

BRIDGING THE GAP OF EFFECTIVE BUILDING ENVELOPE ASSET ASSESSMENT, MANAGEMENT & CAPITAL FUNDING

BON SECOURS MERCY HEALTH



Construction Products Group

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LEARNING OBJECTIVES

- 1) Why Does a Systemwide Approach Improve Capital Funding Decisions Over A Campus Driven Approach?
- 2) How & Why Should A Systemwide Approach Inform Evidence Based, Facility Design Construction Standards & Facility Asset Preservation Plans?
- 3) How Does An Organization Bridge The Capital Funding Gap AND Transfer Asset Performance Risk Both During & After, The Transition From a Campus Driven Approach To A Systemwide Approach?

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QUESTIONS – OPEN DISCUSSION

What Does A Typical Campus
Driven Approach Look Like For
You All?

What Are The Typical Results?

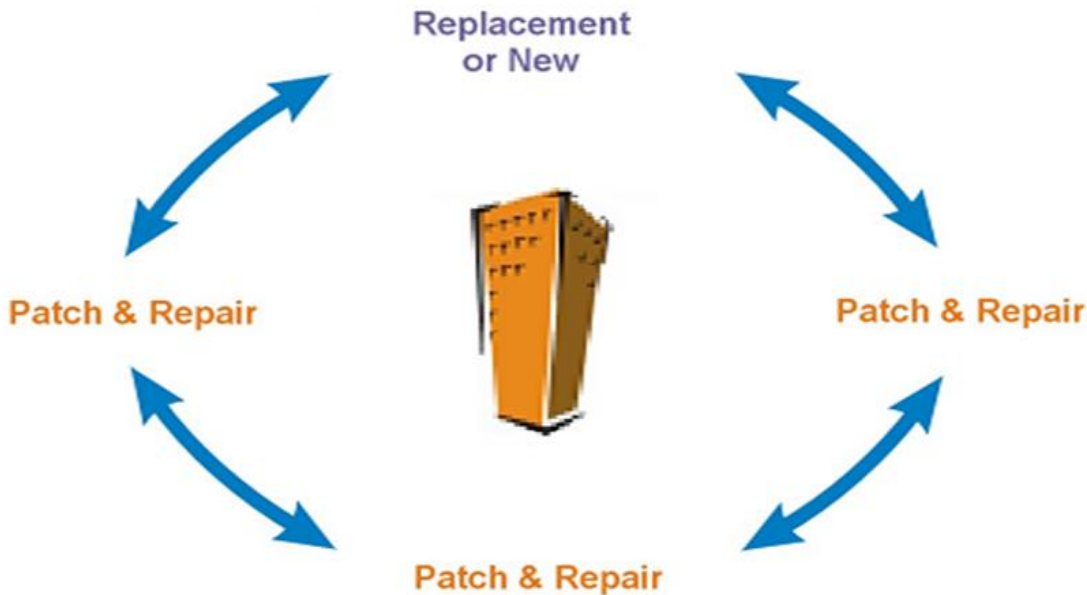
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WHAT DO WE TYPICALLY SEE?

Repetitive Cycle of Repair & Replacement Funding Requests



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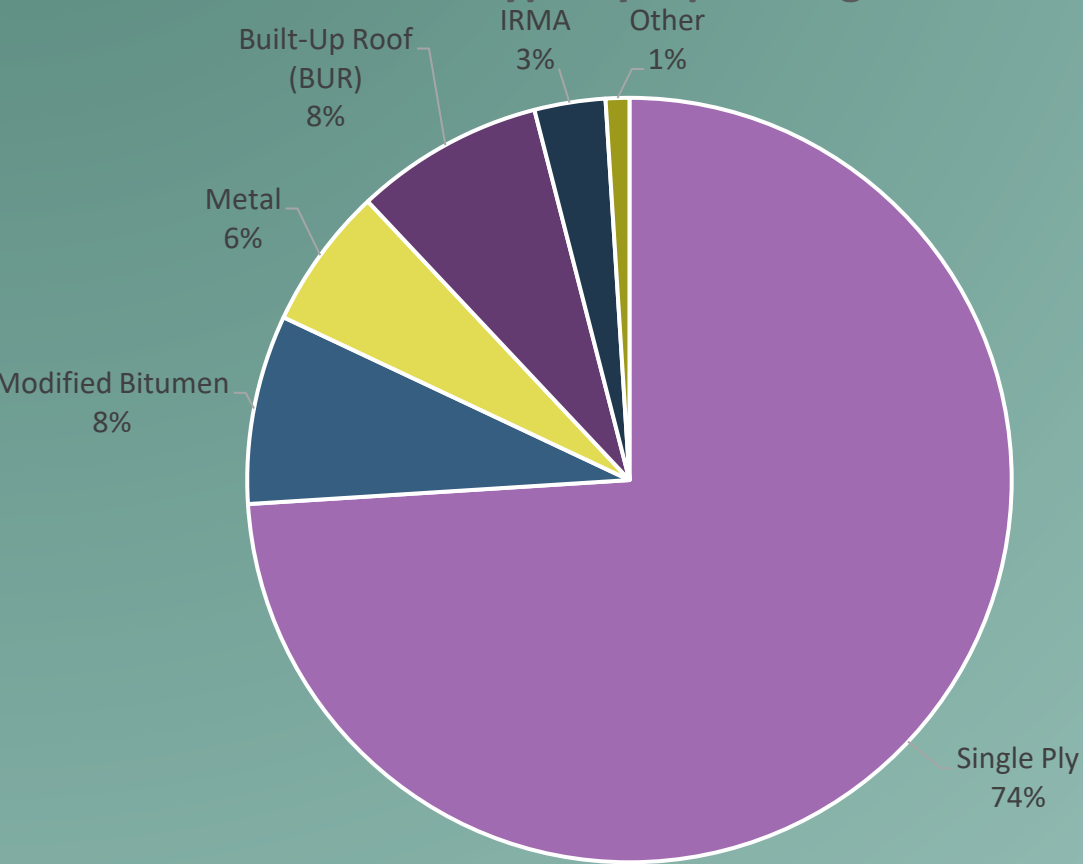


