



## New York State Green Jobs Survey Overview

### *Introducing the Green Jobs Study*

As part of the American Recovery and Reinvestment Act of 2009, the New York State Department of Labor was awarded a \$1.1 million grant from the U.S. Department of Labor to conduct research on the green labor market in New York State.

This research goes hand-in-hand with New York State's commitment to increasing energy efficiency and maximizing growth in its clean energy sector, in keeping with the Energy Efficiency Portfolio Standard; the Renewable Portfolio Standards; the Regional Greenhouse Gas Initiative; and the State Energy Plan.



As one part of the study, the New York State Department of Labor and its research partners surveyed 20,000 businesses in autumn 2010 to determine the number of and types of green jobs in the State.

### *Questions Answered*

Policymakers, researchers and the public have a variety of questions about the green labor market in New York State. The Green Jobs Survey begins the work of demystifying green by answering the following questions for several industry clusters involved with producing goods or delivering services that increase energy efficiency or generate renewable energy.



- **How many firms have green employees?**
- **How many workers are green?**
- **How do firms expect their green employment to change?**
- **What green credentials do firms prefer?**
- **Which occupations are green or greening?**
- **What are some key green occupations?**
- **For which occupations do firms have difficulty recruiting green workers?**
- **Which green occupations require more training, and how do workers get this training?**



## Defining Green

While ‘green’ touches nearly every sector of the economy, such as agriculture, conservation, education, energy, transportation, etc., New York State’s Green Jobs Survey focused on two specific areas:

### Renewable Energy and Energy Efficiency

- **Green economic activities<sup>1</sup>**: producing goods or delivering services that increase energy efficiency or generate renewable energy.
- **Green employer**: an employer that engages in green economic activities.
- **Green employee**: a worker primarily engaged in producing green products or services.

Future research may include other green sectors such as pollution abatement or waste remediation, which would require more expansive green definitions.

## Industry Spotlight

The Green Jobs Survey was sent to firms in seven industry clusters<sup>2</sup>. For now, the findings are focused on the following four:

- ✓ **Construction Trades**
- ✓ **Building Services**
- ✓ **Component Manufacturing**
- ✓ **Professional Services**

## Research Partners

- ***The New York City Labor Market Information Service at the City University of New York’s Graduate Center***
- ***The Energy and Environmental Technology Applications Center at the University at Albany’s College of Nanoscale Science and Engineering***
- ***The Advanced Energy Center at Stony Brook University***

## Survey Conventions

While every effort was made to ensure that the survey findings are representative<sup>3</sup>, please note:

- As with all surveys, results are subject to sample and non-sample sources of error
- Estimates are based on employer self-identification and have not been independently verified
- Firm and employment estimates are rounded to the nearest ten
- Percentages are calculated from unrounded data and rounded to the nearest percentage point

<sup>1</sup> In Building Services the definition of green economic activities differs slightly to: helping buildings and facilities achieve greater energy efficiency, use new technologies or achieve other environmental sustainability goals.

<sup>2</sup> Appendix B for a list of 6-digit NAICS codes included in selected industry clusters.

<sup>3</sup> See Appendix A for information on sample selection and data collection.

**New York State Green Jobs Survey Finding #1:  
Prevalence**

**Statewide, by Industry Cluster, for 2010 4<sup>th</sup> Qtr**



<b>Firms Statewide</b>	<b>Component Manufacturing</b>	<b>Professional Services</b>	<b>Building Services</b>	<b>Construction Trades</b>
Number with Green Employees	260	2,840	4,110	7,370
Total Number in Cluster	1,660	10,300	25,540	26,980
<b>Percent with Green Employees</b>	<b>16%</b>	<b>28%</b>	<b>16%</b>	<b>27%</b>

In these four clusters alone, there are over 14,500 firms that have one or more employees primarily engaged in producing goods or delivering services that increase energy efficiency or generate renewable energy.

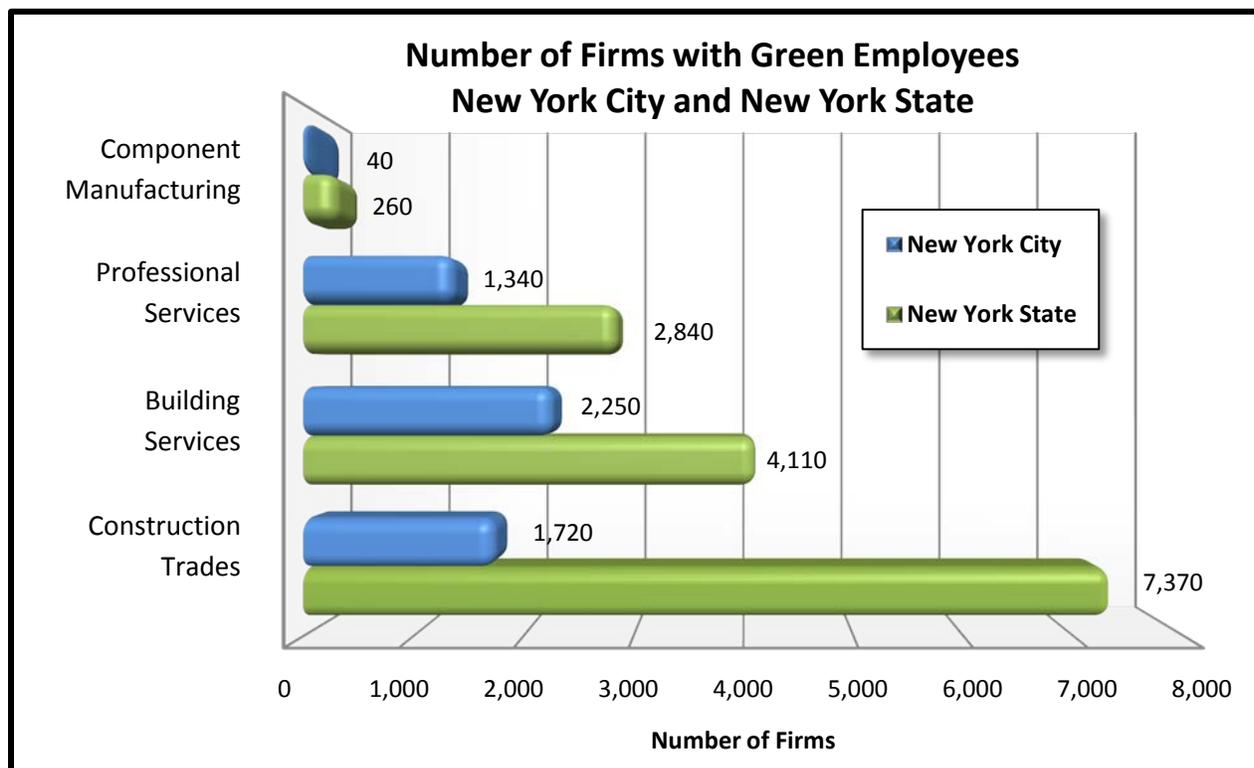
The smallest industry cluster listed above – Component Manufacturing – also has the fewest firms with green employment whereas the largest – Construction Trades – has the most. In the same vein, Building Services is the second largest cluster and has the second highest number of firms with green employment, while Professional Services<sup>1</sup> ranks third on both measures.

