

## SUN STUDY

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(M.A., Interior Design, Marymount University - expected completion Fall 2019)

Created: Sunday, November 25, 2018

## TOOLS USED

**Revit:** A program created by Autodesk - used by professional architects and engineers to create architectural geometry that's equipped with real-life information, such as sun paths based on date and time, geographical orientation, site elevation, etc.

**The Photographer's Ephemeris:** A program created by Crookneck Consulting LLC - used by professional photographers to chart sunlight and shadows. Uses exact coordinates and elevations based on U.S. Geological survey data. It can also inform individuals about shadows cast by an object of any specified height.

## METHODOLOGY

Based on the limited information available to me, I created a building similar in size and mass to the building in Application 19751 using Revit. The building I created uses roughly the same dimensions and setbacks as the Applicant, taking height-above-grade into consideration.

Using Revit's ability to cast realistic shadows based on orientation, date, and time, I created a few examples of how the proposed building's shadow could fall across adjoining properties.

I then used The Photographer's Ephemeris to double-check the length of shadows cast by the Revit model. The dates and times I chose to examine are:

December 21 (Winter Solstice, when shadows are longest)

- 2:59 PM
- 3:59 PM
- 4:07 PM

March 21 (In-between solstices)

- 4:30 PM
- 5:15 PM
- 6:00 PM

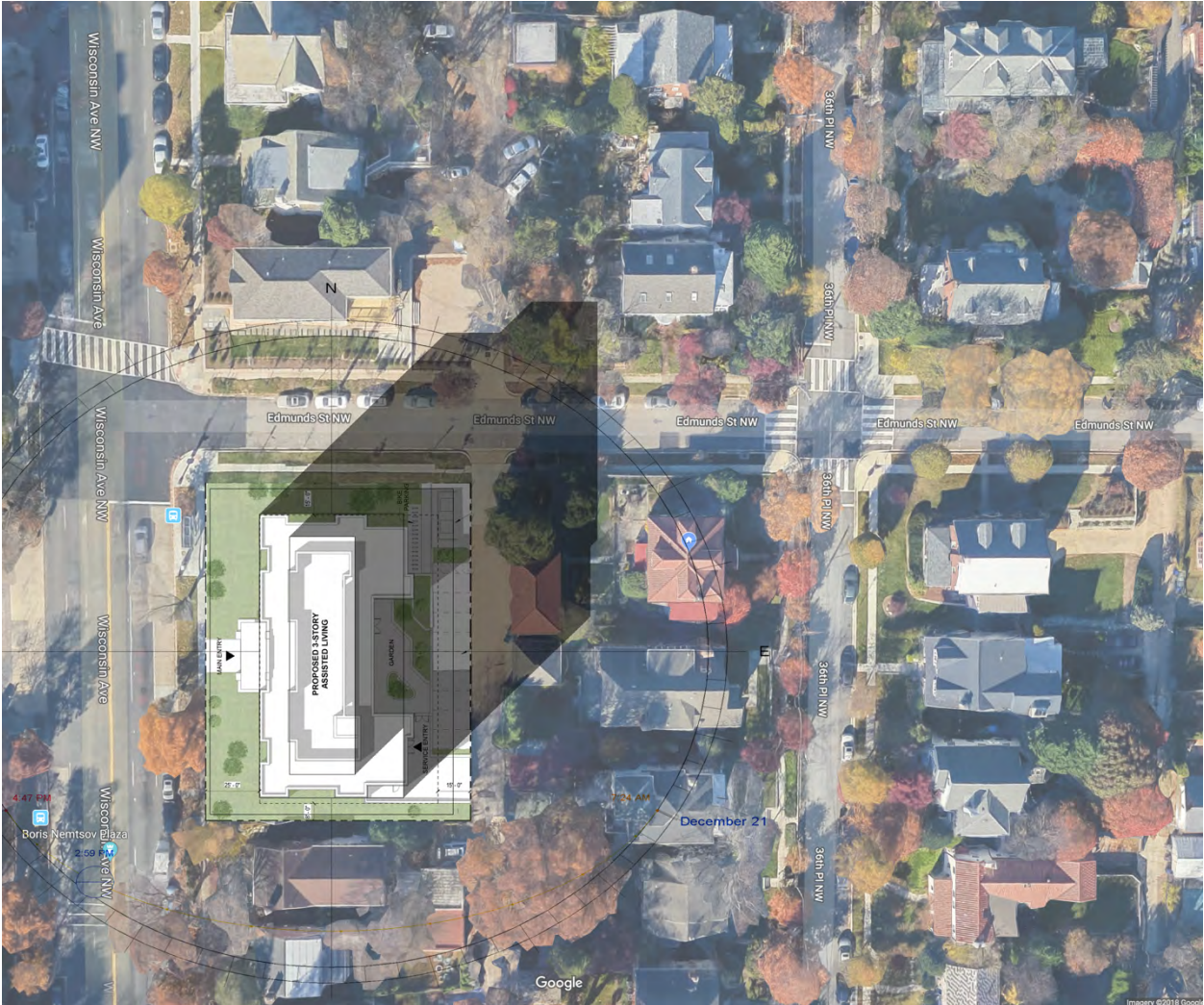
June 21 (Summer Solstice, when shadows are shortest)