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WHAT WE TYPICALLY DON'T SEE

Overall Inventory Understanding

Roof Type by Sq. Footage



■ Single Ply ■ Modified Bitumen ■ Metal ■ Built-Up Roof (BUR) ■ IRMA ■ Other

Roof Type	Sq. Ft.
Built-Up Roof (BUR)	209,087
Fluid Applied	68,353
IRMA	153,313
Metal	309,175
Modified Bitumen	446,322
Polyurethane Foam (PUF)	136,627
Shingle	27,716
Single Ply	4,136,750
Tile	20,215
Vegetated Assembly	85,465

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WHAT WE TYPICALLY DON'T SEE

Systemwide, Life Cycle Based, Asset Preservation Approach & Program Understanding

This Requires:

Deeper Level Expertise

(Life Cycle vs Age)

Quantitative Diagnostics

Corporate Driven Pgm & Support

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WHAT WE TYPICALLY DON'T SEE

Evidence Based Macro Trends:
How Are Different Systems
Performing?

Are There Consistent Issues
Across Multiple Campuses?

Are There Other Collateral
Impacts With Installed Systems?

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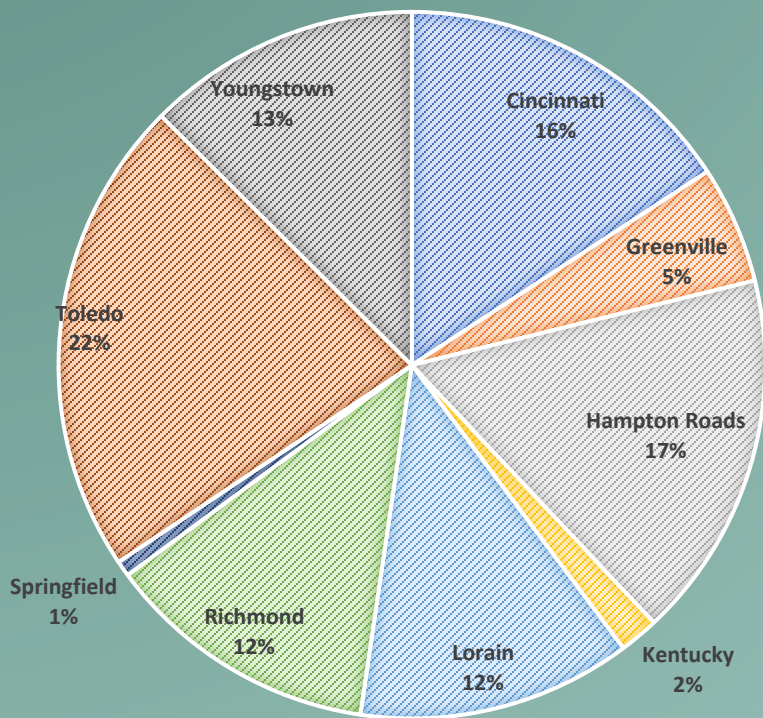


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WHAT WE TYPICALLY DON'T SEE

- If 279 Leak Calls Across 25 Facilities
- Is Capital Prioritized Against Leak Data & Facility Pain?

TOTAL LEAKS BY MARKET



Facility	# of Leaks Reported
St. Vincent Medical Center	58
Lorain	35
Mary	34
St.	24
Jev	18
Fa	12
Me	11
Ric	11
Ma	10
Cle	9
St.	9
St.	8
St.	7
An	5
Lo	5
St.	4
So	3
St.	3
Me	2
St.	2
So	2
So	2
St.	2
St.	2
St.	1
Grand Total	279

