

CHAPTER 7: FINDINGS ABOUT EDUCATION AND TRAINING OPPORTUNITIES

D. Building and Grounds Cleaning and Maintenance Occupations - O*NET-SOC Code 37

Overview

This job family includes janitors and cleaners and first-line supervisors of these occupations. It also includes landscaping, lawn service, and grounds keeping workers. Skills for these occupations are typically learned through on the job training.

The research conducted under this grant focused on the green occupations in the Building and Grounds Cleaning and Maintenance job family in O*NET's *Greening of the World of Work*,¹ and also occupations that were reported by New York State employers in the large employer survey conducted in late 2010-early 2011.

Non-Degree/Non-Credit Bearing Programs

Non-degree and non-credit bearing programs and courses for this job family mainly focus on basic maintenance skills that contribute to energy efficiency, facilities management, and waste disposal and recycling.

The courses or programs may prepare individuals for credentials from the following credentialing bodies:

- **BPI** (Building Performance Institute)
- **BOC** (Building Operator Certification)
- **EPA** (Environmental Protection Agency)
- **GA** (Green Advantage)
- **LEED** (Leadership in Energy and Environmental Design)
- **NABCEP** (North American Board of Certified Energy Practitioners)
- **OSHA** (Occupational Safety and Health Administration)
- **RESNET** (Residential Energy Services Network)
- **Urban Green Council's G-PRO**

The table on the next page displays the distribution of non-degree providers and programs available in New York State to prepare people for these occupations. It also shows the number enrolled and the number of completers in 2010-11.

New York City has the largest number of programs for this job family, with 39 programs, or 57 percent of the total. The Hudson Valley region is the second largest, with 6 programs representing about 9 percent of all green non-degree training. The Central

¹ Dierdoff, E., J. Norton, D. Drewes, et al., *Greening of the World of Work: Implications for O*NET-SOC and New and Emerging Occupations*, National Center for O*NET Development, 2009.

NY/Southern Tier region has the smallest number of programs with only one program identified for this region.

Building and Grounds Cleaning and Maintenance Occupations – Green Non-Degree Programs/Non-Credit Bearing Courses				
Region	Number of Providers	Number of Programs	Students Enrolled*	Student Completers*
New York City	21	39	3933	2901
Hudson Valley	3	6	117	117
Western NY/Finger Lakes	4	4	415	180
Capital District/North Country/Mohawk Valley	3	3	150	126
Long Island	1	2	24	24
Central NY/Southern Tier	1	1	n/a	n/a
Online**	3	13	5	5
Total	36	68	4644	3353

* Enrollment and completion data were not reported by all training/education providers.

**Online designation is for web based programs and is not one of the LMI Regions.

**Blended format programs are included within the 6 LMI Regions.

New York City has approximately 85 percent of reported enrollments and completions in the State, with 3,933 and 2,901 respectively. The “1,000 Green Supers” Program offered by the Thomas Shortman Training Fund in New York City (see box on next page), accounts for 25% of all reported program enrollment in New York City.

Some non-degree programs in New York State include:

- 1,000 Green Supers Program
- BPI Multi-Family Building Analyst Certification
- Building Operator Certification
- GreenWorks Building Maintenance Training
- Heating Ventilation & Air Conditioning (HVAC) Excellence
- Green Handyman and Weatherization Specialist
- Plumbing and Electricity Basics for Green Jobs
- Basic Property Management
- Facilities 101 Anatomy of a Building
- Water Treatment Grade B & C

The Thomas Shortman Training Fund's 1,000 Green Supers Program*

The Thomas Shortman Training Fund is a joint fund of the Service Employees International Union (SEIU) Local 32BJ and the Realty Advisory Board on Labor Relations. Since 2005, the Fund has been greening New York City's buildings by training building service professionals who are members of 32BJ. They work in residential apartment buildings, commercial office buildings, theaters and stadiums in New York City.

