



# Through the Decades – Celebrating 65 Years of T&R Findings





T&R initial research up to the 1970s



#### **T&R Early Publication**



OPPORTUNITY STATES











#### T&R Research

1970s and 1980s



## Research started in 1977 on four single ply's on the market

OPPORTUNITY

- 45 mil EPDM by Carlisle with gum tape lap joints
  - 32 mil unreinforced PVC by Trocal
    - KMM mod bit by Koppers
    - CRM mod bit by WR GRACE



### Partial list of T&R Projects with Reports

OPPORTUNITY.

1978 & 1979 - Preliminary Report on Single Ply

1981- Recommended performance criteria for PVC

1982 - Recommended performance criteria for EPDM

1983 - Recommended performance criteria for Mod Bits

1984 - Application Guide for Expanded Polystyrene insulation

1986 - EPDN Lap Adhesives (switch from neoprene to butyl)



#### T&R work in the late 1980's

OPPORTUE

- 1987 Tensile strength tests on Type IV fiberglass /asphalt felts
- 1987-1988 Aged R value testing joint with NRCA. This extensive study yielded the R – 5.6 for Polyisocyanurate, still accurate today for this insulation product when tested at room temperature
- 1988 Uplift and crushing resistance of Polyisocyanurate and Phenolic roof insulations
- 1988 MRCA/TAMKO Asphalt Research on ASTM D312 mopping asphalts with regard to softening point variations























