Charlotte Historic District Commission	***Application for a Certificate of Appropriateness***
Staff Analysis	***Date: November 13, 2019***
HDCRMI 2019-00538	***PID# 08118703***

LOCAL HISTORIC DISTRICT: Plaza Midwood

PROPERTY ADDRESS: 1511 The Plaza

SUMMARY OF REQUEST: Addition (Solar Panels)

APPLICANT/OWNER: Larry Nabatoff

Details of Proposed Request

Existing Conditions

The existing structure is a two-story Craftsman constructed in 1920. Architectural features include a full-width front porch that terminates at a porte cochere, decorative shingles in the gables, exposed rafters, brackets, 8/1 windows. Lot size is approximately 100' x 159'. Adjacent structures are 1-2 story single-family houses. A rear addition, accessory structure and swimming pool were approved under previous applications (COA# 2014-191, COA# 2015-0053).

Proposal

The proposal is the addition of solar panels to the asphalt shingle roof of the main building and an accessory building. The panels will be flush mounted, no-tilt and have a life span of approximately twenty years. Proposed locations are the rear elevation roof, a portion of the left elevation roof, and the left elevation of the c. 2015 accessory structure's roof. There are no changes proposed to the historic structure itself, and the solar panels are completely reversible.

Design Guidelines – Additions, page 7.2

1. Attempt to locate the addition on the rear elevation so that it is minimally visible from the street.
2. Limit the size of the addition so that it does not visually overpower the existing building.
3. Attempt to attach new additions or alterations to existing buildings in such a manner that, if such additions or alterations were to be removed in the future, the essential form and integrity of the building would be unimpaired.
4. Maintain the original orientation of the structure. If the primary entrance is located on the street façade, it should remain in that location.
5. Maintain the existing roof pitch. Roof lines for new additions should be secondary to those of the existing structure. The original roof as visible from the public right-of-way should not be raised.
6. Make sure that the design of a new addition is compatible with the existing building. The new work should be differentiated from the old while being compatible with its massing, form, scale, directional expression, roof forms and materials, foundation, fenestration, and materials.

Staff Analysis

Staff has the following concerns with the proposal:

1. The proposal is not incongruous with the District and meets the guidelines for Additions 7.2.
2. Minor revisions may be reviewed by staff.

HDCRMI 2019-00538

PID: 08118703

LOCAL HISTORIC DISTRICT: PLAZA-MIDWOOD

PROPOSED PROJECT: ADDITION

November Meeting 2019

We plan to place solar panels on our home at 1511 The Plaza. Our home is part of the Plaza-Midwood Historic District. We will celebrate the 100 year anniversary of our home in 2020. We believe that installing solar panels will cut down on our energy usage, convert much of our usage to a cleaner source, provide this clean energy back to the grid for our neighbors to use and reduce the need for energy production from carbon emissions as Charlotte has an air quality issue. Because of some of the details of our project and the relative "newness" of solar panel decisions coming before the Commission, our project needs to go before the full Commission for approval.

Our solar provider designed a system for our location (Image A) which included panels visible from the front of our home. After viewing this, we requested that we look for another way to gain the necessary exposure for the lost panels. The solution (Image B) includes panels on the out building and maximizing the panels placed on the back of the home.

The panels are standard panels, flush mounted. They have a lifetime of 20 - 25 years - by which time our entire roof surface will likely be made of photo-voltaic panels or shingles. As such, they are not permanent, and they are not a structural element or an alteration to the home any more than painting the house in camouflage print or placing purple roof shingles on the home (both of which are allowed as I understand).

None of the panels being proposed are visible from the street in front of our home. Some panels are visible from an angle down the street and some are visible looking through my neighbors back yard from around the corner on School Street.

We respectfully request that the Commission approve our proposal as submitted. Any reduction in the number of panels will significantly reduce the viability of this project. The panels are black, flush mounted and blend into the rooftop. The are not permanent nor do they represent a structural change to our home.