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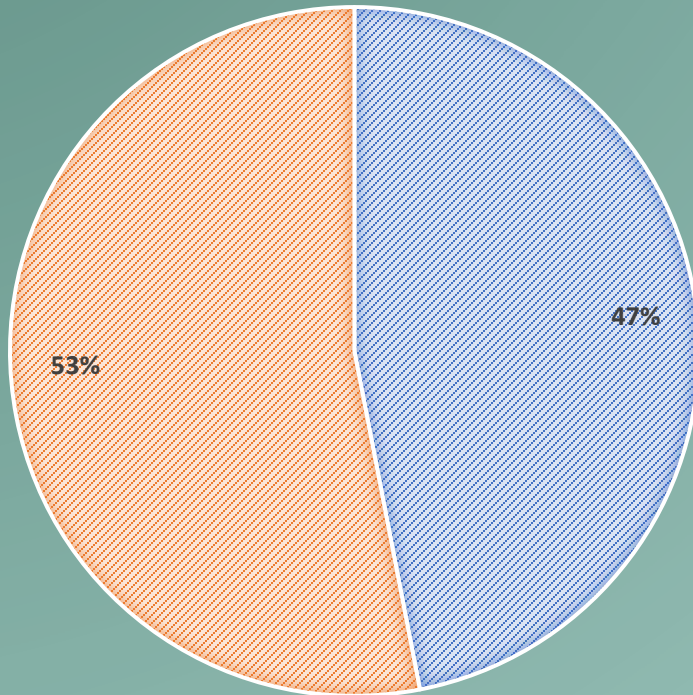


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WHAT WE TYPICALLY DON'T SEE

- Is Capital Allocated Evenly Across Regions...If You Have Them? Do You Have Data To Defend Funding?

TOTAL LEAKS BY REGION



Facility	# of Leaks Reported
St. Vincent Medical Center	58
Lorain	35
Mary	34
St.	24
Jev	18
Fa d M	12
Me rial lonal edic Center	11
Ric	11
Ma	10
Cle	9
St. sepe arre	9
St. nci own	8
St.	7
An	5
Lo	5
St. nci asts	4
So	3
St.	3
Me y Center	2
St. ne	2
So ern nia ion Medical Center	2
So gion Center	2
St. Boa	2
St.	2
St.	1
Grand Total	279

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WHAT WE OFTEN DON'T SEE

Evidence Based Roof System Choice
Performing To The Level Needed For
“Certain & Essential Type Facilities”
Such As Healthcare Bldgs.

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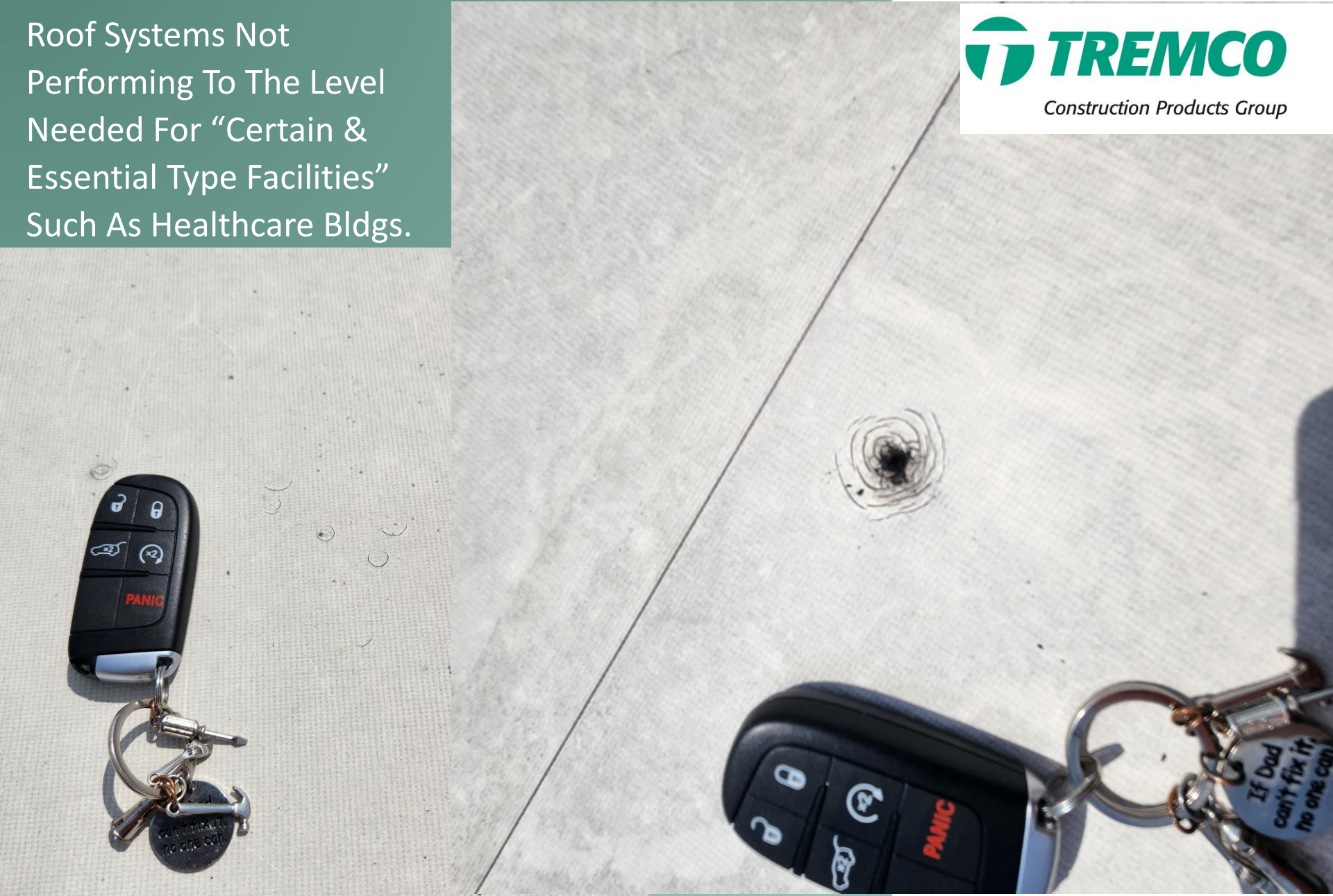