#### T&R Research

1990s and early 2000s













#### T&R Research

2010 and beyond



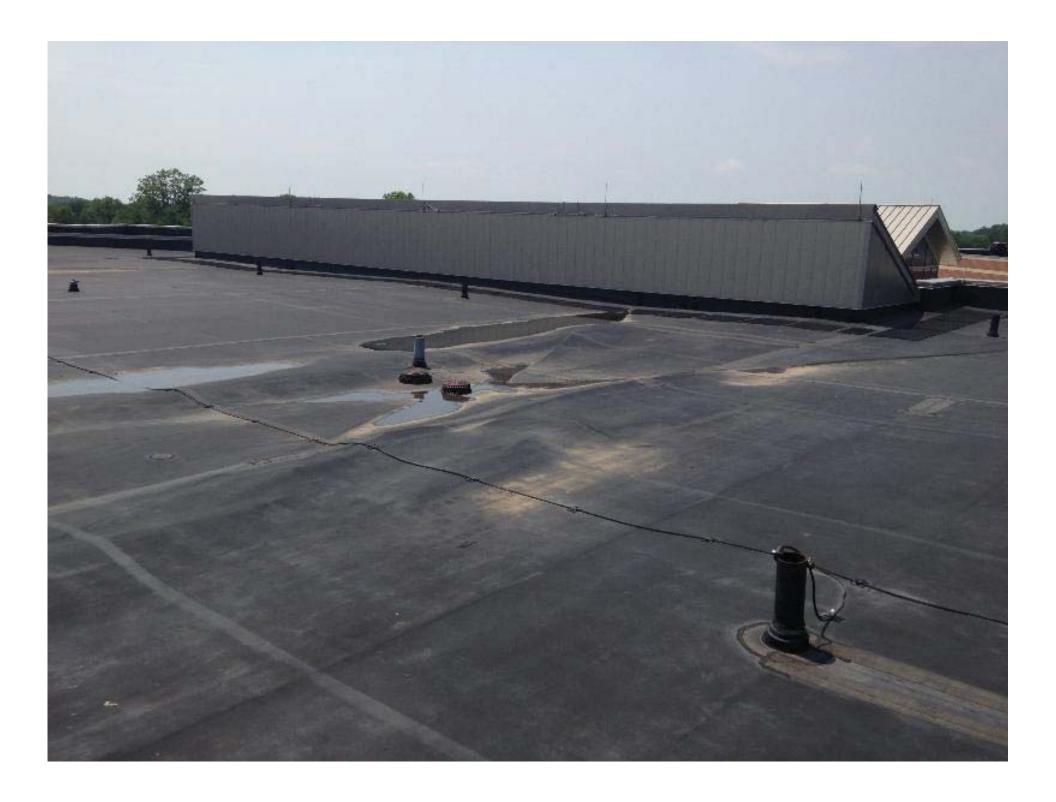
### T&R Research 2010 and Beyond

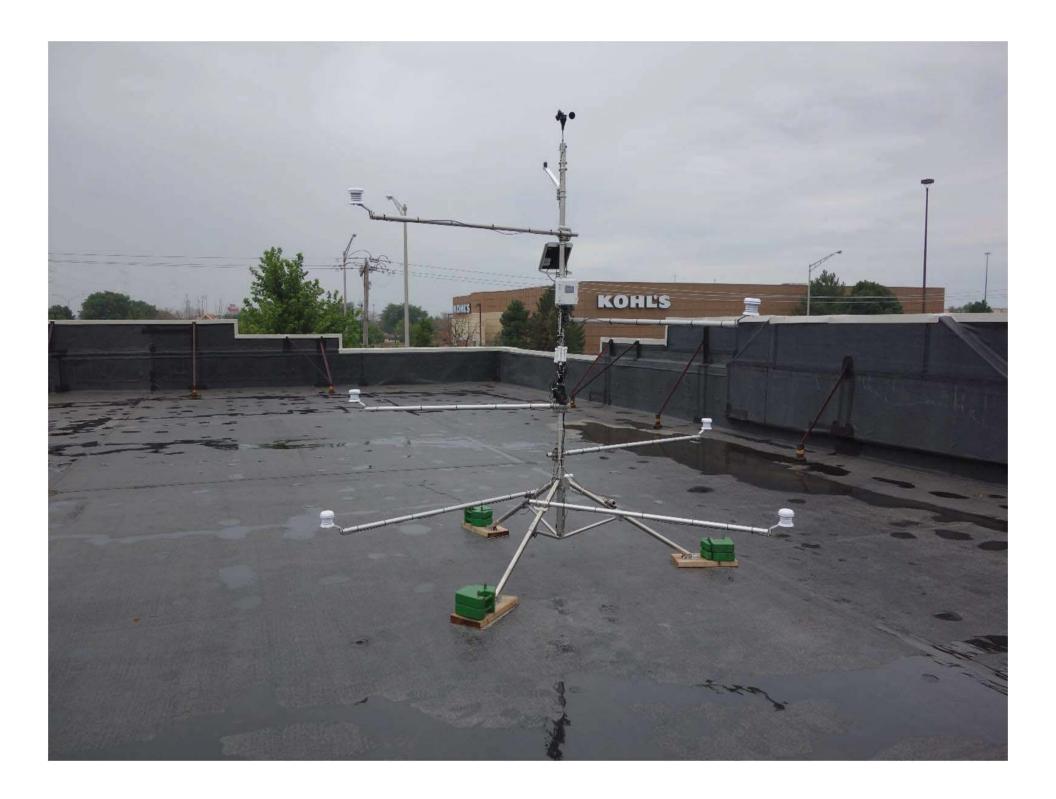
OPPORTU-

- 1. 2010 TPO
- 2. 2011 Structural Lightweight Concrete Roof Decks
- 3. 2013 Roof Air Temperature Study
- 4. 2013 Advisory Changes to Polyisocyanurate R-Values
- 5. 2013 Advisory on FM Global Changes Pending Air Barriers Issues for Mechanically Fastened Roof Systems
- 6. 2013 Field Study Results of Reflective Modified Bitumen Roofs











# 2013 Advisory Changes to Polyisocyanurate R-Values





### 2013 Advisory on FM Global Changes Pending Air Barriers Issues for Mechanically Fastened Roof Systems







