



Professional engineering department yields energy savings

*Another great article from The Rooms Chronicle, the #1 journal for hotel rooms management! ***Important notice: This article may not be reproduced without permission of the publisher or the author.*** College of Hospitality and Tourism Management, Niagara University, P.O. Box 2036, Niagara University, NY 14109-2036. Phone: 866-Read TRC. E-mail: editor@roomschronicle.com*

Notice: The ideas, opinions, recommendations, and interpretations presented herein are those of the author(s). The College of Hospitality and Tourism Management, Niagara University/The Rooms Chronicle assume no responsibility for the validity of claims in items reported.

Unsurprisingly, hotels that use excessive amounts of energy usually have unorganized engineering departments. The engineering department is one of the most vital departments in the hotel business. A typical chief engineer in a luxury hotel usually manages up to a dozen assistant engineers to provide a comfortable environment for both guests and employees.

For the most part, the chief engineer also manages the second highest cost of doing business, which is the cost of energy and water. With today's improved technology, the chief engineer also works with some of the most sophisticated computerized building automation equipment available. To accomplish these tasks, the entire engineering department should develop a professional way of doing business.

Cleanliness and order

The first and foremost activity is to keep the shops, office and machine rooms in a clean and orderly manner. We have noticed during our on-site inspections that this is frequently not the case. Some machine rooms and maintenance shops look like the storage area after a disaster. The first step is to eliminate everything in the shop and all machine rooms that are not pertinent to that area. For example, in the light bulb storage area, dispose of all outdated lighting products. Try to minimize the number of light bulbs used throughout the hotel. Also, get rid of all old motors, duct work, pumps, piping and all other garbage laying around in the shop. This will provide incentive for all employees to maintain critical equipment to its best performance.

After the engineering department and machine rooms have been spruced up, pick up some yellow paint that can be used to identify walkways with striping throughout these areas. Also, use bright colored paint or decals to mark all mechanical equipment, such as air handling units, pumps, chillers and boilers. Be creative and develop a numbering system that can be cross-referenced to the hotel's preventive maintenance file. Piping throughout all these mechanical areas should also be equipped with arrows describing direction of flow and what type of liquid is passing through each pipe. For example, pipes should be identified as carrying chilled water, cold water, hot water or steam.

It is also critical that adequate lighting be provided in all these areas. This is where engineers spend a great deal of their time working. A dark, dingy area will take its toll, not just on the eyesight of personnel, but poor lighting will also foster an accident-prone environment. Utilize two-lamp, four-foot fluorescent fixtures in the location where tasks are frequently performed.

The chief engineer's office is the heart and soul of the engineering department. Directly outside the chief engineer's office there should be a preventive maintenance work order board; it too should be well lit and very accessible. The chief engineer's office is also the ideal location for all existing building mechanical/electrical prints. These prints are extremely important to good maintenance on the facility. Another key component in the chief engineer's office is the preventive maintenance filing program. Each piece of equipment in the facility should have its own file folder where all pertinent information on that item is kept. Eventually, the preventive maintenance program can be transferred to a computerized type system, typically on the chief engineer's personal computer. The personal computer in the chief engineer's office is also the primary tool for use of a building computerized automation system.

Pictured below: Labels indicate the contents and direction of flow in these mechanical pipes.