In January 2010, the U.S. Department of Labor awarded a \$2.8 million Energy Training Partnership grant to the Shortman Fund to train building superintendents in achieving energy efficiency through better operations and maintenance. The 40-hour course covers:

- 1. Building Science & Building Envelope** — includes the fundamentals of building science and examines a 'whole-building' approach to operations and maintenance. Topics include air movement, heat transfer, and relative humidity. It also covers the core area of the building's envelope and explores ways to keep conditioned air from escaping to the outside environment. Topics include air barriers, vapor barriers, thermal barriers, air sealing, insulation, pressure boundaries, and compartmentalization.
- 2. Lighting** — includes all aspects of lighting. Topics include lighting types, quality, efficiency and controls. The unit also discusses appliance efficiency ratings.
- 3. Heating, Ventilation & Air Conditioning (HVAC)** — includes the essentials of running a building's heating, ventilation, and air conditioning system. Topics include combustion science, combustion efficiency, boilers, controls and distribution as well as efficiency strategies for each of these areas.
- 4. Field Exercise (HVAC): Mechanical Room and Roof** — Onsite visit to a building's machine room and roof where instructors will teach supers how to perform steady state efficiency tests, maintain rooftop ventilation equipment, and apply efficiency strategies and best practices.
- 5. Sustainability/Indoor Environmental Quality** — describes the phenomenon of global warming and how energy use and waste generated from buildings contribute to global warming. Students learn that the manner in which they perform their jobs has a direct impact on the environment. Also covers the indoor atmosphere of a building, strategies to avoid and limit indoor pollutants, an introduction to green cleaning and the concept of green purchasing.
- 6. Water Conservation** — includes the essentials of water use and water conservation strategies. Topics include understanding water use, low flow appliances, leak detection, and leak repair.
- 7. Field Exercise: Hallway, Lobby, Apartment** — onsite exercise where supers learn how to inspect an apartment, evaluate hallways and common areas, and inspect the building's envelope.
- 8. Utilities & Energy Benchmarking** — includes measuring and managing energy use by understanding and working with utility bills (fuel, gas, electricity, and water). Topics include reading and understanding bills, energy benchmarking, recognizing unusual energy use (trends), and identifying opportunities for savings.
- 9. Green Building Work Plan** — students develop a basic action plan for improving their buildings based on concepts and strategies taught in earlier units. In addition, the class also discusses strategies and techniques to communicate effectively with building owners, tenants, and staff on their action plan, including payback and incentives for improvements.
- 10. Review & Practice Exam** — a review and a practice test are given to help prepare for the BPI exam.

*Information taken from the www.1000supers.com.

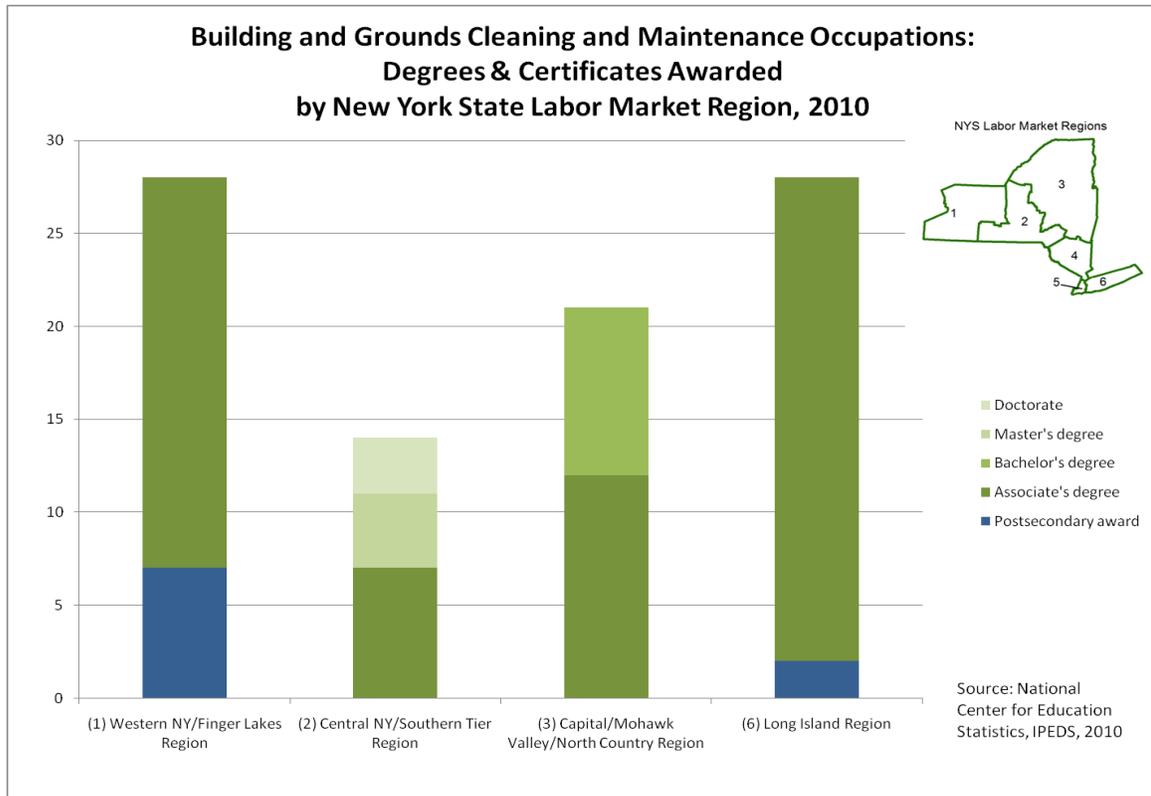
Degree and Credit-Bearing Certificate Programs

