

Biophilic Site Planning and Architecture - creating a healthy working environment

OVERHANGS

Overhangs provide protection from direct sun and water exposure. This sketch shows that the windows exposed to the West and South sides are fully shaded by the overhang. The Sketch is modeled for July 10th at 3pm in the afternoon (15:00).

MANUFACTURING/ ROBOTICS

Manufacturing Spaces that require precision, such as robotics, should be fully conditioned in the South East climate. This building has insulated precast panels as the exterior envelope and construction with large windows to provide day lighting. During the day electrical lighting is never utilized which not only saves on energy, but creates a more welcoming and pleasant work space.

SOUTH PORCH ELEMENT

The South Balcony on the south side is completely in the shade during the summer afternoon hours. In the winter, the porch allows for low winter sun angles to penetrate deep into the building, warming up the concrete floor and slowly releasing this heat during the day.

RAIN WATER

Treating water for water quality and managing rain water runoff is important for preserving our environment, and with it our own health. Two over-sized downspouts project all the roof rainwater into a reflecting pool that runs to a rain-garden with native plants and through a sand filter out into the nearby creek.

Rain gardens and Bioswales are beautiful natural ways to meet water quantity and water quality requirements.

RECESSED WINDOWS - WEST

Deeply Recessed windows on the west provide good shading in the summer months from direct solar heat gain in the afternoons.

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PASSIVE HOUSE

Held Architecture is a leader in Passive House design for residential and commercial buildings in the Charlotte area and beyond. We believe that buildings should be designed as energy efficient as possible so we can save on ongoing energy sources and brace for severe weather and temperature fluctuations to the benefit of user comfort and safety.

**Passive House is an internationally operated performance-based energy certification program with the goal of minimal s ensures optimal interior comfort.*

THERMAL INSULATION: optimizing thermal insulation of the entire building envelope minimizes heat loss and gain.

HIGH PERFORMANCE WINDOWS & DOORS: Highly insulated, carefully shaded/ oriented windows and doors, optimal protection from solar heat gain, or optimal solar heat gain

AIR-TIGHTNESS: airtight envelopes prevent energy loss and moisture damage .

THERMALLY SOUND DETAILS: reducing thermal breaks in the envelope minimizes energy loss, cold spots and moisture problems.

CONTINUOUS VENTILATION: constant ventilation with energy recovery delivers a healthy, comfortable interior.

COMFORT: minimizing differences in surface temperatures and noise from heating and cooling systems ensures optimal interior comfort.