Minutes
Hampden Town Council
Services Committee
January 25, 2012 @ 6:00pm

The meeting of the Hampden Town Council Services Committee was called to order at 6:11p.m. on Wednesday, January 25, 2012, at the Hampden Municipal Building by Chairperson Jean Lawlis.

Gretchen Heldmann, GIS/IT Specialist
Darcey Peakall, Pool Director
Kurt Mathies, Recreation Director
Mayor Janet Hughes
Councilor Jean Lawlis, Chair
Debbie Lozito, Library Director
Clare Cole
Curt Keller
Councilor Brann

**Note: Items may have been discussed in a different order to accommodate guest or staff schedules. Unless otherwise noted, there was no objection to addressing the items in a different order than stated on the agenda.

1. Approval of Minutes

Minutes from December approved with no objections.

2. Old Business

A. MSAD22 Trails Grant Update

Gretchen shared the final copy of the grant that was submitted and provided Councilor Lawlis with a document Melanie wanted to share, about another grant program opportunity.

B. Subcommittee Updates

FoDDix – will be meeting Feb. 4th and will come up with a plan to finish the water project and set any other project goals for the year. Councilor Brann commented that the vegetation management needs to get done.

C. Western Ave. Rec. Area playground equipment

Kurt has not had any time to work on this, but there is plenty of time left still to put together the RFP information and go out to bid before the addition could be built anyway. There is a

Parks, Recreation, and Tourism student at UMaine that is interested in working on this project, so Kurt is also following up with that.

D. Outdoor Facilities Ordinance

Tabled. Councilor Brann will talk to the town attorney about liability issues with residential organizations doing work on town lots with some sort of lease agreement or MOU.

E. Community Garden Update

The group met and started to form a more organized body, including creating committees to work on different tasks. They would like to be affiliated with the Town at least to begin with. The next meeting is Feb. 8th 6pm Blue Room at the Edythe Dyer Library. They have an unofficial contract with the Good Shepherd Food Bank. They talked about leasing individual plots, organizing with the school, planting annuals and perennials, having a picnic area by the brook, etc. 45 Canaan Rd is the address of the property. The group would like to have a mailbox set up here where they can drop off information for each other to pick up. Gretchen backed up the discussion and explained again the Affiliated Programs process. She did not know the exact details, but stressed again that the group needs to talk to the Recreation Director, Kurt Mathies, as there is a form to fill out to apply to be an Affiliated Program of the town, and there is probably a process beyond that, and/or guideline to follow. Clare said she would talk to Kurt tomorrow. Once that is in place, then a mailbox can be set up, access to posting on the website and newsletter, and other issues could be addressed and worked out. There was a brief discussion on doing a farmer's market, and Curt was willing to help with that.

F. Portapotty Situation at Western Ave. Rec. Area Update – Kurt

Kurt has looked into this briefly and will do more research on the matter. He pointed out another consideration is that these new porttapotties, which are now handicap accessible, now only hold about one third of regular capacity. 250 people attending a soccer event on a Saturday will easily fill it. A long-term solution may need to be considered.

3. New Business

A. Pool Naming Rights – Darcey

The pool did a mass mailing for a fundraising campaign on Dec. 1st, to about 5,500 people. So far they have received a lot of both pledges and donations: $5,595 in actual cash donations, and $5,540 in pledges to be made over the coming two years, for a total of $11,535. The Pool Board has yet to ask for corporate sponsors, but they suggested a naming rights campaign, and the town attorney saw no problem with that. Questions were raised as to what would be named, what would be the minimum amount to donate in order to get a name somewhere, would this include etching names into the tiles of the pool floor, etc? Darcey will go back to the Pool Board

and work that out and bring back some details. Darcey said that a lot of people have been asking about the Town's commitment to the pool, and what if the air handler died before the campaign raised the funds needed? People wanted to know their money was going to the pool and not a general town fund. Feb. 13th is the bid opening for the air handler.