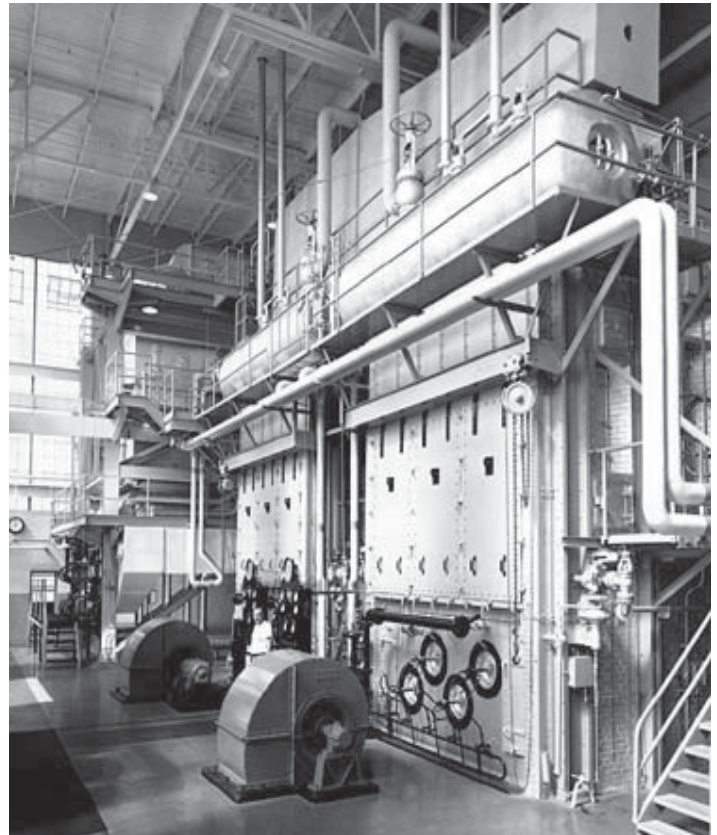
Professional training

It should be the goal of the chief engineer and all of his assistants to continuously improve their knowledge and ability to maintain the sophisticated hotel systems of today. There are many different ways one can achieve this

goal. The easiest is to take advantage of professional organizations typically located in all large cities. These professional organizations always offer ongoing training in all areas of building operations and maintenance. This is where real energy savings will come into place, by keeping up-to-date on the latest strategies and equipment available for your hotel. The following is a list of organizations. I recommend that each chief engineer join and be active in:

- ASHRAE (Association of Heating and Refrigeration Engineers)
- BOMA (Building Owners and Managers Association)
- AEE (Association of Energy Engineers)
- AH&LA (American Hotel & Lodging Association)
- Energy Star Program

All of these associations have websites on the Internet that can get a chief engineer started with membership. These associations also offer college credit as individuals progress through their training programs. Once certification is completed, for example, in BOMA, the sky will be the limit in terms of high paying building management positions.



Professional magazines

The engineering department is always encouraged to take advantage of complimentary technical literature available everywhere. These come in the form of interesting, easy to understand technical articles on how to save energy and operate your building efficiently. Testimonials of strategies and articles on new cutting-edge technology and energy-saving products are typically revealed in many of these publications. The following is a list of some of the more prominent literature available. When you fill out your free subscription card, be sure to provide an e-mail address so that you can obtain critical updates as they come out.

- Energy User News
- Engineered Systems
- Buildings
- Building Operation and Maintenance
- PM Magazine

Most of the aforementioned professional organizations also have complimentary monthly publications that you can take advantage of. Make these publications available to all your assistant engineers by placing them in break areas or outside the chief engineer's office.

Implementing the preventative maintenance program

No building maintenance personnel can repair anything without tools. It is imperative that every building maintenance engineer wear a tool belt with critical items. Screwdrivers, pliers, knife and flashlight are typical items that should be carried by all maintenance personnel.

The same concept is true for the shop area in the engineering department. Be sure to have a full complement of tools on a workbench in the shop area that can be marked or stamped as inventory for the hotel. Many larger hotel corporations provide the engineering department of each hotel in their portfolio with a Standard Operating Procedures manual that clearly outlines a list of specific tools that should be maintained by the engineering department.

The guestrooms are one of the most critical areas of the hotel that the engineering department maintains. In order to implement a comprehensive, guestroom preventative maintenance program, most hotels utilize a maintenance cart. These carts are also clearly described in the Standard Operating Procedures manual. Generally, they consist of about a two foot by three foot rolling cart that contains tools and supplies for guestroom preventative maintenance and repair. Spare light bulbs, air filters and plumbing supplies are typical examples of items on the cart.

Websites for professional training for building engineers:

- American Society of Heating Refrigerating and Air-Conditioning Engineers – www.ashrae.org
- Building Owners and Managers Association International – www.boma.org
- Association of Energy Engineers – www.aeacenter.org
- American Hotel & Lodging Association – www.ahla.com
- Energy Star Program – www.energystar.gov

As has been discussed, the engineering department deals with a considerable number of variables with regard to maintaining a safe and comfortable environment throughout the hotel. Almost everything the employees in the engineering department do has some effect on energy and water consumption throughout the property. Run a professional engineering department and everybody will be happier with a clean and organized environment that will ultimately conserve energy. ✧

(TRC's resident energy expert, Phil Sprague is a member of the AHLA Executive Engineers Committee and president of PSA Hotel Energy

Consultants. Based in Minneapolis, PSA Hotel Energy Consultants assists lodging companies and individual properties to develop effective, cost-saving energy strategies by auditing and assessing all energy consuming devices and appliances, and delivering comprehensive, customized recommendations in an actionable format. They can be reached at 952-472-6900.)