OUR GREEN BUILDING

SUSTAINABLE FEATURES OF
THE CONNECTICUT AUDUBON SOCIETY
CENTER AT POMFRET

➢ Recycled and Recyclable Material
  • Carpet
    Patacraft carpet tile system allows for easy replacement and long-term durability.
    Patacraft carpets are the industry’s first sustainable, non-PVC tile backing system. A
    special nylon fiber is used in the manufacture of this product can be recycled and used
    again and again. The company recycles 100 million pounds of carpet each year, keeping
    postconsumer carpet and raw materials from entering landfills.
  • Repurposed fieldstone
    The fieldstone around this building was salvaged from the original 1895 barn foundation
    and used for landscaping.
  • Exterior porch and classroom materials
    Hemlock timbers were salvaged from the original 1895 barn. They are left unmilled to
    minimize the use of penetrating oils.
    Repurposed materials salvaged from a closed retail store
  • Reception, education room and kitchen countertops
    Richlite countertops made from a high level of recycled paper and composite materials
    were used.
  • Classroom & Storage Shelving
    Repurposed materials from a closed retail store were used.

➢ Energy Efficiency
  • HVAC
    HVAC system is a high efficiency propane furnace unit paired with 15 SEER air
    conditioning units. All ductwork is kept within the building to minimize losses.
    Cupola
    The cupola has motorized windows which allow it to be a natural chimney to draw hot air
    out of the building. This is supplemented by ceiling fans to minimize the need to use
energy for cooling.

- **Ventilation system**
  We have 2 energy ventilators (ERV) which provide fresh air while conserving approximately 80% of the interior heat and cooling energy.

- **Interior and exterior lighting**
  We used high lumen per watt fixtures, zoned switching and task lighting to minimize the lighting loads in the center.

- **Wall Framing**
  Used tall wall composite lumber for the studs and placed them at 24” oc (off center) for material efficiency and better insulation performance.

- **Insulation**
  The wall insulation is icynene LD-R50. It is water born castor oil based open cell insulation giving us a very tight building envelope minimizing drafts. We used continuous R-14 insulation under the slab floors and at all cold bridging locations.

  - Castor oil environmental overview:
    - 100% naturally filtered, no chemical additives required
    - Castor oil crops do not require irrigation, relying only on natural rainfall, saving scarce water supplies.
    - Castor beans do not require pesticides or fungicides.
    - Production process has low energy dependence, consisting of simply de-husking and pressing. Harvesting is manual.
    - Castor beans do not compete with food crops, as castor plants can be grown on marginal lands, which do not compete with food production lands.
    - Castor is a rapidly renewable material, as per USGBC definition, requiring a 10 year less regrowth time frame.

- **Structural Insulated Panels**
  The structural insulated panels used in this building have an R-value of 35, but because there is no thermal bridging of the roof structure they perform at a level of R-40 compared to a conventional roof. R-value indicates the insulation’s resistance to heat flow. The higher the R-value the greater the insulating effectiveness.

- **Windows**
  Low-E glass with an argon fill, which is performing at a U-30 value
  Low-emissivity (Low-E) coatings on glazing or glass controls heat transfer through windows with insulating glazing. Windows manufactured with Low-E coatings typically cost about 10-15% more than regular windows, but they reduce energy loss by as much as 30-50%.

- **Doors**
  The wood framed entry doors have a similar rating as energy efficient windows. They perform much better than traditional aluminum storefront entry systems.

- **Exterior Siding**
  Hardiplank siding is a cement board siding which is extremely durable and minimizes maintenance. It is installed on a rain screen to manage moisture and prevent deterioration of the structural systems.

- **Low Consumption Plumbing**
• **Low flow, dual flush toilets**
  Dual flush toilets use 20% less water than conventional flush toilets. The TOTO Dual-Max Flushing system was selected for dual flush performance and conservation. The dual flush toilet allows you to select the appropriate amount of water usage from 0.9 gpf (1 button) to 1.6 gpf (2 buttons.)

• **Ultra low consumption urinal**
  Using just 1/8 gallon of water, the ultra low consumption urinal incorporates the latest sensor washroom technology that reduces bacteria transfer and increased restroom hygiene.

• **Hands-free Water fountain**
  The water fountain uses motion detection sensors that help with water consumption. To get a drink, stand directly in front of the water fountain. Step back and it will turn off.

• **Storm Water Management**
  Spread it out, slow it down, soak it in. A storm water infiltration system allows accumulated runoff water to percolate in the subsoil. Water quality is usually improved by the soils’ natural filtering ability. Infiltration is a key feature of low impact development (LID) designs. The permeable driveway and grassy overflow parking area allow for maximal rainfall infiltration.

• **Rain Garden**
  A Rain Garden was incorporated into the landscape design. The grassy swales are strategically placed to collect excess water. The purpose of a rain garden is to improve water quality in nearly bodies of water. Rain gardens can cut down on the amount of pollution reaching creeks and streams.

> **Environmentally Friendly Paints and Preservatives**

• **Low VOC Paints**
  Sherwin Williams zero VOC products were used for the exterior and interior finishes. Volatile organic compounds (VOCs) are organic chemicals that have a high vapor pressure at ordinary room temperature conditions. When released they can be the cause of unhealthy air quality.

• **Preservative on Sill Plates**
  We used a borate preservative treatment rather than the more toxic ACQ traditional system. Boron compounds offer some of the most effective and versatile wood preservative systems available today. They combine the properties of broad-spectrum efficacy and low acute mammalian toxicity. Oxides of boron, the active ingredients in boron systems, are ubiquitous within the environment. They are essential plant micronutrients and are added regularly to agricultural land as fertilizers.

> **Low Maintenance and Environmentally Friendly Structural Features**

• **Concrete Flooring**
  A finished concrete floor was used as the structural and finished slab which minimizes materials and makes for a durable low maintenance finish.
Locally Sourced Materials

• Post and Beam Timber Frame
  The framing was constructed of white pine timbers harvested from local forests in Rhode Island. Eastern white pine (Pinus strobus) grows only in the northeastern United States and has attributes that competing products rarely match. The trees are harvested when they reach an age between 80 and 100 years old to ensure that the product is as straight and true today as it was when the eastern white pine was first harvested during the 1600s.