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July 25, 2017

BY FEDERAL EXPRESS
AND E-MAIL

Hon. James C. Sheers
and Members of the Planning Board
City of Beacon
1 Municipal Plaza
Beacon, New York 12508

Re: Site Plan Application – Shadow Study
Premises: 475 Main Street, Beacon, New York (Tax ID: 6054-37-076730)

Dear Chairman Sheers and Members of the Planning Board:

On behalf of behalf of 605 N. Macquesten Parkway, L.L.C., as a single member for 475 Main Street Beacon LLC, (the "Applicant"), the owner of the above-referenced Premises, we respectfully submit this letter in furtherance of the Site Plan Application for proposed modifications to an existing mixed-use building.

The Applicant recently appeared before this Board, at which time the Board circulated its Notice of Intent to serve as Lead Agency under SEQR. Additionally, in response to comments from this Board and from the Howland Cultural Center, the Applicant retained the services of Cleary Consulting to prepare an analysis of any potential impacts of shadows cast by the existing building and the proposed addition – particularly on the Howland Cultural Center.

As noted in the enclosed Shadow Impact Study,[1] and as detailed more fully herein, the proposed minor building addition will not create new shadow impacts on the existing planting beds adjacent to the building. While the proposed addition will result in slightly longer shadows during *certain times of the day*, during *certain times of the year* – notwithstanding cloud cover and overcast skies, which occur randomly – any potential impacts would be very limited and only for a short period of time. Accordingly, it is respectfully submitted that any *new* shadow conditions are *de minimis*. The existing narrow courtyard is currently impacted by existing shadows -- particularly on the planting beds – and the addition will not alter the character of the Howland Cultural Center or its yards.

[1] Enclosed herein as **Exhibit A**, please find a copy of the "Shadow Impact Study," prepared by Cleary Consulting, dated July 20, 2017.

C&F: 3492169.1
C&F: 3492288.1

PROPERTY BACKGROUND:

As this Board is aware, this proposal involves the construction of a two (2)-story addition to the existing one (1)-story rear portion of the existing 'L'-shaped building, two-thirds (2/3) of which is already three (3)-stories in height. The 800+/- sq. ft. retail/gallery space will remain at the Main Street frontage. The proposed addition to the existing mixed-use building conforms to the applicable requirements set forth in the Zoning Code of the City of Beacon (the "Zoning Code"),[2] but for the proposed lot area per dwelling unit, which requires an area variance from the Zoning Board of Appeals ("ZBA"). An area variance application was submitted to the ZBA detailing the area variance relief sought.

Currently, as shown on the enclosed Site Plan and Building Elevations, approximately two-thirds (2/3) of the existing building is already three (3)-stories. *See also* **Exhibit B** – Google Map Images. Through this application, the Applicant merely proposes an addition that will make the existing building three (3)-stories uniformly throughout. Under the current zoning, the maximum building height is 35 feet (three (3) stories)). As shown on the Site Plan and Building Elevations previously submitted to this Board, the proposed addition will not propose to exceed the permitted building height.

Additionally, pursuant to the recommendations in the recent Comprehensive Plan Update, the City Council has undertaken to amend the Zoning Code to extend the Central Main Street (CMS) District to the upper and lower sections of Main Street that are currently zoned CB.[3] As identified in the Comprehensive Plan, "[t]he CMS encourages infill development by raising development potential and lowering parking requirements" the purpose being "... to allow for continued commercial vitality and mix use of area along Main Street."[4] Indeed, under the City's proposed rezoning as currently drafted, the existing improved Premises *would not* be subject to density restrictions, and the Applicant *would not* be required to obtain area variance relief for the proposed multi-family units. Accordingly, it is respectfully submitted that the Applicant's proposal is consistent with the existing and proposed development along Main Street.

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[2] Note: Zoning Code Section 223-26(B)(2) provides that parking is not required for the Premises, because the building was in existence on April 20, 1964, and the new use is less than 25% greater intensity than the use existing in 1964.

[3] CITY OF BEACON COMPREHENSIVE PLAN UPDATE, dated March 29, 2017, at page 171 (the "Comprehensive Plan Update").

[4] *See* Comprehensive Plan Update, at 171.

SHADOW IMPACT STUDY:

The Applicant has submitted plans and information establishing that the proposed alterations and additions to the existing building are consistent with the character of the neighborhood and maintain the building in the Historic District. As described above, neighboring properties will not be adversely impacted by the proposed project. Immediately west of the Premises are mixed-use commercial and apartment developments on the south side of Main Street, including apartments above Brother's Trattoria, and the redevelopment of the Beacon Theater. Additionally, the Beacon Hotel is located west of the Premises on the north side of Main Street. Further, the current CMS Zoning District permits up to a four-story building, where only three (3) is proposed herein.[5]

In reviewing any potential impacts from the proposed addition to the rear of the existing building, the Applicant has been in communication with the Howland Cultural Center. In response to the Howland Cultural Center's letter dated June 13, 2017 (the "June 13th Letter"), the Applicants requested to meet with the Howland Cultural Center to further discuss concerns with the proposed apartment units in the building.[6] In response to the June 13th Letter and comments from this Board, the Applicant prepared the enclosed Shadow Impact Study, which supplements prior submissions about potential impacts.

Generally, the Shadow Impact Study presents the findings of an analysis of the impact of shadows cast by the existing building, as well as shadow impacts resulting from a proposed addition. As more fully documented in the Shadow Impact Study, the proposed building addition will only result in slightly longer shadows on the Howland Cultural Center's courtyard during certain times of the day, during certain times of the year. As shown in **Exhibit B**, and the photographs included in the Shadow Impact Study, the courtyard is a very narrow area located between two (2) existing tall buildings that are much taller than the width of the courtyard. Consequently, the courtyard is currently impacted by existing shadows created by the Howland Cultural Center, with limited impacts from the 475 Main Street building. This is particularly so for the areas of the planting beds that are located directly adjacent to the buildings themselves. Accordingly, any limited new shadows from the proposed addition will only encroach into the lawn area between the planting beds, and on the rear wall of the Howland Cultural Center building. New shadow impacts to the existing planting beds adjacent to the buildings will not result from the addition.

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[5] Zoning Code Section 223-41.18(D)(7).
[6] The July 13th Letter also identified that the Howland Cultural Center believes that the "... highest and best use of this property, at least from the community's point of view, would be for retail, office and studios, which are historic uses and ones that appear to be in demand."

As noted in the Shadow Impact Study, the proposed addition has limited shadow impacts from current conditions, providing in relevant part that:

> These shadows are negligible, and do not materially alter the character of either the side or rear yard of the Howland Center, nor would they fundamentally change the already generally shady characteristics of the yards. The existing shade tolerant plantings located along the building foundations would not be further adversely impacted by the shadows cast by the proposed building addition.[7]

Additionally, the Shadow Impact Study shows conditions under completely clear skies – with no allowance for cloud cover or overcast skies, which occur randomly. Therefore, it is also important to note that shadows are in constant motion, and the limited impacts noted herein will affect the Howland Cultural Center's yards for only a short period of time and reduce the actual (and perceived) shadow impact.

CONCLUSION

For the reasons set forth above, and as will be further discussed at the continued public hearing on this matter, the Applicant respectfully submits that the aforementioned addition is consistent with the existing and proposed development along Main Street and within the Historic District.

In support of this application, please find enclosed one (1) original and five (5) copies of the instant letter with the following documents:

Exhibit A: Shadow Impact Study, prepared by Cleary Consulting, dated July 20, 2017; and
Exhibit B: Google Maps Aerials of the Premises.

We appreciate your continued efforts in this matter and look forward to appearing at the continued Public Hearing on Tuesday, August 8th in order to review the proposed addition and Shadow Impact Study. In the meantime should this Board or City Staff have any questions or comments with regard to the foregoing, please do not hesitate to contact me.

