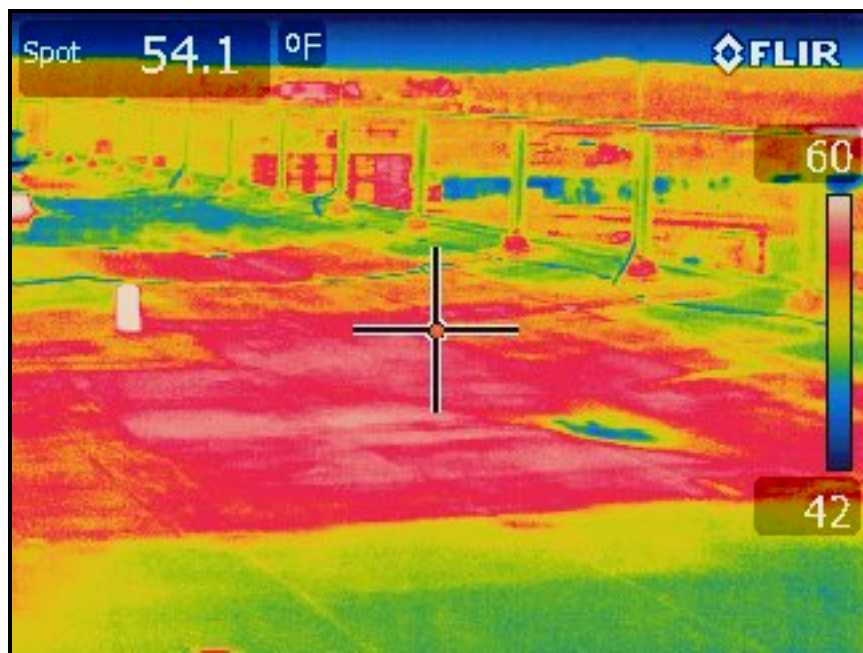


# ROOF SYSTEM INFRARED SCAN EVALUATION

## ALBANY HOUSING AUTHORITY

One and Three Lincoln Homes  
Morton Avenue  
Albany, New York 12202



Prepared by:

Sean Moran, Roofing Innovations, LLC

Date: April 26, 2014



## *Introduction*

A comprehensive infrared moisture survey, utilizing a FLIR E60 Camera, and subsequent visual condition assessment, was completed for The Albany Housing Authority, specifically, One and Three Lincoln Homes located on Morton Avenue, Albany NY. As a comment, The FLIR infrared scanning device works on a principal of locating thermal (heat) gain achieved during day's with direct sunlight warming/heating the membrane and transferring the heat gain into the existing insulation located below the membrane. During evening hours, the dry insulation releases the heat gain, the wet areas of insulation retain the thermal gain – the IR Camera records/identifies the difference in temperatures, which translates to areas identified as having wet insulation.

The infrared survey was performed on Thursday, April 10<sup>th</sup>, 2014. Weather conditions were ideal, with sunshine during the day, with temperatures in the mid 60's, with nighttime temperatures dropping into the high 40's. The temperature differential was sufficient to get accurate reading(s).

The subsequent visual inspection was performed on Thursday, April 24, 2014. The purpose of this inspection was to identify the extent, if any, of moisture infiltration into the existing roof assembly, document observed deficiencies, determine overall condition of the existing roof system and to estimate the remaining service life of the in-place roof assembly.

The existing roof system, noted at all roof areas, is a Firestone, SBS, mineral-surfaced, hot-modified roof system, installed over multiple layers of polyisocyanurate insulation and recovery board. Existing deck type is poured-in-place concrete.

Please reference the Roof Inspection Summary, attached rooftop drawing and Photograph Documentation for additional information pertaining to this roof inspection.