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EVIDENCE BASED DESIGN

Roof Systems Not Performing To The Level Needed For “Certain & Essential Type Facilities” Such As Healthcare Bldgs.



EVIDENCE BASED DESIGN

Roof Systems Not Performing To The Level Needed For “Certain & Essential Type Facilities” Such As Healthcare Bldgs.



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WHAT WE TYPICALLY DON'T SEE

Regularly Updated and Informed
(Evidence Based) Design &
Construction Standards for New
Construction, Renovation & Existing
Facilities.

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WHAT IS THE SYSTEM WIDE APPROACH PAYBACK?

Significant Asset Management
Cost Reduction
With Simultaneous
Asset Performance Improvement.

Is This Possible?
Why & How?

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WHY IS THIS POSSIBLE?

BECAUSE AGE IS NOT A FUNCTION OF ROOF SERVICE LIFE EXPECTANCY.

IF THE ROOF INSTALLATION IS FUNDAMENTALLY SOUND, SERVICE LIFE CAN OFTEN BE DOUBLED AND TRIPLED AT 50-60% THE COST OF ROOF REPLACEMENT. 80+ YEARS!!!

CONVERSELY GOOD MONEY CAN GET THROWN AT FUNDAMENTALLY FLAWED/DEFICIENT ASSETS

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FINANCIAL IMPLICATIONS

UNTIL THE LAST 3 YEARS, ROOF COSTS HAVE INCREASED ABOUT 8%/YEAR.

TRANSLATION – 2X EVERY 9 YRS. 4.6X EVERY 20 YRS.

LAST 3 YEARS - 20+%/YEAR

SOME MATERIALS UP 50-100%

IN GENERAL - MATERIAL INFLATION IS TEMPERING
LABOR IS NOT. WHY?

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FINANCIAL IMPLICATIONS

Example

5,500,000 sf of Roofing Assets, 8% Inflation

5% Replacement over 20 years \$755,000,000

If 35% Can Be Restored \$640,000,000 Pgm Spend

If 50% Can Be Restored \$600,000,000 Pgm Spend

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DEEPER REVELATIONS

Are Other Systems Failing That Are Masking The True Performance Of The Particular Asset Being Scrutinized or Reviewed?

In The Case Of Roofing, Water Enters A Facility From A Variety Of Ways...But The Roof is Always Guilty Until Proven Innocent.

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WAYS WATER ENTERS YOUR BUILDING- ROOF IS GUILTY UNTIL PROVEN INNOCENT

