

### CERTIFICATIONS RELATING TO BUILDING OPERATIONS FOR SUSTAINABLE HIGH-PERFORMANCE BUILDINGS

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The following provides a preliminary overview of Certifications that relate to property/facilities operations with varying degrees of focus on aspects of “sustainability.”

#### **BOMI**

The Building Owners and Managers Institute is the national educational division of the Building Owners and Managers Association (**BOMA**). They offer several Certifications to address different levels and specialties within the real estate management industry:

- Real Property Manager (RPM)
- Facilities Management Administrator (FMA)
- Systems Maintenance Technician (SMT)
- Systems Maintenance Administrator (SMA)

These certifications are widely recognized by the property management industry, often play a role in career advancement, and might be thought of as the “gold standard” for this market. Courses can be pursued through self-study, semester-length offerings at local BOMA chapters, accelerated review formats, or specially arranged on-site. The new employee mandatory courses at the Operating Engineers Local 94 Training Center bear credit towards the SMT and SMA certifications. Significantly, maintenance of BOMI Certifications requires on-going earning of approved Continuing Education Units (CEU's).

There is no indication of how “sustainability” topics are being introduced into classes, certification study or testing.

#### **USGBC**

The United State Green Building Council promotes and administers professional certification, at two levels:

- LEED Green Associate
- LEED Accredited Professional (AP)

LEED (Leadership in Environmental Excellence in Design) is the most widely recognized “green building” standard in the United States. Individuals are certified in the LEED rating system and application process for obtaining LEED designations for building projects. Individuals may self-study, can attend seminars and/or can join study groups, offered through local USGBC chapters and by USGBC-approved instructors. The AP certification

must be taken in one of the LEED “product categories”: New Construction, Core-and-Shell, Existing Building Operations & Maintenance, etc.

The New York USGBC chapter, now called the Urban Green Council, is working on a curriculum to communicate at an introductory level the key aspects of sustainability as they are relevant to the construction trades. This curriculum will offer a “GreenPro” certification of completion.

### **AEE**

The Association of Energy Engineers offers a large variety of certification titles, with a particular focus on energy performance and sustainability topics, such as

- Certified Energy Manager (CEM), original and flagship certification
- Certified Lighting Efficiency Professional
- Certified Power Quality Professional
- Certified Indoor Air Quality Professional
- Distributed Generation Certified Professional

Certification is achieved by testing, usually following a course of study that can be pursued via seminar, on-line course, or self-study. These certifications are recognized in the utility industry, by the US Department of Energy but less so in the real estate management industry. AEE certifications take particular aim at energy performance and sustainability knowledge.

### **ASSOCIATION FOR FACILITIES ENGINEERING**

The AFE, originally founded in 1954 as the American Institute of Plant Engineers (AIPE), offers three Certification titles:

- Plant Engineer
- Plant Maintenance Manager
- Plant Supervisor.

Certification is achieved on the basis of a test. AFE offers both classroom and web-based preparatory classes for the exams, based on their review packets. AFE also offers training in partnership with other industrial technician training organizations, such as CenTech.

### **ASHRAE**

The Association of Heating Refrigeration and Air-conditioning Engineers has for decades been the ruling authority in the US on HVAC design. With its recent focus on the actual performance of buildings, ASHRAE has developed several certifications for high-performance designers and is developing one specifically for personnel involved in building operations:

- Operations and Performance Management Professional (OPMP)

Certification will be based on a test, with a combination of education and work experience required to sit for the exam. The focus is on knowledge of and ability to manage energy and indoor environmental quality. There is presently no training offered directly by ASHRAE in connection with its Certifications although other ASHRAE training and self-study programs would be relevant to work in this field.

## **IFMA**

The International Facilities Management Association provides professional development courses, both on-line and in-classroom, and also two levels of certification:

- Certified Facility Manager (CFM)
- Facility Management Professional

On its website IFMA provides a short list of university-based continuing education certifications in Facilities Management (but not including the program at CUNY's NYC College of Technology). Another organization,

## **BOC**

The trademarked "Building Operator Certification" is managed by a non-profit of the same name. Created by the Northwest Energy Efficiency Alliance and the Northwest Energy Efficiency Partnership in the late 1990's, it has grown as a nationally-offered program focused on **commercial real estate**.

- Building Operator Certificate level I and level II

Certification is offered as a direct outcome of participation in a training program that combines classroom sessions and practical field exercises. Focus is on energy and resource efficient operation and maintenance of building systems earned, for each level by (a) attending 8 days of training over 3 months (b) completing 5 project assignments in their facilities, (c) passing class exams and (d) having appropriate work experience.

This curriculum has been supported in NYS by NYSERDA, especially for use in school districts. In NYC, this certification is offered through CUNY under coordination of the Building Performance Lab. The BOC classes are recognized as approved CEU's for maintenance of BOMI certifications.

## **BPI**

The Building Performance Institute, located outside of Albany and supported by NYSERDA since its inception in the mid-1990's, provides standards for knowledge and skills in the **residential energy retrofit market** including weatherization programs and multifamily housing.