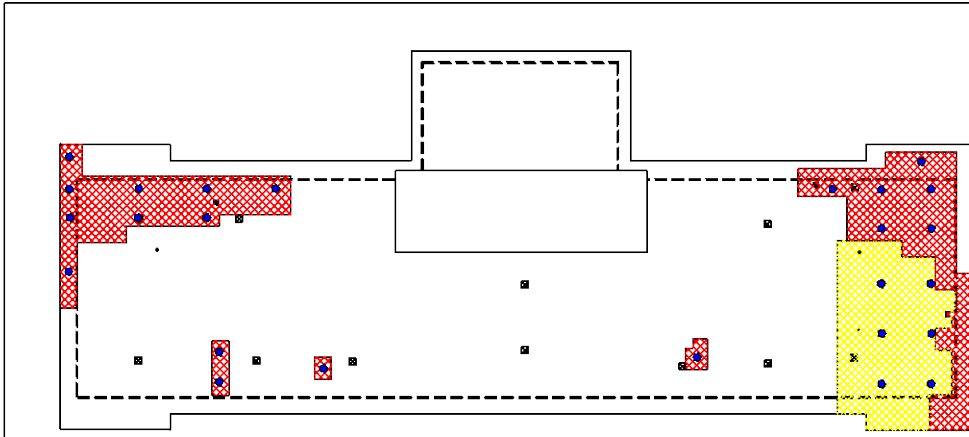
## *Roof Inspection Summary*

Lincoln Homes are both 12 story buildings. Both site(s) have a roof footprint of approximately 5,200 ft<sup>2</sup>, measuring approximately 152' x 40'. The overall condition of the current roofing assets is poor. Both roof(s) are approximately 16+/- years old being installed originally by J & B Roofing, formerly of Cohoes, NY.

As stated above, the roof areas, as confirmed in this report, via the performed infrared scan are all comprised of the same construction. All decks are concrete.

Core cuts taken revealed the following construction from top-to-bottom. Namely;

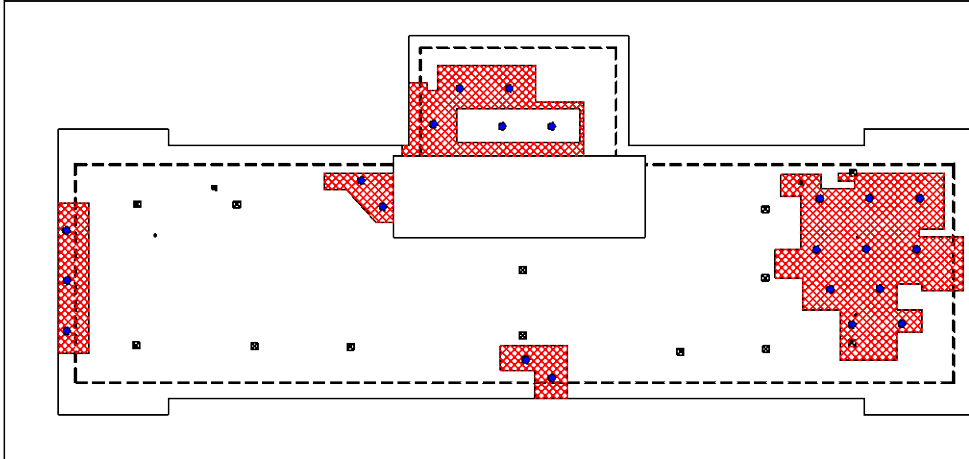
- A Firestone SBS mineral-surfaced, modified bitumen roof cover over;
- Multiple layer(s) of tapered polyisocyanurate insulation over;
- A poured-in-place concrete deck
- Note; did not observe a vapor barrier placed on the concrete deck



**GENERAL NOTES:**

1. Provide existing roof cover to program to include the specified replacement. The attached detail drawing, which provides an example of the replacement, shall be used for the replacement. It is the contractor's responsibility to verify the existing roof cover and to provide the replacement in accordance with the specifications and to provide the replacement in accordance with the specifications.
2. Install existing waterproofing membrane of waterproofing membrane on the roof and over the waterproofing membrane. The waterproofing membrane shall be installed in accordance with the specifications and to provide the replacement in accordance with the specifications.
3. Verify the waterproofing membrane is installed in accordance with the specifications and to provide the replacement in accordance with the specifications. The waterproofing membrane shall be installed in accordance with the specifications and to provide the replacement in accordance with the specifications.
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FLOOR LAYER	
1	CONCRETE
2	INSULATED CONCRETE
3	FLYASH ASK
4	MEMBRANE SYSTEM
5	PERFORATION
6	IRON FRANK
7	EMERALD VIEW