Rooftop Air Handling Units



WAYS WATER ENTERS YOUR BUILDING- ROOF IS GUILTY UNTIL PROVEN INNOCENT

The Building Enclosure – Walls



WAYS WATER ENTERS YOUR BUILDING- ROOF IS GUILTY UNTIL PROVEN INNOCENT

The Building Enclosure – Walls



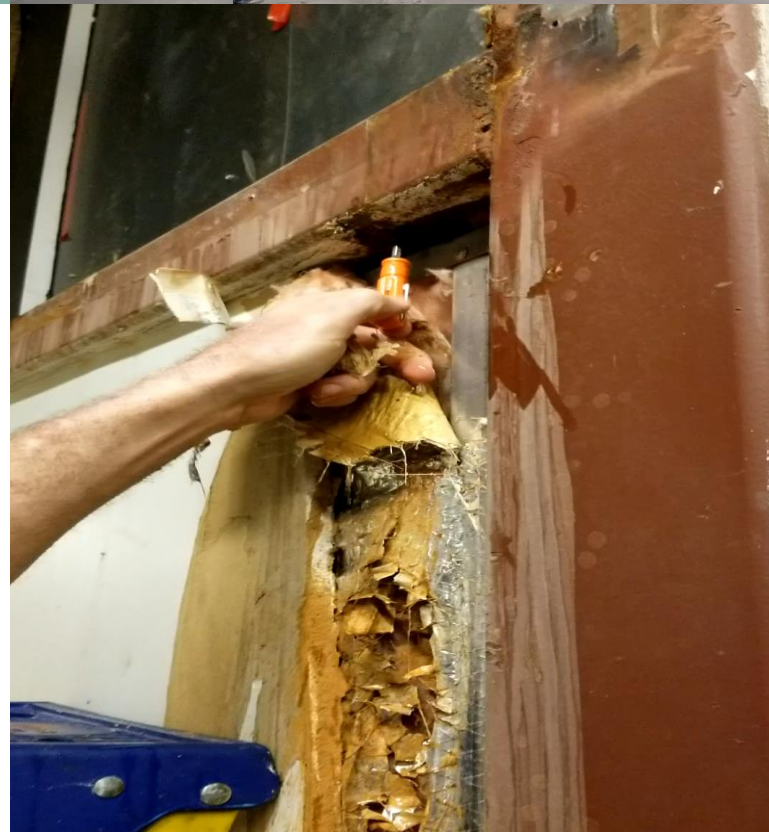
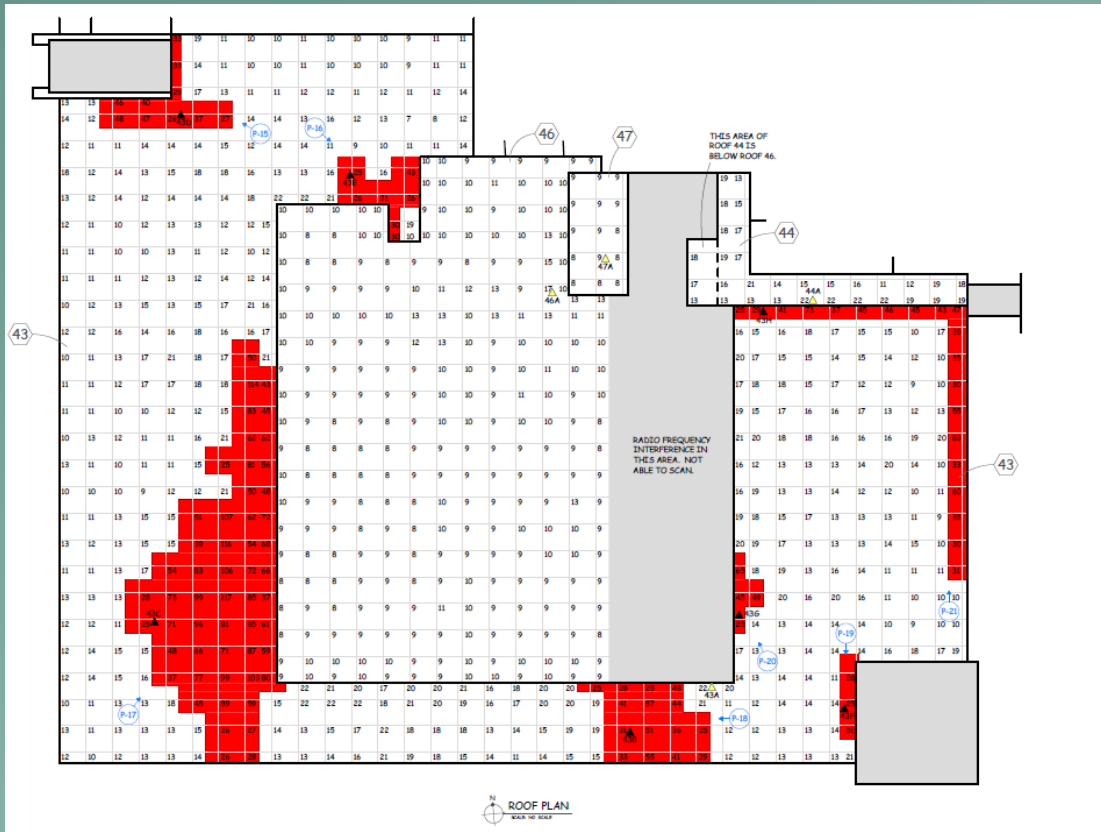
WAYS WATER ENTERS YOUR BUILDING- ROOF IS GUILTY UNTIL PROVEN INNOCENT

The Building Enclosure – Windows



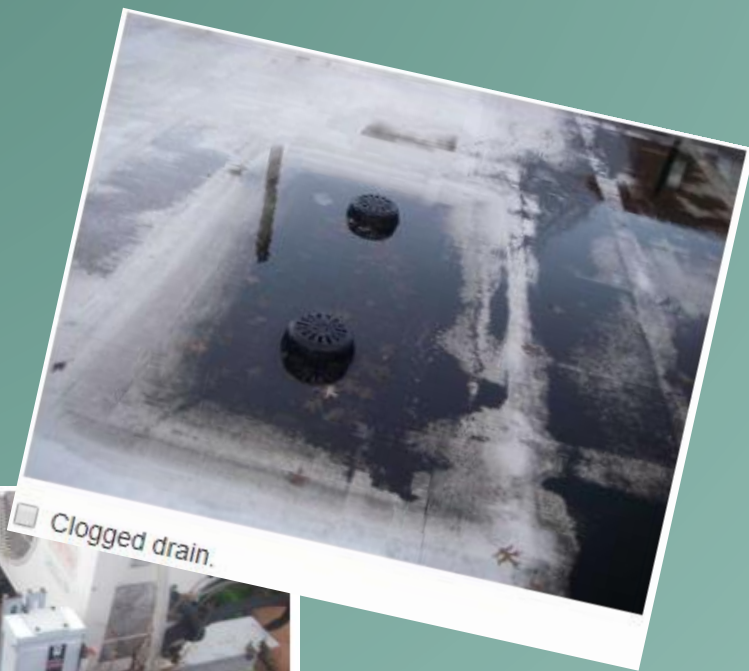
WAYS WATER ENTERS YOUR BUILDING- ROOF IS GUILTY UNTIL PROVEN INNOCENT

The Building Enclosure – Louvers and Walls.



