

### Architect:

VMDO Architects  
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### Owner:

Free Union County School

### Project Cost:

n/a

### Square Footage:

3000 sf

### Cost per Square Foot:

n/a

### Completion Date:

design phase

### Project Consultants:

n/a



### Project Description:

VMDO was selected from a pool of talented local architects as the winner of the Free Union Country School Design Competition. The contest sought designs from architects for the construction of a new, two-story, 3000 square foot, fine arts classroom building.

Free Union County School's vision is to have a building that supports and extends its mission of providing progressive education utilizing small class sizes and experiential learning, while at the same time enabling inventive and innovative design ideas.

Consistent with the school's vision, the proposed design meets the school's program needs and acts as a tool for teaching the children about the natural systems at work on the site, particularly through its use of high-performance, environmentally sensitive techniques and materials. With this in mind, the siting of the building will strive to preserve the view of the Blue Ridge Mountains.

### Green Features:

Generous daylight is provided through a clerestory that is carefully designed to balance the need for indirect daylighting with the need for direct passive solar gain. A broad roof overhang shades the south façade from high-angle summer sun but allows low angle winter sun to penetrate deep into the space. Light shelves and a light-colored ceiling bounce daylight around the room. Further light control and spatial enclosure is provided by canvas "clouds" suspended on tracks between the rafter ties. The building can be completely darkened with a combination of simple roll-up (clerestory) and roll-down (view windows) shades.

The inverted "butterfly" roof of the art room supports an array of solar collectors (that pre-heat water for heating and hot-water) and directs rainwater to a tank above the elevator tower. This gray water is used to flush toilets and irrigate gardens. When the tank is full the water is directed through a system of expressive gutters and chain drains that carry the water to the ground, where the rate of discharge is controlled by a series of landscape elements.

A stair and elevator tower provides access to the lower level. The stair serves a number of functions beyond simple circulation. The masonry shell absorbs solar energy and acts as a thermal chimney, promoting natural ventilation by drawing warm air

from the new building and venting it through the louvers at the top of the stair. A gnomon in the top of the skylit tower casts shadows on the sheathing of the north wall, acting as a solar clock. The tower also supports a windmill, which registers wind direction and provides a simple source of power.

