

Mount Airy, NC Public Library

http://www.mazria.com/projects/mt_airy0.html



- A saw-tooth clerestory above the structural bays provides daylight over the circulation desk, reading areas and reference stacks.
- A butterfly roof configuration with glazed ends and a central elongated light well provides illumination for the open stacks area.
- At the exterior, south- and west-facing clerestories with exterior light shelves extend natural light onto the ceilings and deep into reading spaces, while shading the large windows below from high summer sun
- Passive cooling in the building is achieved by shade trees and a light-colored roof membrane to reduce the impact of solar radiation in summer.
- It is also achieved by operable windows which allow for natural ventilation when the weather permits and thick white colored masonry exterior walls provide the thermal lag necessary to delay the effect of the summer sun on the interior until the evening hours when the library is closed.
- Passive heating in winter is accomplished by storing the heat gained through south facing windows and clerestories in CMU walls, the concrete structural elements and the tiled concrete floor slab.
- It is a completely daylit, passively heated and cooled facility that uses 75% less energy than a typical library in the region.
- The library “uses about one sixth as much energy per square foot as a nearby municipal building compare that [23,149 Btu/sq ft/year] with a typical small office building’s 105,000 Btu/sq ft/year in a cold climate and 65,000 in a warm climate and you can see how frugal the Mt. Airy design is.