

comfort zone

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indoor air quality

It's easy to take your building's air for granted, until an issue arises that draws attention to it.

These issues can include anything from tenant/employee discomfort on hot or cold days, an inordinate number of employee sick days, or a foul odor permeating your building. Acceptable indoor air quality (IAQ) is much more than providing a prescribed volume of outdoor air per person. Today's building owners and managers are concerned about maintaining and documenting IAQ, not only to avoid problems with condensate, building sickness, or noise issues, but to provide a clean and healthy working environment in the building for their employees and tenants.

Good HVAC system selection and design along with proper building operation and maintenance are the foundations of high quality indoor air.

What equipment should you select for new installations or renovations, and more importantly, what contractor will you utilize to maintain it?

Temperature, humidity, particulate count, fresh air volume and circulation are all variables of IAQ that can be monitored and controlled for your building's purpose, whether your building is an elementary school, a luxury hotel, a family restaurant, a commercial office building, or a hospital. Each building has its own unique needs and requirements.

A qualified, Unified Group contractor has the expertise to ensure that all essential aspects of your system support your IAQ requirements and help your building fulfill its purpose, however specialized it may be. ■■■

heating up cost savings

If you are in the market for a new boiler, there are several options available today that will improve your heating system's efficiency, and can potentially save you money through energy savings.

Boilers are now manufactured with different efficiency ratings. Some of the new high-efficiency boilers operate at efficiencies of up to 95%, which can produce energy savings, especially when compared to the installation of an 82% efficient boiler, and even more when compared to an existing system that may have only a 70% efficiency rating.

Another cost savings option is the installation of a programmable setback thermostat. Setting back the temperature of a system during the night or during unoccupied periods is a proven method of reducing energy consumption. Combining a high efficiency boiler and a programmable thermostat can result in even greater savings.

The U.S. Environmental Protection Agency provides a free energy savings calculator that can be used to estimate the potential savings and payback period of upgrading other boilers systems (see example). This calculator can be used to compare the energy usage of different boiler efficiencies, with and without the use of programmable thermostat, and with different full-load heating hours. Visit the EPA's website at www.energystar.gov for other energy savings calculators and ideas.



Life Cycle Cost Estimate for 1 Energy Star Qualified Oil Boiler(s)

This energy savings calculator was developed by the U.S. EPA and U.S. DOE and is provided for estimating purposes only. Actual energy savings may vary based on use and other factors.

Enter your own values in the gray boxes or use our default values.

Choose your fuel type from the drop-down menu		
Number of Units	1	
Oil Rate (\$/gal)	\$1.07	
Choose your city from the drop-down menu		
	ENERGY STAR Qualified Unit	Conventional Unit
Initial Cost per Unit (estimated retail price)	\$4,000	\$2,700
Annual Fuel Utilization Efficiency (AFUE)	93.0	74.0
Heating Capacity of Boiler (Btu/hr)	84,000	84,000
Use with Programmable Thermostat (Yes/No)		

Annual and Life Cycle Costs and Savings for 1 Oil Boiler(s)

	ENERGY STAR Qualified Unit (s)	1 Conventional Unit(s)	Savings with ENERGY STAR
Annual Operating Costs*			
Energy cost	\$1,367	\$2,046	\$678
Maintenance cost	\$0	\$0	\$0
Total	\$1,367	\$2,046	\$678
Life Cycle Costs*			
Operating costs (energy and maintenance)	\$18,585	\$27,802	\$9,220
Energy cost	\$18,585	\$27,802	\$9,220
Maintenance cost	\$0	\$0	\$0
Purchase price for 1 unit(s)	\$4,000	\$2,700	\$1,300
Total	\$22,583	\$30,502	\$7,920

* Annual costs exclude the initial purchase price. All costs, except initial cost, are discounted over the products' lifetime using a real discount rate of 4%. See "Assumptions" to change factors including the discount rate.
 † A simple payback period of zero years means that the payback is immediate.

Summary of Benefits for 1 Oil Boiler(s)

Initial cost difference	\$1,300
Life cycle savings	\$9,220
Net life cycle savings (life cycle savings - additional cost)	\$7,920
Simple payback of additional cost (years)	1.9
Life cycle energy saved (MMBtu)	1,775
Life cycle air pollution reduction (lbs of CO2)	282,793
Air pollution reduction equivalence (number of cars removed from the road for a year)	24
Air pollution reduction equivalence (acres of forest)	39
Savings as a percent of retail price	198%

innovative technology

The buildings in which we live, work, and play protect us from nature's extremes, yet they also affect our health and environment in countless ways. The design, construction, operation, and maintenance of buildings take enormous amounts of energy, water, and materials, and also generate large quantities of waste, air, and water pollution. The buildings develop their own indoor environments, which present an array of health challenges.