ALBANY HOUSING AUTHORITY



ROOFINGinnovations

ROOF UPGRADE - 2014

2014 ROOF UPGRADE RESTORATION

ALBANY HOUSING AUTHORITY  
IDAVARROUGH APARTMENTS  
270 NORTH PEARL STREET  
ALBANY, NEW YORK 12207

PROJECT NO. 123456789

DATE: 12/31/2014

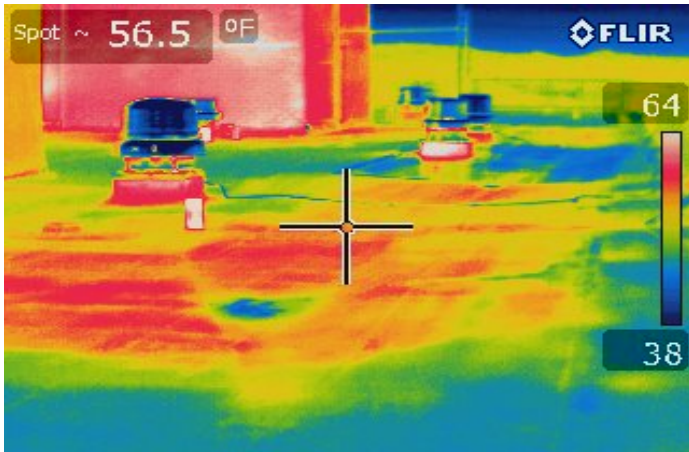
SCALE: 1/8" = 1'-0"

PROJECT LOCATION: 270 NORTH PEARL STREET, ALBANY, NY

PROJECT DESCRIPTION: ROOF UPGRADE RESTORATION

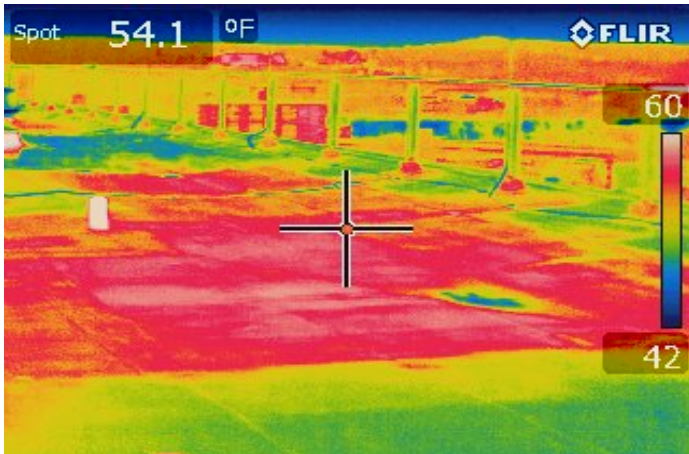
A-1

**IR PHOTO DOCUMENTATION – ONE LINCOLN**



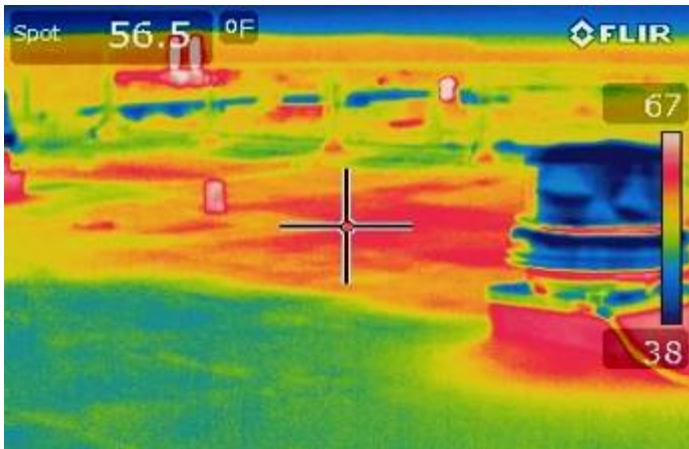
Overall view looking East...

