



# High Performance Buildings & Job Creation

Apollo Summit

Stephen Cowell, CSG

February 26, 2007



Conservation Services Group



# Job creation in the era of climate change and petro-terrorism

- Energy efficiency creates more jobs per dollar than imported fuel based solutions
- High performance buildings mean improved economic and environmental performance
- New jobs are often higher skilled/higher pay jobs
- End use solutions mean more local jobs





## Punch list of new jobs

- **Home construction and renovation:**  
Introducing performance testing
- **Building Controls and Automation:** Mfg,  
installation and operation of energy  
management systems
- **HVAC system installation and maintenance:**  
computer diagnostic and testing





## Punch list of new jobs

- **Retrofit/replace** inefficient lighting and HVAC systems
- **Operation and Management Services** that lower energy costs
- **Renewable Energy systems and Distributed Generation:** installation and maintenance — a power plant in every building





## Punch list of new jobs

- **Environmental Product:** manufacture, sales, installation and maintenance
- **Evaluation Services:** building performance
- **High Skilled trades in organized labor compatible environments**





## **Expand union jobs: numbers and skills**

- I.B.E.W. Local 103 – retrofitting buildings for renewable electricity generation
- S.E.I.U. – Thomas Shortman Training Program (NYC) offering Green Buildings and efficient HVAC courses





# I.B.E.W.

IBEW regional training center

100 kW;

Height: 35 meters

First commercial-scale turbine installed in Boston

Apprentice electricians receive training on wind turbine installation and maintenance



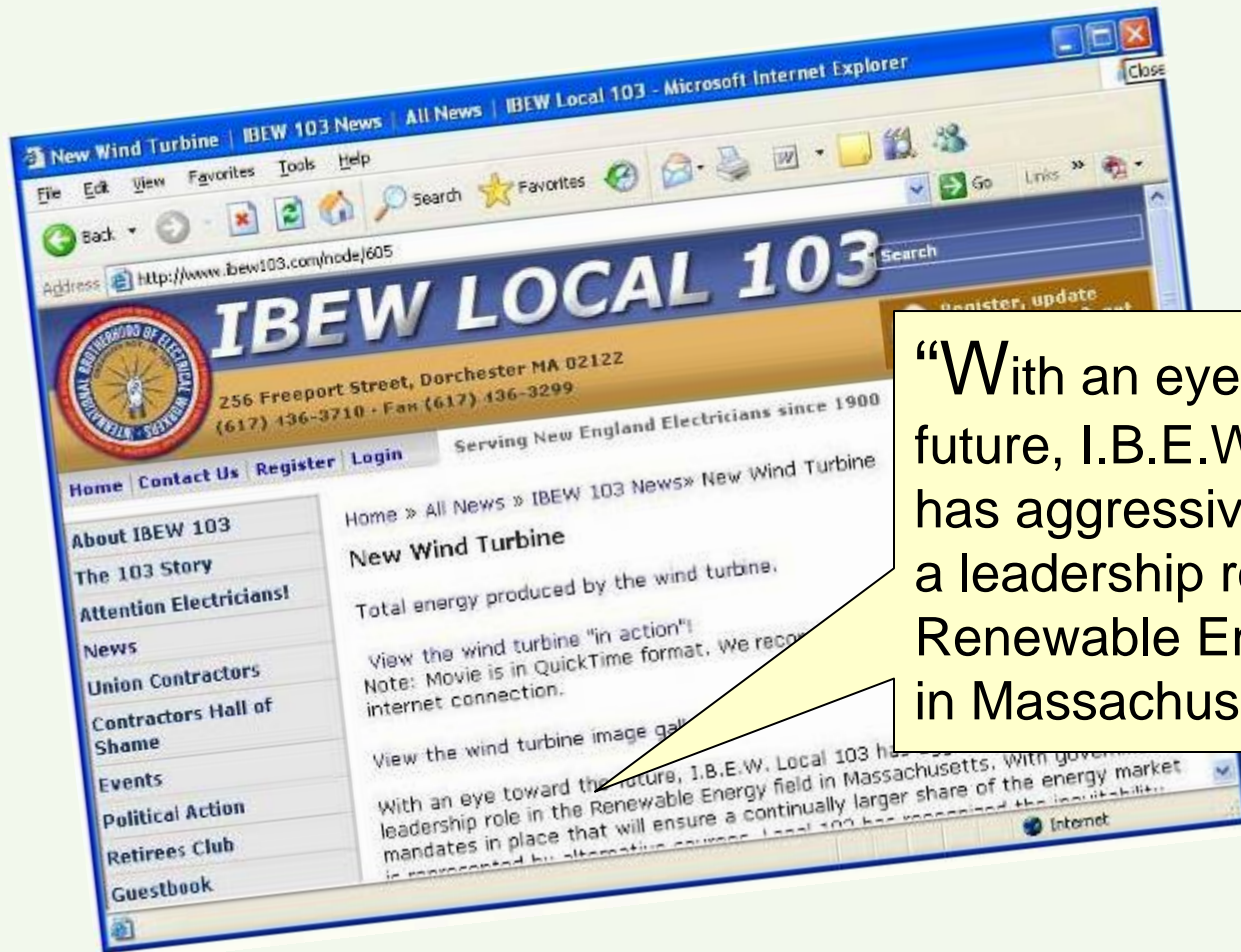
Conservation Services Group



# I.B.E.W.

Local 103 is now installing solar energy in commercial and industrial buildings as well as residences





