

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W

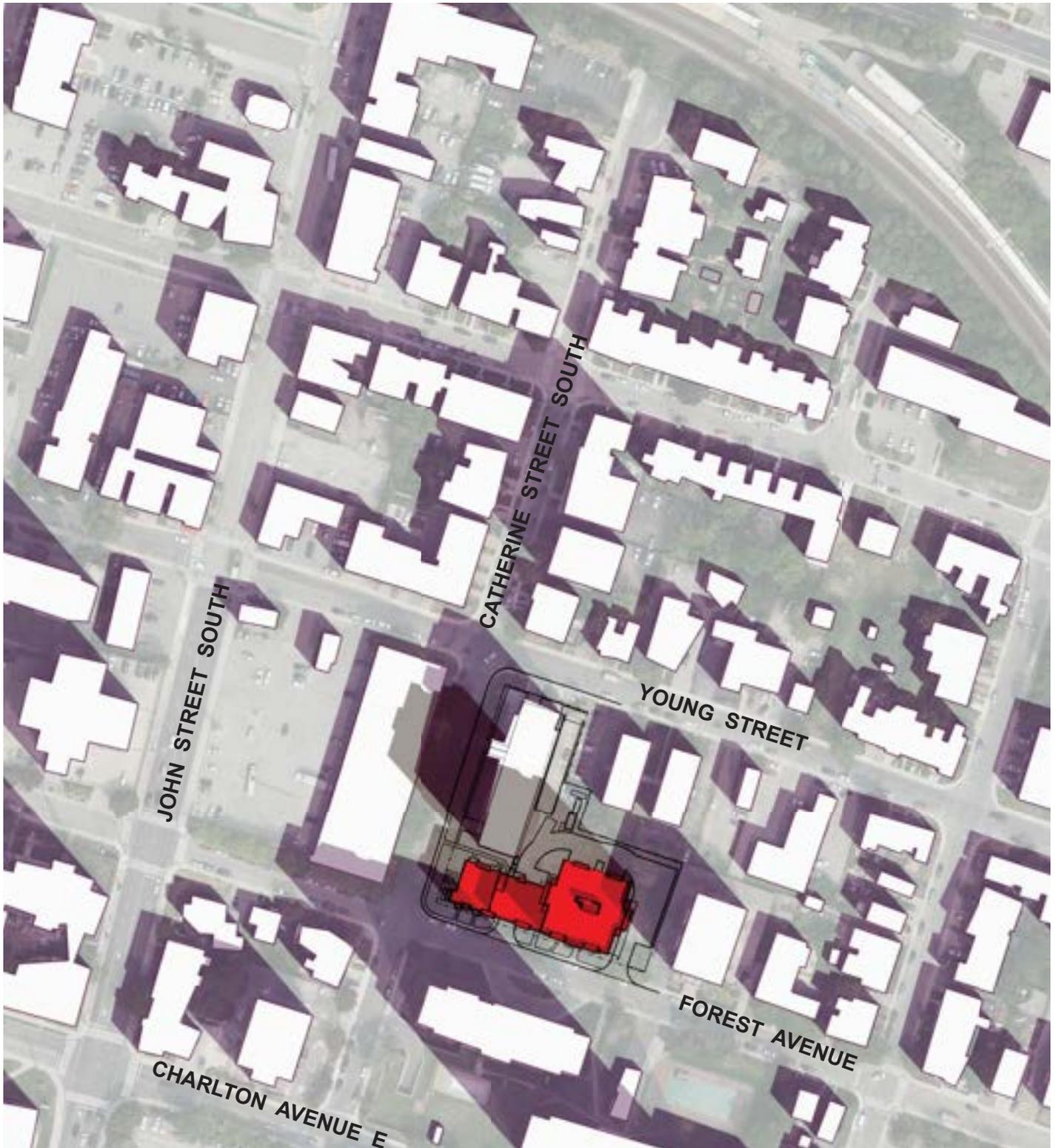


DESIGN IMPACT ANALYSIS

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Date: September 11, 2023



MARCH 21, 11:26 AM

