ROOF CONSULTING SERVICES, INC.

Project Name & Location	Roof Issue:	Service Type:	Date:	Estimated Cost (In Thousands) RCS Cost to Client	Estimated Cost (In Thousands) Potential Cost Savings to Client
Client: W. W. Grainger Project: 002 Kansas City Distribution Center (KCDC) Address: 11200 E. State Route 210, Kansas City, MO Contact: Steven Korey Email: Steven.Korey@grainger.com	1,273,002 SF distribution center; Phase II (792,611 SF) single ply recovery over original asphalt BUR, scope for full tear-off replacement; value engineering through moisture testing	Replacement Design Tramex Moisture Scan Construction Admin. QC Inspections	Since January 2026	$96,075.00	$3,000,000+ (Phase II Recovery vs. Full Tear Off)

As part of the roof asset management program RCS administers for W.W. Grainger, RCS was contracted in early 2026 to provide roof replacement design and construction administration services for the 002 Kansas City Distribution Center (KCDC) in Kansas City, MO. The facility consists of three (3) connected buildings with approximately 1,273,002 square feet of low slope roof area over painted metal deck, divided into more than seventy (70) individual roof areas.



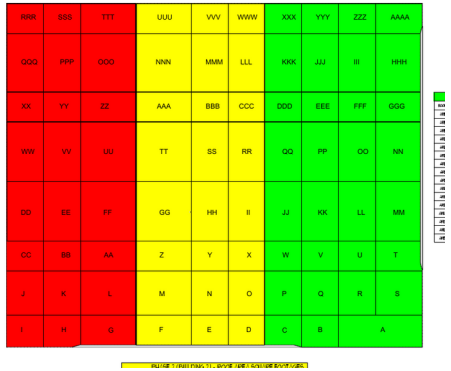
Because the distribution center had to remain fully operational, RCS split the work into two (2) phases: Phase I, Building 3 (480,401 square feet), and Phase II, Buildings 1 and 2 (792,611 square feet). The original design called for full removal to the structural deck on all roof areas and installation of a new double layer of 2.4” polyisocyanurate insulation, gypsum coverboard and a single ply thermoplastic polyolefin (TPO) membrane with new ANSI/SPRI ES-1 coping.

During the field evaluation, RCS core cuts showed that the Phase II roofs were not a single roof system. The original assembly, a gravel surfaced four (4) ply fiberglass felt asphalt built-up roof (BUR) over two (2) layers of 2” fiberglass insulation, had previously been covered with a 1/4” high density polyisocyanurate recovery board and a 60 mil PVC membrane.



Interior observations of the metal roof deck underside

Rather than assume the original BUR had to be removed, RCS recommended a **Tramex electrical impedance moisture scan** of the Phase II roof areas. Using a Tramex DSAL Dec Scanner, RCS scanned the roof surface, took core cuts to establish dry baseline readings and verified suspect areas with a Delmhorst moisture probe. All moisture affected areas were marked on the roof and recorded on the construction drawings.



Phase plan: Phase II – Building 1 (red) and Building 2 (yellow); Phase I – Building 3 (green)

Bidding moved forward while the scan was underway. Seven (7) commercial roofing contractors and three (3) manufacturers attended the February 24, 2026 pre-bid meeting. To protect the Owner's schedule, RCS included a Phase II bid alternate and a note in the pre-bid minutes that the Phase II scope would change to a recovery if only minimal wet insulation was found in the original BUR.

The scan found only isolated areas of moisture entrapment. RCS determined that the original BUR could stay in place, and the Phase II documents were reissued on June 30, 2026 as a recovery: remove only the existing PVC recovery membrane and recovery board, prepare and disable the original BUR, remove the wet insulation shown on the updated drawings, then install the new insulation, 5/8" gypsum coverboard and an adhered 80 mil TPO membrane with ES-1 and GT-1 coping.

Keeping the original roof assembly in place avoided removing and disposing of almost 800,000 square feet of BUR and insulation over an active distribution center, reduced the risk of exposing building contents during tear-off, and preserved the existing insulation value. **This value engineering produced an estimated total cost savings of more than $3,000,000** compared to full tear-off replacement of the Phase II roof areas.





The Phase I contract was awarded to O'Hara's Son Roofing with GAF as manufacturer, and the system was upgraded to meet FM Global Very Severe Hail (VSH) requirements. RCS led the May 21, 2026 pre-construction meeting and reviewed all contractor submittals, including an October 2026 review of a proposed rooftop hydrogen line relocation, which RCS returned as not acceptable as submitted because of inadequate support spacing, anchoring and roof flashing details.

RCS has completed four (4) in-progress quality control inspections to date (July 18, August 19, September 23 and October 13, 2026), documenting installed areas, open details and items to complete. During the second inspection, RCS found a stack of coverboard left exposed to the weather and required that the materials be moisture scanned and any wet or damaged materials removed rather than installed, protecting both the FM approval and the manufacturer's warranty.





Phase I construction is nearing completion, and the Phase II recovery will follow under the revised contract documents. RCS will continue to provide construction administration, in-progress inspections and project close-out through both phases.

By testing before tearing off, RCS turned a full replacement into a recovery and gave W.W. Grainger a long-term, FM compliant roof system at a fraction of the expected cost. We are confident that this kind of value engineering is why W.W. Grainger continues to rely on RCS to manage its roof assets nationwide.