- 4:35 PM
- 6:39 PM
- 7:15 PM

**SHADOW CAST EXAMPLES**

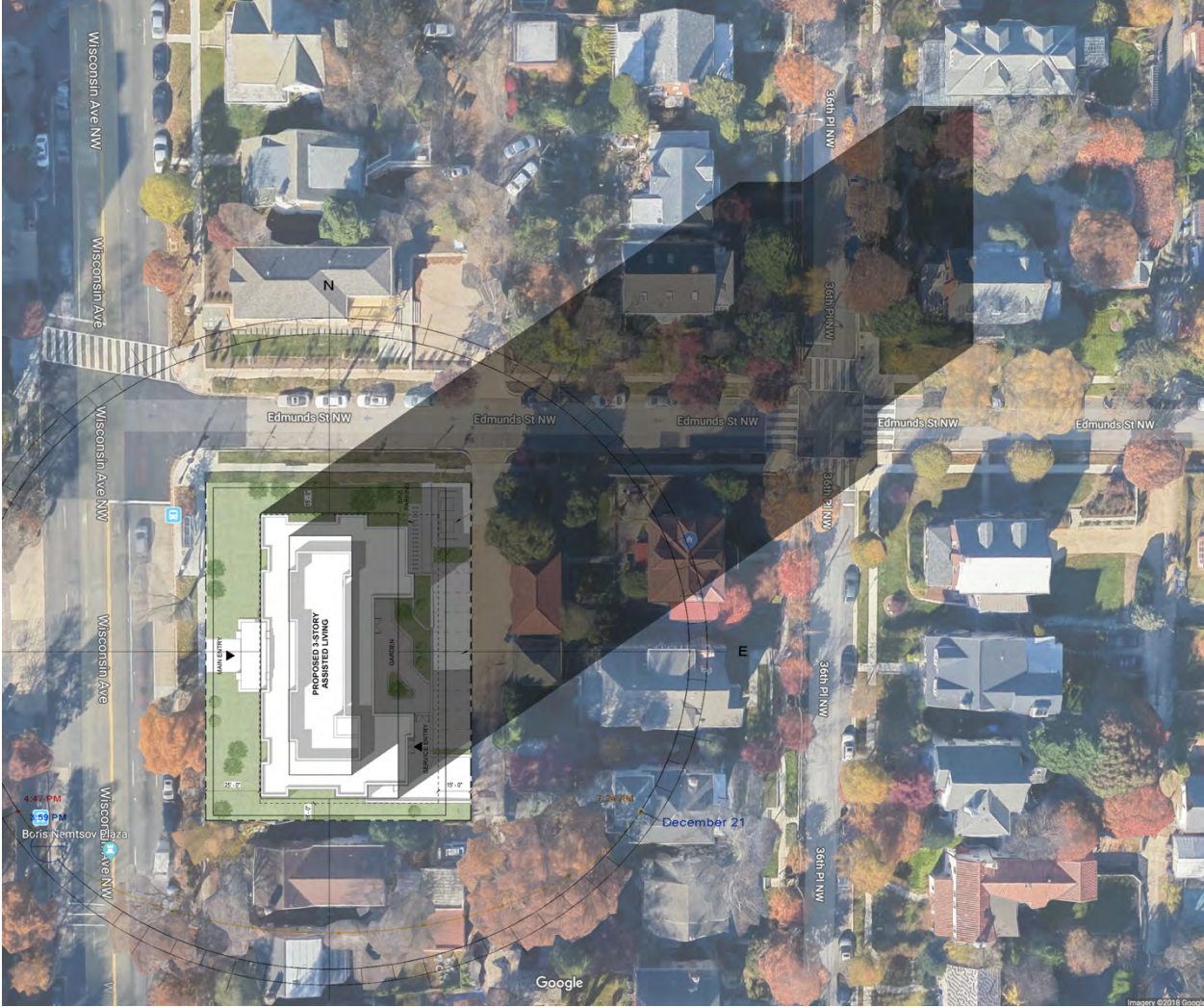
The following examples were created by overlapping my Revit model in Photoshop with 1) an overhead rendering submitted by the Applicant, and 2) an image of the neighborhood taken from Google Maps.