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W

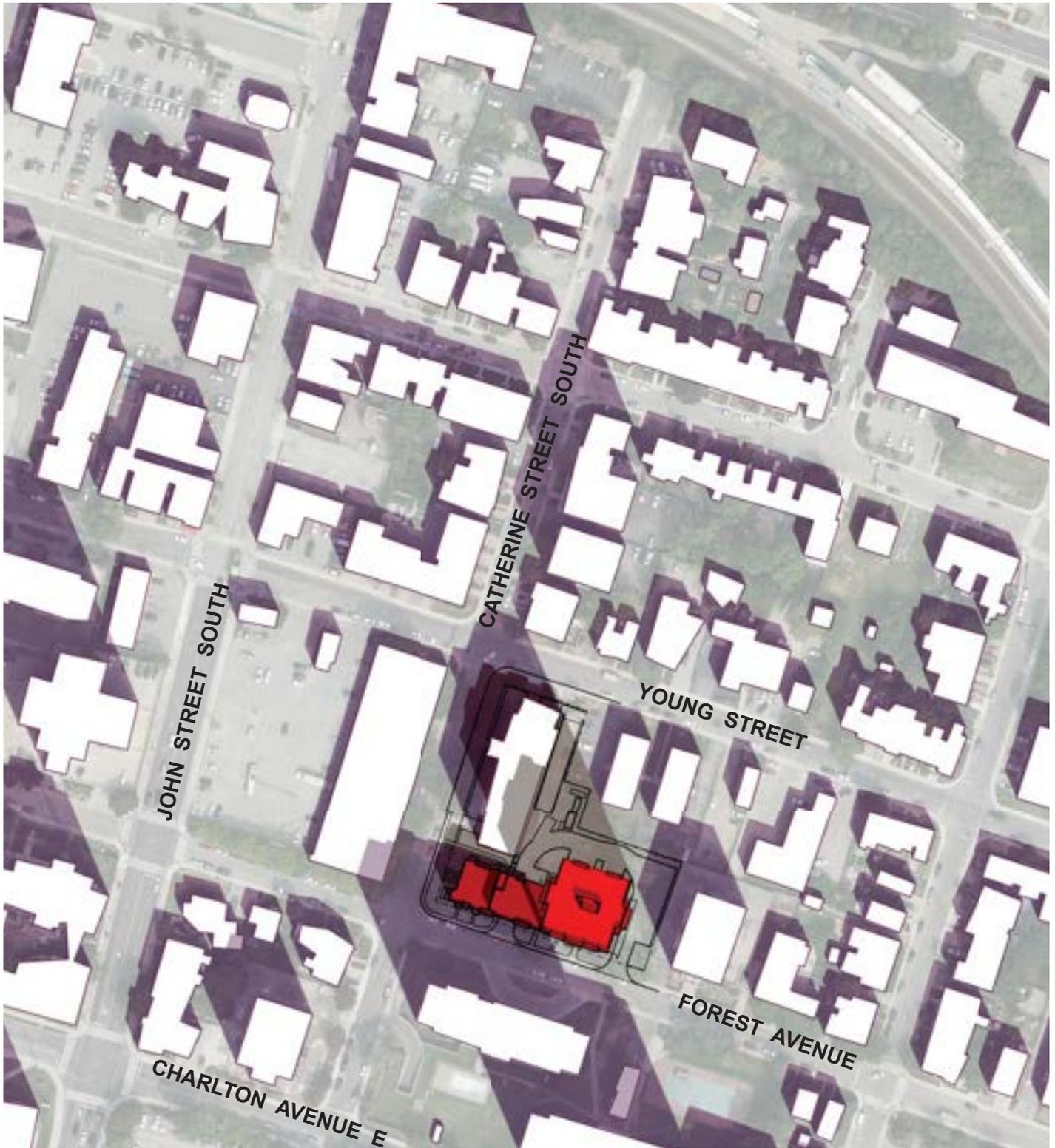


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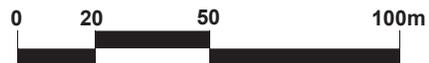
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MARCH 21, 12:26 PM