**T-1**



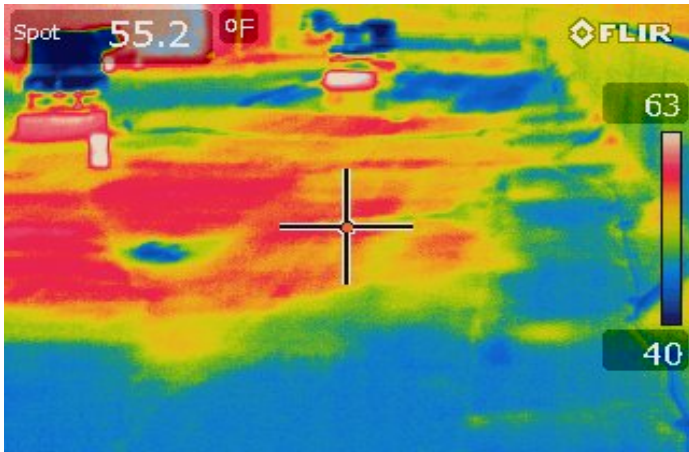
View of large anomaly...

**T-2**



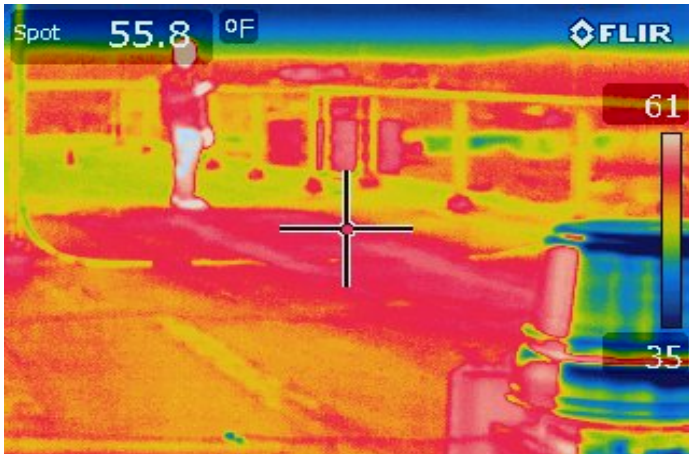
View looking Southeast...

**T-3**



View of large anomaly looking East...

T-4



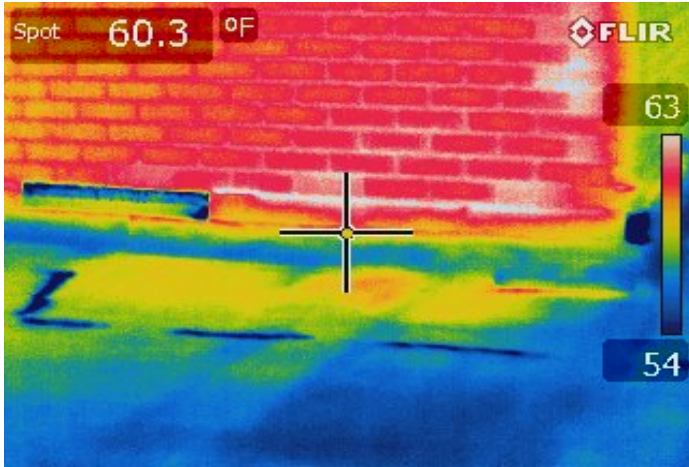
View of anomaly looking Southeast...