A different picture emerges when clusters are ranked by share of firms with green jobs. Professional Services tops the list with 28% of its firms having green employment. Construction Trades is a close second with 27%, and Building Services and Component Manufacturing are tied at 16%.

<sup>1</sup> The Professional Services industry cluster excludes legal services.

## New York State Green Jobs Survey Finding #1: Prevalence

### New York City, by Industry Cluster, for 2010 4<sup>th</sup> Qtr



Green Firms	Component Manufacturing	Professional Services	Building Services	Construction Trades
In New York City	40	1,340	2,250	1,720
In New York State	260	2,840	4,110	7,370
<b>Share<sup>2</sup> in New York City</b>	<b>17%</b>	<b>47%</b>	<b>55%</b>	<b>23%</b>

Although over 40% of New York State’s businesses are in New York City, this proportion does not hold true across every industry. For example, New York City has 40% of the State’s Professional Services companies, but only 30% of the State’s Construction Trades firms. Building Services has the largest share of firms located in New York City (63%) and Component Manufacturing has the smallest (17%).

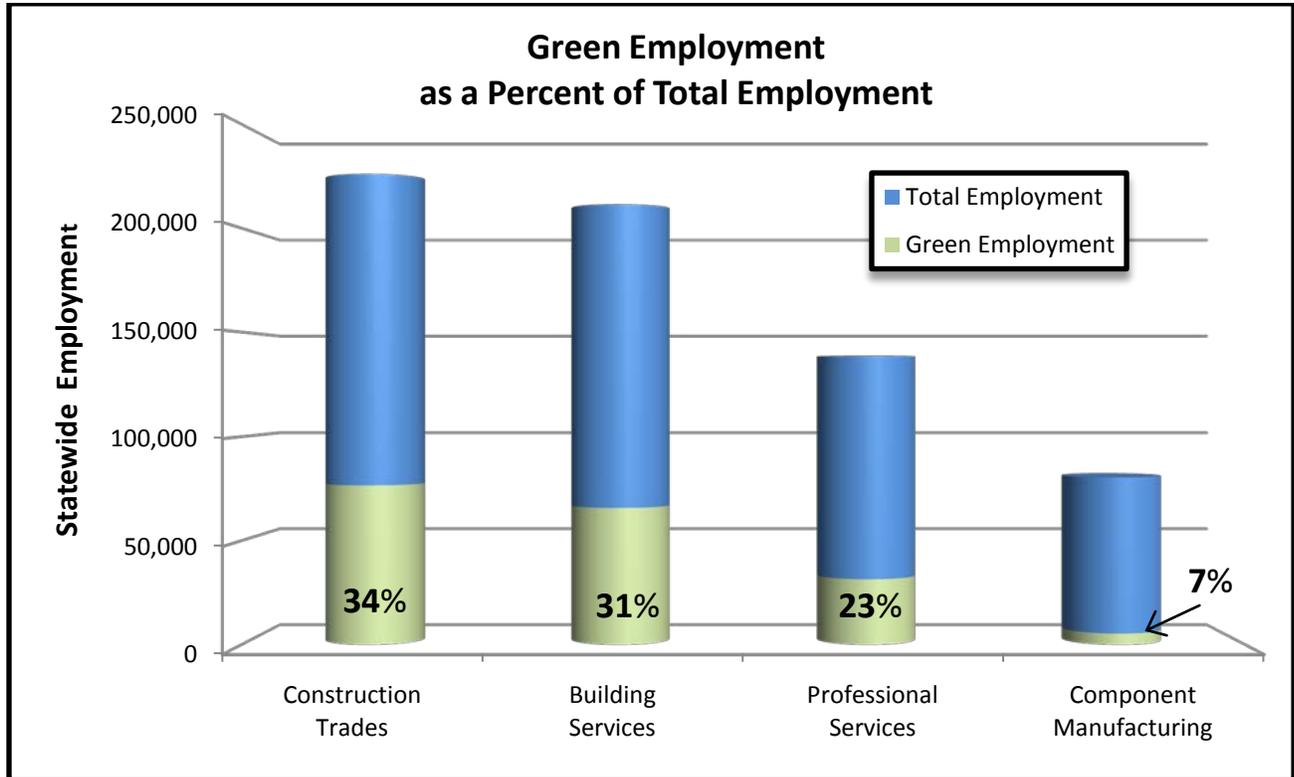
In New York City, over 5,000 green firms account for approximately:

- 17% of all green Component Manufacturing firms in New York State
- 47% of all green Professional Services firms in New York State
- 55% of all green Building Services firms in New York State
- 23% of all green Construction Trades firms in New York State

<sup>2</sup> Percentages are calculated from unrounded data.