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W

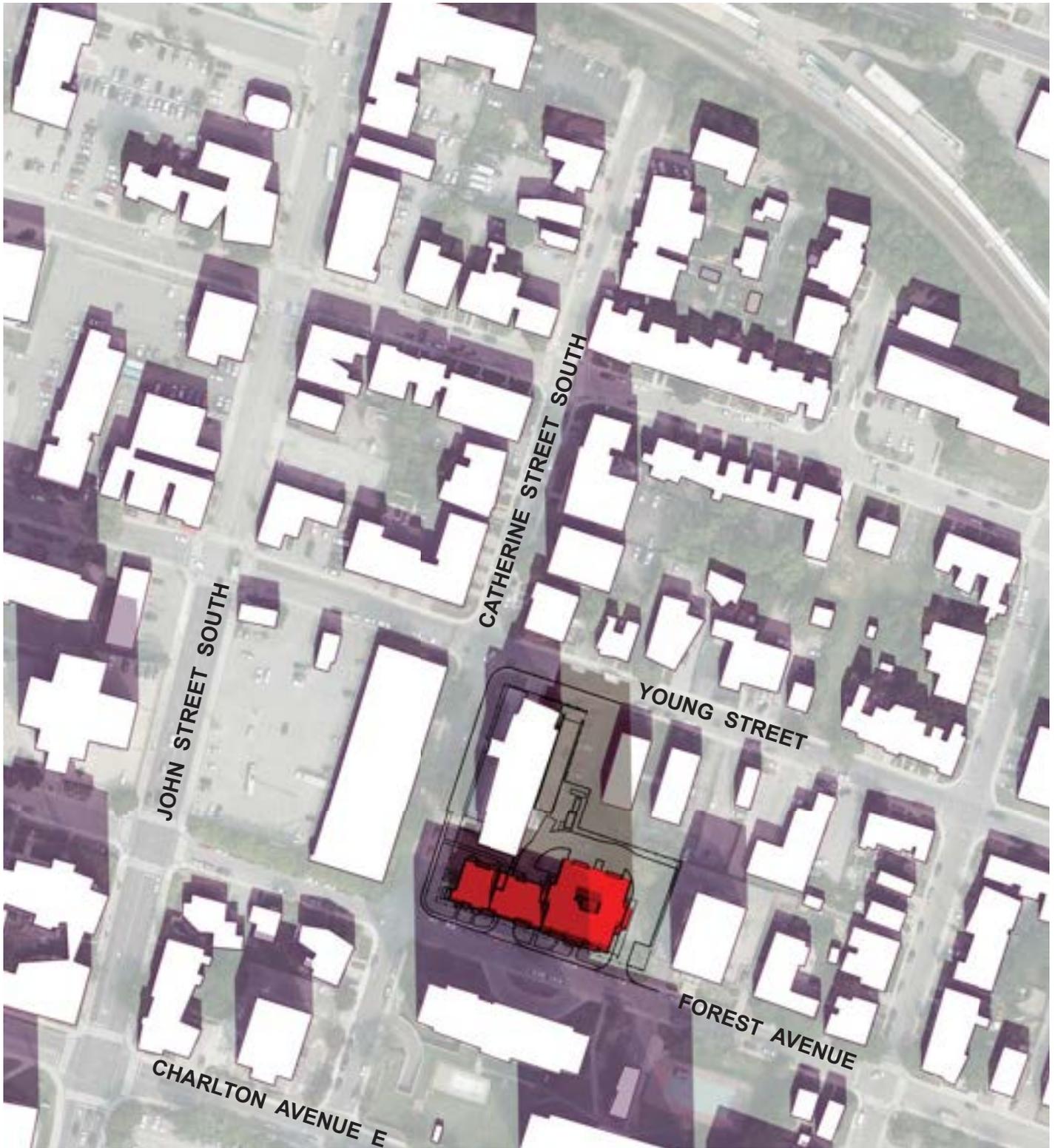


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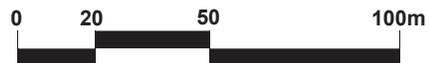
Date: September 11, 2023



MARCH 21, 1:26 PM (Solar Noon)