T-5



Area(s) where red are being shown were noted as being wet-to-saturated – note temperature of 55.4F° v 50.9F° for Blue, or dry area are(s) as noted

T-6



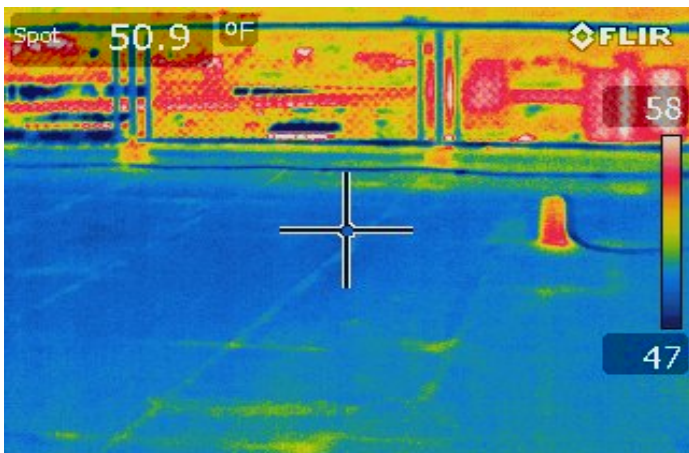
T-7

Additional view...picture framing was noted as being damp-to-wet insulation...



T-8

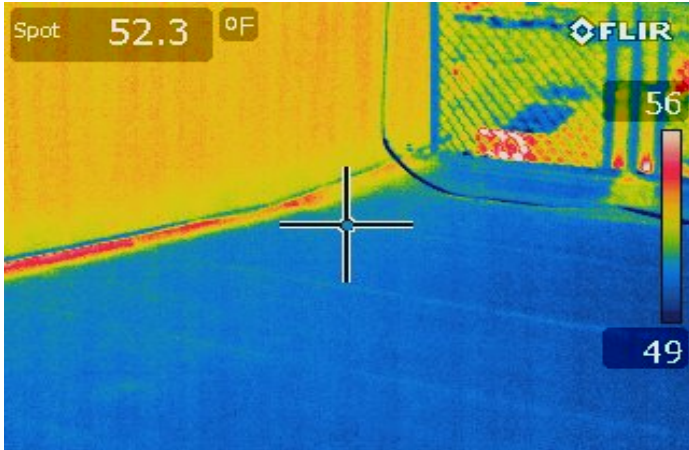
View of noted anomaly...



T-9

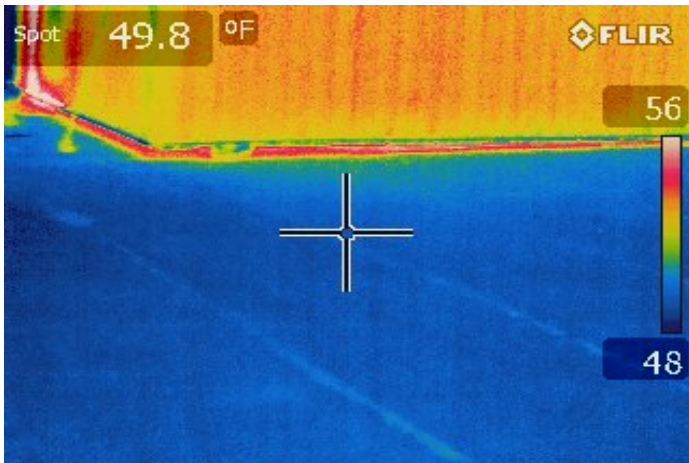
Area of dry insulation...note temperature of 50.9F°

IR PHOTO DOCUMENTATION – THREE LINCOLN



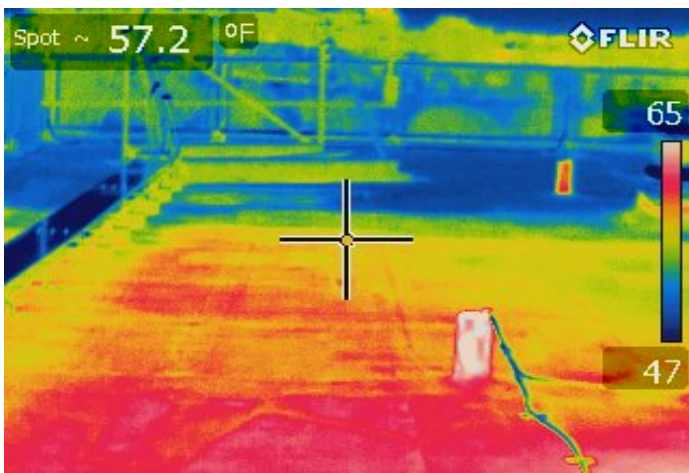
Area of dry insulation as noted near penthouse...

