

**CURT M. FREEDMAN, P.E., CEM, CEA, LEED® AP  
MECHANICAL ENGINEER  
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Provide professional engineering consultation services for the residential, commercial, and industrial sector. Design, engineer, and construct HVAC systems, plumbing systems, and utility conservation products for the residential, commercial, and industrial sector; boiler and chiller design. Evaluate building mechanical and structural infrastructure. Provide forensic engineering services for attorneys and the insurance industry. Advocate for utility conservation and more equitable electric, natural gas, water, and sewer tariffs.

**EDUCATION:**

**Lehigh University**, Bethlehem, PA, **Bachelor of Science in Mechanical Engineering (B.S.M.E.)**, May, 1981.

**Western New England University**, Springfield, MA,  
**Master of Science in Engineering Management (M.S.E.M.)**, February, 1987.

**EMPLOYMENT HISTORY:**

1985-Present	<b><i>CMF Engineering, Inc.</i></b> , Longmeadow, MA
2008-2013	<b><i>EFI Global</i></b> , Fall River, MA
2006-Present	<b><i>Western New England University</i></b> , Springfield, MA
1983-1985	<b><i>Friendly Ice Cream</i></b> , Wilbraham, MA
1982-1983	<b><i>Xidex Corporation</i></b> , Holyoke, MA
1981-1982	<b><i>Combustion Engineering</i></b> , Windsor, CT

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**DETAILED PROFESSIONAL EXPERIENCE:**

**1985-Present**

**C.M.F. Engineering, Inc.**, Longmeadow, MA

***Senior Forensic and Mechanical Engineer***

Business ventures of this corporation include energy management, HVAC design and controls, water and utility conservation, plumbing design, boiler design, chiller design, and building systems evaluation, structural/mechanical inspections for real estate property assessments, mechanical systems' sound attenuation, forensic engineering, expert witness testimony, and energy/utility intervention.

**2008-2013**

**EFI Global**, Fall River, MA

***Senior Forensic and Mechanical Engineer***

Responsibilities include: mechanical systems failure evaluation, expert witness testimony, forensic engineering, and energy/utility conservation. Mechanical design includes energy management, lighting design, HVAC design and controls, boiler design, chiller design, and building systems evaluation.

**1983-1985**

**Friendly Ice Cream**, Wilbraham, MA

***Associate Design Engineer***

Building code evaluation, handicap access evaluation, HVAC design, energy management, plumbing design, electrical design, HVAC controls.

**1982-1983**

**Xidex Corporation**, Holyoke, MA

***Project Engineer***

Completed machine design, energy management, industrial engineering, and water conservation. Helped manage and operate a 50 kW low head water wheel. Implemented a facility wide energy conservation program and worked to improve microfilm production by over 30%.

**1981-1982**

*Combustion Engineering*, Windsor, CT

*Autoclave Facility Engineer*

Combustion Engineering, Windsor, CT, Nuclear Power Systems, Engineering Development and Services, Development Engineer.

Responsible for laboratory testing and performance evaluation of various products for the nuclear power industry. Duties consisted of writing test procedures and reports, selection of vendors for materials and services, as well as supervision of technicians and shop workers in the design and manufacture of test equipment; this duty extended to the shop floor where technical support was given in the manufacturing process. Additional responsibilities included the position Autoclave Room Facility Engineer where I was responsible for the coordination and scheduling of test programs in the 11 autoclaves.

Specific achievements were the qualification testing by NRC specifications of C-E's differential pressure controller, and renovation of the autoclave facility. This renovation included machining of vessel heads, design of new support brackets, better insulation of pressure vessels, installation of solid state power relays, and inspection for crack propagation in vessel walls.

**(2006-Present)**

## **TEACHING EXPERIENCE**

*Adjunct Professor*, Western New England University in Springfield, MA. Instruct energy management and alternative energy, high speed camera laboratory, and heat pump laboratory to juniors, seniors, and graduate Students.

In 2007, as faculty advisor for an engineering design contest sponsored by the American Society of Mechanical Engineers, my students placed first and second in the region.

In 2009, I designed, specified, and directed the construction of an outdoor alternative energy laboratory that includes a photovoltaic solar array, evacuated tube solar panel, a flat plate solar panel, and a retractable wind turbine on a 60' mast.

In 2010, I was the first professor to successfully include the Certified Energy Manager (CEM) Exam as part of an engineering classroom as sponsored by the Association of Energy Engineers (AEE).

I was a participant as part of a Memorandum of Agreement that was part of a grant that was given to Western New England College. This Memorandum of Agreement (MOA) outlines the agreement between the partners listed below to develop and implement a project funded by the Clean Energy Workforce Training Capacity Building Initiative. The overall purpose of the program is to build capacity of Massachusetts training providers in providing clean energy training.

Instruct Alternative Energy Systems Design and Energy Management courses, and develop and manage the Outdoor Green Energy Laboratory. Assist the curriculum advisory committee with

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the development of undergraduate clean energy curriculum, participate in classroom discussion and provide guidance to interns participating in the program.

### **PROFESSIONAL EXPERIENCE HIGHLIGHTS**

#### **Curt's Crossing**

Designed, specified, and supervised construction for a single lane bridge (40' span x 18' wide) in Westbrook, CT. Although the bridge is frequented by automobile traffic, it was designed to withstand the weight of a 50,000-lb. boat lift.

#### **First Church of Christ**

Designed, specified, and supervised the mechanical system renovation of this house of worship that is also a historic landmark in Longmeadow, MA. My work included the design of a heated handicap access ramp and stairs for the northern entrance to the facility.