As explained more fully in the *Research Methods* section of this report (Chapter 1), the research partners looked at awards (certificates and degrees) conferred by colleges, universities, and technical and vocational institutions in fields associated with green employment. This data was derived from the U.S. Department of Education’s Integrated Postsecondary Education Data System (IPEDS). Instructional programs were linked to occupations using the U.S. Departments of Education and Labor’s “CIP–SOC” crosswalk.

Because skills for building and grounds cleaning and maintenance are learned primarily on the job or through non-credit training or coursework, relatively few degree and credit based programs were identified for this job family.

In 2010, 91 people received degrees or certificates that prepared them for work within the Building and Grounds Cleaning and Maintenance job family.

As shown in the bar chart below, only four of the six NYS LMI Regions have awards in this job family. These regions include the Western NY/Finger Lakes, Capital District/Mohawk Valley/North Country, Central NY/Southern Tier and Long Island regions.



Long Island and the Western NY/Finger Lakes Regions conferred the highest number of total awards, with 28 each. The Long Island Region has the highest proportion, with 39 percent of total Associate's Degree awards. The Capital District/Mohawk Valley/North Country region is the only region with Bachelor's Degree awards for this Job Family.

In addition to the degree and credit-bearing certificates in fields associated with green employment identified through IPEDS, the researchers found specialized green-related degree and credit bearing programs in building and grounds cleaning and maintenance occupations.

Illustrative specialized green degree and certificate degree programs include:

- SUNY Ulster and Sullivan County Community College: Green Building Maintenance and Management AAS
- Mohawk Valley Community College: School Facilities Management Certificate Program
- New York City College of Technology: Continuing Education Courses in Building Operations

Program Focus

The table on the next page displays particular program focus areas. As shown, a large number of programs are focused on energy efficiency training.

Building and Grounds Cleaning and Maintenance Occupations	Degree/Credit Programs	Non Degree/Non-Credit Programs
Electrical / Power / Lighting	n/a	1
Energy Efficiency	n/a	21
Energy Mgmt / Environmental Mgmt / Sustainability Mgmt / Facilities Mgmt	5	1
Green Construction / Sustainable Building, Materials and Design:		
Green Construction, Architecture, Design, Sustainable/Green Building (non-LEED)	n/a	13
LEED Program	n/a	1
Other / Miscellaneous	1	22
Renewable / Alternative Energy:		
Multifocus or Other Renewable / Alternative Energy	n/a	1
Solar PV	n/a	2
Solar Thermal	n/a	1
Waste Management / Environmental Remediation	1	4

*Programs may be counted toward multiple job families.

Conclusion

Skills for Building and Grounds Cleaning and Maintenance occupations are learned predominantly through on the job training and non-credit training. This is reflected in the relatively low occurrence of green degree and credit-bearing educational and training programs.

Building and Grounds Cleaning and Maintenance occupations account for a high level of green employment in New York City, and this is where most of the non-degree/non-credit bearing programs are located, including the 1000 Green Supers program.