- Energy Analyst I and II
- Residential Retrofit Specialist
- Multifamily Energy Analyst
- Energy Efficient Building Operations (multifamily)

BPI does not provide training but encourages others to train to its standards and provides certification tests and testing services. Locally, such training is provided by several not-for-profit organizations: the Association for Energy Affordability (AEA), Conservation Services Group (CSG), the Community Environmental Center (CEC) and one A/E firm, Steven Winter Associates. BPI-certification training is also provided with NYSERDA support through community colleges across the state, coordinated by Hudson Valley CC and in NYC through CUNY under coordination by Bronx CC.

## **NATE**

The National Association for Technical Excellence provides a range of certification standards aimed primarily at the installation and service trades. NATE establishes the body of knowledge and tests for its various titles and approves local entities to act as trainers.

## **APPA**

Originally the Association of Physical Plant Administrators, APPA focuses on educational facilities and campuses, including a new certification title with two levels

- Educational Facilities Professional
- Certified Educational Facilities Professional

## **AFE**

The Association for Facilities Engineering offers several levels of certification:

- Certified Plant Engineer
- Certified Plant Maintenance Manager
- Certified Plant Supervisor

These certifications are aimed at graduate engineers or non-engineers with extensive in-plant experience. A national exam is administered, preparation for which largely appears to be on a self-study basis using AFE-prepared materials.

While an interesting reference point, this certification is targeted at industrial rather than commercial or institutional facilities and it appears to have little presence in the NY Metropolitan area market.

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## **INDUSTRIAL HYGIENE PROGRAMS**

Another aspect of building performance is management of the indoor environment, including indoor air quality. The latter falls broadly under the area of Industry Hygiene and the job title Industrial Hygienist. This job title is its own specialization with its own educational structure. Rutgers, for example, operates an extensive continuing education program in affiliation with the Robert J. Woods School of Medicine.

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## **LOCAL UNIVERSITY PROGRAMS**

The listing above focuses on Certifications available through professional organizations. It does not provide a review of certificates (or full academic degrees) that may be available through local university programs. It is common for universities to offer "Certificates" as a continuing or professional education route for the completion of a set of specialized courses in an area without the general courses that would be required for an academic degree. Often the specialized courses are the same as those that would be taken to major in that field of specialization. It will be worthwhile to review and track programs at various local schools, such as

## **NYU**

The New York University School of Continuing Education is the powerhouse in NYC adult education and the granting of certificates. The Real Estate Institute is widely recognized and provides several certificate tracks in property and construction management, including a sequence in mechanical/electrical building systems. NYU is currently merging with the Polytechnic Institute in downtown Brooklyn, a strong engineering program although with limited offerings in building systems.

## **CUNY**

The City University of New York provides the city's most geographically extensive avenue for continuing education activities, through offerings at its nineteen campuses. It also leads universities in working with labor through the Murphy Institute for Labor Education. To date, CUNY has led the way with a variety of opportunities in separate programs. The BOC Certification is offered through a pair of courses presently offered at the **School of Professional Studies** in cooperation with the Energy Services and Technology Program at **Bronx Community College** (BCC). Also at BCC, the Center for Sustainable Energy offers hands-on Photovoltaic training that leads to a national PV Installer certification. At **NYC College of Technology**, in downtown Brooklyn, majors are offered in Environmental Control Technology, Facilities Management, Construction Technology and Architectural Technology, including among various Certificates a new interdisciplinary one in "sustainability." As Consortium members know, the Newman Real Estate Institute at **Baruch College** has been developing sustainability courses specifically for property developers and managers, including a Certificate in Sustainability. At **City College of New York** (CCNY), an interdisciplinary Masters degree in Urban Sustainability is offered by the schools of engineering and architecture.

## **NEW YORK INSTITUTE OF TECHNOLOGY (NYIT)**

Among its many technical programs, NYIT operates the Masters Program in Energy Management. This M.Sc. degree mixes engineering and business courses with a special focus on energy markets, regulations, and technologies. This may be the region's longest standing academic program focused specifically on energy and its management.

## **COLUMBIA**

Columbia has prestigious engineering, architecture, urban planning and real estate programs and a strong research program in "sustainability" science related to Columbia's globally influential Earth Institute. Within the School of International Policy and Affairs (SIPA), there is opportunity for study of urban energy management.

## **PRATT**

Within Pratt's traditionally strong Architecture and Urban Planning program, an Environmental Management concentration has recently been created. It is not clear what opportunity there is within this program for professionals not seeking a degree.

## **NEW SCHOOL**

The New School has recently created an environmental studies program with a design-orientation addressing sustainability issues. The degree program is emphasized. The NS' Interior Design program (Parsons), addresses the sustainability of materials and also features a strong Lighting Design program.

Activities are known to be under development at nearby schools in New Jersey:

**New Jersey Institute of Technology (NJIT)**

**Stevens Institute**

**Rutgers University**