December 21, 2:59 PM



Building shadow in the afternoon crossing over properties at 2701 Wisconsin Ave NW, 3615 Edmonds St NW, 2610 36<sup>th</sup> Pl NW (where it blocks light to a guest apartment over the garage), and 2608 36<sup>th</sup> Pl NW.

December 21, 3:59 PM



Building shadow in the afternoon crossing over properties at 3615 Edmonds St NW, 2715 36<sup>th</sup> Pl NW, 3609 Edmonds St NW, 2610 36<sup>th</sup> Pl NW (where it blocks light to a guest apartment over the garage), and 2608 36<sup>th</sup> Pl NW.



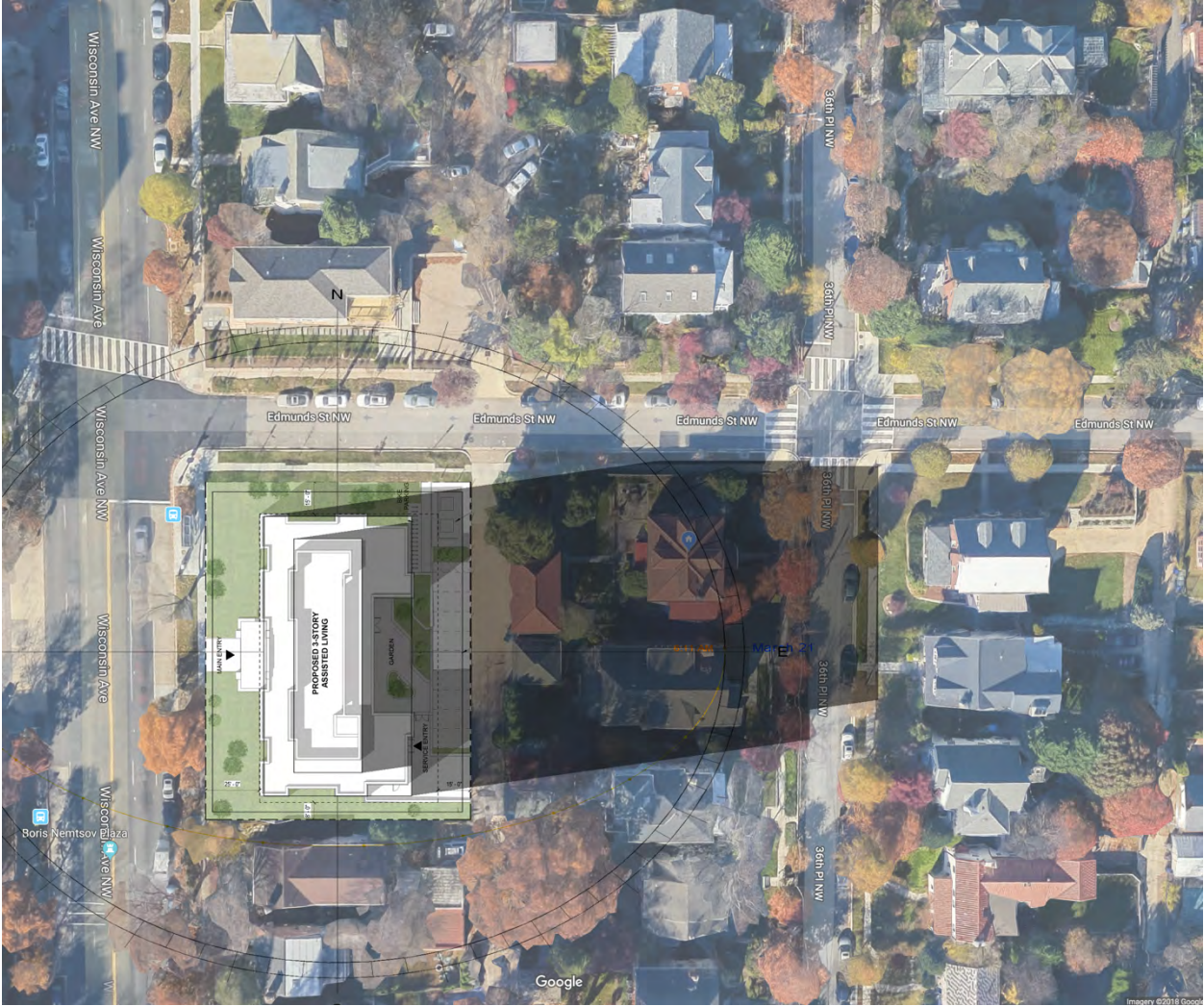
Building shadow in the late afternoon crossing over properties at 3615 Edmonds St NW, 2715 36<sup>th</sup> PI NW, 3609 Edmonds St NW, 2610 36<sup>th</sup> PI NW (where it blocks light to a guest apartment over the garage), 2608 36<sup>th</sup> PI NW, as well as part of 3620 Edmonds St NW.

