
Appalachian State University

Appalachian State Conservatory for Biodiversity

Boone, North Carolina



The future site of the Appalachian State Conservatory for Biodiversity, before construction.

The design of sustainable water infrastructure for Appalachian State University contributes to a targeted achievement of Living Building Challenge™ CORE certification while capitalizing on the reuse of non-potable water to reduce the institution's ecological footprint.

SERVICES

Conservation Planning
Research & Development
Water Strategies

Adjacent to 67 acres of the Appalachian State Nature Preserve, a site that once harbored a conference center and has since existed as a gravel parking lot was envisioned by Appalachian State University to become an “Innovation District” for a mixed-use development that would maximize research capacities and enhance the institution's access to the surrounding community and industry. Working as sub-consultant to LAS, Biohabitats led the design of sustainable water infrastructure to support the Living Building Challenge™ CORE certification 4.0 component of the University's vision to transform the undeveloped space into a sustainable ecosystem of academic, housing, and commercial buildings.

To understand site conditions, opportunities, and constraints, Biohabitats reviewed current site information, development plans, and infrastructure reports before generating a water balance to identify potential sources, demands, and water flows. This informed final deliverables including a Water Infrastructure Basis of Design Report, an LBC Water Strategy Summary, and proposed next steps.

To support LBC Core and/or LEED certification, Biohabitats performed an Ecology of Place analysis including field reconnaissance and a baseline site assessment to generate potential improvements with next steps and an Adaptive Management Plan. The team supported Living Building Design development with an Integrated Water Strategies package, including rainwater harvesting, non-potable reuse for toilet flushing and irrigation, cost-estimate, and construction documents review, and construction observation. Biohabitats worked closely with the integrated project team and Client during all phases of design to develop an approach that would capitalize the reuse of non-potable water and contribute to the University's commitment to sustainable practices.