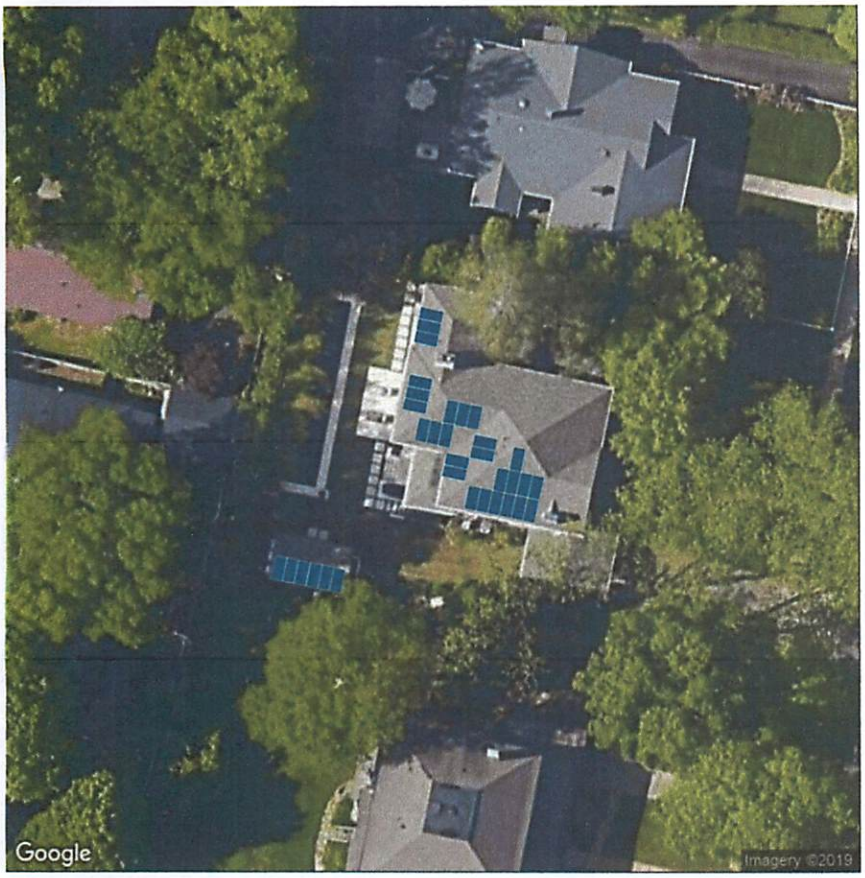
Thank you.

Larry Nabatoff and Kelly Katterhagen
1511 The Plaza

Front of House E

Initial Plan Design

(A) original recommendation from solar comp. to maximize solar (9 panels on front of home)



W

E Front of House

(B) Request/Proposed Panels

moves panels from front of home to south facing side of shed in back of home to allow for historic look of home from street.