## New York State Green Jobs Survey Finding #2: Green Employment

### Statewide, by Industry Cluster, for 2010 4<sup>th</sup> Qtr



Statewide	Construction Trades	Building Services	Professional Services	Component Manufacturing
Green Employment	76,600	65,770	31,490	5,360
Cluster Employment	226,020	211,460	138,600	80,450

Statewide, there are nearly 180,000 green workers in these four clusters alone.

Among selected industry clusters, Construction Trades not only has the greatest number of workers (226,020), but also the greatest number of green workers<sup>1</sup> (76,600) and the highest incidence of green employment (34%).

Workers engaged in green economic activity make up 31 % (65,770) of Building Services' total employment of 211,460 and 23% (31,490) of Professional Services'<sup>2</sup> total employment of 138,600.

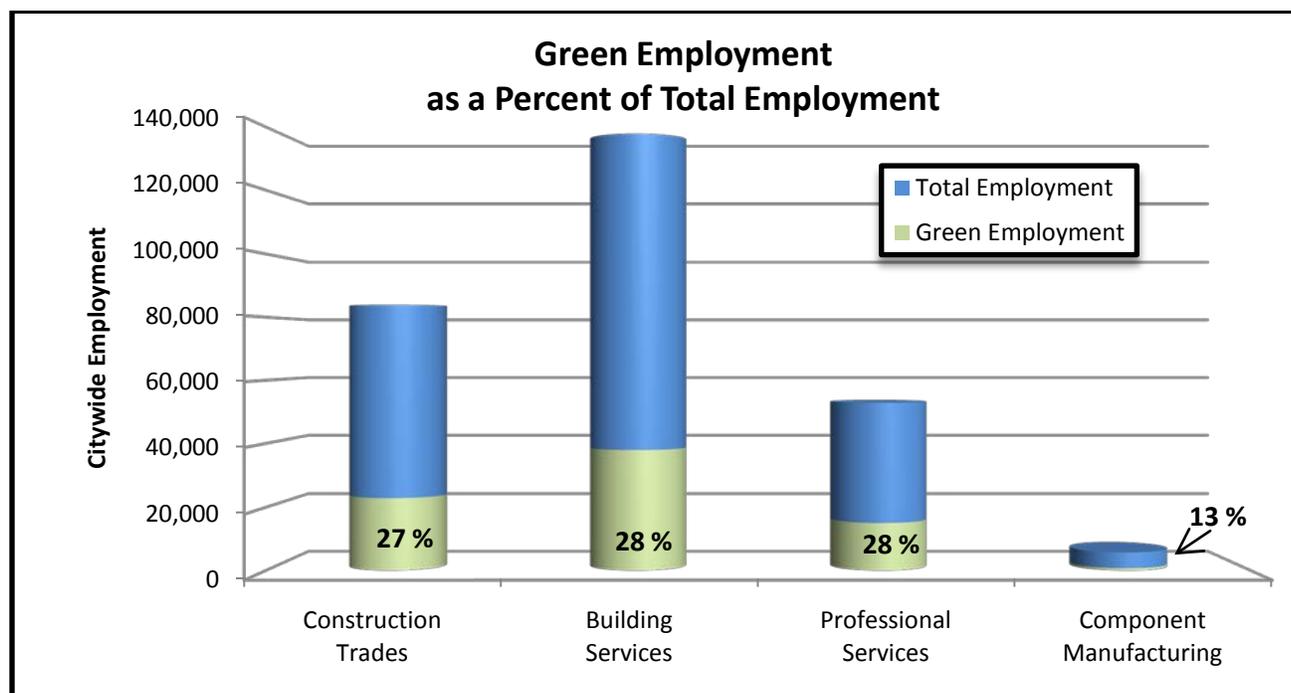
Component Manufacturing is the smallest of four clusters, with only 80,450 workers. This cluster also has the fewest green workers (5,360) and has the lowest incidence of green employment (7%).

<sup>1</sup> For the purpose of this study, *green workers* are defined as workers "primarily engaged in producing green products or services."

<sup>2</sup> The Professional Services industry cluster excludes legal services.

## New York State Green Jobs Survey Finding #2: Green Employment

### New York City, by Industry Cluster, for 2010 4<sup>th</sup> Qtr



Citywide	Construction Trades	Building Services	Professional Services	Component Manufacturing
Green Employment	22,900	37,940	15,050	760
Cluster Employment	83,880	137,840	52,910	5,750

Over 75,000 green workers in these four clusters are employed by firms located in the five boroughs.

#### **Spotlight: New York City Building Services**

In New York City, the Building Services cluster is composed of 137,840 total workers. It is estimated that 28% (37,940) are green workers - a slightly lower incidence than Building Services statewide (31%).

With a regulatory environment in New York City that encourages green practices in the Building Services Industry, one might expect a higher percentage of green employment. However, there is a lag in green activity by the small<sup>3</sup> employers that encompass 96% of the firms and account for 46% of the employment in Building Services in New York City.

Only 13% of small firms in New York City report engaging in green economic activities, a lower share than otherwise comparable larger employers (29%). Also, these small firms were less likely to engage in green economic activities than similarly-sized Building Services firms across the rest of the state (19%).

<sup>3</sup> Fewer than 25 employees



## New York State Green Jobs Survey Finding #3: Green Expectations

### Statewide, by Industry Cluster, for 2010 4<sup>th</sup> Qtr

#### Expected Changes in Green Employment, by Firm, Over the Next Year

One Year Change	Building Services	Construction Trades	Component Manufacturing	Professional Services
<b>For Firms with Green Employees, what is their expected change in green employment?</b>				
Grow Larger	26%	30%	42%	38%
Unchanged	50%	42%	39%	45%
Become Smaller	1%	4%	3%	3%
Don't Know	24%	23%	17%	14%
<b>Number of Firms</b>	<b>4,110</b>	<b>7,370</b>	<b>260</b>	<b>2,840</b>
<b>For Firms without Green Employees, do they expect to have green employment?</b>				
Yes	4%	7%	3%	4%
No	71%	57%	70%	74%
Don't Know	25%	36%	27%	22%
<b>Number of Firms</b>	<b>21,430</b>	<b>19,600</b>	<b>1,400</b>	<b>7,460</b>

Among firms with green employees, Component Manufacturers are most likely to anticipate an increase in green employment – 42% foresee having a larger green workforce next year. Half of these firms expect their number of green workers to be ‘larger’ and half expect their number to be ‘significantly larger.’