T-10



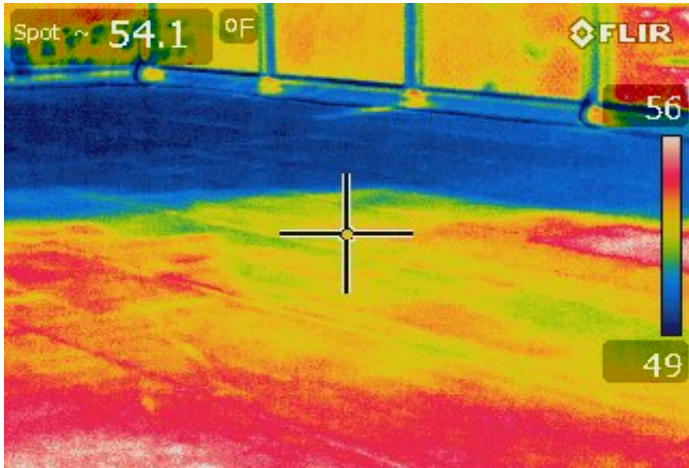
Additional view...

T-11



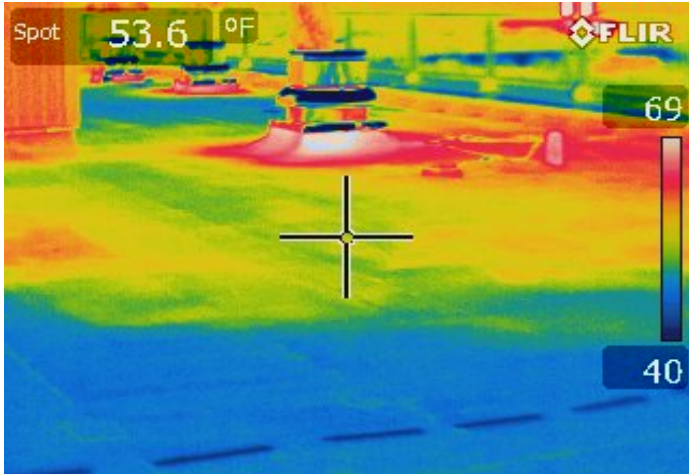
View of large anomaly looking West...

