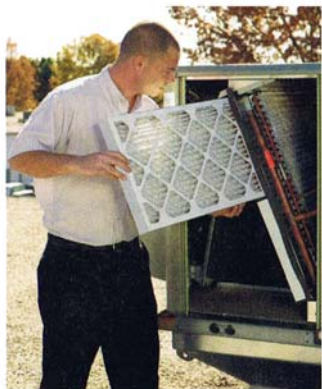


HVAC

Retail Facility Business asked several experts about HVAC issues pertaining to retailers and shopping centers, specifically about readying their stores for summer and the impending 2010 phase-out of R-22 refrigerant. Our experts are: **Mark Barraclough**, president of New Britain, Pennsylvania-based Alpine Mechanical Services.

RFB: What do retailers and property managers need to do to get their facilities' HVAC units ready for summer?

Mark Barraclough: The most important thing to do to keep equipment running efficiently is to have HVAC units cleaned and overall operations tested. Routine preventive maintenance includes replacing air filters in order to promote adequate air flow. The refrigerant circuits should also be checked to confirm the refrigerant charge is within safe operating levels and to confirm the superheat and subcooling levels are within the acceptable standards. If any variation is detected, refrigerant levels should be adjusted. Additionally, evaporator and condenser coils should be cleaned if needed so they can absorb and reject heat properly. Another important step in preventive maintenance is to confirm that all units with economizers are operating properly and bringing in outside air to cool the store when applicable. Spring is the ideal time to have HVAC units serviced before the heat of the summer puts additional strain on equipment; however, preventive maintenance should be performed at least four times per year to keep equipment operating efficiently year-round.



Routine preventive maintenance includes replacing air filters in order to promote adequate air flow. Be sure to replace all air filters with dated filters.

RFB: What are the most common maintenance calls you get regarding HVAC issues in the summertime?

Barraclough: If the unit has not been properly maintained, there are a number of issues that will arise. In most cases, equipment that is not maintained will have dirty filters, loose or cracked fan belts, dirty coils or an incorrect refrigerant charge. Any one of these issues can lead to unit failure and extensive repairs. This will also translate into loss of sales because customers will not want to shop in a hot store. The idea is to keep equipment working efficiently through preventive maintenance — this ensures customers will be comfortable and able to shop.



Refrigerant leaks are common maintenance problems.

RFB: Everyone is trying to save money these days. How can retailers run their stores' air conditioning more cost-effectively?

Barraclough: It is important to understand that the HVAC

maintenance budget and the energy budget are interdependent. By investing in preventive maintenance, you will actually reduce your HVAC service, repair and energy costs because a well-maintained system requires fewer repairs and uses less energy. The converse is also true — if you reduce or eliminate preventive maintenance, you will see an increase in these costs as well as costs associated with equipment downtime. Many people don't realize that preventive maintenance can help reduce costs because it seems counterintuitive; however, it is actually one of the most effective ways to reduce costs.



The cost of installing, owning and operating an EMS system is dropping.

RFB: HVAC is a huge user of energy. What is being done in the industry to make HVAC more energy-efficient and environmentally friendly?

Barraclough: Through the use of technology, contractors today are able to dramatically increase the efficiency of HVAC equipment by ensuring the system is running at peak performance. A few HVAC service providers are utilizing a handheld diagnostic tool, called the HVAC Service Assistant, to promote energy efficiency and optimize unit performance. The technology has the ability to confirm unit performance by acquiring key operating data and calculating the correct superheat and subcooling levels. The HVAC Service Assis-

tant identifies and diagnoses any existing faults in the unit that is causing equipment to consume more energy than necessary. In one case study, the HVAC Service Assistant was used in a mall to help increase energy efficiency and resulted in 59,756 kWh annual savings and 31.6 reduction in peak demand.

RFB: What are the latest questions and concerns retailers may have regarding the government mandated phase-out of R-22 refrigerants? Is the retail industry ready?

Barraclough: In the short term, the R-22 phase-out will not have much of an impact on retailers with existing equipment that utilizes R-22. After 2010, chemical manufacturers may still produce R-22 to service existing equipment, but the production will be reduced by 65%. In addition, 2010 marks the date manufacturers are no longer allowed to make HVAC equipment using R-22. By 2015, production of R-22 will continue but be reduced to 90% of the 2010 production volume. Use of existing refrigerant, including refrigerant that has been recovered and recycled, will be allowed beyond 2020 to service existing systems, but chemical manufacturers will no longer be able to produce R-22 to service existing air conditioners and heat pumps. The retail industry should not be impacted as long as they select an air conditioning contractor that is certified in the use of the new refrigerant and that follows EPA guidelines to properly service equipment with R-22 refrigerant. It is important, however, that retailers start thinking about their long term replacement plan and replacing inventory with EPA-approved units.

RFB