Among firms with green employees, 26% of Building Services, 30% of Construction Trades, and 38% of Professional Services expect their green employment to grow.

No change in green employment over the year is the most common prediction by firms across all four industry clusters. This is the case for both firms with (“Unchanged”) and for firms without (“No”) green employees, though a much more common occurrence in the latter.

Few firms anticipate a decrease in the number of their green workers. In every cluster, less than 5% of green firms foresee a reduction in their existing green workforce.

A number of firms without green workers expect to hire their first green employee in the next year. For example, 4% of 7,460 Professional Services businesses (see table below) anticipate employing at least one green worker, which could increase the number of Professional Services firms with green employment by 300 (+11%).

## New York State Green Jobs Survey Finding #3: Green Expectations

### New York City, by Industry Cluster, for 2010 4<sup>th</sup> Qtr

#### Expected Changes in Green Employment, by Firm, Over the Next Year

One Year Change	Building Services	Construction Trades	Component Manufacturing	Professional Services
<b>For Firms with Green Employees, what is their expected change in green employment?</b>				
Grow Larger	22%	31%	27%	39%
Unchanged	45%	46%	53%	41%
Become Smaller	0%	2%	0%	4%
Don't Know	33%	21%	20%	16%
<b>Number of Firms</b>	<b>2,250</b>	<b>1,720</b>	<b>40</b>	<b>1,340</b>
<b>For Firms without Green Employees, do they expect to have green employment?</b>				
Yes	5%	9%	4%	4%
No	69%	53%	67%	70%
Don't Know	26%	38%	28%	25%
<b>Number of Firms</b>	<b>13,930</b>	<b>6,300</b>	<b>240</b>	<b>2,740</b>

Among New York City businesses with green employees, Professional Services firms are the most likely to expect increased green employment, with 39% predicting growth. Twenty-two percent of Building Services, 31% of Construction Trades, and 27% of Component Manufacturing firms also anticipate hiring additional green workers in the next year.

For companies with and without green employees, no change in green employment was the most common one-year prediction by New York City firms across all four industry clusters. The least common over-the-year forecast is for a 'Smaller' green workforce; less than 5% of the New York City green firms in any cluster anticipate a loss of green jobs.

A number of New York City firms without green workers expect to hire at least one green worker this year -- including, for example, 5% of the 13,930 non-green firms in Building Services (see table below). This could increase the number of Building Services firms with green employment by 660 (+29%).

## New York State Green Jobs Survey Finding #4: The Top Green Credentials Preferred by Green Employers

### Leadership in Energy and Environmental Design (LEED)

Leadership in Energy and Environmental Design (LEED) is administered by the U.S. Green Building Council (USGBC), a non-profit association with over 18,500 member organizations from the building trades. LEED offers both certification for buildings and credentials for individuals. The Green Building Certification Institute (GBCI) administers LEED professional credentials in green building design, construction and maintenance, and neighborhood development. For more information about LEED credentials, visit [www.gbci.org](http://www.gbci.org).

### The Building Performance Institute, Inc. (BPI)

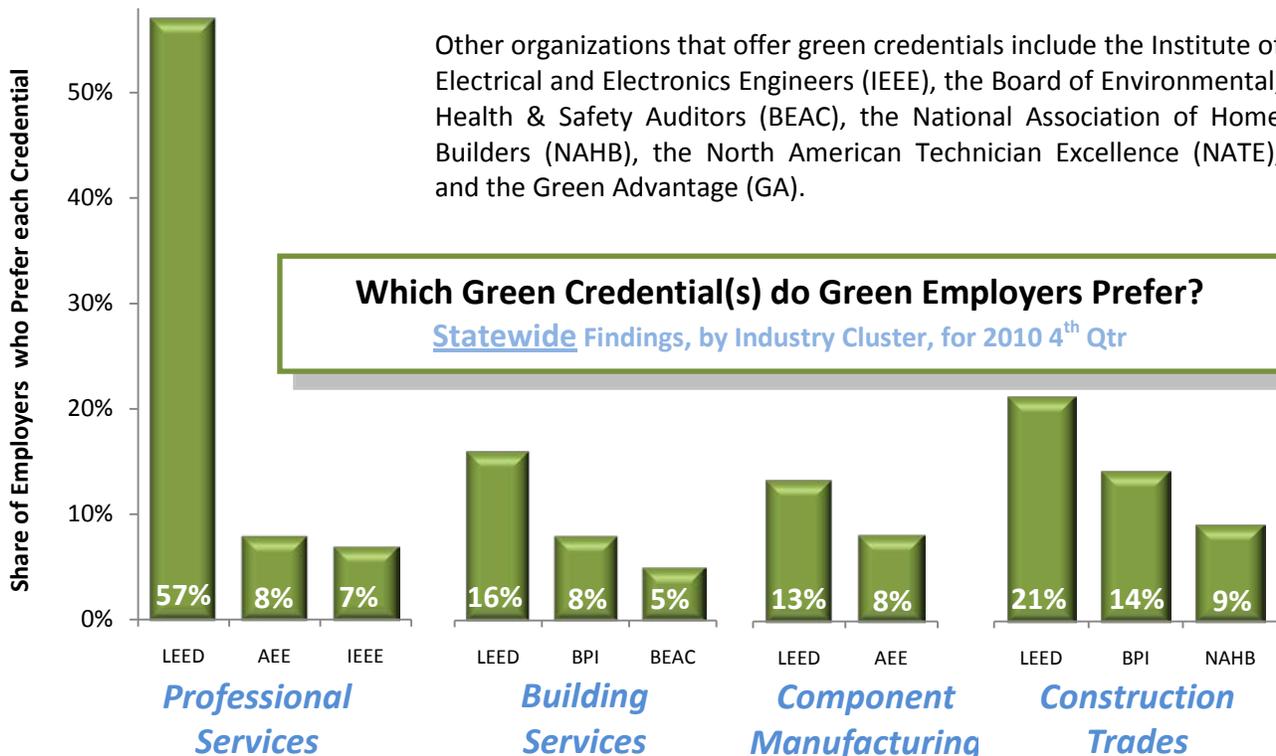
The Building Performance Institute, Inc. (BPI) is an independent non-profit organization that develops industry standards for residential energy efficiency retrofits and weatherization. BPI offers company accreditations and professional credentialing. Many professional certification types are available, including envelope, manufactured housing, and multifamily. For more information, see [www.bpi.org](http://www.bpi.org).