WAYS WATER ENTERS YOUR BUILDING- ROOF IS GUILTY UNTIL PROVEN INNOCENT

The Building Enclosure – Drains



Clogged drain.



Debris on the roof.



**Drain Leader Issues*



WAYS WATER ENTERS YOUR BUILDING- ROOF IS GUILTY UNTIL PROVEN INNOCENT

Plugged Drains- Water Level Rises Above The Flashings!



*30 seconds of work
to open the drains
and remove
18.000 pounds of
water weight*

WAYS WATER ENTERS YOUR BUILDING- ROOF IS GUILTY UNTIL PROVEN INNOCENT

The Building Enclosure – Ductwork & Related Connections



OTHER DEEPER REVELATIONS

Non ballasted single ply systems are slippery when wet. Thermoplastic systems are a dangerous FM Liability with frost, ice or snow.



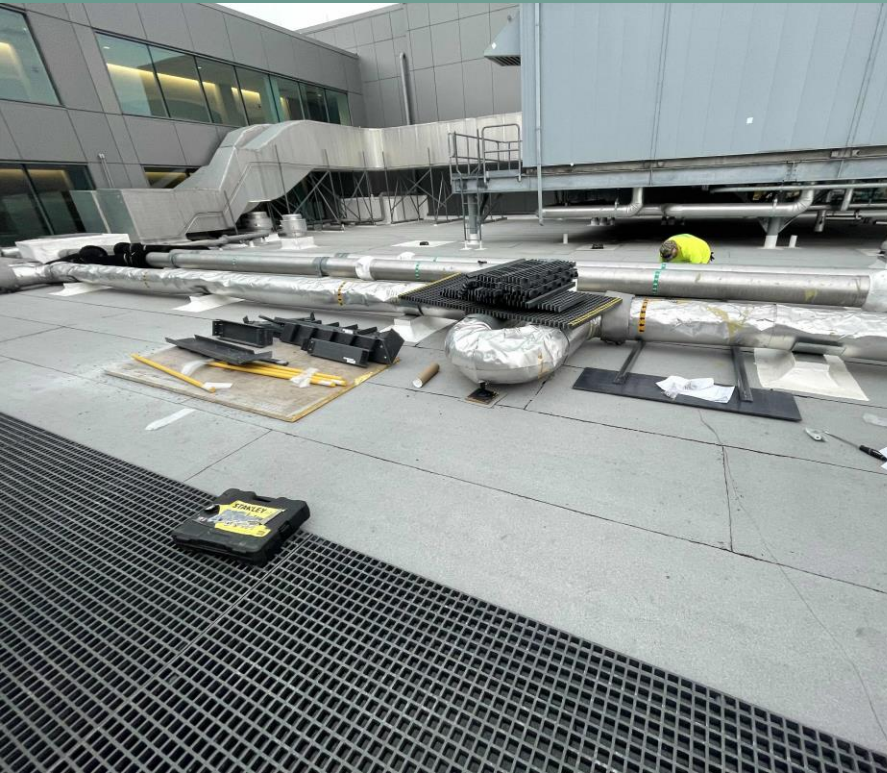
OTHER DEEPER REVELATIONS

Granule surfaced systems solve the dangerous slip/fall problems... year 'round



OTHER DEEPER REVELATIONS

Rooftop equipment piping and equipment access can be an issue. Piping insulation gets damaged. Rooftop transitions can be difficult. Crossover stairs solve this problem!



DEEPER REVELATIONS

Are your rooftops OSHA
Compliant & Safe?



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LANDING THE PLANE - KEY PGM COMPONENTS

How Does An Organization Bridge The Capital Funding Gap And Transfer Asset Performance Risk Both During & After The Transition From a Campus Driven Approach To A Systemwide Approach?

Identify An Organization That Can Be A Key Business Partner AND Who Is Willing to Accept The Asset Performance Risk Under a Fixed Cost Program. 1 Year At A Minimum, Ideally Multiple Years.

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Why?....you'll see in a moment



KEY PROGRAM COMPONENTS

INITIALLY FREEZE CAPITAL SPENDING!!!!

THE BRIDGE - ALL INCLUSIVE FLAT RATE PROGRAM FEE:

Key Business Partner (KBP) Develops Systemwide Roof Construction Information From The Structural Deck Up..... For Every Roof Section In Your System.