#### **Mercury Poisoning Incident**

Investigated and provided testimony concerning an industrial mercury poisoning incident that resulted from the negligent design of a HVAC system by a registered professional engineer. The event resulted in over 40 factory workers being hospitalized, some with permanent brain damage.

#### **Vacuum Ovens**

Investigated the design deficiencies for high temperature vacuum ovens. These deficiencies were responsible for accidents, fires and elevated risk exposure to factory workers. Forensic evaluation of vacuum ovens included reference to NFPA 86, Standard for Ovens and Furnaces.

#### **Carbon Monoxide**

Investigated and provided testimony for a carbon-monoxide poisoning incident that resulted from the improper use of an unlined brick chimney to vent a natural gas furnace. The chimney became blocked with crumbled brick, causing products of combustion to back up into the basement; the accumulating carbon monoxide caused permanent brain damage to occupants of the office building.

**Consult for the Ski Industry in Vermont**

Provided detailed utility rate analysis for *Bromley, Ascutney, Suicide Six, Magic, and Stratton* to develop a more competitive special contract with *Central Vermont Public Service*; successfully established energy conservation, on-site generation, and load management programs for *Bromley Mountain* in 2004. Provided expert testimony to the *Vermont Public Service Board* and the *Department of Public Service* to establish special contracts for *Ascutney Mountain* and *Magic Mountain* in the *Central Vermont* service territory in 2005.

**First in Western Massachusetts** to establish Time-of-Use (TOU) electric rates for commercial customers; successfully intervened against Northeast Utilities at Massachusetts Department of Public Utility Commission Hearings in **1990** and **1998-2000**. In November '04, an agreement was reached with Northeast Utilities and the Office of the Attorney General Office putting forward a special contract for two houses of worship in the Western Massachusetts Electric territory.

**First in the nation** to establish residential dual fuel interruptible natural gas rates in **1994** resulting in a **25%-50%** reduction in fuel costs. Intervened before the Massachusetts Department of Public Utilities against Bay State Gas Company. The story was aired in a special segment broadcast on WFSB, Channel #3, 1/29/01.

**First in the nation** to establish a statewide policy in Massachusetts to implement a policy that requires Utilities to review rebate eligibility for renewable energy projects from an after tax-credit cost position instead of a first cost position; this policy change was successfully achieved working closely with Governor Patrick's office and the Attorney General's office. The intended goal of this policy was to enable greater funding for renewable projects through existing Utility rebate programs by placing renewable energy savings projects on an exactly level playing field with conventional energy conservation projects.

**STATES OF ENGINEERING REGISTRATION**

<b>Connecticut</b>	<b>Florida</b>	<b>Maine</b>
<b>Maryland</b>	<b>Massachusetts</b>	<b>New Hampshire</b>
<b>New Jersey</b>	<b>New York</b>	<b>Ohio</b>
<b>Pennsylvania</b>	<b>Rhode Island</b>	<b>Vermont</b>

**Certified Energy Manager (C.E.M.)**, The Association of Energy Engineers.

**Certified Energy Auditor (C.E.A.)**, The Association of Energy Engineers.

**Leadership in Energy and Environmental Design (LEED® AP)**,  
U.S. Green Building Council.

**Tau Beta Pi (τβπ)** - Engineering honor society. The Tau Beta Pi Association was founded in 1865 to mark integrity and excellence in engineering.

**PROFESSIONAL ORGANIZATION AFFILIATIONS:**

- ~ Association of Energy Engineers (**AEE**)
- ~ The Association of Heating Refrigeration and Air Conditioning Engineers (**ASHRAE**)
- ~ Building Officials and Code Administrators International, Inc. (**BOCA**)
- ~ The American Society of Mechanical Engineers (ASME),  
Past President, Western Mass. Section 1989-1991
- ~ The National Society of Professional Engineers (NSPE), member
- ~ The National Academy of Forensic Engineers (NAFE), “*Senior Member*”
- ~ The International Association of Arson Investigators, Inc., member

**Special Recognition for Professional Accomplishments:**

*The Computer Simulation and Performance Testing of a Baseboard Tubing Solar Panel*, presented at the 22nd National Heat Transfer Conference at Niagara Falls, New York, August '84. The presentation featured a new type of baseboard tubing solar panel that I developed that is more cost efficient. The presentation documented a detailed energy balance analysis modeling solar insolation using *ASHRAE* clear sky equations, factors for glazing transmission and reflectance, radiation losses, detailed equipment performance modeling, seasonal and hourly weather variation, transient heat load analysis and energy costs.

**November 5, 1998**, Atlanta Georgia, at the *World Energy Engineering Congress*, given by *Energy User News* for my engineering accomplishments in building energy efficiency. The Certificate of Merit in the *Building Retrofit* category was awarded for my contribution at *Temple Beth El*, in Springfield, Massachusetts.

**Technical Papers and Public Documents:**

*Wide Ranging Effort a Must to Avert Energy Crisis*, this OP-ED article was featured in the Springfield Union News on 1/28/01.

**House Bill 2156, An Act Relative to Electric Utility Rates for Houses of Religious Worship in the Commonwealth** was presented before the Joint Committee on Government Regulations, Joint Meeting with House and Senate, March 15, 2001 at the Massachusetts State House to establish greater equity in electric service for customers with prominent off-peak power users.

Testified before the Connecticut legislature. Established the right for marinas to subscribe to residential electric rates in the State of Connecticut as supported by the Connecticut Marine Trades Association. Bill signed into law by Governor John G. Rowland in 2002.

**Recreational Interests:**

Swimming, sailing, bicycling.