Very truly yours,

Taylor M. Palmer
Enclosures cc: Jennifer L. Gray, Esq.; Art Tully; John Clarke; Aryeh J. Siegel, Architect; Michael A. Bodendorf – Hudson Land Design

[7] *See* "Shadow Impact Study" at 5.

EXHIBIT A

475 Main Street

605 N. Macquesten Parkway, L.L.C.

As a Single Member for 475 Main Street Beacon, L.L.C.

Shadow Impact Study

July 20, 2017

CLEARY CONSULTING
Planning and Environmental Services

Introduction:

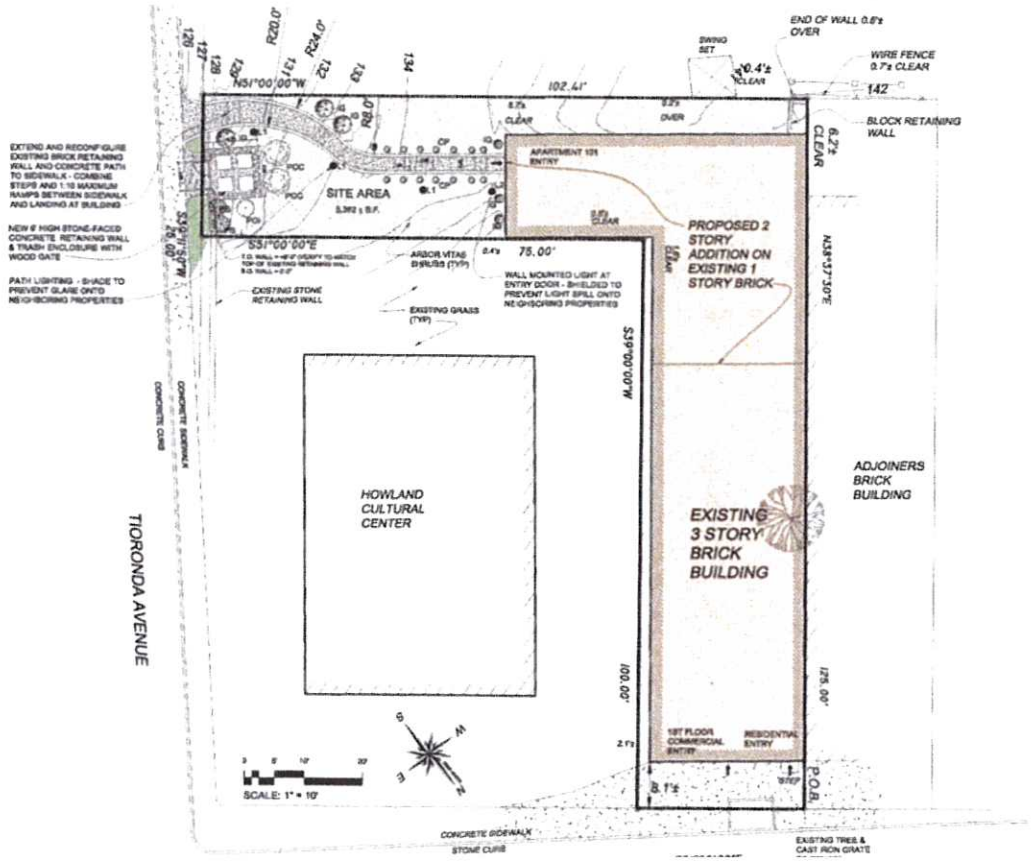
This study presents the findings of an analysis of the impact of shadows cast by the existing building located at 475 Main Street in the City of Beacon, as well as changes resulting from a proposed addition to the rear of that building on surrounding properties, and in particular, on the adjacent Howland Cultural Center located at 477 Main Street (the "Howland Center"). The issue of shade and shadow pertains to the blockage of direct sunlight for a given amount of time that affects certain "shadow sensitive" land uses. A "shadow sensitive" land use is one where sunlight is important to function, physical comfort or commerce.

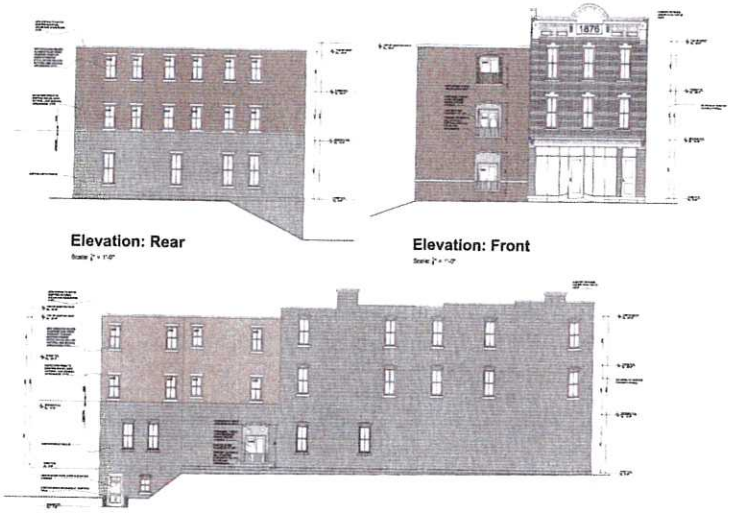
Shadows are variable, and depend on factors such as the height and size of buildings, proximity of buildings to each other, intervening features such as topography and vegetation and the angle of the sun. The angle of the sun varies based on the rotation of the earth (i.e. time of day) and it's elliptical orbit (i.e. change in seasons). The longest shadows are cast during the winter months, and the shortest shadows are cast during the summer months.

Proposed Project:

605 N. Macquesten Parkway, L.L.C. as a single member for 475 Main Street Beacon, L.L.C., is proposing to construct an addition to the rear of an existing L-shaped mixed-use building containing apartments and a retail gallery space on the first floor. The addition would create a uniform 3-story building in the CB zoning district, which permits buildings of 3 stories in height (Figure 1 – Proposed Site Plan and Building Elevations).

As more fully documented below, the proposed building addition will result in slightly longer shadows on the Howland Center courtyard during certain times of the day, during certain times of the year. However, the courtyard is a very narrow area located between two pre-existing tall structures that are much taller than the width of the courtyard. Consequently, the courtyard is *currently* impacted by existing shadows, and this is particularly so for the areas of the planting beds, which are located directly adjacent to the buildings themselves. The limited new shadows will encroach into the lawn area between the planting beds, and on the rear wall of the Howland Center building. New shadow impacts to the existing planting beds adjacent to the buildings will not result from the proposed addition. The following photographs provide the visual context of the courtyard between the Howland Center on the left and 475 Main Street on the right.





Source: Aryeh Siegel Architect

Scale: N.T.S.	**Figure 1** **Site Plan & Elevations**	N W E S
CLEARY CONSULTING		

Methodology:

This shadow study is based on a computer generated 3-dimensional (3D) model of the project area. The 3D model was geo-located to its precise location in the software program SketchUp using Google Earth within the SketchUp program. Data on solar declination (angle) and position and time of day on exact dates were calculated by SketchUp.

It should be noted that the Google Earth imagery depicts an existing shadow. The shadows modeled as described above are shown in a darker grey tone than the existing lighter grey on the aerial photography. Additionally, shadows cast on the Howland Center property have been highlighted with a red outline, to more easily ascertain their impact.

On June 21st at solar noon, aka the summer solstice, the sun reaches its highest point in the sky for the entire year.

On December 21st at solar noon, aka the winter solstice, the sun is at its lowest midday elevation in the sky for the entire year.

On March 21st and September 21st aka the vernal and autumnal equinoxes, daylight and darkness each last for 12 hours. These four key dates are established as the standard "worst case" framework for this, and all shadow studies.