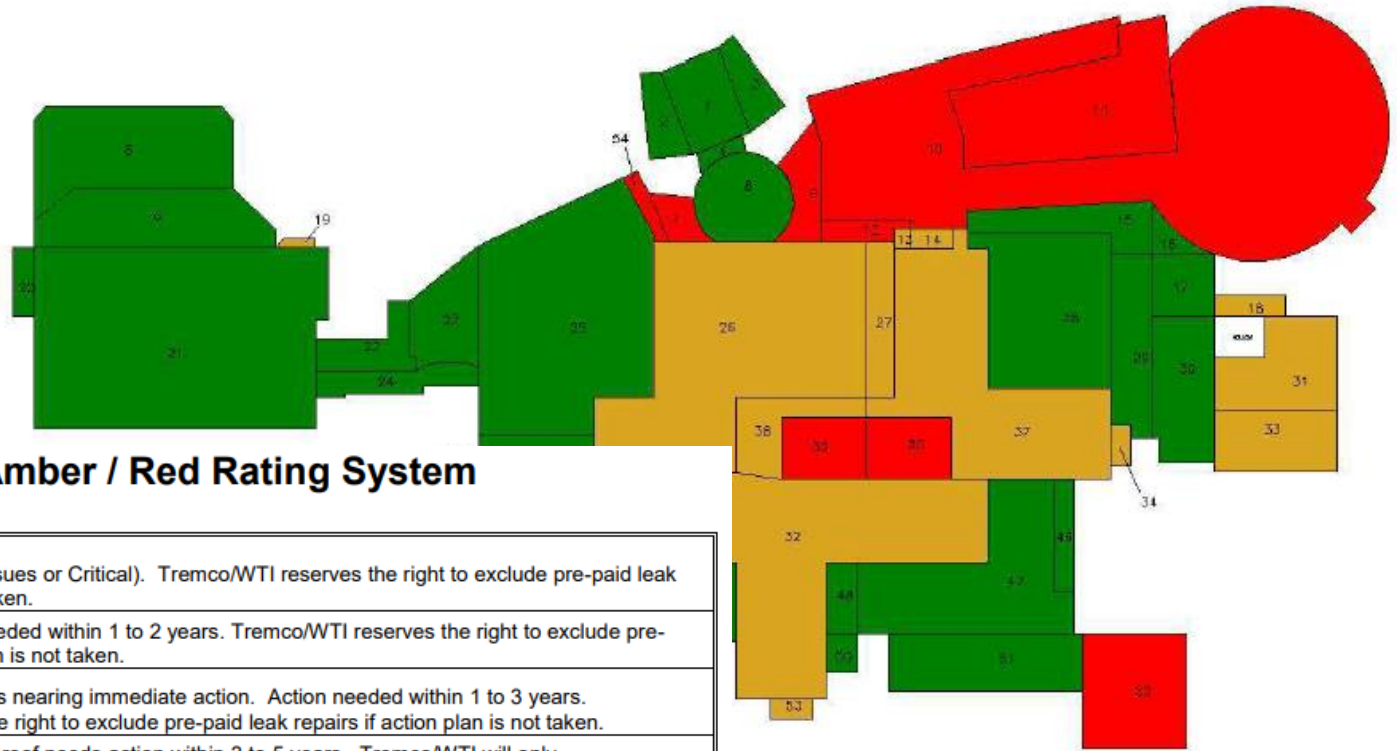
Grades Every Roof Section In Your Entire System On A Scale From 0-100.

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KEY PROGRAM COMPONENTS

Every
Roof
Graded



Green / Amber / Red Rating System

0	Red	Critical Action (HS&E Issues or Critical). Tremco/WTI reserves the right to exclude pre-paid leak repairs if action is not taken.
10	Red	Replacement. Action needed within 1 to 2 years. Tremco/WTI reserves the right to exclude pre-paid leak repairs if action is not taken.
20	Red	Replacement. The roof is nearing immediate action. Action needed within 1 to 3 years. Tremco/WTI reserves the right to exclude pre-paid leak repairs if action plan is not taken.
30	Amber	Fair, not restorable. The roof needs action within 3 to 5 years. Tremco/WTI will only warrant leaks unless replacement can return roof to Green condition.
40	Amber	Fair Condition. The roof needs action within 1 to 3 years to prevent replacement. Tremco/WTI will only warrant leaks unless restoration or replacement can return roof to Green condition.
50	Amber	Fair condition. Repairs or restorations should be budgeted in 3-5 years. Roof could be returned to full warranted Green condition with repairs or restoration. Shingle and tile roofs in fair condition.
60	Amber	Fair condition. Roof could be returned to full warranted Green condition with repairs or restoration.
70	Amber	Fair condition. Roof may require repairs in 1-2 years to extend service life and/or return roof to Green condition. Repairs could return roof to full warranted condition.
80	Green	Good condition. Preventive maintenance or minor repairs may be needed.
90	Green	Good condition. Preventive maintenance may be needed.
100	Green	New - 2 Years or Less. Preventive maintenance may be needed.