B. Faxing at Library – Debbie

Debbie said that there was virtually no place in town that people could go to send a fax, and they had to drive in to Bangor and go to Staples. The only place in town that does it is Bangor Savings Bank but they were not too keen on it. Debbie wanted to know if they could offer faxing at the Library, through the photocopier, for a fee. Councilor Brann suggested looking into Ferris Rental because they offer stand-alone copiers with just a send/stop and keypad and it is coin-operated (or swipe card). Debbie also wondered about scan-to-email. Gretchen suggested that another stand-alone machine would be one more piece of equipment to maintain, train staff on how to use so they can help patrons, and she also said scan to email would probably cause more headaches than helps, because a lot of people do not understand the concept of an email attachment. Gretchen also pointed out that the Fees Ordinance needs to be looked at as a whole, because the Library charges a dime a page for copies, while the town office charges a quarter. She also mentioned that we do fax tax cards to people and invoice them for a fee, but a quick glance at the Fees Ordinance does not specify/clarify this. The Committee asked Debbie to look into what fees are being charged at the town office for various types of copies and faxing, and come back with a recommendation. The Committee agreed the Fees Ordinance needed to be looked at in whole.

C. Reappointments to Library Board

Councilor Brann motioned to approve the reappointments without interviews, second by Mayor Hughes. All voted in favor.

4. Public Comment

None.

5. Committee Member Comments

Gretchen asked about this skate park she'd been hearing about in passing but nothing formal. Councilor Brann indicated that someone had talked to Kurt about it. Gretchen said that it had been quite a while if that was the case. Councilor Brann stated Bangor Savings Bank wanted to help with it, and that Chip's (Public Works Dir.) son was sort of heading up the group. This concept will come to this committee eventually.

The next meeting is February 13, 2012 at 6:00pm

The meeting was adjourned at 7:42pm.

Respectfully submitted,

Gretchen Heldmann
GIS/IT Specialist

HEATING/PIPING/AIR CONDITIONING
HPAC
ENGINEERING

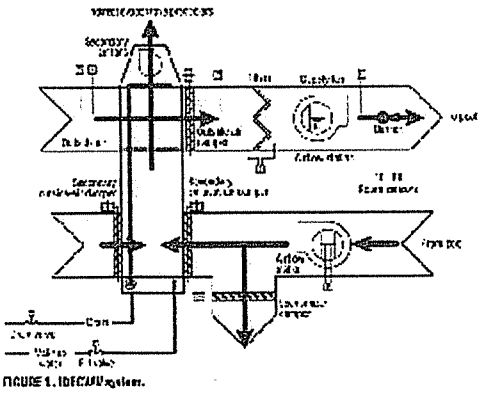
Evaporative Pool Dehumidification

Oct 1, 2011 12:00 PM, By MARK S. LENTZ, PE, Lentz Engineering Associates Inc., Sheboygan Falls, Wis.

Comparing the actual performance of two approaches to swimming-pool HVAC

Operated by the Marathon Area Swim Association (MASA), the Ray & Marie Goldbach, Marathon Area Swim Center in Marathon, Wis., is a 10,122-sq-ft facility consisting of a 25-yd-long, six-lane-wide main pool; a small instructional pool; locker rooms; and a small administrative area. It opened in 1988.

The original pool dehumidification unit (DHU) used heat of rejection from the refrigeration system to heat pool water and provide hot-gas reheat. In 2003, it began experiencing operational problems. Those problems became severe in early 2004. The temperature controls failed because of corrosion, causing the service contractor to alter the way the system was controlled. The dehumidification-system condenser lost its ability to heat the pools' water. The cooling-coil fins became oxidized and started to fall off. The hydronic heating coil froze and ruptured on several occasions. By 2009, the unit housing had lost integrity, and MASA concluded it needed to replace the system.



(/images/1011-evaporative-Fig1.gif)

Fig. 1. Click on image to view larger.

The system MASA chose (IDECVAV) is a direct-fired, variable-volume, 100-percent-outdoor-air unit equipped with an indirect evaporative precooler used to provide sensible cooling and heating-season energy recovery (**Figure 1**). The system is installed on the roof

of the building, where it is subject to winter design conditions of -25°F.