### The Association of Energy Engineers (AEE)

The Association of Energy Engineers (AEE), a non-profit professional society with over 14,000 members, offers a broad range of professional certifications in the energy industry. AEE certification programs require candidates to pass written examinations as well as meet specific educational and/or experience criteria. To learn more, go to [www.aeecenter.org](http://www.aeecenter.org).

### Other Green Groups

Other organizations that offer green credentials include the Institute of Electrical and Electronics Engineers (IEEE), the Board of Environmental, Health & Safety Auditors (BEAC), the National Association of Home Builders (NAHB), the North American Technician Excellence (NATE), and the Green Advantage (GA).



## Survey Finding #4: The Top Green Credentials Preferred by Green Employers

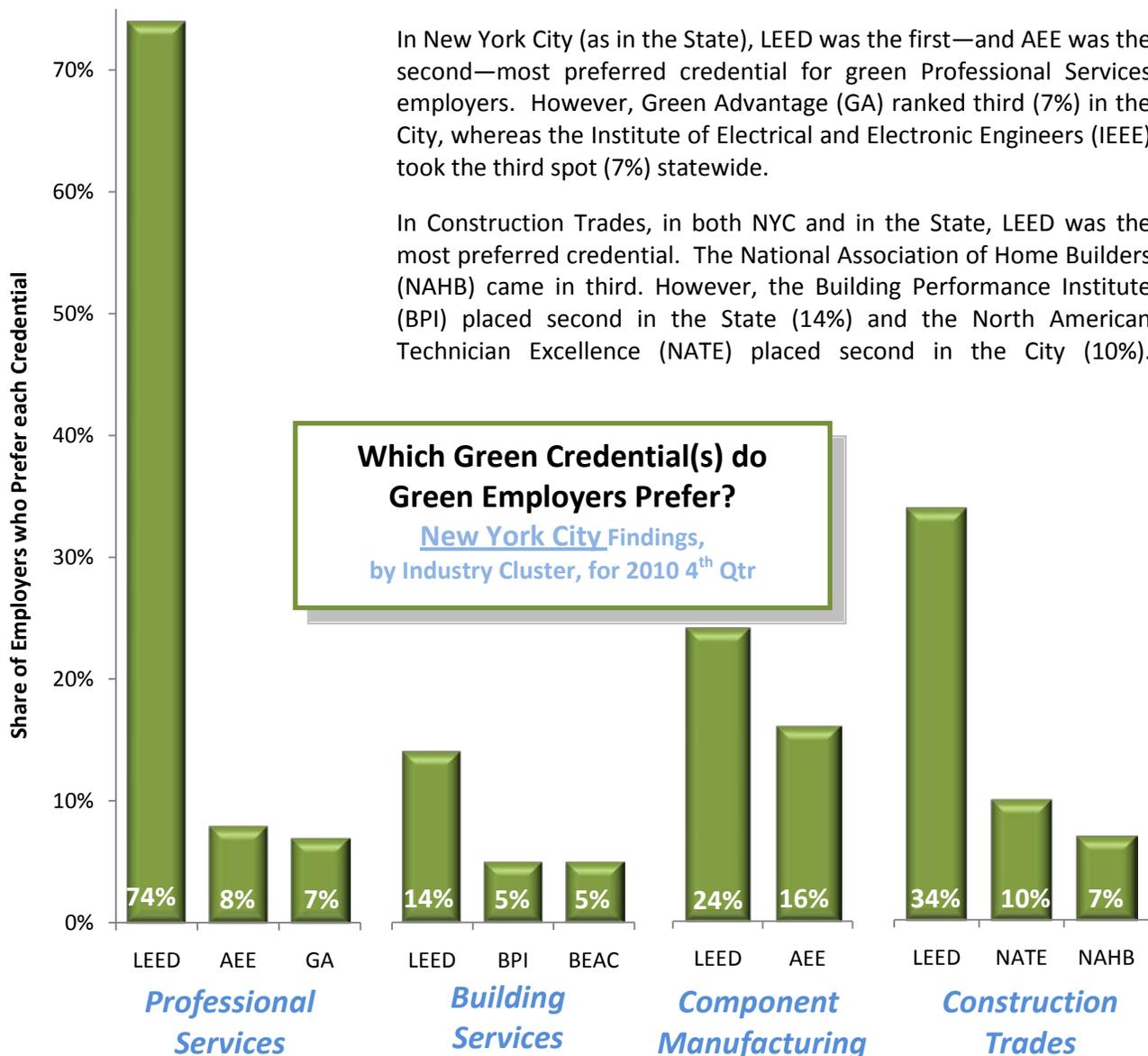
### LEED is the Leader, Especially in New York City

Across all clusters, both in the State and in New York City, the Leadership in Energy and Environmental Design (LEED) credential was the most preferred by firms with green employees. In the five boroughs, among Professional Services, Construction Trades, and Component Manufacturing firms, this preference for LEED is even more pronounced. In Professional Services, 74% of green employers in NYC preferred their employees to have LEED credentials, compared with 57% of green employers statewide. Similarly, 34% of green Construction Trades employers located in NYC preferred LEED, compared to 21% of otherwise comparable employers located throughout the State.

### Regional Differences

In New York City (as in the State), LEED was the first—and AEE was the second—most preferred credential for green Professional Services employers. However, Green Advantage (GA) ranked third (7%) in the City, whereas the Institute of Electrical and Electronic Engineers (IEEE) took the third spot (7%) statewide.