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W



DESIGN IMPACT ANALYSIS

175 Catherine Street South, Hamilton, Ontario

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Date: September 11, 2023



MARCH 21, 2:26 PM

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W



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KNYMH File # 21039 v.1.0

Date: September 11, 2023



MARCH 21, 3:26 PM

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W

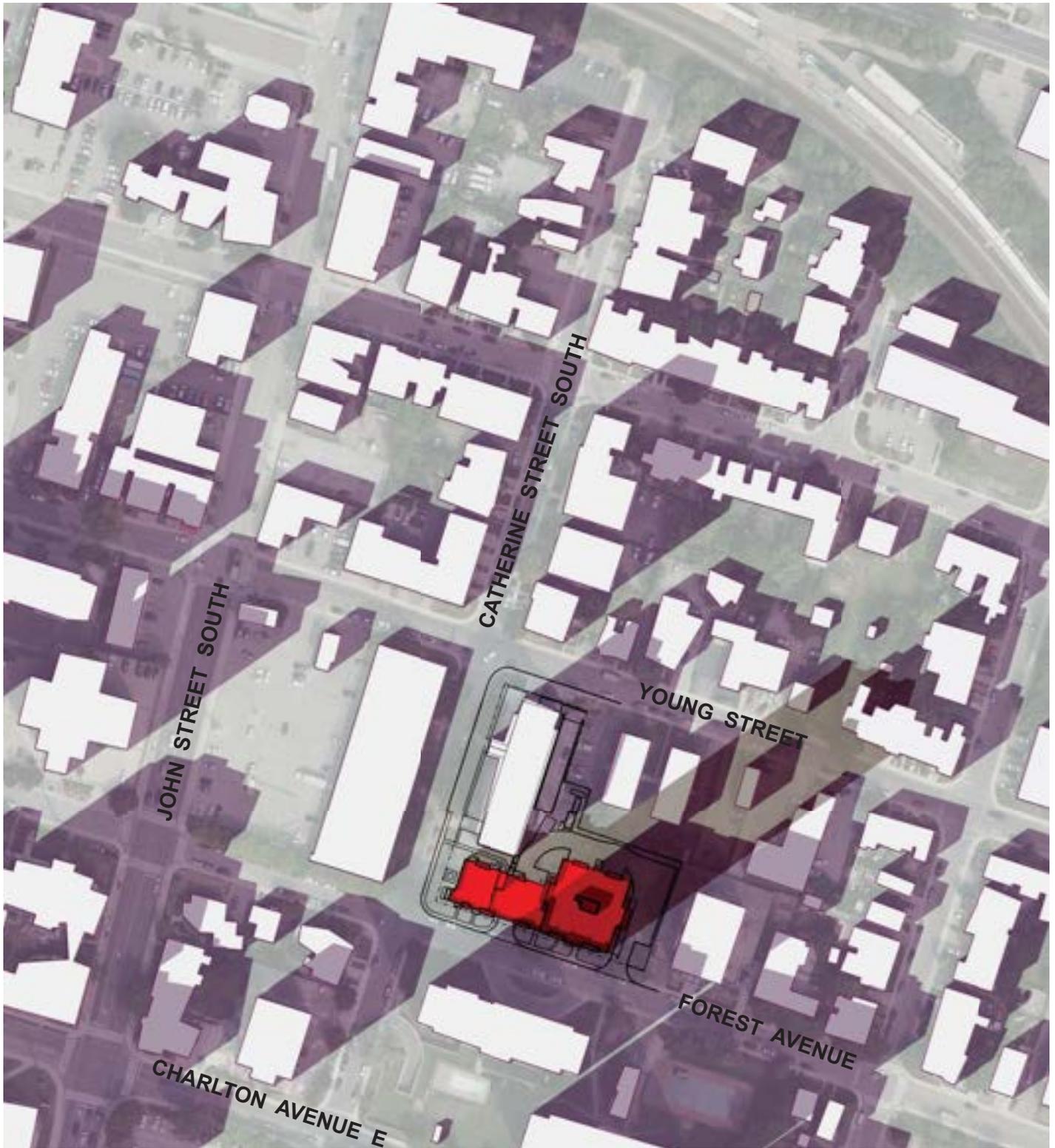