All times are referenced as standard or daylight savings time, in keeping with standard practice. The 21st of each month is used as the standardized approximation. Depending on the calendar year, these dates may be +/- two (2) days.

48 separate images are presented in this study. For each of the four (4) time periods (i.e. the two solstices and the two equinoxes) images are presented at 9:00 AM, Noon and 5:00 PM. Also, to obtain a detailed understanding of the impact of the proposed project on adjacent properties, separate images looking at the project from a northern viewpoint and a southern viewpoint are provided.

Explanation of Results:

For all dates, the most significant shadow effect occurs in the early morning and late afternoon, as expected when the sun is lowest in the sky and the corresponding shadows are lengthiest. Shadows diminish as the sun reaches its zenith, and begin to lengthen again in the afternoon.

The existing building at 475 Main Street is shown in orange (noted as "Existing Condition"). The addition to the rear of the building is shown in brown (noted as "Build Condition").

The area between the Howland Center building and the 475 Main Street building, that opens to Main Street is hereinafter referred to as the Howland Center side yard. The area behind the Howland Center, and the "L-shaped leg of the 475 Main Street building (where the addition is proposed) that opens toward Tioronda Avenue, is hereinafter refereed to the Howland Center rear yard.

Vernal (Spring) Equinox (Exhibit 1):

At 9:00 AM the sun is rising and low in the sky. The Howland Center side yard is completely in shadow cast by the Howland Center building. Approximately half of the Howland Center rear yard receives direct sunlight, the rear of the Howland Center building and a small portion of the steeple from the Tabernacle of Christ Church block direct sunlight. The proposed building addition causes no change to these conditions as the sun is located to the east at this time.

At noon, most of the Howland Center side yard remains in shadow from the Howland Center building, however, a portion of the Howland Center rear yard, adjacent to the L-shaped leg of 475 Main, is in shadow from that building, and would experience a slightly deeper shadow (approximately 10'), attributable to the new building addition.

At 5:00 the sun is setting, low on the horizon and all of the Howland Center's yards are in dark shadow in both the existing and build conditions.

Summer Solstice (Exhibit 2):
At 9:00 AM the sun is rising and low in the sky. The Howland Center side yard is almost completely in shadow cast by the Howland Center building, with only a small strip of non-shadow along the face of 475 Main Street. Approximately three quarters of the Howland Center rear yard is in shadow, blocked by the rear of the Howland Center building. Only a wedge closest to Tioronda Avenue receives direct sunlight. The proposed building addition causes no change to these conditions.

During the Summer Solstice, the sun is higher in the sky, so at noon, only a small strip of the Howland Center side yard falls in shadow, directly adjacent to that building. Similarly, the shadow cast by the L-shaped leg of 475 Main, is shallower, and while that shadow increases as a result of the new building addition, it would only increase negligibly by several feet.

At 5:00 the sun is setting, and the existing buildings cast long shadows toward the east. All of the Howland Center's yards are in shadow in both the existing and build conditions. Shadow would extend up approximately 10' along the rear wall of the Howland center building as a result of the new building addition.

Autumnal Equinox (Exhibit 3):
At 9:00 AM the sun is rising and low in the sky. The Howland Center side yard and approximately the first floor of 475 Main Street, are completely in shadow cast by the Howland Center building. Approximately half of the Howland Center rear yard receives direct sunlight, the rear of the building and a small portion of the steeple from the Tabernacle of Christ Church block direct sunlight. The proposed building addition causes no change to these conditions as the sun is located to the east at this time.

At noon, approximately three quarters of the Howland Center side yard remains in shadow from the Howland Center building and the L-shaped leg of 475 Main. The shadow cast from the new addition would lengthen that shadow by approximately 12 feet.

At 5:00 the sun is setting, and the existing buildings cast long shadows toward the east. All of the Howland Center's yards are in shadow in both the existing and build conditions. The shadow on the rear wall of the Howland Center building would be taller, nearly to the roof, due to the proposed building addition. But the shadow on the garden area would remain unchanged by the building addition.

While Autumnal Equinox represents the most extensive shadow impact on the Howland Center caused by the proposed building addition, the impact

consist of a somewhat longer shadow across the lawn area. The shadow impact on the area directly adjacent to the buildings, where the existing plantings are located will not change significantly, because these areas are *already* impacted by the shadows cast by the existing buildings. Therefore, the shadow impact on the planting beds will not appreciably change. The shadow on the rear wall of the Howland Center will be proportionally higher during this time of the rear.

Winter Solstice (Exhibit 4):

At 9:00 AM the sun is rising and very low in the sky. The Howland Center side yard and most of the side of 475 Main Street, are completely in shadow cast by the Howland Center building. A portion of the Howland Center rear yard receives very low-level sunlight. The proposed building addition causes no change to these conditions as the sun is located to the east at this time.

At noon – the angle of the sun is such that most of Howland center side yard is in shade, except for a shaft of sun that from the southeast. Most of the Howland Center rear yard receives low-level direct sunlight. Given the angle of the sun, the proposed building addition would not change this condition.
At 5:00, the sun has set, and the project area is in darkness.

Summary & Findings:

In summary, the Howland Center supports a side and rear yard that is only approximately 20 feet in width – which is significantly less that the height of the two buildings that boarder those yards (the Howland Center and 475 Main Street). Those two buildings currently create conditions where the Howland Center's yards are in shade for extensive periods.

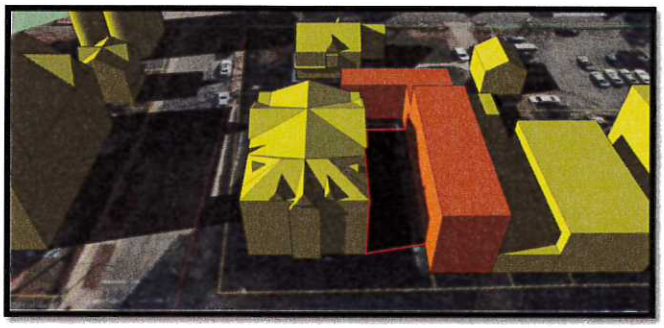
As graphically depicted by the following images, the yards already experience shadow all year, and during most times of the day. During the mid-day period, when the sun is high in the sky, sunlight does reach the yards, and during some times of the year, the proposed addition to the rear of 475 Main Street, will slightly increase the length of shadows in the yard area directly adjacent to the L-shaped portion of the building. These shadows are negligible, and do not materially alter the character of either the side or rear yard of the Howland Center, nor would they fundamentally change the already generally shady characteristics of the yards. The existing shade tolerant plantings located along the building foundations would not be further adversely impacted by the shadows cast by the proposed building addition. This "worst-case" condition can be most clearly seen on Exhibit 3, at 5:00 PM during the Autumnal Equinox.

It is also important to note that shadows are in constant motion, and the limited impacts noted herein will affect the Howland Center's yards for only a short period of time. Also, the shadow conditions depicted in the following computer generated

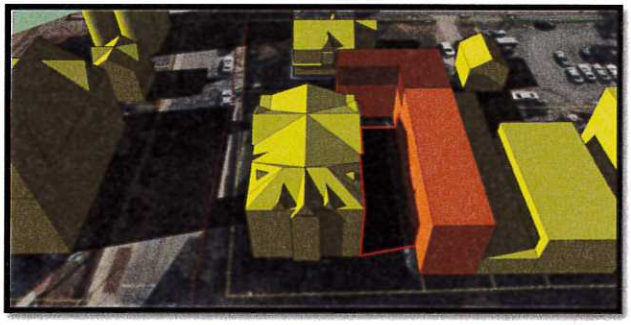
images make no allowance for cloud cover of overcast skies, which occur randomly, but with greater frequency and duration in the late fall and winter (corresponding to the worst case autumnal equinox shadow impact described above). These factors have the affect of reducing the actual (and perceived) shadow impact.