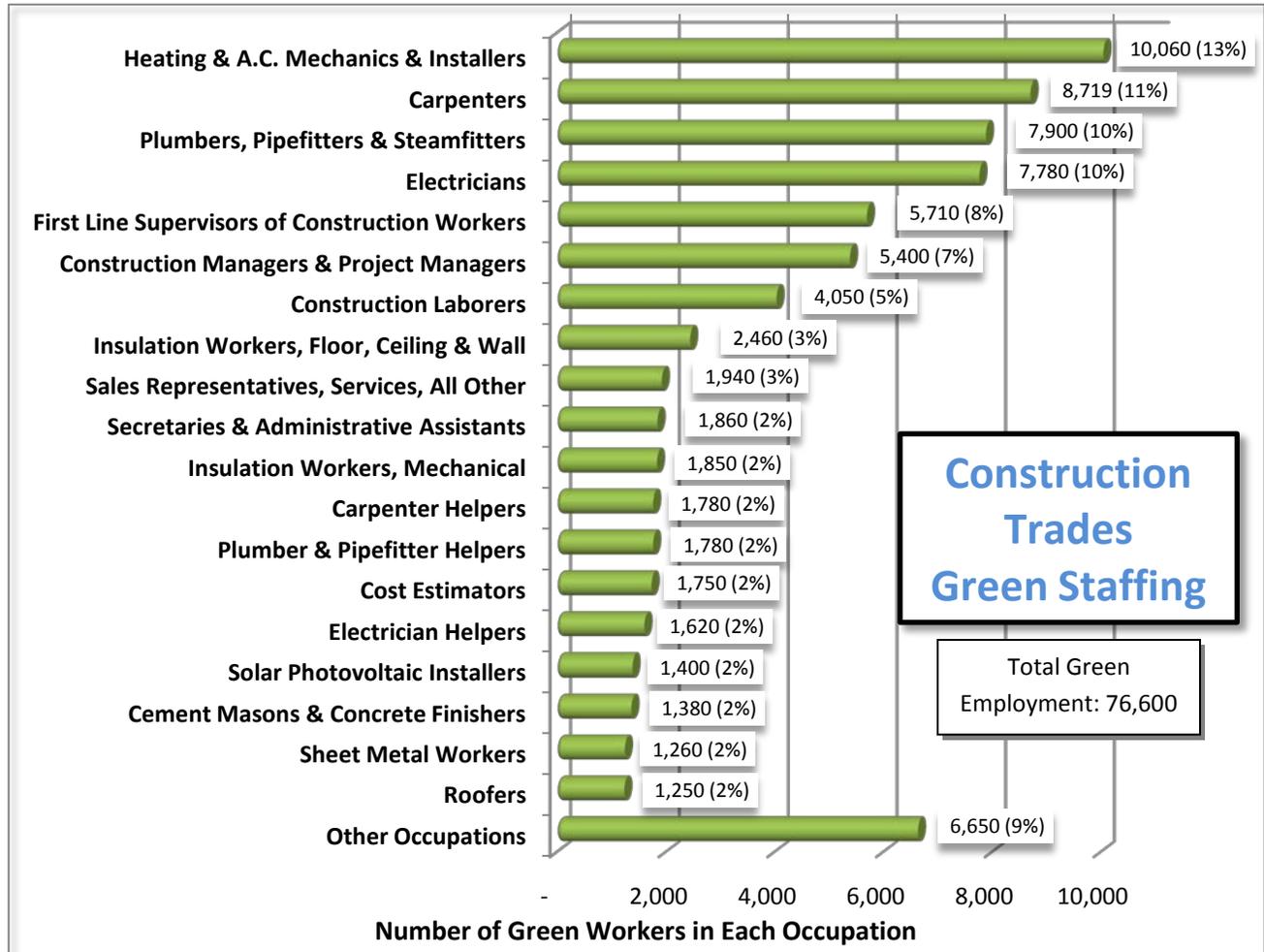
In Construction Trades, in both NYC and in the State, LEED was the most preferred credential. The National Association of Home Builders (NAHB) came in third. However, the Building Performance Institute (BPI) placed second in the State (14%) and the North American Technician Excellence (NATE) placed second in the City (10%).



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**New York State Green Jobs Survey Finding #5a:  
Common Green Occupations**

**Statewide, Construction Trades, for 2010 4<sup>th</sup> Qtr**



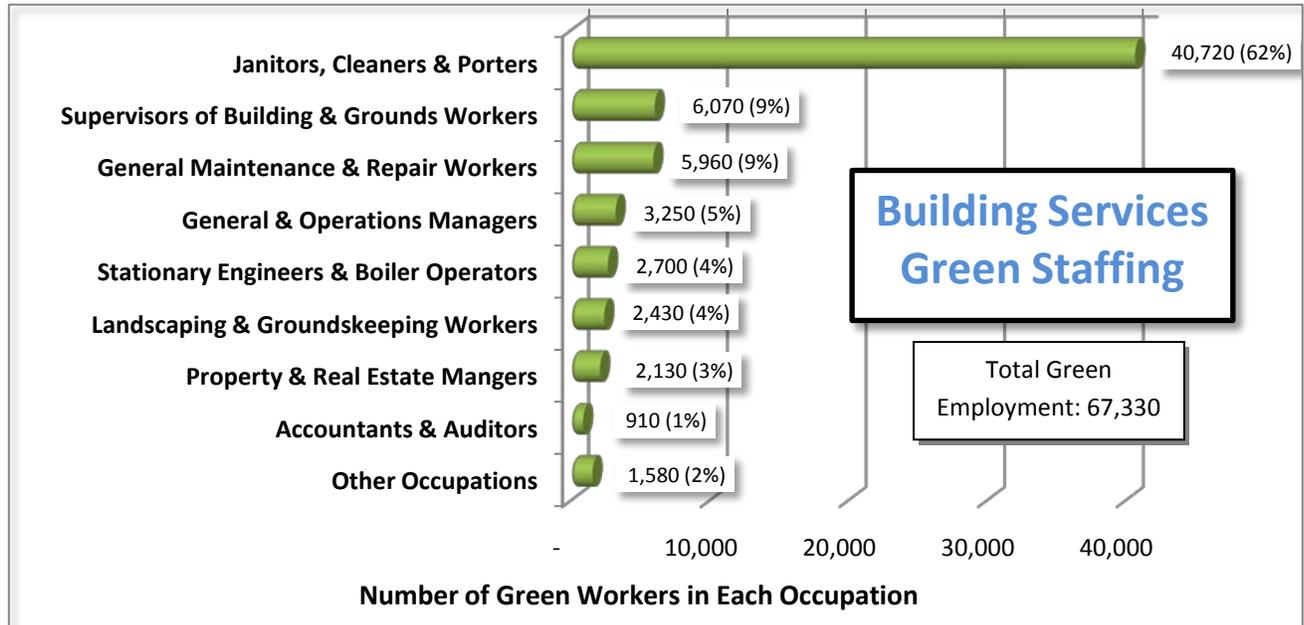
Many different occupations are involved in producing goods or delivering services that increase energy efficiency or generate renewable energy. Construction workers, for example, engage in new construction or retrofitting to improve the energy efficiency of residential and commercial buildings.