T-12



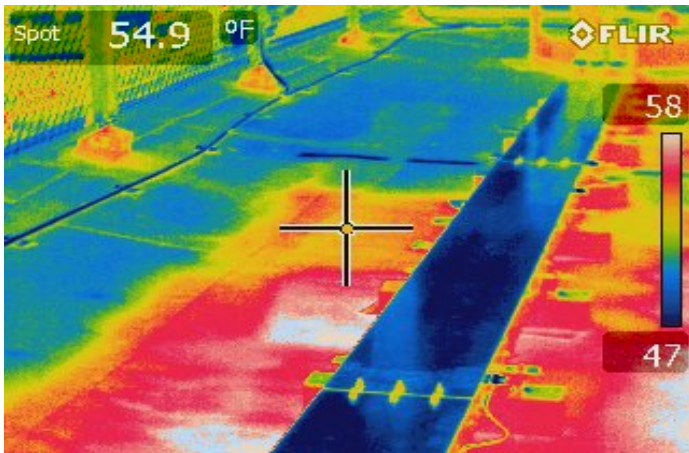
T-13

Additional view...note Yellow temperature of 54.1F°



T-14

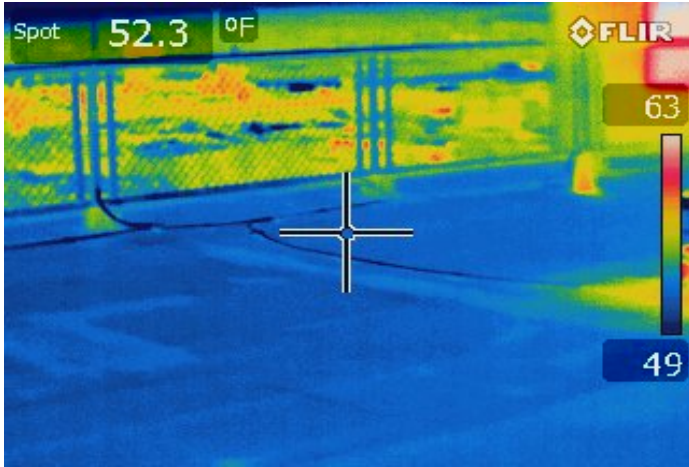
View looking Southeast...



T-15

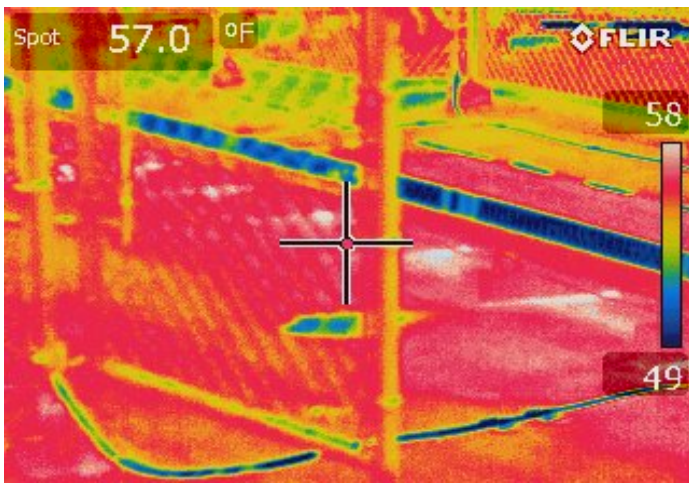
Note insulation board (straight edge) telegraphing through the mineral surfaced membrane...





View of noted dry area of insulation...

T-16



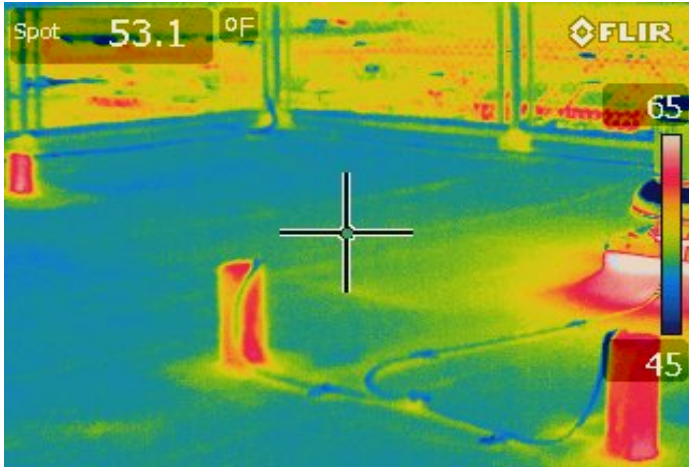
Area of wet insulation near fencing at penthouse egress...

T-17



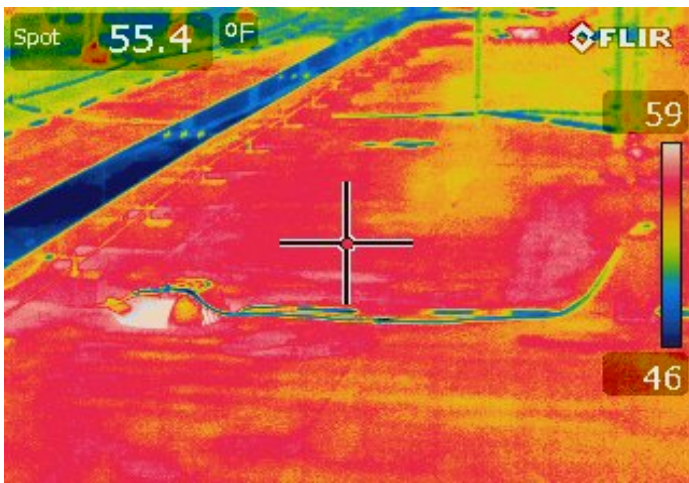
View of Three Lincoln looking East...near the penthouse egress