This article compares the performance of the original and replacement systems. The comparison is based on actual performance. Aiding the comparison is the fact the swim center is a stand-alone facility served by dedicated utilities, rather than a small part of a much larger facility without dedicated utilities or submetering, which can obscure, distort, or dilute actual performance.

Strategies

The DHU introduced minimum outdoor air through the mixed-air path. This concept treats ventilation energy as a tax on the system the owner simply must pay. Refrigeration was used to dehumidify the air. Rejected heat was used to heat supply air and pool water. Recirculation of chloramine-contaminated air caused equipment deterioration and, ultimately, failure. The use of refrigeration for pool-water heating, while more economical than the brute-force use of water heating and ventilation, reduced energy usage, but imposed high parasitic energy losses on the system in the form of compressor energy.

The IDECVAV system is ventilation-based and designed with the following features:

- Outdoor air is free of chloramines and dry under cold weather conditions. The design employs 100-percent outdoor air to maximize air quality. Also, it permits the equipment to be located outdoors, prevents moisture from compromising air-handling-unit insulation during cold-weather operation, allows adjacent areas to be pressurized with fresh air, and limits the potential for corrosion damage.
- Supply-air volume is controlled to maintain space relative humidity with a low limit set to the minimum-outdoor-air ventilation rate.
- The exhaust fan is a direct-drive plug fan that locates the motor outside of the corrosive air stream. Exhaust airflow is piezometrically tracked to supply airflow to maintain mass balance and a pressure consistent with that of adjacent spaces. Secondary-exhaust-fan speed is slaved to primary-exhaust-fan speed to maintain building pressure under all conditions of operation.
- Exhaust-air, secondary exhaust-air, and secondary outdoor-air dampers are modulated as a mixed-air control.
- The system is designed around an indirect evaporative cooler. The air-to-air heat exchanger is of polymer construction to resist corrosion. The housing is American Iron and Steel Institute Type 304 stainless steel for corrosion resistance. Cooling, on the rare occasions it is needed, is provided by cycling the indirect-evaporative-cooler pump on and off.
- Supplemental heat is provided through a direct-fired gas burner with a 40:1 turndown ratio to maximize fuel efficiency.

With the IDECVAV system, outdoor-air ventilation is used to control space relative humidity and always is provided in quantities that meet or exceed minimum code requirements. Energy is conserved by recovering sensible and latent energy from exhaust air to temper outdoor air. Because much of the energy in the exhaust path is recovered and recycled, the need for refrigeration—and the associated high parasitic energy use—is functionally eliminated.

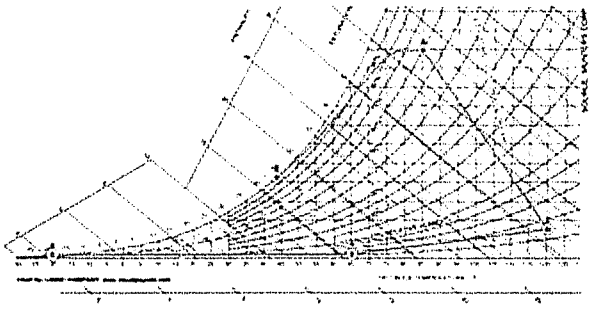


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Fig 2. Click on image to view larger.

Figure 2 shows the psychrometric path in heating mode. Both sensible and latent heat (A-B) are converted to sensible heat (X-Y) through energy recovery. Supplemental heat is introduced by a gas burner (Y-Z). Water vapor is absorbed from the space while heat is delivered to offset envelope losses (Z-A). In part because system airflow is controlled from space relative humidity, an 8,760-hr typical-meteorological-year psychrometric analysis was employed not only to predict system economics, but to eliminate uncertainty as to which ambient conditions would dictate design airflow rates and to determine which conditions produce both maximum heating and maximum cooling requirements.