“With an eye toward the future, I.B.E.W. Local 103 has aggressively assumed a leadership role in the Renewable Energy field in Massachusetts.”



# S.E.I.U.

## The Thomas Shortman Training Program coursecatalog



Free Training to Engage

### Industry Skills for 2005-2006

**Green Buildings**

**NEW**

**PREREQUISITE** - None

Sponsored by the New York State Energy Research and Development Authority (NYSERDA), Green buildings are designed or modified to maximize economic and environmental performance. Over the course of six weeks, students will learn about innovative maintenance strategies, energy efficient building operation and water use reduction measures. Each session is described in detail in the Industry Seminar section on pages 19-20.

**Students who successfully complete this course will be able to maintain a building in the most efficient and environmentally friendly way.**

**Heating Systems I**

**NEW**

**PREREQUISITE** - Appropriate score on standardized Reading test or high school diploma or GED and Air Pollution Control

This course is designed to introduce students to the types of heating equipment used in today's residential and commercial buildings. Students will study boiler operation, combustion controls, steam output and piping. Field trips are included.

**Students who successfully complete this course will be able to identify all phases of boiler operation.**

**Heating Systems II**

**NEW**

**PREREQUISITE** - Heating Systems I

This course is designed to give students hands-on experience with #2 and #6 boiler systems. Students will learn about fuel and draft control systems, boiler water treatment processes and boiler operating procedures. Field trips are included.

**Students who successfully complete this course will have a basic understanding of #2 and #6 boiler systems.**

**Heating Systems III**

**NEW**

**PREREQUISITE** - Heating Systems II

This course is designed to make students proficient in #2 and #6 boiler systems. Students will learn about hotwater heating systems, New York City steam systems and boiler operation safety. Field trips are included.

**Students who successfully complete this course will understand, identify, troubleshoot, and operate steam, #2 and #6 boiler systems.**

**HVAC: Heat Load Calculations**

**NEW**

**PREREQUISITE** - Refrigeration License Preparation III, Heating Systems III

This course instructs the student in all phases of heat load calculations relating to comfort and specialized heating/cooling systems in residential and commercial high-rise buildings. It covers heat loss, heat gain, heating/cooling conservation, air distribution and the effective use of outdoor air.

**Students who successfully complete this course will be able to identify, plan cooling and heating programs in the building under their care, with a minimum of cost and energy.**

**Industrial Cleaning**

**NEW**

**PREREQUISITE** - Appropriate score on standardized Reading test or high school diploma or GED

This course is designed to teach students how to properly use cleaning equipment on a variety of surfaces such as vinyl, ceramic tile, carpeting, and concrete. Students will learn techniques to safely clean residential and commercial buildings and to dispose of hazardous chemicals.

**Students who successfully complete this course will be able to choose and use cleaning chemicals, machinery, and equipment according to industry and safety guidelines.**

“Students will learn about innovative maintenance strategies, energy efficient building operation and water use reduction measures”



# S.E.I.U.



Industry Seminar section on pages 19-20.

Students who successfully complete this course will be better able to maintain a building in the most efficient and environmentally friendly way.

## Heating Systems I



**PREREQUISITE** • Appropriate score on standardized reading test or high school diploma or GED and Air Pollution Control

This course is designed to introduce students to the types of heating equipment used in today's

ents  
trois

“Students . . . will be able to effectively plan cooling and heating programs in the buildings under their care, **with a minimum of cost and energy.**”

## HVAC: Heat Load Calculations



**PREREQUISITE** • Refrigeration License Preparation III, Heating Systems III

This course instructs the student in all phases of heat load calculations relating to comfort and specialized heating/cooling systems in residential and commercial high-rise buildings. It covers heat loss, heat gain, heating/cooling conservation, air distribution and the effective use of outdoor air.

Students who successfully complete this course will be able to effectively plan cooling and heating programs in the buildings under their care, with a minimum of cost and energy.



Conservation Services Group



***Thank you!***

Steve Cowell

stephen.cowell@csggrp.com

508.836.9500 x13262

[www.csggrp.com](http://www.csggrp.com)



Conservation Services Group