

COASTAL ENGINEERING COMPANY, INC.

Professional Engineers and Land Surveyors

**Providing solutions
for the benefit
of our clients
and community**

SHOREFRONT PROTECTION

WATERFRONT INFRASTRUCTURE

ENVIRONMENTAL PERMITTING

SITE DEVELOPMENT

INNOVATIVE WASTEWATER TREATMENT

HISTORIC PRESERVATION

BUILDING TECHNOLOGIES

SPECIALTY STRUCTURES

ENERGY MANAGEMENT

260 Cranberry Highway
Orleans, MA 02653
508.255.6511
CoastalEngineeringCompany.com

Energy Management Services

Providing design solutions for energy-efficient systems



HOLLY TREE RESORT, YARMOUTH, MA

Owners of the year-round resort wanted to address water damage and high energy bills. Coastal Engineering inspected the roofing and window systems and determined both had served their useful lives and were in need of renovation or replacement. The Building Sciences team recommended an energy management program that included retrofit lighting, energy efficient HVAC upgrades, and design changes to the resort's roof, wall and flooring systems. With its new "building envelope" and energy conservation measures, the Holly Tree Resort is operating utility efficient, with reduced energy costs and improved guest comfort.

"The energy conservation grant Richard Lorenzotti was able to negotiate is unbelievably great news. I have informed Vacation Resorts International's other local clients about the generous energy incentives they may qualify for with Coastal's Experience."

Richard Muller

Sr. VP of Operations, Vacation Resorts International

SUMMARY

Annual Energy Savings: **\$47,847**

Program Incentives: **\$234,833**

Average Payback: **3.34 years**

Energy Reduction: **40%**

Reduction in GHG Emissions: **136 metric tons**

"Coastal has gone over and above for Holly Tree."

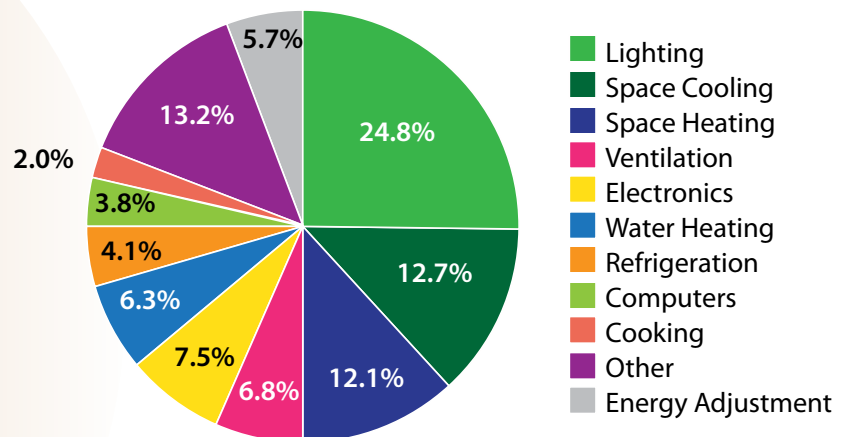
Brian M. O'Hearn

General Manager, Vacation Resorts International

TYPICAL ENERGY USE IN COMMERCIAL BUILDINGS

LIGHTING
accounts for $\frac{1}{4}$
of total primary energy use
in a COMMERCIAL building.