March 21
Spring Equinox

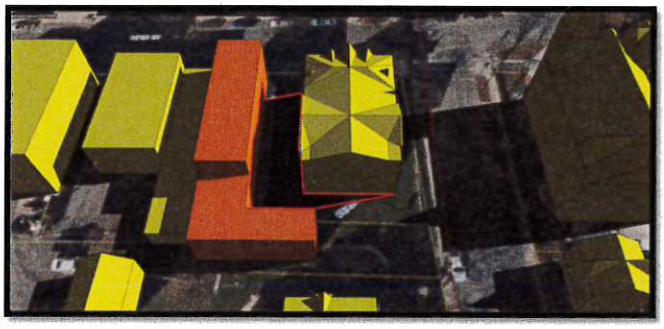
Existing Condition
View Looking South
9:00 AM



Build Condition
View Looking South
9:00 AM



Existing Condition
View Looking North
9:00 AM



Build Condition
View Looking North
9:00 AM

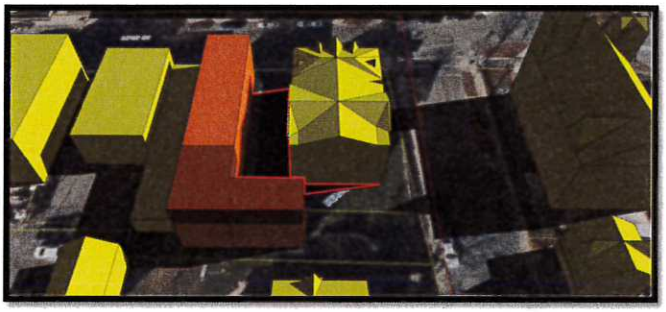
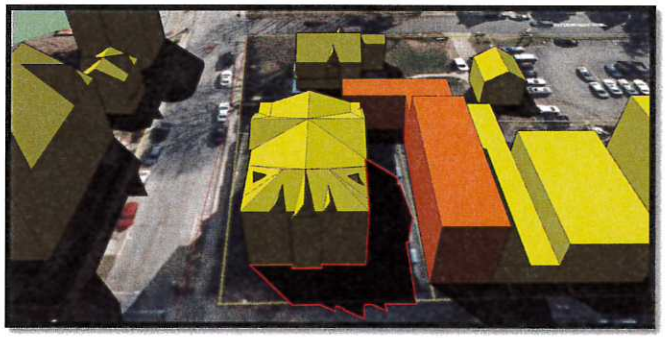


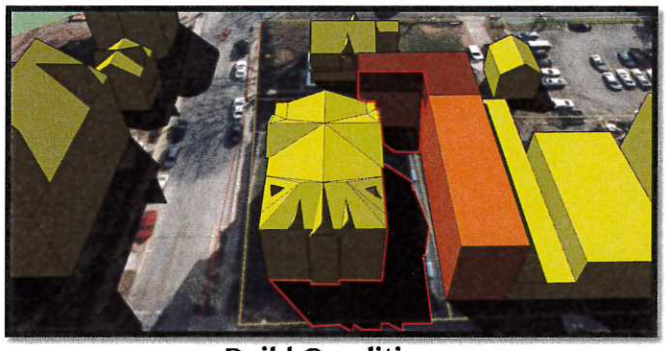
Exhibit 1

March 21
Spring Equinox

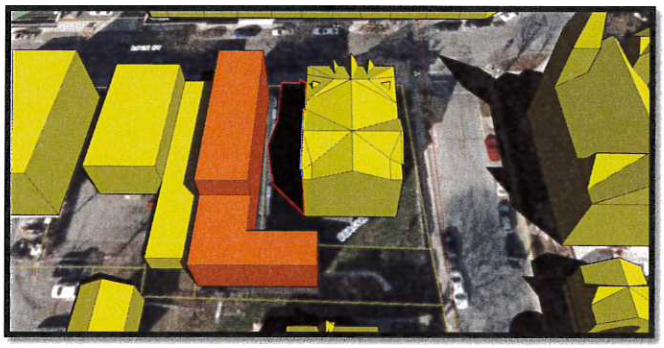
Existing Condition
View Looking South
Noon



Build Condition
View Looking South
Noon



Existing Condition
View Looking North
Noon



Build Condition
View Looking North
Noon

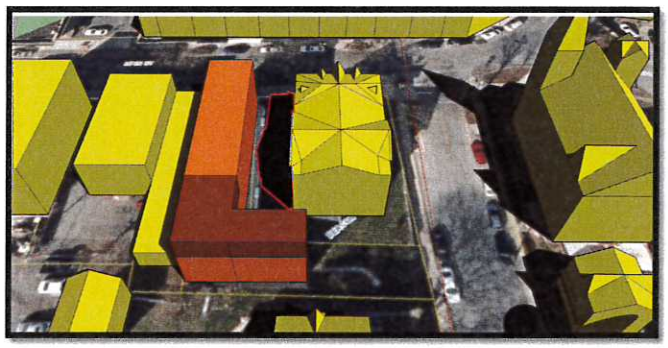
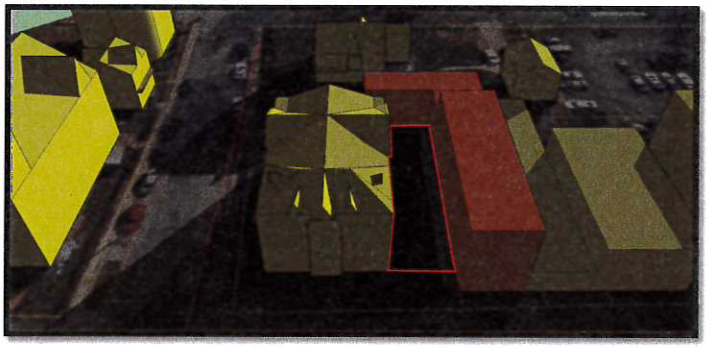


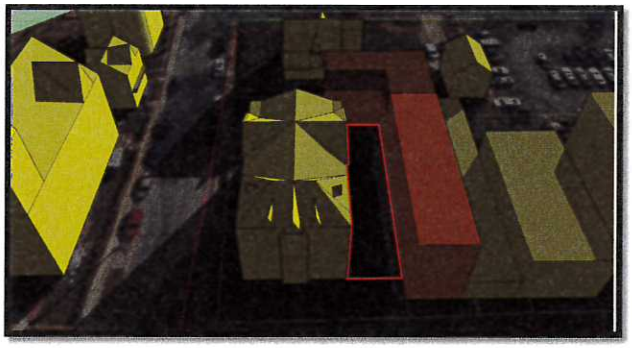
Exhibit 1

March 21
Spring Equinox

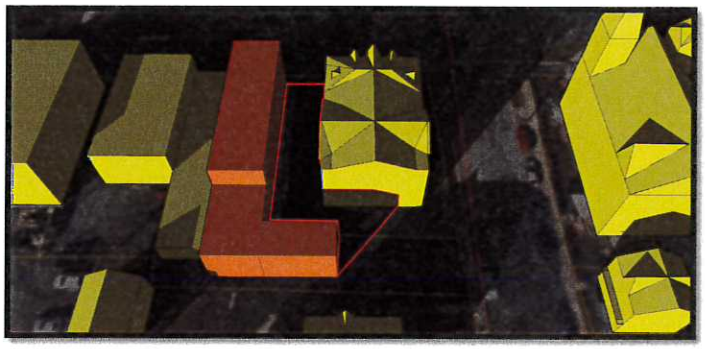
Existing Condition
View Looking South
5:00 PM



