

# SHADOW STUDY REPORT

**184 Valley Street,**

**Town of South Orange, NJ**

**Date: March 4th, 2019**

**Prepared By: CPA Architecture**

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## **PURPOSE:**

The purpose of this report is to analyse the impact of a proposed development upon the surrounding properties at the above noted location. We will discuss and comment upon the impact of the massing of the proposed development upon the adjacent properties using a computer-generated model for analysis of the proposed new 3 story mix use building. We have provided graphics with Site Plan of the surrounding area. The property is located at 184 Valley Street, South orange NJ.

## **DESCRIPTION OF THE SITE AND NEIGHBOURING PROPERTIES:**

**The Subject Property:** The subject property is a single lot #1 Block #2003, containing no former development.

### **Neighboring properties include:**

- **TO THE SOUTH-WEST:** The property abuts 4<sup>th</sup> Street on the side lot line. Immediately across the road are groups of three-story homes, with single story commercial building at the corner.
- **TO THE NORTH-WEST:** The property abuts Valley Street on the front side lot line. Immediately across the road are groups of two- and three-story homes.
- **TO THE NORTH-EAST:** Running parallel with the north east property line (interior side lot line) is series of 4 three story homes.
- **TO THE SOUTH-EAST:** Behind on South East is a row of 2 & 3 story homes all along the 4<sup>th</sup> street

## **METHODOLOGY**

In order to undertake the Shadow Study, we relied on standard best practice methods for analysis. The testing timeframes of three-hour increments allow for a rigorous assessment of the impact throughout the day. The testing date and evaluation allows for the ability to quantify the shadow impact as it moves across a property. Together, these testing times and evaluation are appropriate and comprehensive for the evaluation of shadow impact for proposed mid-rise development in Town of South Orange.

### **SOFTWARE USED (for modeling and shadow study: Autodesk REVIT**

#### **Testing Times:**

The evaluation of acceptable solar access will rely on 3-hour increments between the timeframes from 9:00 a.m. to 3:00 p.m. These time frames will be applied equally to the following dates:

- March 21st (Spring Solstice)
- June 21st (Summer Solstice)
- September 21st (Fall Equinox)
- Dec 21st (Winter Solstice)

## **EVALUATION**

After reviewing the shadow analysis for the proposed development, the following are the findings of the analysis. The image documentation of the Shadow Impact Analysis can be found in submitted drawings with this report, Sheet # A101, A102, A103 & A104.

This study was conducted to determine the extent to which shadows created by the new proposed structure will impact the existing overall conditions to the immediate adjoining properties.

The massing of the existing structures were created by utilizing the software previously defined. This allowed us to locate the existing adjacent structure =s to match their overall length, depth as well as height.

In the development of shadow study, we wanted to incorporate those pre-existing elements which currently exist (including pre-existing trees) and will remain after the new proposed structure is built in order to accurately determine what the actual change in circumstance of the new proposed structure will create.

We performed one shadow study of the existing current conditions without the new proposed structure and another study showing the effect the new proposed structure will have on the immediate neighbors in order to accurately judge the impact.

**OBSERVATIONS:**

**SHADOW STUDY ANALYSIS OF THE PROPOSED 3- STOREY DEVELOPMENT**

**SPRING SOLSTICE SHADOWS: (MARCH 21ST)**

- 09:00 AM: No Change
- 12:00 PM: No Change
- 03:00 PM: No Change

**SUMMER SOLSTICE SHADOWS: (JUNE 21ST)**

- 09:00 AM: There is an additional shadow created on the front of the adjacent existing building structure.
- 12:00 PM: No Change
- 03:00 PM: No Change

**FALL EQUINOX SHADOWS: (SEPTEMBER 21ST)**

- 09:00 AM: No Change
- 12:00 PM: No Change
- 03:00 PM: No Change

**WINTER SOLSTICE SHADOWS: (DECEMBER 21ST)**

- 09:00 AM: There is an additional shadow created on the front eastern side of the adjacent existing building at the front approximately 5' to 7', which encompasses only the porch.
- 12:00 PM: No Change
- 03:00 PM: No Change

Sincerely,



**Albert Arencibia / R.A. | A.I.A.**

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