

AFRICAN MEETING HOUSE

Boston, MA

NSE
Norian/Siani Engineering



PROJECT DATA

PROJECT TYPE:
Renovation

OWNER:
National Park Service

ARCHITECT:
John G. Waite Associates

PROJECT BUDGET:
\$9,500,000

CONSTRUCTION COMPLETED:
2012

PROJECT DETAILS

The African Meeting House, a National Historic Landmark, was built in 1806 by the free black community of Boston. Its pulpit and meeting space gave voice to famous abolitionists and activists of the time. After a grant from Mrs. Michelle Obama this project was able to be completed in 2012. We provided partial redesign of MEP systems and construction phase services for the complete renovation of this building that is now a part of the neighboring Black History Museum. The difficult site and requirements for designs to meet modern codes and comfort made this project a challenge.

Alvah Kittredge AK House

Roxbury, MA



PROJECT DATA

PROJECT TYPE:
Renovation

OWNER:
History Boston, Inc.

ARCHITECT:
Amory Architects

PROJECT BUDGET:
\$3,700,000

CONSTRUCTION COMPLETED:
2015

PROJECT DETAILS

The historic Boston mansion has been restored to its original exterior appearance and cleverly renovated to provide five beautiful modern apartments. Built to a LEED Silver standard and in compliance with Stretch Code and Green Communities, each separately metered apartment consumes only a modest amount of energy and water. Exterior mechanical equipment has been concealed carefully so as not to impact the appeal of the exteriors. Winner of the 2015 Boston Preservation Alliance Award.

BELMONT COMPLEX

Belmont, MA



PROJECT DATA

PROJECT TYPE:
Renovation

OWNER:
Town of Belmont

ARCHITECT:
Donham & Sweeney
Architects

PROJECT BUDGET:
\$3,100,000

CONSTRUCTION COMPLETED:
2005

PROJECT DETAILS

This project involved complete renovations of two historically significant municipal buildings: the Town Hall Annex and the School Administration Building. Our scope of work included design of heating, cooling, electrical, and fire protection systems. Both buildings received energy efficient mechanical systems designed in compliance with the ASHRAE Energy Code (ASHRAE 90.1), and ADA Compliant. The heating systems featured 98% efficient condensing boilers, heat recovery units to pre-heat outside air for ventilation, and implementation of variable frequency drives on hydronic circulators. The challenge to retrofit the mechanical systems into a building where they were never intended was met by use of a two pipe change over hydronic system and low-profile ducted fan coil units. This scheme provided multiple zones to achieve optimal temperature control and also enabled the architect to preserve the ceiling height necessary for a building of this type. Automatic Temperature Controls with user-friendly Web based graphics were installed to monitor and command the various systems from a single point.

CARTER MEMORIAL

Needham, MA

NSE
Norian/Siani Engineering



PROJECT DATA

PROJECT TYPE:
Building Renovation

OWNER:
Carter Memorial United
Methodist Church

PROJECT BUDGET:
\$2,000,000

CONSTRUCTION COMPLETED:
2014

PROJECT DETAILS

This project included extensive renovations and upgrades to the 12,300 square foot facility which contains a sanctuary wing, educational wing and an administrative wing. Norian/Siani Engineering provided HVAC and Plumbing design and construction administration services. HVAC elements involved new VRF air source heat pumps, new high efficiency hydronic boiler plant and panel radiators, Energy Recovery Ventilator's (ERV), and ducted dehumidifiers. Plumbing includes new bathrooms with low consumption plumbing fixtures, piping, and water heaters.

JEWETT HOUSE

South Berwick, ME

NSE
Norian/Siani Engineering



PROJECT DATA

PROJECT TYPE:
Renovation

OWNER:
Jewett-Eastman Memorial
Committee

CONSTRUCTION COMPLETED:
1998

PROJECT DETAILS

This property includes a primary three-story structure and attached addition. The main structure operates as a seasonal museum displaying family and industrial items from the past. The addition provides a single dwelling unit occupied year-round. As a historically registered building the Society for the Preservation of New England Antiquities (SPNEA) manages the property and employed us to design a replacement primary heating plant. We have created a small boiler plant in a neighboring shed and with underground piping have eliminated older, sooty, and troublesome mechanical equipment from the main building. With the use of outdoor reset control, we have minimized the energy costs and the amount of temperature cycling in the building. The new efficient plant allows easy access for repairs and oil deliveries.

SIMES HOUSE

Plymouth, MA

NSE
Norian/Siani Engineering



PROJECT DATA

PROJECT TYPE:

Restoration and Renovations

OWNER:

Town of Plymouth

ARCHITECT:

Red Hawk Studio Architects

PROJECT BUDGET:

\$2,000,000

CONSTRUCTION COMPLETED:

2014

PROJECT DETAILS

NSE provided the MEP & FP for this historic mansion from 1863 on the Manomet Bluffs of modern-day Plymouth, Massachusetts has been restored to its original exterior appearance and renovated to provide first floor museum, meeting space and kitchen facilities, five offices and large conference space for businesses on the second floor, and two modern apartments on the 3rd floor. The project was overseen by the Simes House Foundation. Exterior mechanical equipment has been located carefully so as not to impact the appeal and historic character of the exteriors. First floor trim, detail and interior materials have remained true to original. The building has also been insulated within limits of the existing framing and meets the standards of LEED Silver certification for all plumbing and mechanical systems. Each of the buildings lessees' utilities are separately metered, and consume only a very modest amount of energy and water. This project is the recipient of the 2018 Massachusetts Historical Commission Preservation Award.

LONGFELLOW'S WAYSIDE INN

Sudbury, MA



PROJECT DATA

PROJECT TYPE:
Master Plan and
Renovation

OWNER:
The Wayside Inn Foundation

CONSTRUCTION COMPLETED:
2000

PROJECT DETAILS

Longfellow's Wayside Inn is the oldest, continually operating inn in the country and includes a set of historically registered set of buildings.

MECHANICAL MASTER PLAN

The condition of mechanical heating, ventilating and air conditioning systems and the large set of refrigeration systems are of varying ages and states of repair with most in very poor condition. The time for careful planning had more than passed. Norian/Siani Engineering developed a Master Mechanical Plan for the Inn, plotting a course for system upgrade and replacement over the next few years. Considerations included: modern standards for health and comfort, current mechanical and life safety codes, energy efficiency and economic viability. The report consisted of an existing conditions investigation, complete heat loss and gain calculations, catalog and plan of existing equipment, definition of system and renovation/replacement alternatives, recommended options, and product cuts illustrating elements of the recommended systems. Recognizing that the refrigeration and HVAC systems play a very important role in maintaining the success of the Inn, particularly because they serve over 700 meals per week and never close down, we developed a cohesive plan and a recommended construction approach that does not damage the historic character of the Inn.

ADDITION & RENOVATION

As part of a project team, Norian/Siani Engineering conducted the mechanical design for a 3,200 square foot addition and a 2,400 square foot renovation of this historic landmark. The design consisted of a gas fired duct furnace, air handlers, and air-cooled condensing units. Significantly, outside air was supplied via a mixing box, both for economizer cooling and air quality throughout the addition and renovation. The design included extensive coordination with other members of the project team, as well as, particular attention to the sensitive nature of the Inn's aesthetic requirements, while ensuring proper environmental control and comfort.