

# Sumac Island House

**E**vergreen Building Systems, LLC is a full service custom homebuilder serving coastal New England. Evergreen recently completed a stunning 4500 square foot gambrel colonial with extensive finish details and state-of-the-art systems on a private island off the coast of Connecticut. The custom home was constructed to a finished level at a temporary jobsite in New London, CT and then moved to the island by barge.

Early in the planning stages of the project a number of challenges were identified due to the homes island location. These included the difficulty in mobilizing the workforce and materials out to the island, the lack of existing island infrastructure, low productivity due to logistical and weather constraints, and concern regarding effective project management and quality control. With the use of conventional site based construction systems, these challenges would contribute to a very expensive project requiring 2½ to 3 years to complete.

After carefully considering these issues and investigating alternative construction strategies, Evergreen made the decision to build the house offsite and then move it to the island. With this approach, the project cost and timeframe could be significantly reduced, but it would require a level of capability, equipment, and engineering analysis very different than typical residential construction projects.

Evergreen assembled a highly capable project team and construction began late in September 2005. Building the house on the mainland allowed Evergreen to construct the house quickly, efficiently, and to the highest quality level benefiting from our suppliers and sub contractors operating in a "business as usual" basis. It also allowed us to limit the challenging aspects of the project to the site work, foundation, and the house move.

Site preparations, complicated by the island location, required extensive planning, coordination with local governing agencies and the Department of Environment Protection, and innovative solutions. To meet



The custom house was constructed to a finished level on steel at a temporary jobsite in New London, CT



BY MICHAEL O'NEILL, EVERGREEN BUILDING SYSTEMS, LLC, OLD LYME, CT

**The finished 4500 square foot gambrel colonial has a propane generator and inverters provide secondary power for peak usage.**



FEMA requirements, the existing grade surrounding the house site needed to be raised by two feet requiring more than 100 truckloads of fill. To meet potential wave pressures, the foundation required approximately 60,000 lbs of epoxy coated steel reinforcement and 25 truckloads of concrete. These materials were transferred to the island with the use of a military landing craft using great care to minimize environmental impact.

Drawing only fresh water from the mainland, the house is otherwise off the grid and fully self-sustaining. The homes electrical system is powered by a 3600-watt photo voltaic collection and storage system which consists of 28 roof-mounted solar panels, control systems, and battery storage. A propane generator and inverters provide secondary power for peak usage. Hot water is provided by a solar collection and storage system, and the homes lighting and appliances operate at the highest efficiency levels cur-

rently available. Engineered and constructed to survive....

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