In our last newsletter we introduced the emphasis being placed on Green Buildings. That article was focused on product and the health, safety, and welfare of those affected by cleaning agents used in the HVAC system.

The EPA has established guidelines to achieving "Green Building Certification". One of the guidelines defines the relationship between Planned Maintenance and Indoor Air Quality.

According to the EPA: A planned maintenance (PM) program provides care to all building mechanical systems and components that keep them operating at peak performance. An effective PM program is the most important tool to preventing IAQ problems.

- Lack of effective PM is one of the biggest causes of IAQ problems
- Facilities with effective PM programs generally have fewer problems
- You cannot quickly diagnose and solve many IAQ problems without an effective PM program because you won't have the system knowledge and records
- Should IAQ problems result in legal action, your PM records may prove good faith efforts to control IAQ

The EPA goes on to say: PM is *one of the most cost effective tools* for increasing energy efficiency. For example:

- All equipment works at peak efficiency according to design
- Clean filters and ductwork reduce workload on fans
- Clean heating and cooling coils transfer temperature more efficiently

- Controls operate to provide service when needed

PM also provides less time and expense responding to complaints, reduced liability exposure, and PM extends equipment life and results in fewer unscheduled repairs.

procedural solutions

Innovative Service Solutions offers customized Planned Maintenance programs to achieve any client need. In striving for a green building, there are several principles that are the foundation of the PM program.

The first principle is to clean for health and safety first, not just for appearance. Dirt, film, grime, and other contaminants will migrate and diminish indoor air quality in the whole building.

The second principle is to protect workers from hazardous conditions. Such protections include adequate ventilation, personal protective equipment, proper labeling, proper mixing areas, and procedures.

The third step in achieving a quality PM program is the procedures to organize and record tasking and activity. A quality PM program includes:

- **Equipment list:** Contains serial numbers, spare parts required, suppliers, and all equipment specifications. This inventory enables parts and services ordering directly from the PM equipment files
- **Equipment history record file:** Contains a historical record of the installation and all work performed on each piece of equipment
- **PM work orders:** Contains inspections for unusual conditions like excessive noise and heat, inspections for leaks, rust, dirt, and mechanical problems, regular and careful lubrication, mechanical and electrical adjustments, HVAC testing and balancing, operational checks, parts replacement and coil cleaning and filter replacement

Call Innovative Service Solutions today to start your Green Building Certification program. ☎

employee spotlight

Name: Greg Suarez

Position: Field Service Manager

Years in the HVAC industry: 27

Years at ISS: 3

Major job responsibilities: Managing quality and technical assurance for my field employees, and developing a personal relationship with my clients

For me, a perfect day at

work is: 100% client satisfaction and technician proficiency

Most challenging part of my job:

Balancing employee issues and maintaining good client relationships

Town:

Kissimmee, FL

My very first job was:

Stable boy for an Equestrian

Hobbies/Past times:

Riding my motorcycle, fishing, hunting and playing with my granddaughter ☺





THE UNIFIED GROUP

together we make the difference

We are an independent association of the country's elite HVAC commercial contractors. We help our members increase productivity, profitability and customer retention, and we also provide a network for national and regional customer business solutions. Visit us at www.theunifiedgroup.com.


ISS kitchen

Pumpkin Muffins

Ingredients

- 1 1/2 C raisins
- 4 3/4 C all-purpose flour
- 4 C white sugar
- 1 1/2 t each baking powder, baking soda, salt, nutmeg, cinnamon, ground cloves
- 6 eggs
- 1 (29 oz) can pumpkin
- 1 C unsweetened applesauce
- 1 C chopped walnuts

Directions

1. Preheat oven to 350 degrees F (175 C). Grease three 12 cup muffin pans. Soak raisins in hot water for ten minutes to plump, then drain.
2. In a large bowl, combine flour, sugar, baking powder, baking soda, salt, nutmeg, cinnamon, and ground cloves. In a separate bowl, mix eggs, pumpkin, and applesauce, until smooth. Add this mixture to the dry ingredients and stir thoroughly to make a smooth batter. Stir the raisins and walnuts into the batter. Spoon batter into the prepared muffin cups.
3. Bake for 30 to 35 minutes, or until a toothpick inserted into the center comes out clean. 

Innovative Service Solutions

ISS is a leader in the commercial, healthcare and industrial air conditioning and refrigeration industry. We excel through our commitment to protect the health, safety and welfare of our clients and our employees.

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