



PROJECT PROFILE

Indiana University Art Museum

Exterior Facade Repair | Bloomington, IN



CLIENT

Indiana University

BACKGROUND

The Indiana University Art Museum, which opened to the public in 1982, is a three-story-tall, cast-in-place reinforced concrete structure designed by I. M. Pei & Partners, Architects.

Due to ongoing interior condensation, water infiltration, and concrete discoloration of the exterior facades, WJE performed an evaluation of the concrete and punched window and curtain wall systems. WJE's assessment also included an evaluation of the thermal performance of the exterior wall systems. Once the issues were understood, WJE designed repairs to address the condensation, infiltration, and staining issues.



SOLUTION

WJE's evaluation of the building included a document review of the original building drawings and specifications as well as reports from previous studies related to the identified condensation and discoloration concerns. WJE completed a close-up investigation of the exterior walls and windows to document the as-built conditions of the walls and windows. WJE noted deteriorated sealant joints and unsealed regularly spaced form tie holes that extended through the exterior wall to interior space with loose plugs installed.

WJE performed thermal analyses of the exterior concrete wall system with temperature and relative humidity data recorded by the university's data loggers and concluded that the system provided conditions conducive for condensation to occur during cold-weather conditions when interior air comes in contact with the interior surfaces of the concrete walls. Likewise, the thermal performance of the existing window frames and glazing provided conditions for condensation to occur.

WJE developed phased repair drawings to replace exterior sealant joints, seal all form tie holes, clean the exterior surfaces of the building, replace existing windows, and install insulating system at exterior walls to mitigate the conditions resulting in condensation.