In Construction Trades, the five most common green occupations are: Heating and Air Conditioning Mechanics and Installers; Carpenters; Plumbers; Electricians; and Supervisors of Construction Workers. These five occupations provide over 50% of this industry cluster’s green employment.

In the chart above, ‘Other Occupations’ includes all occupations that by themselves account for less than 1% of the total green jobs in Construction Trades. These occupations, such as Construction and Building Inspectors and Electrical Power-Line Installers, together make up 9% of green employment in this industry cluster.

## New York State Green Jobs Survey Finding #5b: Common Green Occupations

### Statewide, Building Services, for 2010 4<sup>th</sup> Qtr



The most common green occupations in Building Services -- Janitors, Maintenance and Repair Workers, First Line Supervisors, General Managers, etc. -- are involved not only in energy efficiency activities, but also in recycling and green cleaning. Recycling and green cleaning contribute to 'environmental sustainability' (see below).

More than 60% of the cluster's green employment is in one occupation: Janitors, Cleaners and Porters.

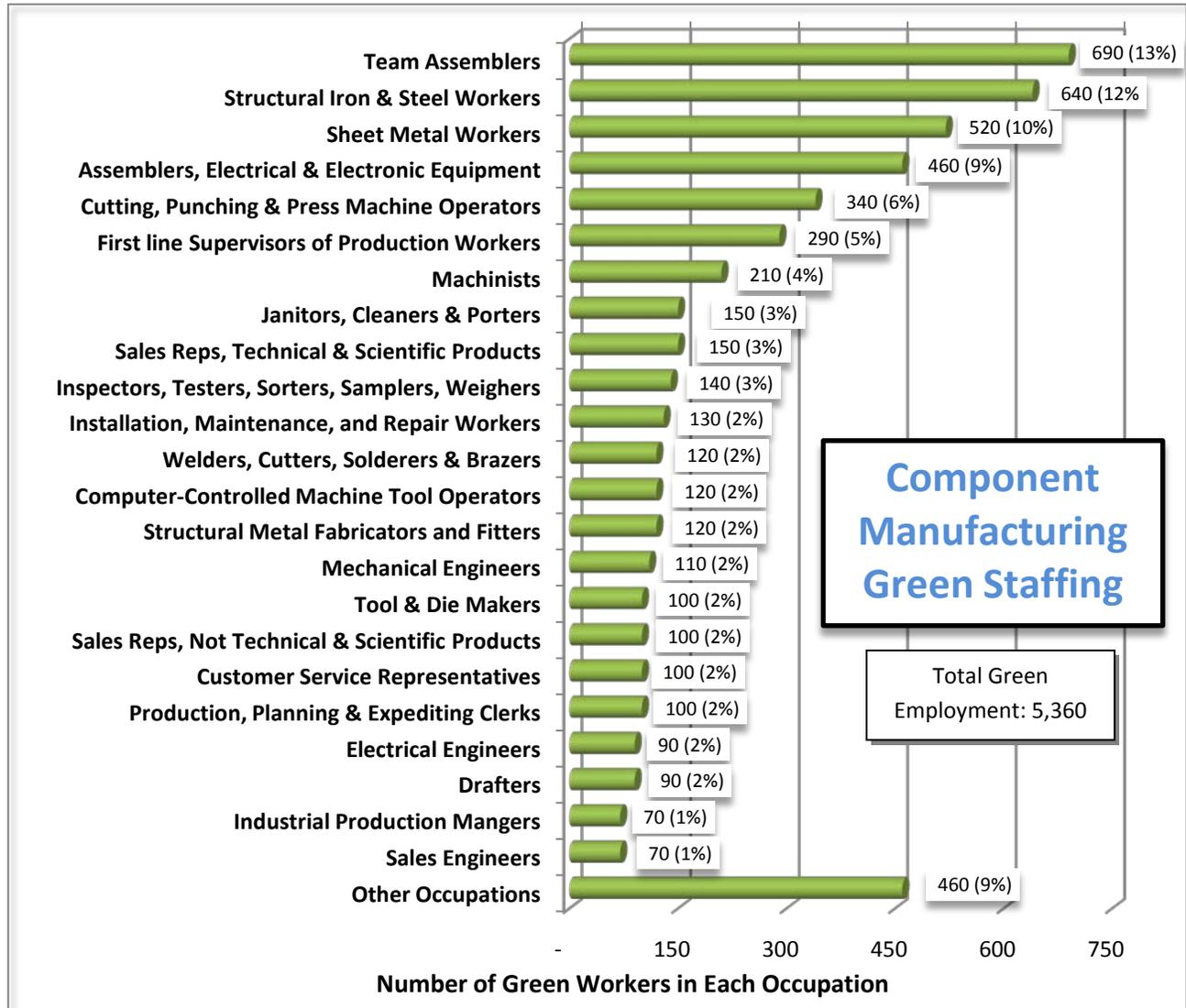
The 'Other Occupations' category includes Real Estate Sales Agents and Appraisers and Assessors of Real Estate. These occupations, not normally considered green, have a small share of practitioners who specialize in knowing the green real estate market. Each occupation by itself comprises less than 1% of the industry cluster's total green employment.