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KEY PROGRAM COMPONENTS

Inventory Dashboard

Financial Planning Dashboard

2023	
Condition Rating	Sq. Ft.
0	14,960
10	115,856
20	656,142
30	300,780
40	357,785
50	1,001,184
60	652,001
70	1,739,966
80	520,065
90	154,728
100	305,441
N/A	9,918
	5,828,826

\$115M needed to get out of
“**replacement mode**”

\$137M needed to maximize 50+
Rank “**restoration**” opportunities

All Green 80 roofs will fall into the restoration category. Total roof restoration opportunities is 3,913,216 sq. Ft. **67%*

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KEY PROGRAM COMPONENTS

CRUCIAL CAPITAL PLANNING W/COST SAVING INCENTIVES

2024 (Replacement)	2025 (Replacement)	2026 (Replacement)	2027 (Replacement)	2028 (Replacement)	2029 (Replacement)	2030 (Restoration)	2031 (Restoration)	2032 (Restoration)	2033 (Restoration)	2034 (Restoration)
\$ 15,000,000.00	\$ 16,500,000.00	\$ 18,150,000.00	\$ 19,965,000.00	\$ 21,961,500.00	\$ 24,157,650.00	\$ 27,392,512.00	\$ 30,131,763.20	\$ 33,144,939.52	\$ 36,459,433.47	\$ 40,105,376.82

\$15M needed for 7.6 years to get out of “**replacement mode**” At this rate, **restoration opportunities** cannot begin until Year 2030. *Note: 10% added annually for inflation.*

Savings Options:

- *With an influx of \$85M today, ALL roof **replacement** needs system wide are satisfied. Saves \$30M+ over next 5-years.*
- *With an influx of \$140M in 2030, ALL roof **restoration** needs system wide are satisfied. Save \$27M+*
- *between years 2030 and 2034.*

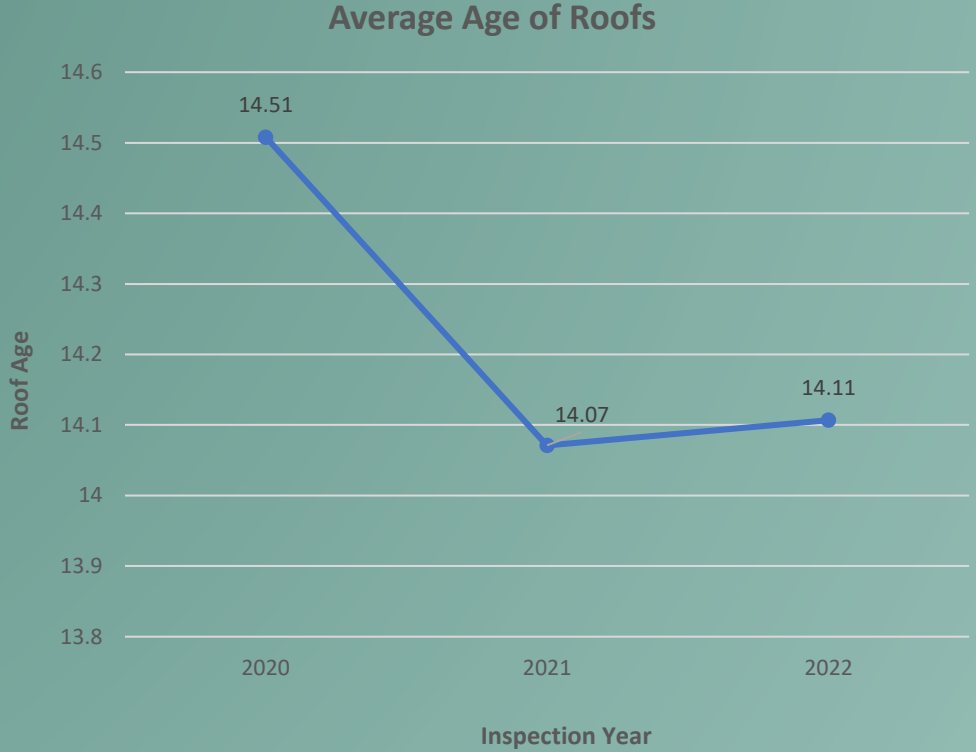
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KEY PROGRAM COMPONENTS

- Why You Want A Multi Year Key Business Partner:
- Uniform Rating System
- Uniform Reporting
- Uniform Processes
- Risk Ownership
- Partnership

Year	Average Roof Condition Rating
2020	61.65
2021	57.21
2022	57.57



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KEY PROGRAM COMPONENTS

Track Leak Response For Every Leak. KBP Owns All Roof Leaks & Provides 24/7/365 Leak Notification Hotline

Document Leak Activity For Every Site AND Document When Water Entry Is Not Roof Related.

Develop Systemwide Asset Health Metric Score.

Determine Needed Systemwide Capital Funding To Get All Roofs Up To A Minimum Score...suggest 70 or 80.

Involve KBP In All Roof Mods.

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A FEW FINAL COMMENTS

Prioritize Capital Funding To Drive Out Cost & Risk

Restoration vs Replacement

Interior Operation Use Areas

Building Enclosure Components

Geography/Weather Risk Impacts

Document Non Roofing Issues & Build Out A Building Enclosure Asset Preservation Plan.

Implement Capital Spend Under A Design-Build

Approach To Maintain KBP Risk

Ownership.

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QUESTIONS?

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