Build Condition
View Looking South
5:00 PM



Existing Condition
View Looking North
5:00 PM

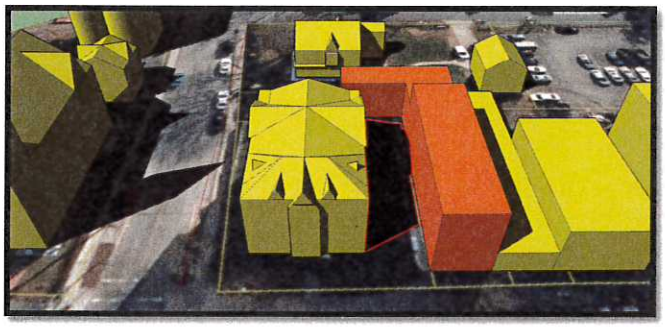


Build Condition
View Looking North
5:00 PM

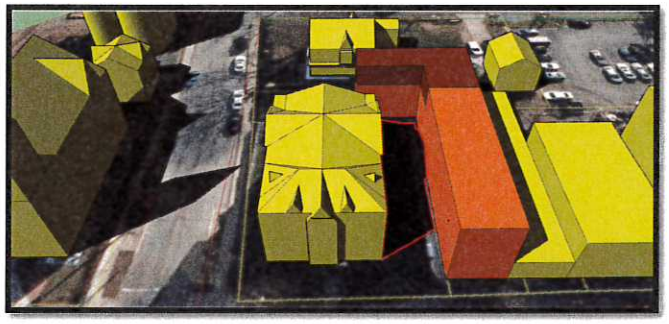
Exhibit 1

June 21
Summer Solstice

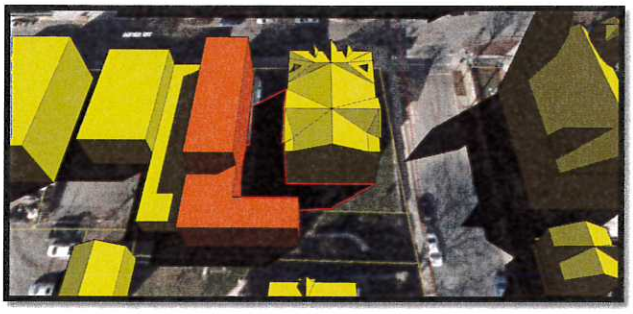
Existing Condition
View Looking South
9:00 AM



Build Condition
View Looking South
9:00 AM



Existing Condition
View Looking North
9:00 AM



Build Condition
View Looking North
9:00 AM

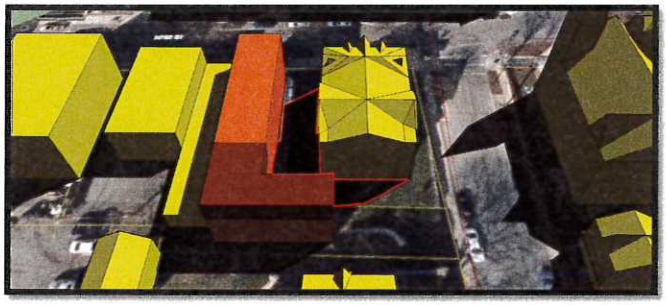
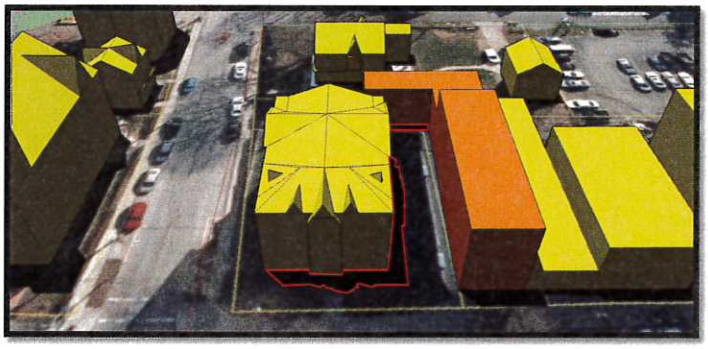


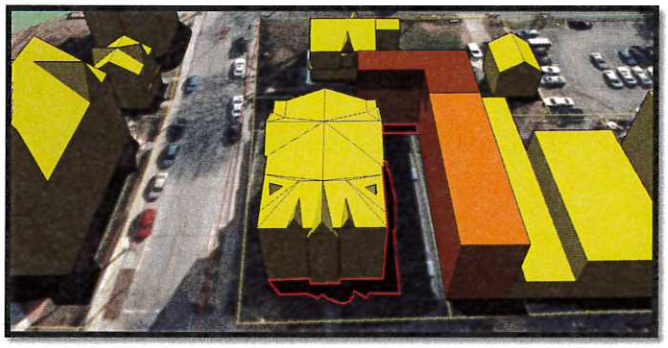
Exhibit 2

June 21
Summer Solstice

Existing Condition
View Looking South
Noon



Build Condition
View Looking South
Noon



Existing Condition
View Looking North
Noon

Build Condition
View Looking North
Noon

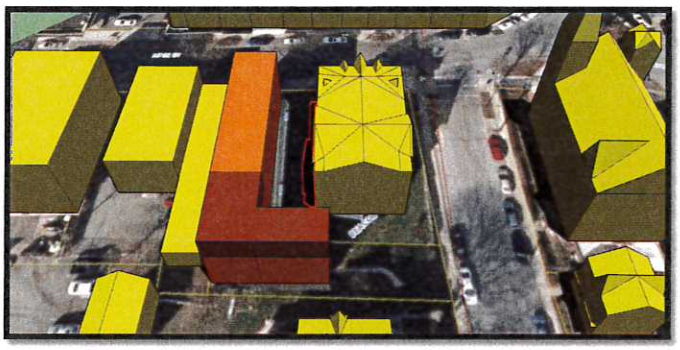
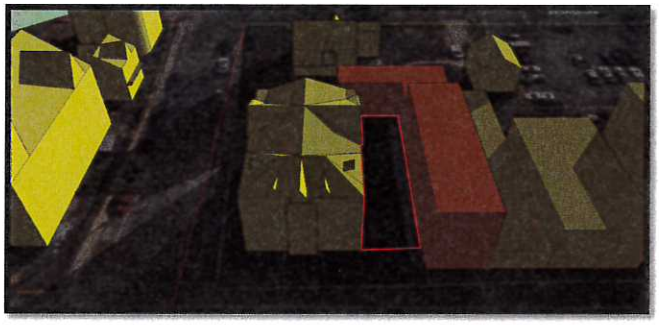


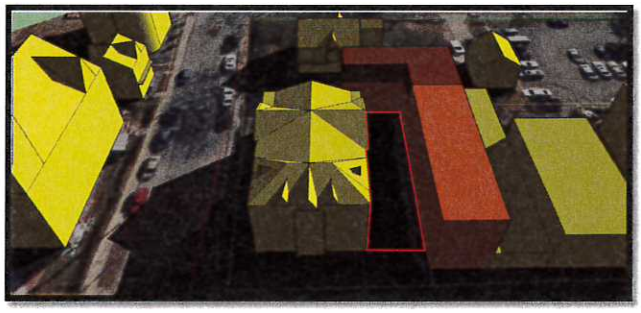
Exhibit 2

June 21
Summer Solstice

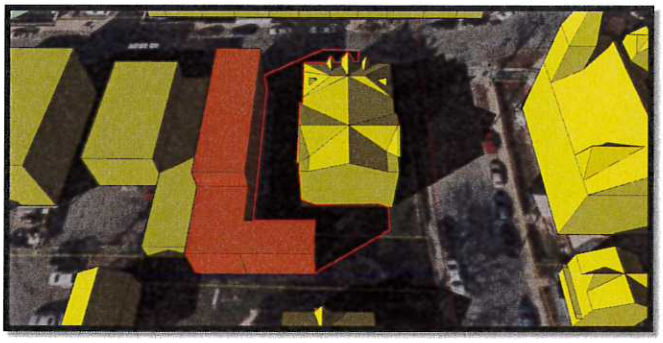
Existing Condition
View Looking South
5:00 PM