The performance of an air-to-air heat exchanger is amplified when moisture condenses on or evaporates from the heat-exchanger surface. This causes boundary-layer resistance to heat transfer to break down. The increased efficiency can become a serious problem at very low ambient conditions. In this application, however, the potential is much reduced, as long as the air in the exhaust path has sufficient energy to prevent the formation of ice in the heat exchanger. For a pool system, that generally is possible if design space-temperature and relative-humidity conditions are maintained. At low-ambient-temperature conditions, that can be compromised by the use of pool covers.

Performance Comparison

The utility use of the DHU in 2003, the last year the DHU was able to perform as designed, was compared with the utility use of the IDECVAV system from July 2010 through June 2011. Both data sets are imperfect: The DHU experienced a shutdown in March 2003; the IDECVAV system had some unresolved startup issues and experienced an unusually cold spring in 2011. However, by any measure, the performance gains realized by the IDECVAV system were significant.

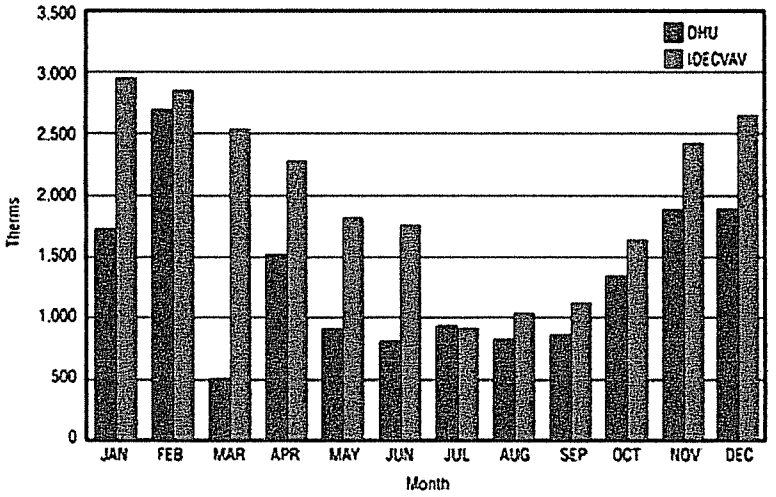

FIGURE 3. Natural-gas energy use.

Figure 3 shows aberrations in the DHU's natural-gas utility use from January to March 2003, when operational problems began. The IDECVAV system substituted less expensive natural gas for the benefits of the electrically driven refrigerant compressors in the DHU. As a result, natural-gas use for all purposes increased 33.7 percent, from 15,842 therms with the DHU in 2003 to 23,951 therms with the IDECVAV system in 2011.

1 2 (http://hpac.com/humidification-dehumidification/evaporative-pool-dehumidification-1011/index1.html) Next (http://hpac.com/humidification-dehumidification/evaporative-pool-dehumidification-1011/index1.html)

Acceptable Use Policy (http://www.penton.com/Pages/AcceptableUsePolicy.aspx)

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Matty B

The article mentions the use of a direct fired gas burner which deposits 100% of its flue gases into the airstream (and thus into the space). Although this seems to be standard practice for say, a manufacturing plant, I would have a tough time

specifying it for a natatorium.

Otherwise, looks like a great application.

Mlentz

Thank you for the comment. To address your concern, please consider the following. Direct-fired air handling units have been successfully used for pool ventilation for decades. The primary problem with the approach has been lack of humidity control when minimum rates of ventilation have been provided, destruction of the equipment by corrosion when recirculation is employed, and high costs of operation.

The high minimum rates of ventilation required typically provide more than adequate dilution of the by-products of combustion. With the IDECVAV system, the byproduces of combustion are further reduced in proportionally to the reductions in heating load associated with the effective application of energy recovery. This will approach 80-85% when condensation occurs in air-to-air heat exchangers, but the designer must be careful to consider the implications of frost formation in cold weather. When an appropriate mass balance is maintained across heat exchangers, the danger point typically occurs around -25F.