Front View

Front view of 1511 The Plaza, Charlotte NC 28205

Solar Panel

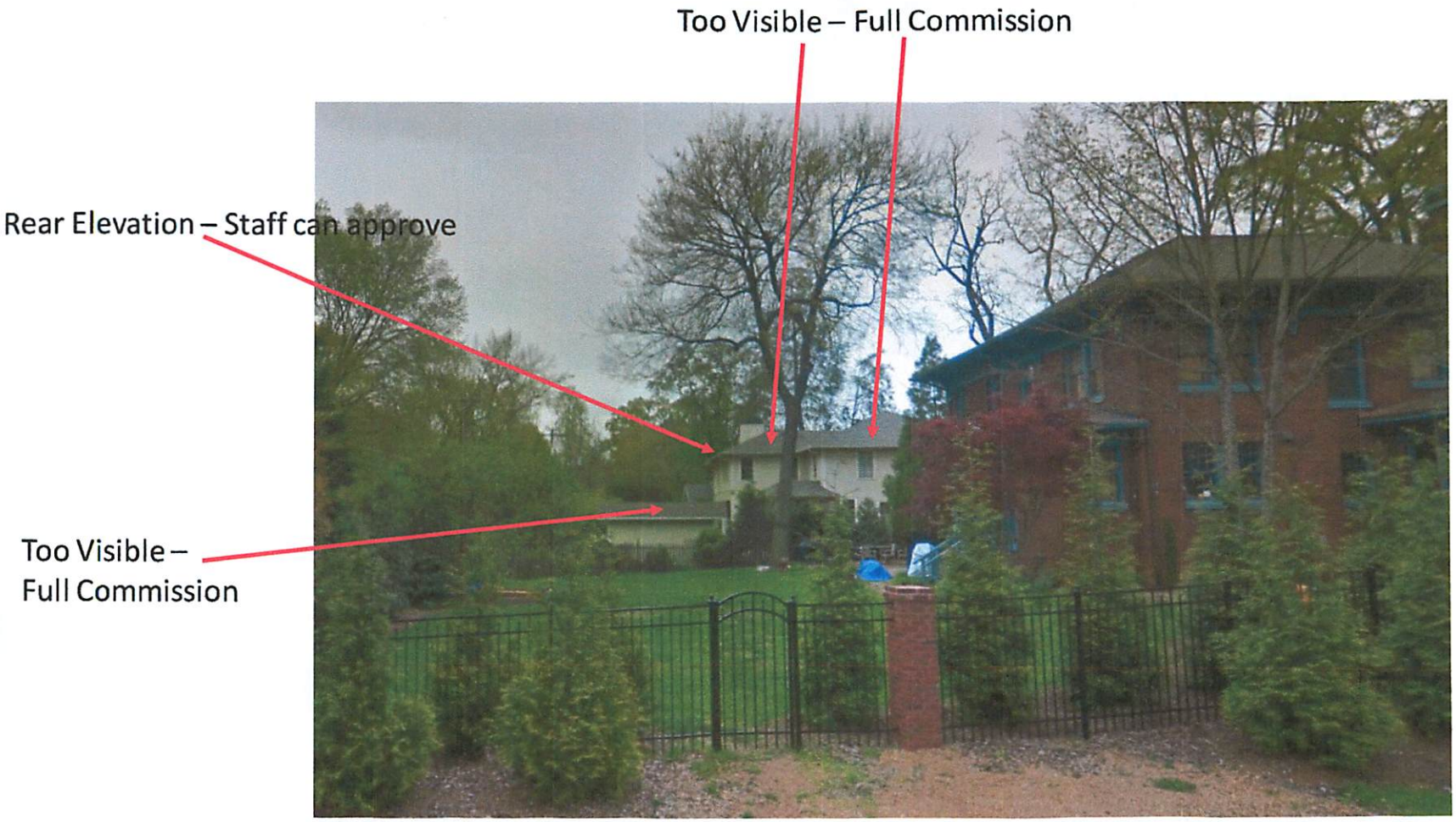
Requested Approval – No/Zero Panels will be visible from the front of the house or anywhere within property line.

View from corner - one house away

Too Visible –
Full Commission

Requested Panel Placement – while not visible from front of home can be seen from down the street.

View from side street behind homes



Requested Panel Placement - can be seen from around the corner - behind neighbors home.


169.33
87
100
168
75
50.01
100
155
Click to start drawing
100.01
Ch
100.09
50
100
99.31
159.19
60.71
159.22
97.82
125.5
34.16
92.75
65.7
168.85
1600-1699
140 feet from first visible spot on The Plaza
190 feet From School Street

Example of panel profile:

- mounted to roof ~~Not~~ Raised or angled
- no wires showing

Q.PEAK DUO BLK-G5 305-320

Q.ANTUM SOLAR MODULE

The new Q.PEAK DUO BLK-G5 solar module from Q CELLS impresses with its outstanding visual appearance and particularly high performance on a small surface thanks to the innovative Q.ANTUM DUO Technology. Q.ANTUM's world-record-holding cell concept has now been combined with state-of-the-art circuitry half cells and a six-busbar design, thus achieving outstanding performance under real conditions — both with low-intensity solar radiation as well as on hot, clear summer days.