T-18



West side of 3 Lincoln...

T-19



View near penthouse egress...

T-20

T-21

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OVERALL VIEW OF 1 LINCOLN LOOKING WEST...



ADDITIONAL VIEW...



VIEW LOOKING EAST...

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ALL PITCH BOXES WERE INSTALLED INCORRECTLY FROM DAY 1 – PITCH BOX FLANGE IS SUPPOSE TO BE PLACED ON TOP OF THE MEMBRANE, WITH THE FLANGE BEING STRIPPED IN WITH A 5 COURSE PROCEDURE...ALL PITCH BOXES NOTED WERE INSTALLED PRIOR TO THE CAP SHEET, WITH THE CAP SHEET SIMPLY BUTTING UP TO THE VERTICAL LEG OF THE PITCH BOX...ALL MASTIC HAD BROKEN AWAY ASLO AS SHOWN IN THIS PHOTO



CORE CUTS REVEALED SATURATED INSULATION



TYPICAL PITCH BOX...AGAIN, WAS NEVER INSTALLED CORRECTLY FROM DAY ONE – NOTE ASLO, DETERIORATION OF THE VERTICAL LEG OF THE PITCH BOX DUE TO LIME IN THE CEMENT EATING THE GALVANIZED METAL MATERIAL OF THE PITCH BOX – PITCH BOXES SHOULD HAVE BEEN ELIMINATED FROM DAY 1. IF THEY WERE USED, 16OZ. COPPER SHOULD HAVE BEEN THE MATERIAL UTILIZED AND SOLDERED.



OPEN SEAMS...NONE WERE  
SOLDERED/WRONG MATERIAL USED.



OVERALL VIEW OF 3 LINCOLN LOOKING EAST...



VIEW OF PAST REPAIRS...

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PAST REPAIRS...



OVERALL VIEW LOOKING WEST...



LOOKING EAST...

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## Recommendations:

The overall condition of these roof areas is poor. Taking into account the possibility of a limited time frame (structures may be demolished within 5 years) I recommend the following.

1. Install/Retrofit new pitch boxes around existing – on side of building where wet insulation is noted only. Contractor to fabricate new pitch boxes of 16oz. copper, install on the outside of the existing pitch box, set in bed of asphalt cement, fill/top off with 1-part Pourable Penetration Sealant and strip in with 5 course procedure to a primed flange.
2. Inspect entire roof mat and flashing for potential sources of water entry and repair with fabric and cement, ie. Laps, base flashings, corners of curbs etc.
3. Install spun aluminum 2-way breather vents within outlined areas of wet insulation. Breather vents to be installed every 250 ft<sup>2</sup>.
4. Lightly apply Prime-Tek 7500 Primer to prepared surface. Allow to dry.
5. Apply base coat of Viridian Silicone Coating(gray – silicone coating)
6. Apply top coat of Viridian Silicone Coating (white – silicone coating)
7. Note: All materials are available to purchase through the GSA – pre-competed roofing materials available through the Federal Government at a discounted rate.  
**Contract No. GS-07F-0400W.**

Consider perhaps have contractor install vents and pitch boxes, in-house crews/summer help to apply coating...plans and specifications will be prepared upon your request for whatever course of action is selected.

In addition, once work s completed, I would continue with an aggressive roof management and PM Program on a semi-annual basis – Spring and Fall.

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Warmest regards,

Sean Moran

Roofing Innovations, LLC

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