The improved removal of toxic and noxious chloramines from the space using displacement techniques prevents the accumulation of these contaminants that routinely occurs with recirculating strategies. By limiting these contaminants to the exhaust air path, effective equipment service lives are also substantially increased.

I've been using this technique since 1996 and have never had a complaint about byproducts of combustion.

Mark S. Lentz, P.E., Author

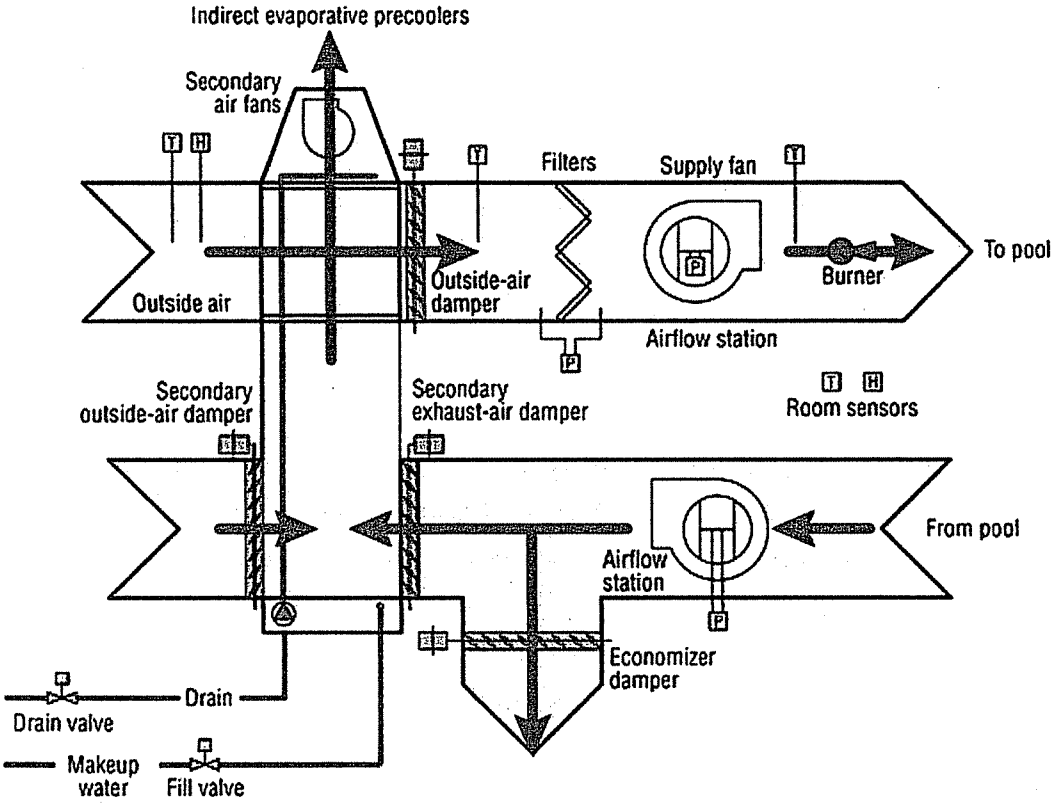

FIGURE 1. IDECVAV system.

Bangor Savings Bank will fax for customers 50¢ per page
Staples $1.50 for the 1st page $1.00 each page after that

Maine Savings NO
Katahdin Trust NO
Hannaford NO
Camden National NO
Rite Aid NO

What libraries charge:
1 charges 50¢ for local; $1.00 for long distance; $2.00 for international

9 charge $1.00 for the 1st page subsequent page costs vary from 15¢ to 50¢

2 charge $1.50 for the 1st page subsequent pages are $1.00

4 charge $2.00 for the 1st page subsequent page costs vary from 50¢ to $2.00

1 charges $3.00 for the 1st page and 50¢ for each subsequent page

4 charge $1.00 per page regardless of how many pages

Auburn Public library has a self contained faxing unit with an attached phone line.

Several librarians suggested a scan to email solution; I believe our machine has that capability.