Q.ANTUM TECHNOLOGY: LOW LEVELISED COST OF ELECTRICITY

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.3%.

INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID Technology, Anti PID Technology[1], Hot-Spot Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty[2].

STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

[1] APT test conditions according to IEC/TS 62804-1:2015, method B (–1500 V, 168 h)
[2] See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:

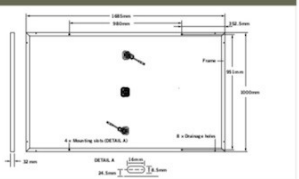
Rooftop arrays on residential buildings

Engineered in **Germany**

Q CELLS

MECHANICAL SPECIFICATION

Format	1685 mm × 1000 mm × 32 mm (including frame)
Weight	18.7 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 20 monocrystalline Q.ANTUM solar half cells
Junction box	70-85 mm × 50-70 mm × 13-21 mm Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) 1100 mm, (–) 1100 mm
Connector	Multi-Contact MC4, IP65 and IP68

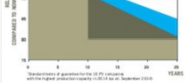


ELECTRICAL CHARACTERISTICS

POWER CLASS				305	310	315	320
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / –0 W)							
Minimum	Power at MPP[2]	P_{MPP}	[W]	305	310	315	320
Minimum	Short Circuit Current*	I_{SC}	[A]	9.78	9.83	9.89	9.94
Minimum	Open Circuit Voltage*	V_{OC}	[V]	39.75	40.02	40.29	40.56
Minimum	Current at MPP*	I_{MPP}	[A]	9.31	9.36	9.41	9.47
Minimum	Voltage at MPP*	V_{MPP}	[V]	32.78	33.12	33.46	33.80
Minimum	Efficiency[2]	η	[%]	≥18.1	≥18.4	≥18.7	≥19.0
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC[3]							
Minimum	Power at MPP[2]	P_{MPP}	[W]	226.0	229.7	233.5	237.2
Minimum	Short Circuit Current*	I_{SC}	[A]	7.88	7.93	7.97	8.02
Minimum	Open Circuit Voltage*	V_{OC}	[V]	37.18	37.43	37.69	37.94
Minimum	Current at MPP*	I_{MPP}	[A]	7.32	7.36	7.41	7.45
Minimum	Voltage at MPP*	V_{MPP}	[V]	30.88	31.20	31.52	31.84

[1] 1000 W/m², 25 °C, spectrum AM 1.5G [2] Measurement tolerances STC ± 3%; NOC ± 5% [3] 800 W/m², NOC, spectrum AM 1.5G * typical values, actual values may differ

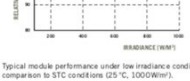
Q CELLS PERFORMANCE WARRANTY



At least 98 % of nominal power during first year. Thereafter max. 0.54 % degradation per year. At least 93.1 % of nominal power up to 10 years. At least 85 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	**Temperature Coefficient of V_{OC}**	β	[%/K]	–0.28
Temperature Coefficient of P_{MPP}	γ	[%/K]	–0.37	**Normal Operating Cell Temperature**	NOCT	[°C]	45

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V_{SYS}	[V]	1000	**Safety Class**	II
Maximum Reverse Current	I_R	[A]	20	**Fire Rating**	C
Push/Pull Load (Test-load in accordance with IEC 61215)		[Pa]	5400/4000	**Permitted Module Temperature On Continuous Duty**	-40 °C up to +85 °C

QUALIFICATIONS AND CERTIFICATES

VDE Quality Tested, IEC 61215 (Ed.2); IEC 61730 (Ed.1), Application class A
This data sheet complies with DIN EN 50380.

PARTNER

NOTE: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

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Q PEAK DUO BLK-G5_305-320_2017-07_Rev01_EN

Engineered in **Germany**

Q CELLS