DESIGN IMPACT ANALYSIS

175 Catherine Street South, Hamilton, Ontario

KNYMH File # 21039 v.1.0

Date: September 11, 2023



MARCH 21, 4:26 PM

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W

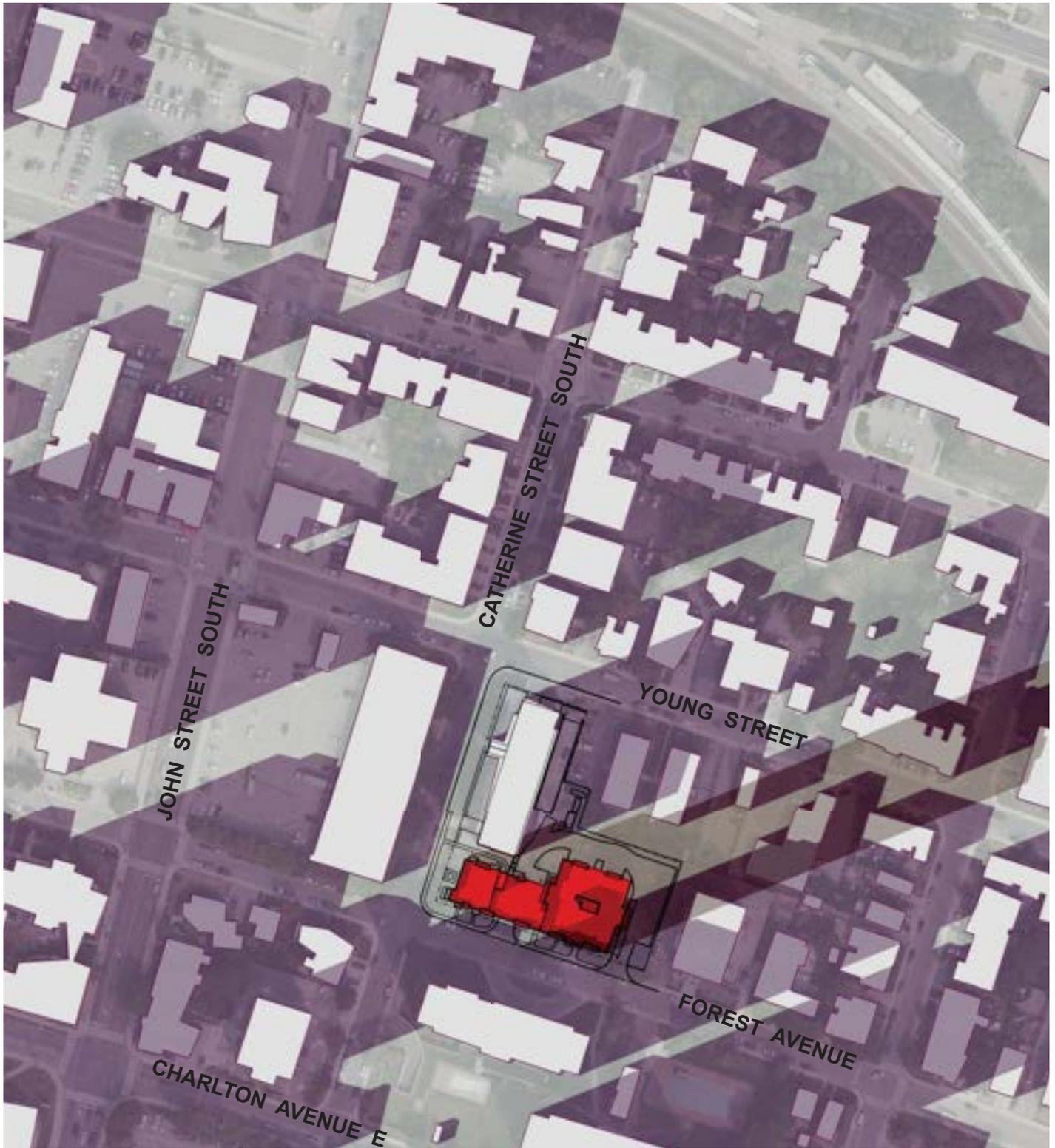


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175 Catherine Street South, Hamilton, Ontario

KNYMH File # 21039 v.1.0

Date: September 11, 2023



MARCH 21, 5:26 PM

UTC: (-04:00)

Latitude: 43d 14' 30" N, Longitude: 79d 51' 00" W

