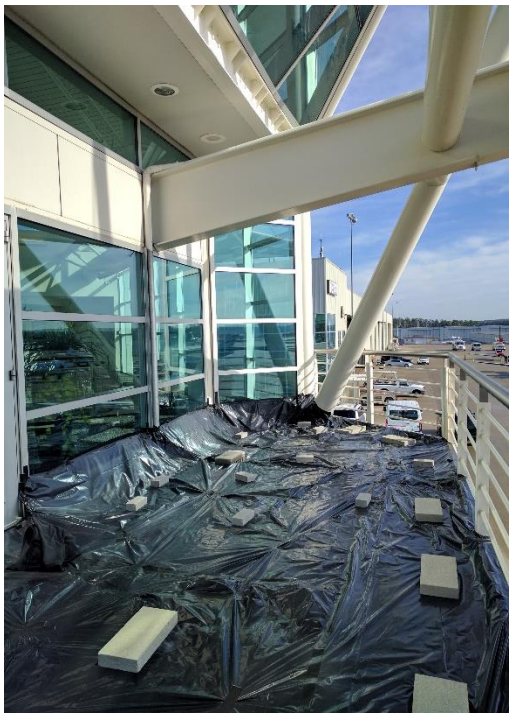
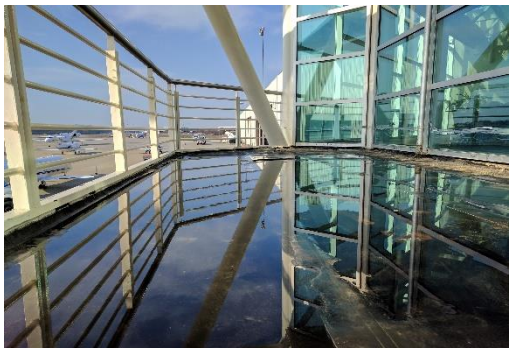
PROJECT PROFILE

RDU General Aviation Terminal

Water Leakage Investigation | Morrisville, NC





CLIENT

Clark Nexsen

BACKGROUND

The General Aviation Terminal (GAT) at Raleigh-Durham International Airport (RDU) was originally constructed in 2002 and was designed by The Freelon Group (now Perkins+Will). The original deck waterproofing assembly and exterior floor tile were replaced in 2016 with a new hot-rubberized asphalt waterproofing system, mortar bed, and tile. The repair work successfully addressed water leakage at the structural penetrations; however, water penetration continued via alternate leak pathways. Interior finish damage was evident at the suspended ceiling tiles and gypsum sheathed ceilings in the first floor atrium space and air-side vestibule below the deck.

WJE was engaged to conduct an investigation of uncontrolled rainwater penetration through the rear elevated deck at the RDU General Aviation Terminal property. The scope of services that WJE provided included an initial site visit and document review, on-site investigation and field water penetration testing, and a summary report including general recommendations for repair.

SOLUTION

WJE visited the property to become acquainted with the nature and the extent of visible damage due to moisture at the property. WJE completed a limited review of available original construction document drawings, shop drawings, specifications, as-built construction documents, and subsequent repair documents and proposals related to the construction and the performance of the elevated deck. WJE then performed a close-range interior visual condition assessment to document interior conditions at the reported areas of moisture damage. WJE evaluated the installed waterproofing assembly within the field, at penetrations, and at perimeter returns by conducting flood testing. Utilizing a hand-held spray nozzle with a central valve and pressure gage, selected joints and assembly transitions were systematically sprayed to isolate the source of the water leakage. The interior of the test area was monitored for water leakage during the nozzle testing.

WJE prepared a final report summarizing the results of the field survey and the on-site investigation, including an overview of the system design intent and observations as well as evaluation of the installed conditions, field test results, and recommendations to address continued water leakage at the air-side deck.

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