



**MASON LANE FARM
OPERATIONS FACILITY
GOSHEN, KENTUCKY**

72.9% site restoration using native plantings

44.3% of all materials extracted and
manufactured within 500 miles of the project site

boiler fueled by **wood waste**
for radiant floor heating

LEED® Facts

Mason Lane Farm Operations Facility
Goshen, Kentucky

LEED for New Construction v2.2
Certification awarded September 7, 2010

Silver 37 points*

Sustainable Sites	10/14
Water Efficiency	4/5
Energy & Atmosphere	8/17
Materials & Resources	6/13
Indoor Environmental Quality	5/15
Innovation & Design	4/5

*Out of a possible 69 points

The information provided is based on that stated in the LEED® project certification submittals. USGBC and Chapters do not warrant or represent the accuracy of this information. Each building's actual performance is based on its unique design, construction, operation, and maintenance. Energy efficiency and sustainable results will vary.



MASON LANE FARM OPERATIONS FACILITY

Regionally Specific Design

Low-Tech Strategies for Sustainability

PROJECT BACKGROUND

The Mason Lane Farm Operations Facility is a new complex for farm equipment servicing, re-fueling & storage, and provides seasonal storage for grain & hay. The facility supports a 2,000-acre property utilized for agriculture, recreation, wildlife habitat and conservation purposes.

STRATEGIES AND RESULTS

Rooted in the simplicity of regional farm structures and in concert with the client's priorities for responsible stewardship of the land, the farm complex utilizes simple, passive sustainable approaches that are specifically based on an understanding of the regional climate and the nuances of the landscape. For reasons of both economy and ease of maintenance, sustainable building strategies are decidedly 'low-tech', favoring conventional construction methods & ordinary materials over specialized systems. In particular, the project implements strategies that take advantage of the cross-synergies between site & building design, focusing on a holistic approach where both components work as a single integrated system.

Consolidating the various programmatic elements into two large barn buildings and a grain silo (in order to minimize building footprints), the majority of the project site is allocated to the circulation & access requirements of large-scale farm equipment. Because facility water usage is minimal and site landscaping is limited to native & regionally-adapted plants that do not require irrigation, site-wide stormwater strategies focus on returning runoff to replenish local aquifers. Porous, drivable gravel surfaces are pitched to channel stormwater into two 'rain gardens' planted with native vegetation. Excess run-off is collected within these basins and allowed to percolate back into the groundwater table. In order to minimize maintenance, building roof gutters are eliminated and replaced with 'site gutters', a system of drivable, shallow concrete channel swales aligned below each roof eave, which direct stormwater to the collection basins.

ABOUT MASON LANE FARM OPERATIONS FACILITY

The two primary buildings (Barn 'A' and Barn 'B') are arranged to frame an outdoor work courtyard, allowing for the consolidation of outdoor lighting requirements to an internalized site zone and away from the farm complex property perimeter, preserving 'dark sky' conditions.

Barn 'A', with fully enclosed storage & work areas, utilizes a standard prefabricated wood truss frame clad with corrugated metal panels. Emphasizing the layering of construction, building elements that are typically hidden (such as wall substrates, fastening screws & alignment lines) are incorporated as design features and reinterpreted as 'finish' materials. Natural light, ventilation and views are provided to all interior spaces through full-height operable windows which working in concert with a whole-house fan to draw air through the building.

Barn 'B', a large covered shed used to store both hay & equipment, is clad in a lattice grid of locally-harvested bamboo sourced only 35 miles from the project site. Considered a fast-growing invasive 'weed', the bamboo is a material nod to the square-bale hay that is stacked at each end of the barn, while also providing a breathable skin that allows the hay to dry through natural ventilation. Since Barn 'B' is an open-air structure vulnerable to wind-uplift forces, the concrete drainage channels below its roof eaves also function as a counterweight through an interlocking detail with the concrete column footings below grade.

"I am delighted with my 'green boiler'. This classic outdoor wood furnace allows us to utilize down trees from our wooded acreage eliminating the need for fossil fuels. The furnace is very efficient; utilizing seasoned and green material with equal efficiency."

Eleanor Bingham Miller, *Owner*



Architect: de leon & primmer architecture workshop
Commissioning Agent: Glyn Humphrey, Sustainable Technical and Commissioning Services
Landscape Architect: Environs Landscape Architecture
MEP Engineer: Kerr Greulich Engineers, Inc. Lichtefeld Incorporated (Design/Build)
Structural Engineer: Steve Leonard Consulting Engineer
Project Size:
 Site Development Area: 6.2 acres
 Barn 'A': 7540 sf
 Barn 'B': 9160 sf
Total Project Cost: \$821,361
Cost Per Square Foot: \$37.32

Photographs Courtesy of: de leon & primmer architecture

ABOUT KENTUCKY USGBC

Our goal is to improve the health and welfare of all Kentucky citizens through a sustainable and responsible built environment. Through education and awareness we encourage the use of sustainable practices that provide our residents with a healthy environment in which to live, work and learn.



KENTUCKY CHAPTER
Greening the Bluegrass

www.usgbckentucky.org
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