March 21, 4:30 PM



Building shadow in the late afternoon crossing over properties at 2610 36<sup>th</sup> PI NW (where it blocks light to a guest apartment over the garage), 2608 36<sup>th</sup> PI NW, and 2606 36<sup>th</sup> PI NW.

March 21, 5:15 PM



Building shadow in the early evening crossing over properties at 2610 36<sup>th</sup> PI NW (where it blocks light to a guest apartment over the garage), 2609 36<sup>th</sup> PI NW, 2608 36<sup>th</sup> PI NW, 2606 36<sup>th</sup> PI NW, and 3620 Edmonds St NW.

March 21, 6:00 PM



Building shadow in the early evening crossing over properties at 2610 36<sup>th</sup> PI NW (where it blocks light to a guest apartment over the garage), 2609 36<sup>th</sup> PI NW, 2608 36<sup>th</sup> PI NW, 2607 36<sup>th</sup> PI NW, 2606 36<sup>th</sup> PI NW, and 3620 Edmunds St NW.

June 21, 4:35 PM



Building shadow in the late afternoon crossing over properties at 2610 36<sup>th</sup> PI NW (where it blocks light to a guest apartment over the garage), 2608 36<sup>th</sup> PI NW, and 2606 36<sup>th</sup> PI NW.

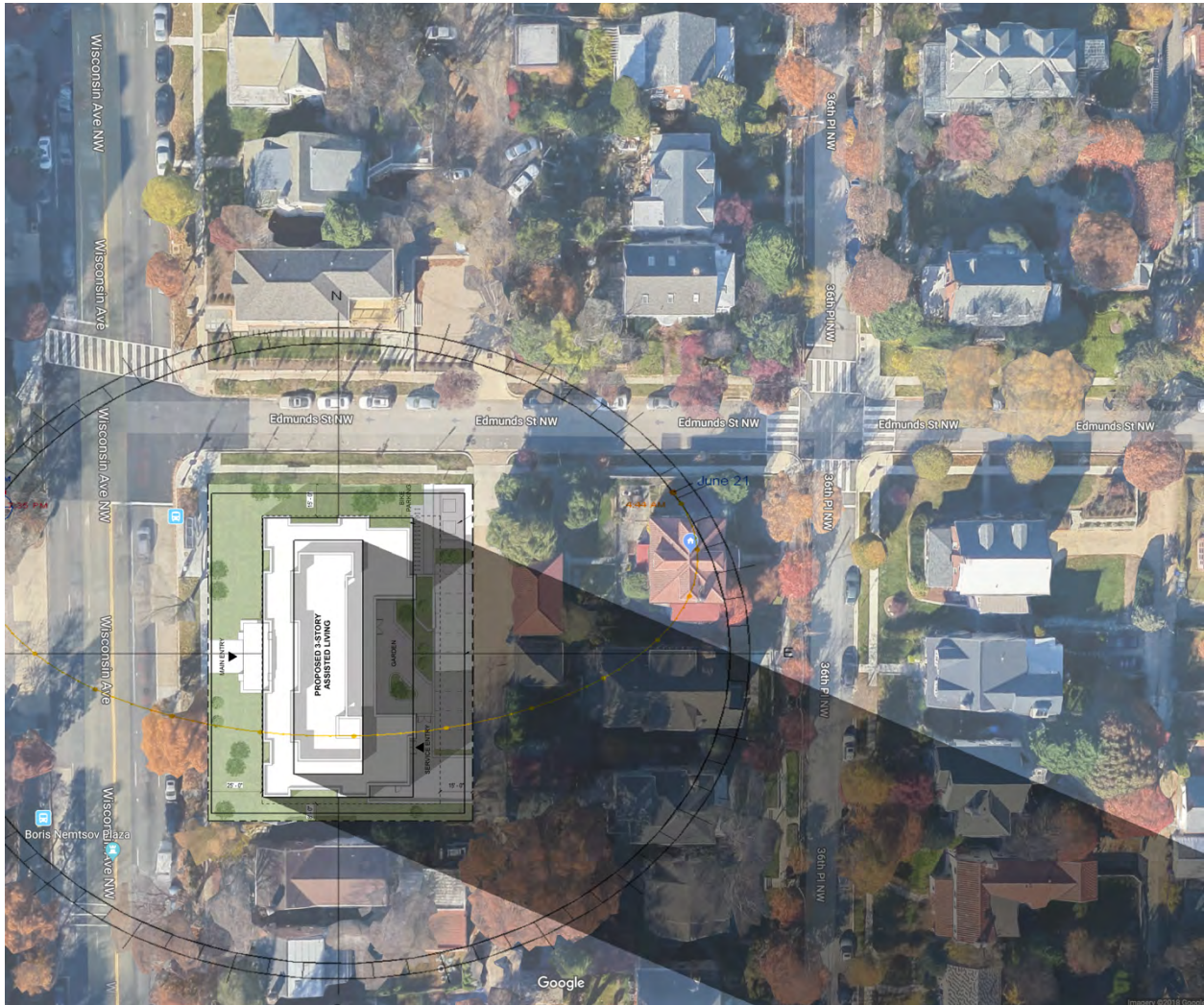


June 21, 6:39 PM



Building shadow in the early evening crossing over properties at 2610 36<sup>th</sup> PI NW (where it blocks light to a guest apartment over the garage), 2608 36<sup>th</sup> PI NW, 2607 36<sup>th</sup> PI NW, 2606 36<sup>th</sup> PI NW, 2605 36<sup>th</sup> PI NW, 2604 36<sup>th</sup> PI NW, 2603 36<sup>th</sup> PI NW, and 2617 Wisconsin Ave NW.

June 21, 7:15 PM



Building shadow in the early evening crossing over properties at 2610 36<sup>th</sup> PI NW (where it blocks light to a guest apartment over the garage), 2608 36<sup>th</sup> PI NW, 2607 36<sup>th</sup> PI NW, 2606 36<sup>th</sup> PI NW, 2605 36<sup>th</sup> PI NW, 2604 36<sup>th</sup> PI NW, 2603 36<sup>th</sup> PI NW, and 2617 Wisconsin Ave NW.

**NOTE:**

**A large, monolithic building blocks more light than smaller, individual houses with gabled roofs set towards the front of lots 44 and 812.**