

DIXON WATER FOUNDATION

Josey Pavilion Wastewater Treatment and Reuse and Stormwater Management

Decatur, Texas



Lake Flato Architects



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The stringent Living Building Challenge requirements for Net Zero Water and Ecological Water Flow are met by treating wastewater onsite to reuse for irrigation and employing a water feature to reduce peak flows while creating an aesthetic amenity.

The Dixon Water Foundation is a non-profit organization which demonstrates and promotes sustainable land management practices for healthy watersheds in North and West Texas. The Foundation owns

four working ranches covering over 15,000 acres.

Working with Lake Flato Architects, Biohabitats assisted in designing water systems for the new Josey Pavilion at the Dixon Ranches Leo Unit

in Cooke County to conserve and reuse water on the site. This 5,000 sq. ft. meeting and event structure meets the stringent Living Building Challenge (LBC) requirements. LBC requirements include Net Zero Water (all water used on site must come from rainwater harvesting or closed-loop water systems and all treated water must not impact downstream ecosystems or use chemicals) and Ecological Water Flow (all stormwater and building water must be managed on-site).

subsurface flow constructed wetlands, a recirculating sand filter, and land application. Treated and disinfected effluent will be used for irrigation on the site.

Biohabitats also designed stormwater conveyance to manage stormwater runoff from the site and buildings. In addition to the site water systems, Josey Pavilion will also generate all of its own renewable energy, building materials will be locally sourced and non-toxic.

Biohabitats designed a wastewater treatment plant for Josey Pavilion to treat an estimated 1,800 gallons per day. The treatment system includes a

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