#### How is Green Defined Differently in Building Services?

In Building Services, green is defined as helping buildings and facilities achieve greater energy efficiency, use new energy technologies, or achieve other environmental sustainability goals. For this cluster, people engaged in recycling and green cleaning are counted as green workers.

**New York State Green Jobs Survey Finding #5c:  
Common Green Occupations**

**Statewide, Component Manufacturing, for 2010 4<sup>th</sup> Qtr**

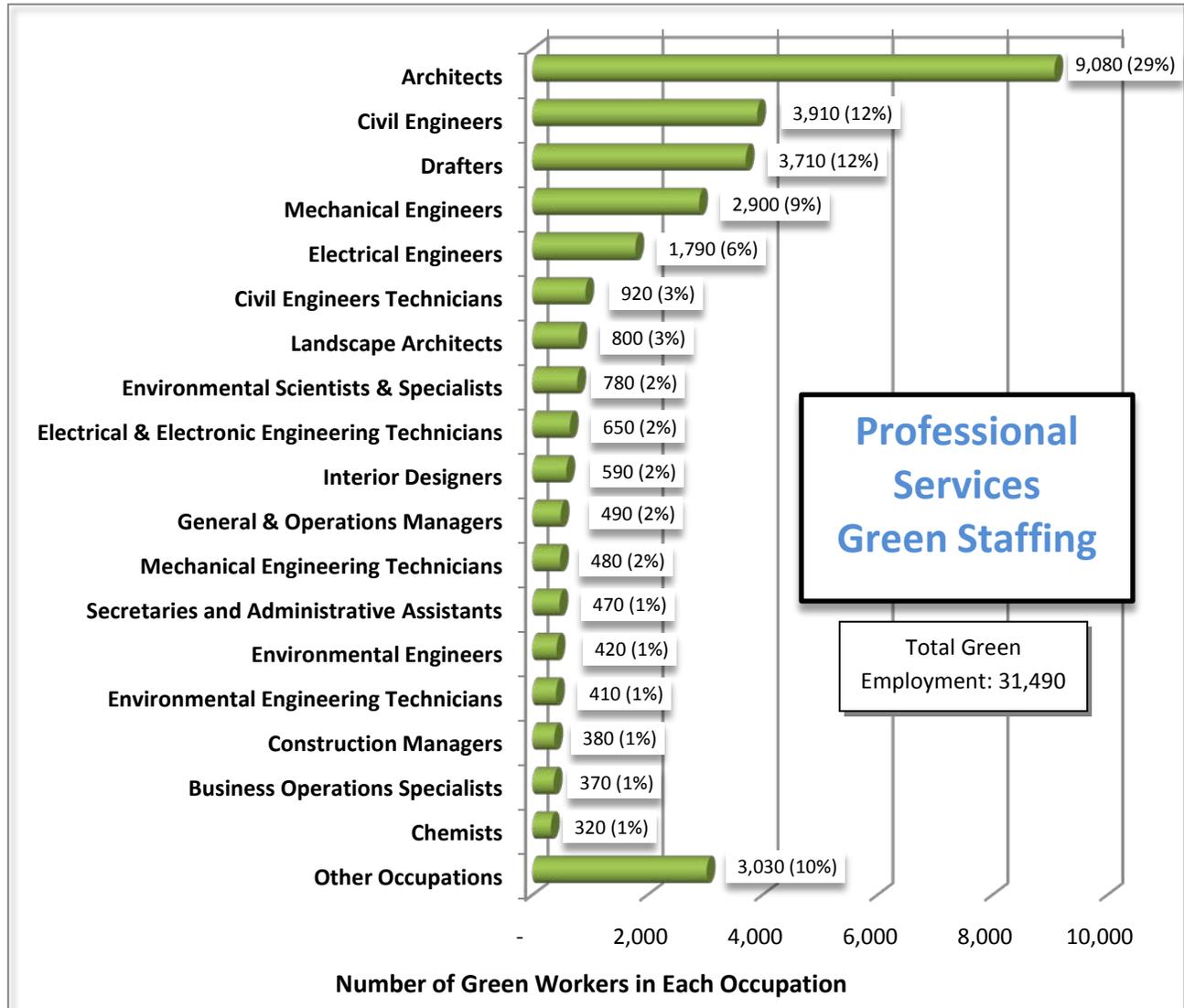


The five most common green occupations in the Component Manufacturing Cluster are: Team Assemblers; Structural Iron and Steel Workers; Sheet Metal Workers; Electrical and Electronic Equipment Assemblers; and Cutting, Punching and Press Machine Operators (Metal and Plastic). These five occupations account for half of the cluster’s green employment.

In the chart above, ‘Other Occupations’ includes job titles that individually account for less than 1% of the total green employment in Component Manufacturing. These occupations, such as Civil Engineers, Electricians, and Environmental Engineers, together make up 9% of green employment in this industry cluster.

## New York State Green Jobs Survey Finding #5d: Common Green Occupations

### Statewide, Professional Services, for 2010 4<sup>th</sup> Qtr



Green employment in the Professional Services cluster is concentrated in a few occupations. The five most common green occupations -- Architects, Civil Engineers, Drafters, Mechanical Engineers and Electrical Engineers -- account for over two-thirds of the cluster's green employment. All of these occupations are involved in delivering energy efficiency products and services.

In Professional Services, 'Other Occupations' make up 10% of the cluster's green employment. 'Other Occupations' includes job titles with low green employment, such as Occupational Health and Safety Specialists, Commercial and Industrial Designers, and Urban and Regional Planners. By itself, each occupation comprises less than 1% of the cluster's total green employment.