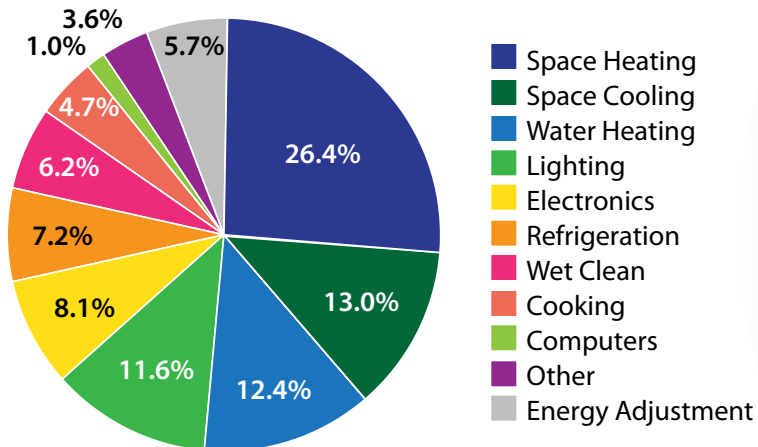
Source: 2009 Buildings Energy Data Book



Building Sciences

Providing solutions focused on external building envelope performance

TYPICAL ENERGY USE IN RESIDENTIAL BUILDINGS



SPACE HEATING
accounts for $\frac{1}{4}$
total energy use;
the largest RESIDENTIAL
energy use

Source: 2009 Buildings Energy Data Book



RESIDENCE, PROVINCETOWN, MA

Owners of waterfront property converted a business into residential space. The beach-side living space required increased support and stabilization with regard to the existing piling system. While Coastal Engineering was on site to provide structural engineering assistance, the Building Sciences team designed an energy management program that included on-site renewable energy generation that allows the homeowner to reduce carbon footprint and energy costs.

"After designing an improved structural base for the piling system under our home, the Building Sciences team designed an energy-efficient heating and air conditioning system and recommended a renewable energy technology that would help reduce energy costs. We installed a Photovoltaic and hot water solar system that has had a great return on investment."

Homeowner

SUMMARY

Renewable Energy: **15% ROI**
Reduction in GHG Emissions: **3 metric tons**
Renewable Energy Production: **95%**

Professional Engineering Services

FIELDS OF EXPERTISE

Civil Engineering

Project Planning and Feasibility
Site Engineering
Stormwater Management
Title 5 and Advanced Sewage Disposal System Design

Structural Engineering

Wood, Steel, and Concrete Building Design
Existing Conditions Assessments
Foundation Engineering and Concrete Restoration
Historic Preservation, Restoration, and Rehabilitation

Marine Engineering

Pier, Dock, Marina, and Ramp Design
Shorefront Protection Analysis and Design
Bulkhead and Revetment Design
Dredging

Land Surveying

Boundary and Data Accumulation Surveys
Topographic and Hydrographic Surveys
Land Court Surveys
ALTA/ACSM (Title Insurance) Surveys

Energy Management

Energy Code Compliance Evaluations
Energy Audits and Energy Conservation Design
Building Sciences
HVAC System Analysis and Design

Environmental and Land-Use Permitting

Local, State, and Federal Permitting
Wetland Identification and Assessment



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PROJECT CHECKLIST

Engineers participate on project teams from design to permitting and through construction. A successful project outcome starts with an experienced project team and a clear understanding of project goals.

- Research architects, engineering firms, contractors, and other professionals based on project experience, breadth of services, and years in business.
 - Check credentials with the Board of Registration.*
 - Get client and business references.*
- Identify project objectives, define budget, and set proposed timeline.
- Assemble project team – architect, other design professional, engineer, and contractor.
- Be cost conscious; yet, don't let service fees be the sole determining factor in which firm to hire. Reduced design fees may save money up front, but could result in higher construction costs in the end.

YOUR PROJECT DESERVES ENGINEERING EXCELLENCE

Coastal Engineering first listens to our Clients to fully understand what they want and then provides services that are appropriate to meeting their project needs. Each of our project managers has many years of experience in his or her area of expertise.

Projects vary greatly in size and complexity. A sole proprietor or small engineering firm may be limited in availability or depth of services. Principals of large firms are often not accessible to deal with small scale projects. Just-right-sized engineering firms like Coastal Engineering that offer multiple services can streamline a project's design and permitting processes and attain timely project goals.

Coastal Engineering has been providing professional civil, structural, and marine engineering and land surveying, energy management, and environmental permitting services to clients on Cape Cod, the Islands, and in southeastern Massachusetts for more than 35 years. We pride ourselves on providing responsible and sustainable designs.