Build Condition
View Looking South
5:00 PM



Existing Condition
View Looking North
5:00 PM



Build Condition
View Looking North
5:00 PM

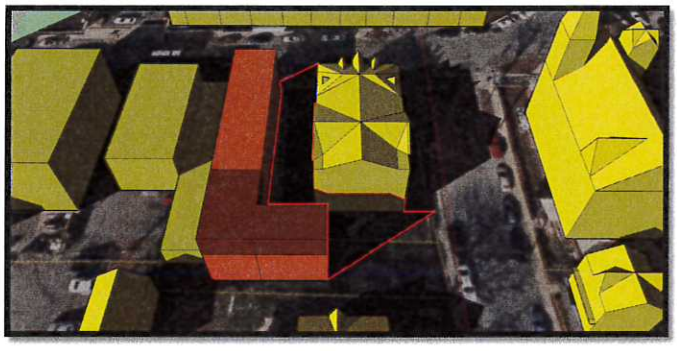
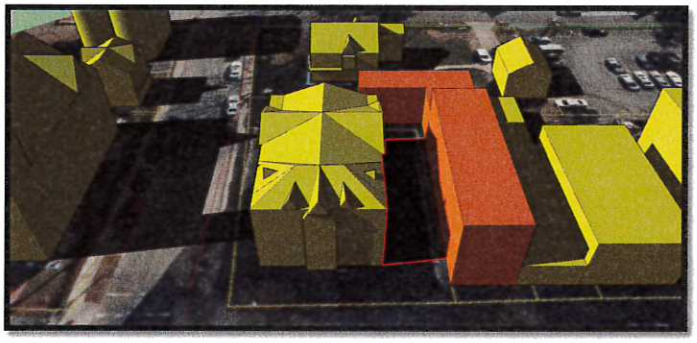


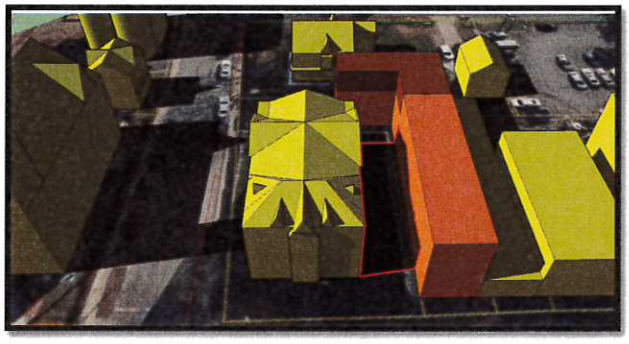
Exhibit 2

September 21
Autumnal Equinox

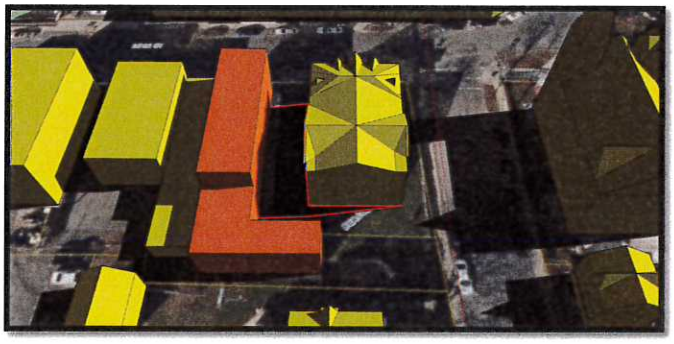
Existing Condition
View Looking South
9:00 AM



Build Condition
View Looking South
9:00 AM



Existing Condition
View Looking North
9:00 AM



Build Condition
View Looking North
9:00 AM

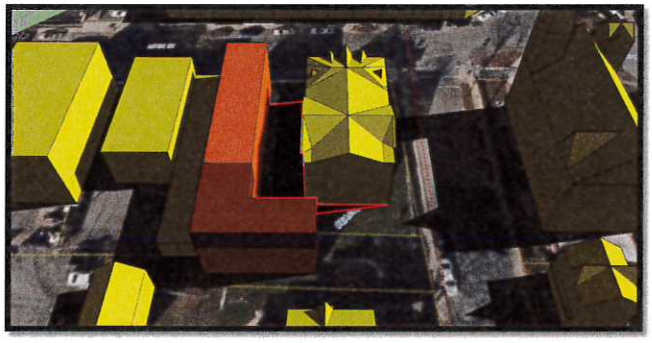
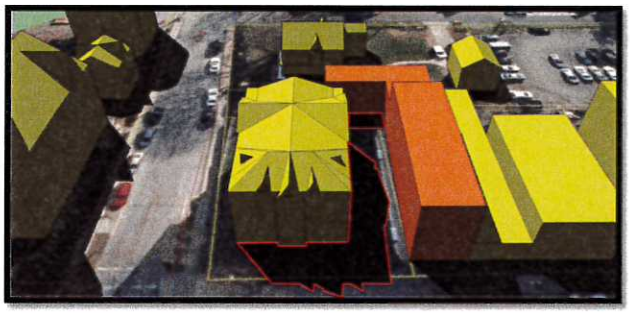


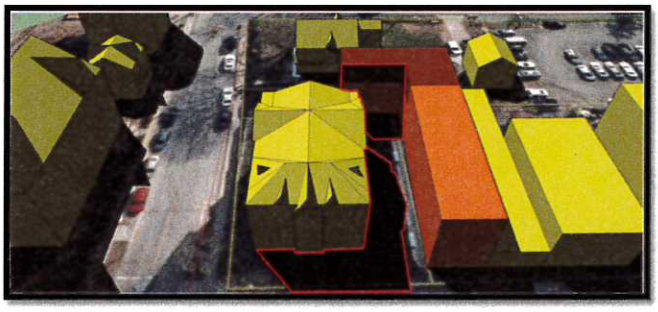
Exhibit 3

September 21
Autumnal Equinox

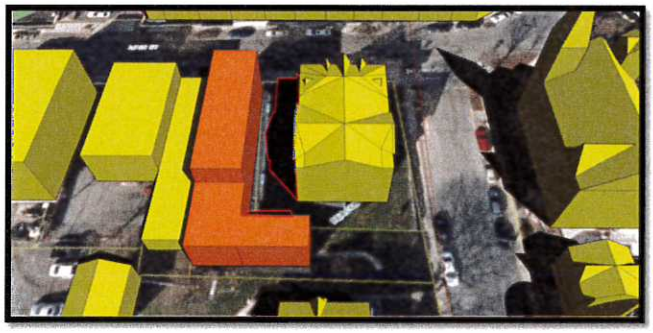
Existing Condition
View Looking South
Noon



