

# Jardine Water Purification Plant Green Roof

CHICAGO, ILLINOIS



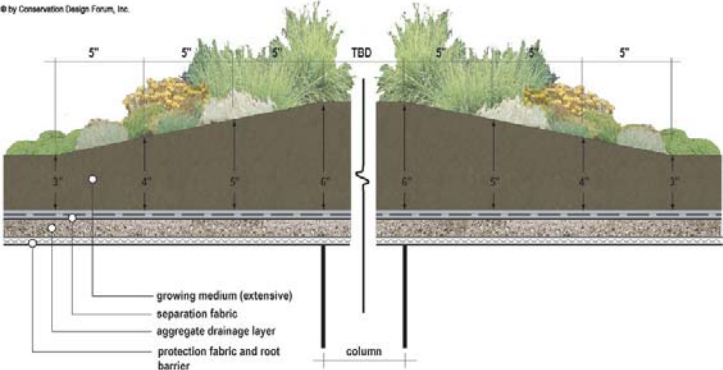
Existing roof conditions



Digital rendering with planned green roof



Digital rendering for canopy green roof



Cross-section through ecological retreat island

The Jardine Water Purification Plant (JWPP), adjacent to Lake Michigan, is owned and operated by the City of Chicago. The City planned a complete replacement of the administration building's existing roofing system, which had exceeded its life span. With the planned replacement, the City recognized the opportunity to expand its green agenda and requested a green roof feasibility study to identify green roof design and system options. Ultimately, CDF determined that the majority of the administration building could receive a 4-inch deep, three-layer, extensive green roof system that would have a saturated design load of 22 pounds per square foot (psf).

Following the recommendations of the feasibility study, CDF worked closely with the design team and JWPP to develop design and construction documents for the green roof. The team developed maintenance approaches, access patterns, and snow drift setbacks, and determined that the entrance canopy structure would receive a 6-inch deep, semi-intensive system. The latter is visible from the adjacent parking garage and approach drive. The administration building design also includes 6-inch deep, semi-intensive, ecological retreat islands that are placed in the extensive system over building columns.

CDF identified large condenser units at the main roof elevations during the design process. With the help of the JWPP, CDF found that these units produce enough condensate water to feed a passive irrigation system that covers the majority of the green roof system. With the design of the passive irrigation system, CDF converted a waste product (condensate water discharge) into a resource that will improve the performance, sustainability, and appearance of the extensive green roof system.

*client:* Chicago Department of Water Management

*project team:* Conservation Design Forum  
Green Roof Design

HDR  
Lead project engineer

Ross Barney + Jankowski Architects  
Project Architect

Rubinos & Mesia Engineers, Inc.  
Structural engineer

*completion:* Issues for Bid 2007