Build Condition
View Looking South
Noon



Existing Condition
View Looking North
Noon



Build Condition
View Looking North
Noon

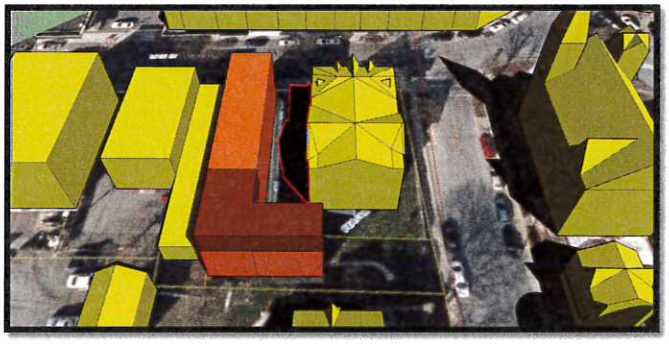
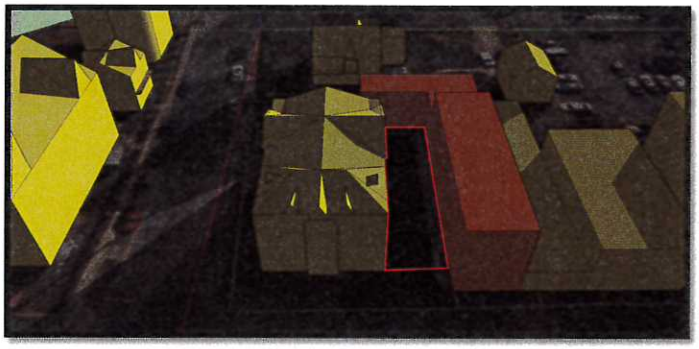


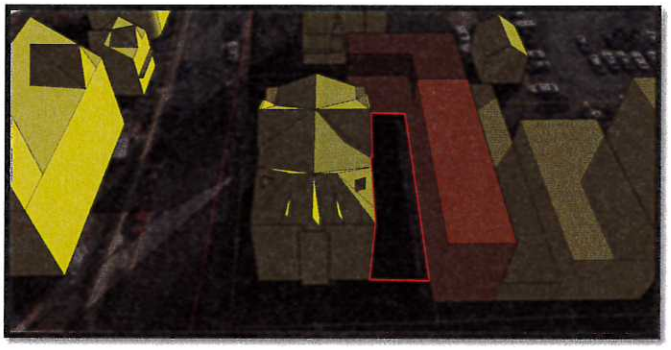
Exhibit 3

September 21
Autumnal Equinox

Existing Condition
View Looking South
5:00 PM



Build Condition
View Looking South
5:00 PM



Existing Condition
View Looking North
5:00 PM

Build Condition
View Looking North
5:00 PM

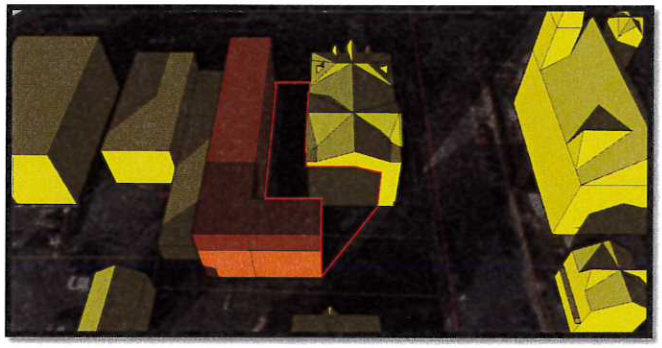
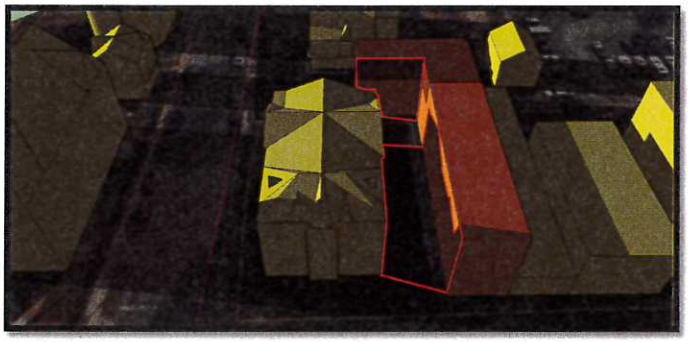


Exhibit 3

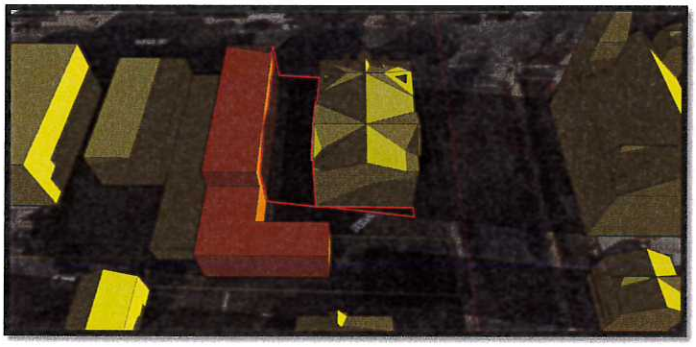
December 21
Winter Solstice

Existing Condition
View Looking South
9:00 AM

Build Condition
View Looking South
9:00 AM



Existing Condition
View Looking North
9:00 AM



Build Condition
View Looking North
9:00 AM

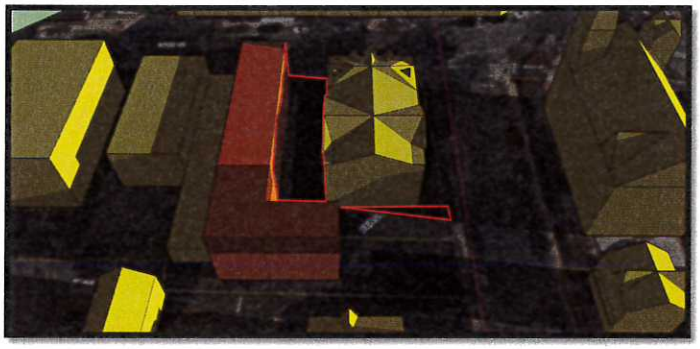
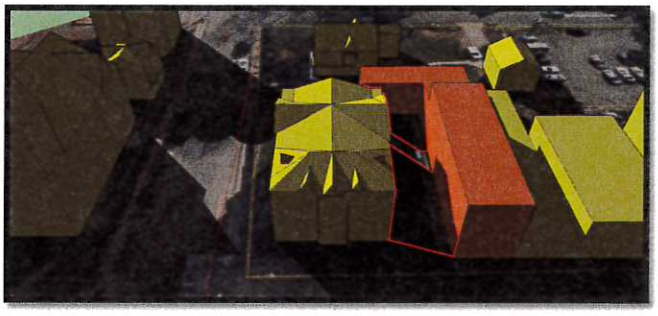


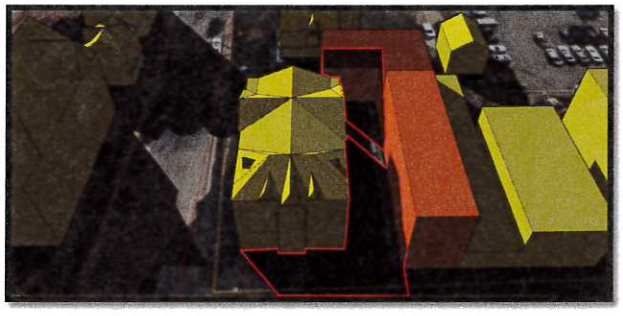
Exhibit 4

December 21
Winter Solstice

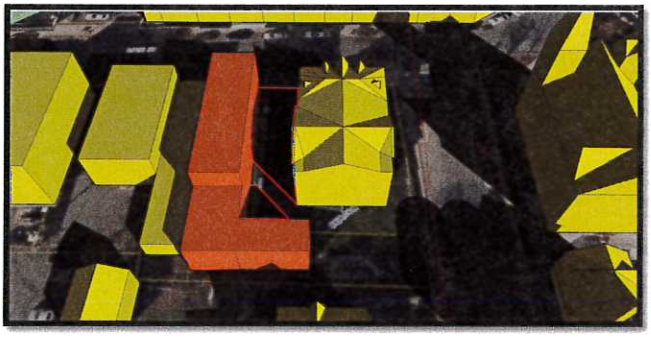
Existing Condition
View Looking South
Noon



Build Condition
View Looking South
Noon



Existing Condition
View Looking North
Noon



Build Condition
View Looking North
Noon

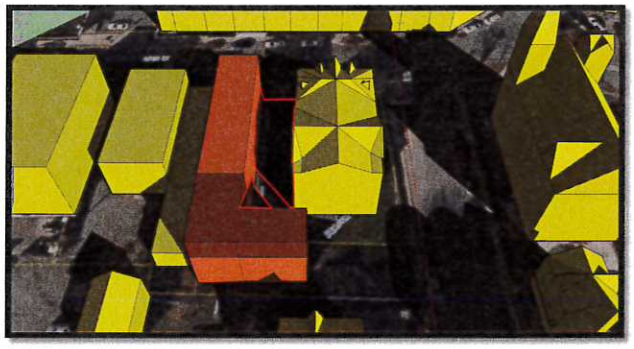
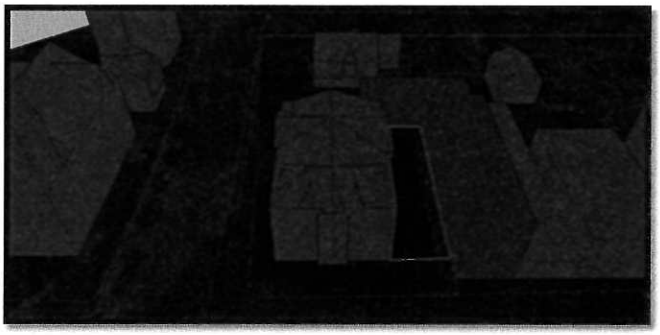


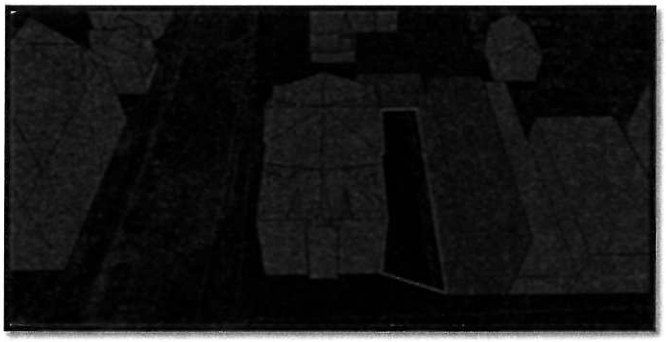
Exhibit 4

December 21
Winter Solstice

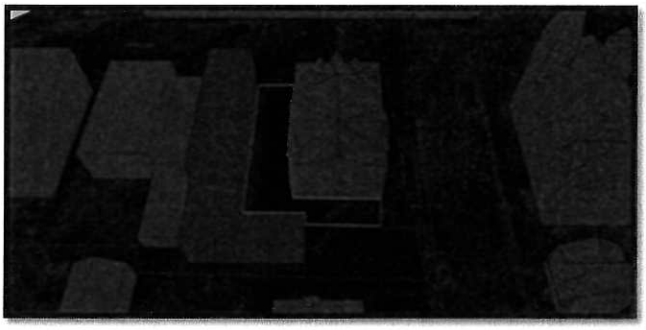
Existing Condition
View Looking South
5:00 PM



Build Condition
View Looking South
5:00 PM



Existing Condition
View Looking North
5:00 PM



Build Condition
View Looking North
5:00 PM

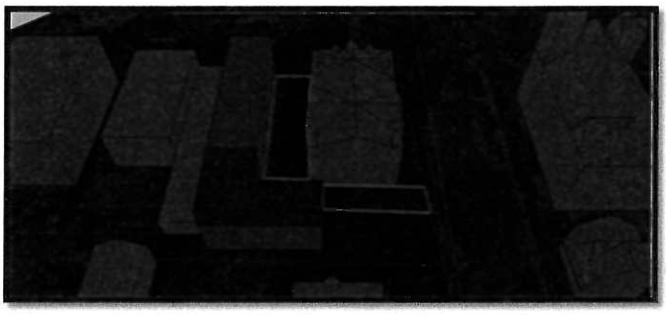


Exhibit 4

EXHIBIT B

Exhibit B

Google Map Aerials – 475 Main Street

View of Premises Facing South:

View of Premises Facing North:

Exhibit B (Cont.)

Ariel View (Birds-eye) of Premises Facing North:

View of Premises From Tironda Avenue:

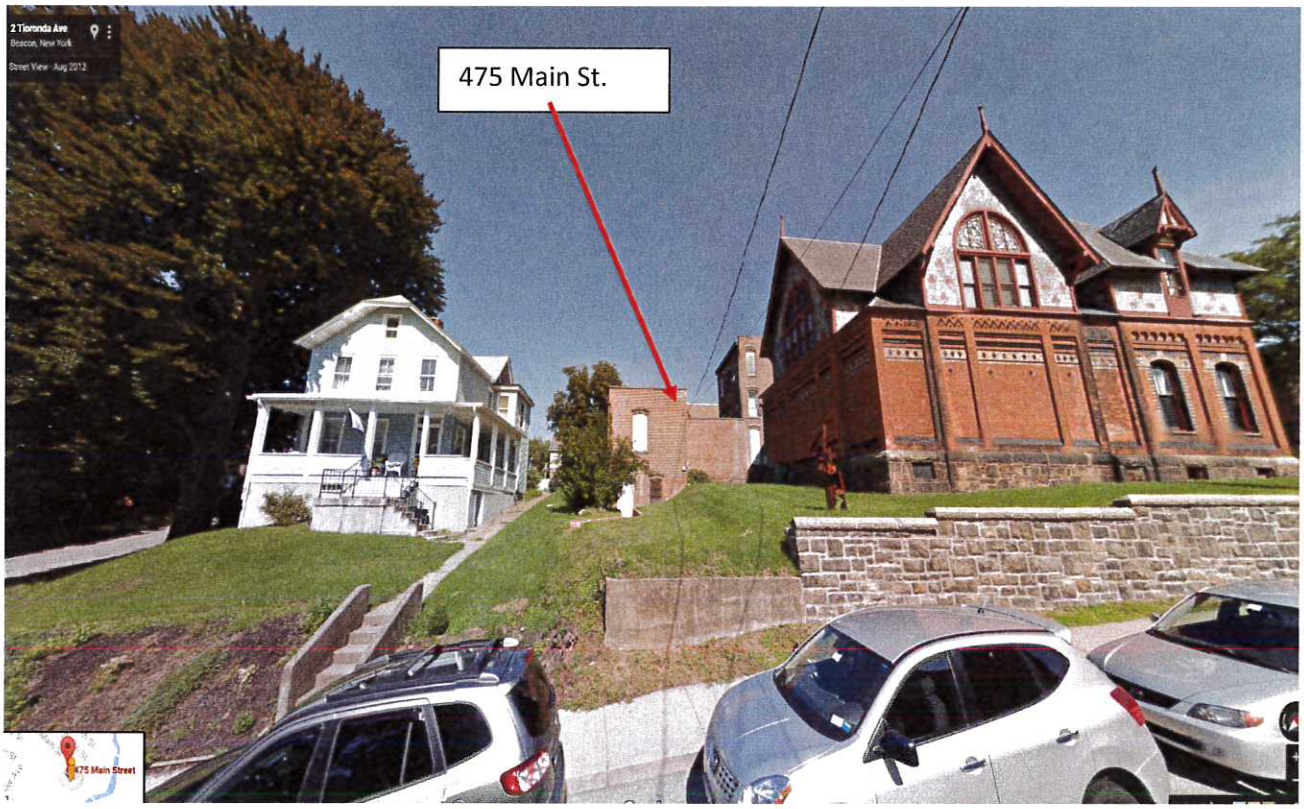


Exhibit B (Cont.)

Street View of Premises From Main Street Facing South:

Street View From Main Street Premises Facing East: