

ShopTalk

Plant Operations Support Consortium

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Fall 2015

Management by Vision A Facilities Manager's Guide to an Optimal Strategic Plan

By Phil Partington, Consortium Staff

With so much emphasis on keeping up with the incessant growth of technology, it's easy to forget what really makes a facility tick. Dennis Suarez, facilities manager at The Washington Soldiers Home and Colony in Orting, Washington, has been recognized time and time again for being an innovative leader with big-picture vision of how to overcome unique challenges in an organization. He credits the principles detailed here for the Home's success in improving facility conditions and dramatically reducing energy use. Their energy consumption shows a progressive downward trend for winter months in the last three years, including a 19% reduction for February 2015 in comparison to February 2012.

"It's a marathon, not a sprint," Dennis says. "The overall vision of the operation actually affects more of what I do than the technical stuff."

"I can always find a book or bring in an expert to solve a problem, but when an organization lacks vision or not everyone is on the same page with that vision, it can cripple the entire operation."

What is Vision, and How Do You Create an Effective One?

Dennis says he is motivated by vision, and not just as a concept. He frequently asks his staff to share their thoughts on the vision of the department/organization. He asks this in terms of the senses: What should it look like, feel like, and sound like?

"When the staff meets, I ask them to describe what their ideal home would look like. What's important to them in a home? For me, I like my home to be welcoming and well-kept, but low maintenance – mowed lawn in lieu of a whole lot of manicured space. Establishing

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Dennis Suarez (right) and John Fry, Stationary Engineer 2, check out the boiler.

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Plant Operations Support Consortium

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Shop Talk is an electronic newsletter of the Plant Operations Support Consortium, providing information focused on facility operations.

We welcome feedback from readers. To provide feedback or to subscribe to the Consortium electronic Listserv, email us at PlantOps@energy.wsu.edu.

Archived issues of *Shop Talk* are available at:

www.energy.wsu.edu/PublicFacilitiesSupport/PlantOperations/ShopTalk.aspx

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Shop Notes

By Edwin Valbert,
Consortium Manager

What a summer it was! The weather was great from my perspective (and yes, I am a native north-westerner) and your Consortium continued to serve its members and helped public facilities operate more efficiently.

The Consortium's support of public agencies, including monitoring centralized energy consumption using ENERGY STAR Portfolio Manager, continues to grow and has become a service that members find very valuable. Contact the staff to learn more about how you can benefit from this service.

Sue Brown has been busy completing no-fault custodial assessments for several school districts and community colleges. Her ability to help public facilities shift from cleaning for appearance (yes, appearance is important...) to cleaning for health (...but cleaning for health better ensures the safety and health of building occupants) is making building occupants safer and supporting productivity as absenteeism decreases. Don't hesitate to reach out to Sue (360-956-2058 or browns@energy.wsu.edu) and see if she can be of assistance at your facility.

I am also excited to let you know that the WSU Energy Program, with the Consortium at the reins,



Edwin Valbert

has been tasked with assisting the Legislature and Office of the Superintendent of Public Instruction investigate and gather data about school facilities as the state continues to work toward the best possible K-12 system. While this effort will consume a lot of Consortium time, we remain committed to serving our members, so keep those calls and emails coming, and we will continue to make your Consortium membership the best value possible.

Finally, it is never too early to be thinking about Leavenworth. Mark your calendars for May 3-5, 2016 for the 12th Annual Energy/Facilities Conference. Of course, if you have any suggestions for session topics, speakers, or other ways to make the conference the best ever, please don't hesitate to share. ✖

Edwin

Smart Building Center Launches Tool Lending Library

The first step in achieving operational excellence often comes down to understanding how a building's systems are actually operating. In answer to this challenge, the Smart Buildings Center (SBC) is opening its new Tool Lending Library, which will allow building owners and managers, as well as energy service professionals to borrow diagnostic tools for short-term energy data collection.

Data loggers, power meters, lighting loggers, infrared cameras, liquid and air flow measurement devices, and much more will be available for Washington businesses starting October 27, 2015. The list of available items is expected to grow as the program matures.

Users can access these tools free of charge for prescribed time periods to capture data on system performance. Analyzing this data can help users troubleshoot performance problems and create actionable information to fine-tune building performance. The SBC can also provide:

- Instruction on how to use these diagnostic tools correctly,
- Guidance on how to best analyze the information collected, and

- Ideas about using that information to make energy- and cost-saving changes.

A list of available tools is online, along with additional details about the SBC:
www.smartbuildingscenter.org/tools-tools-more-tools/

Here are examples of two tools available and their benefits.

Data Loggers



Are tenants complaining about the office being too cold? If so, Onset Hobo 4-Channel Loggers can help. You can measure critical information such as temperature, relative humidity, light intensity, AC voltage, air velocity, and carbon dioxide. The loggers can take temperature readings from -4°F to 158°F, relative humidity from 0% to 95%, and light levels from 1 to 3,000 foot-candles. Data can be

gathered in intervals of 1 second to 18 hours. The loggers also come with downloadable software to help analyze the data.

Combustion Analyzer



This tool can calculate and display efficiency, excess air, carbon dioxide, and air-free carbon monoxide – excellent for installing, cleaning, and evaluating fuel-burning appliances. It can also be used for boiler maintenance, service work, and carbon monoxide testing.

Email tool-library@smartbuildingscenter.org with questions. ✕

Effectiveness of Ice Melt

By Phill Sexton, *Facilities Cleaning Decisions*

Originally published in *Facility Cleaning Decisions* magazine.

Read the article online: www.cleanlink.com/hs/article/Effectiveness-of-Ice-Melt--17734

Salt is the primary material used for anti-icing or de-icing techniques that manage snow and ice. Knowing the types of salt and the conditions for when they are most effective will help custodial managers control usage. That will lead to controlled spending, efficiency of salt usage and the decreased risk of liability exposure from slip-and-fall claims or damage to infrastructure.

There are three types of salt that are most commonly used (**Figure 1**). Those include sodium chloride (NaCl) – also known as rock salt – magnesium chloride (MgCl) and calcium chloride (CaCl). Before using or blending the different types of salt, it's important to first understand the definition.

Salt is a chemical compound formed from a cation, or positively charged ion, attached to an anion, which has a negative charge. The combination prevents ice from bonding, allowing workers to clear areas more effectively.

When Salt Is Most Effective

To effectively use salt, it's important to know what each type of salt does, and its level of effectiveness to melt ice and snow at different temperature ranges.

The single most important condition, besides temperature, that influences the effectiveness of salt is moisture. Moisture from either the air or from precipitation directly affects salt's ability to convert to a liquid known as brine.

The effectiveness of salt will also be influenced by existing conditions that affect salt reaction times. This includes vehicle and pedestrian traffic that is required to efficiently break down solid forms of salt.

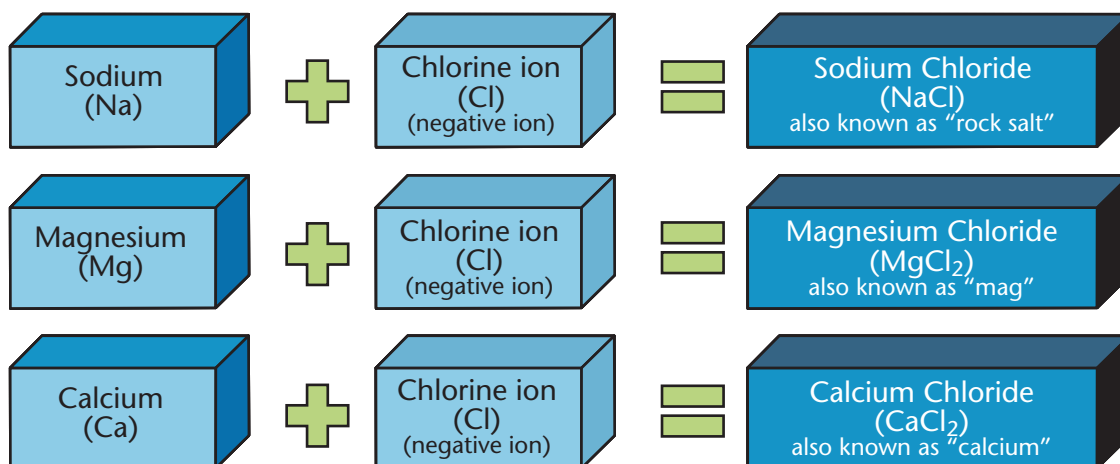
It's important for custodial managers to consider all the steps (**Figure 2**) salt goes through before distributing it. Once that is determined, move on to the type, or blend, of salt most ideal for the situation.

Determining which salt would be appropriate to apply based on varying surface temperatures can be tricky. To simplify things, it's a good rule of thumb to memorize the ratio 15/5/-25 for when blended salt products are not available. These numbers are the effective temperatures in Fahrenheit for rock salt, magnesium and calcium (**Figure 3**) and indicate when each is most ideal for use.

Once managers have identified what products to use,

Figure 1

The three most commonly used types of salt



See **Ice Melt** on page 5

Ice Melt

Continued from page 4

Figure 2

The steps salt goes through to melt ice

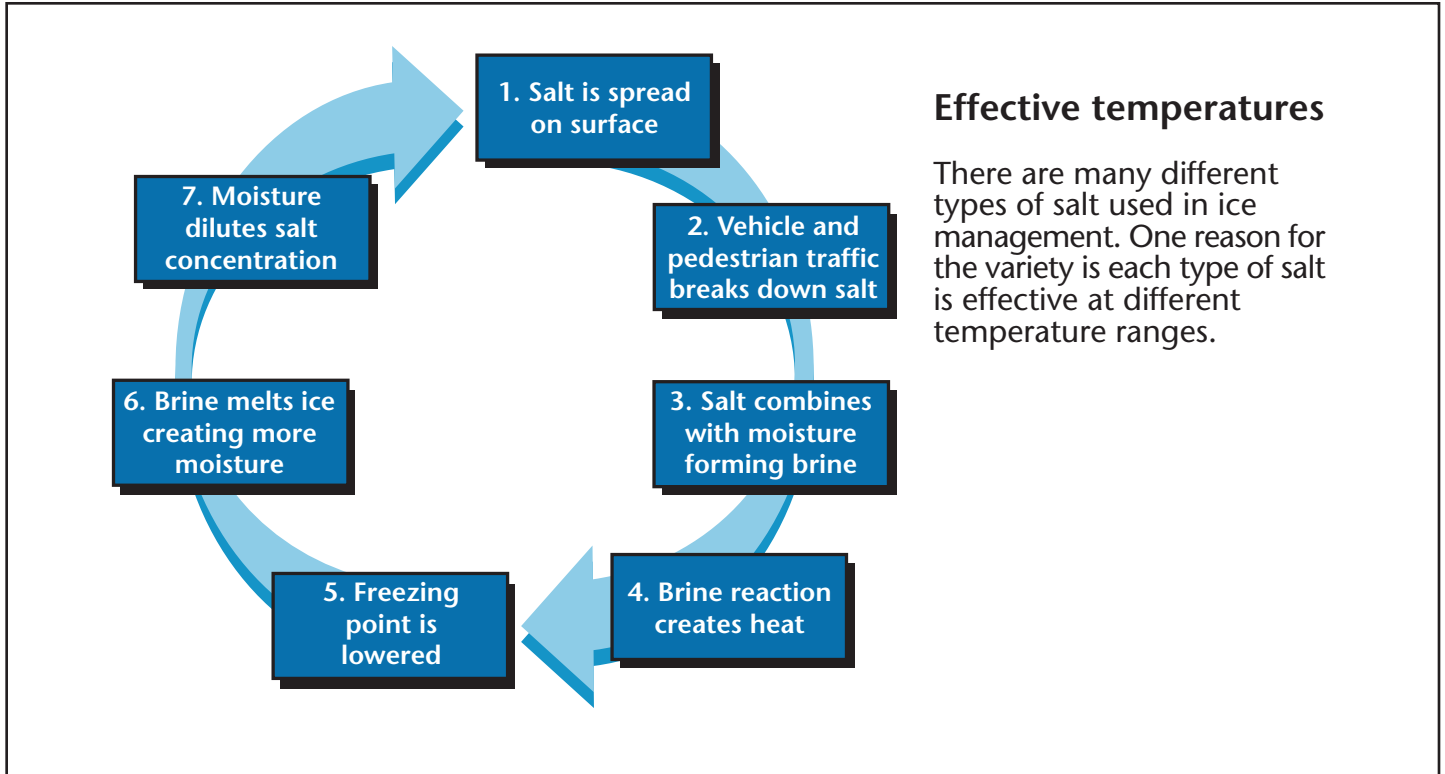
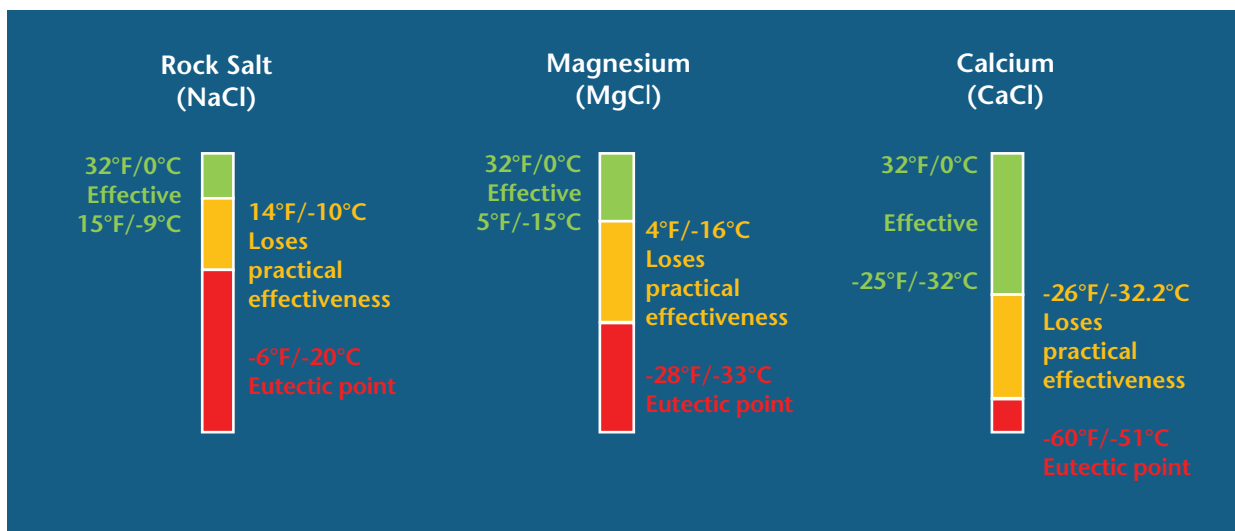


Figure 3

The effective temperatures for rock salt, magnesium, and calcium – and when each is most ideal for use



Figures 1, 2, and 3 are © 2014 Snow & Ice Management Association.

See **Ice Melt** on page 8

Vision

Continued from page 1

what's important to each person helps lay the template for people to make decisions on what to do in their own job."

Inevitably, the point is made that, "This isn't our home. It's our workplace." Dennis' response to this is something to ponder.

The average person sleeps about seven or eight hours a night. Then add one to three hours when he or she is not at home, perhaps driving to or from work, running errands, etc. That makes about eight to eleven hours in the day when the person is either asleep or not at home. Now, add to that an eight-plus hour work-day and you have only about five to eight hours when the person is home and awake.

"When you look at it from that is perspective," he says, "your workplace *is* your home, and so it's important that you take pride in it. If you can get your staff to a place of ownership in the facilities they care for, that's the Holy Grail!"

Vision Leads to the Best Kind of Training

"It's our job to leave a legacy," says Dennis, "and training is the heart of that. This begins with a robust maintenance program, and I'm not necessarily talking about a computer program. Sure, your program can exist on a computer, but it can just as easily live in a binder. I'm talking about the whole system, how the organization conducts its business. Buying a computerized

maintenance management system (CMMS) that promises the world might help in many ways, but it isn't the answer by itself."

Dennis encourages systematizing operations in a rigorous way to give new employees a base from which to learn and train. It also ensures that everyone is using the same language, which helps communication in the workplace.

"When it comes time to do something," he adds, "I want ONE way to do it." In other words, make sure everything is properly documented and easy to access. "This is your best apprenticeship program."

Management by Vision

Simply put, to get to where Dennis is talking about, an operation that's vision-driven requires:

1. Removing your ego,
2. Gaining consensus and buy-in on the strategic process,
3. Documenting best practices, and
4. Overlaying it with technical support and expertise.

"It's critical to establish a learning culture," he says. "Inevitably, if you establish a system that everyone's on board with, where they know the channels for communication and feel safe to use them, the endgame is an operation that runs smoother and facilities that are maintained better. When

“

It's our job to leave a legacy, and training is the heart of that.

”

**Dennis Suarez
Facilities Manager
The Washington Soldiers
Home and Colony**

things are properly maintained, it's easy to spot a failure – you can see things happening quickly. Getting to this point is the goal."

Dennis is a seasoned leader with 30 years of operations leadership experience in the military, public, and private sectors. His teams have shifted culture and implemented best practices models with significant financial and operational success. He received a Bachelor of Science in business administration from California State University, Hayward.

You can contact Dennis at 360-893-4507 or email dennissu@dva.wa.gov ✉



Listen to Dennis Suarez speak more on this subject at the **2016 Energy/Facilities Connections Conference**, where he will take the big stage as one of the event's esteemed keynote presenters.

New Life Cycle Cost Tool is Easy to Use and Adaptable for Tailored Analysis

In September 2014, Greg Rock of the Department of Commerce announced: *With the belief that energy-efficient and smart buildings should be the norm rather than the exception, Governor Jay Inslee signed Executive Order 13-03 in August of 2014, which includes consideration of life-cycle and operating costs in public building projects over 5,000 square feet. The order also directed the state budget office to collaboratively develop a life-cycle cost model to accurately analyze those public facilities.*

Life Cycle Cost Analysis (LCCA) is an analytical tool that allows the present value of upfront capital cost to be compared to future operational costs, and helps decision-makers determine which project designs are likely to deliver the lower Life Cycle Cost. However, some problems occurred because there is not a clear standard or methodology developed for conducting these analyses.

One year after Rock's announcement, the Office of Financial Management (OFM) contracted with the Department of Commerce to develop a Microsoft Excel-based Washington State Life Cycle Cost Tool (WA LCCT), which aims to simplify the process for users.

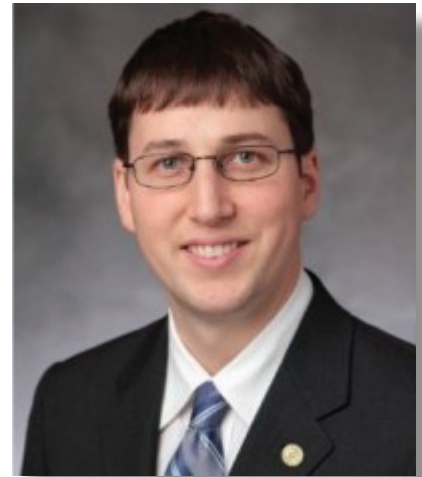
The WA LCCT takes basic inputs like the installed cost and the

useful life of a component, and calculates how often it needs to be replaced and what residual value remains at the end of the study life. It also standardizes the key LCCA assumptions, including building life, discount rate, and fuel escalation rates so results are easier to compare. In this way, the tool both simplifies the process for users and produces an easy-to-read executive report that allows reviewers to quickly identify the modeled design with the lowest total Life Cycle Cost or greatest Net Present Savings (NPS) compared to a baseline scenario.

While OFM standardized key variables that are required for final submission of the LCCA, the tool is also designed to be flexible. Users can edit the assumptions and produce a completely custom year-by-year LCCA. This flexibility makes the tool much more than just a compliance measure; it is something facilities managers can use to assess how present dollars might affect future dollars in a variety of areas.

The Department of Commerce is working diligently to troubleshoot and ensure the tool runs smoothly. Early feedback has been mostly positive.

All state building projects that are capital funded for more than \$5 million and/or 5,000 square feet are required to use this tool to



Greg Rock, Washington State Department of Commerce

evaluate different designs prior to receiving funding.

For additional information about the Life Cycle Cost Tool, contact Greg Rock, Department of Commerce, 360-725-3127 or greg.rock@commerce.wa.gov

The *Life Cycle Cost Analysis Tool* is available at: www.ofm.wa.gov/budget/facilities/documents/LifeCycleCostModel2014.xlsm.

Training videos for the LCCT will be available soon on the WSU Energy Program website. Look for the announcement on the Consortium's Listserv. If you are not on the Listserv but wish to be, contact your Consortium about getting signed up: plantops@energy.wsu.edu. It's free. ✖

Consortium Members

K-12 Schools

Bridgeport
Camas
Central Kitsap
Centralia
Chilliwack, BC
Delta, BC
Enumclaw
ESD 101
ESD 121
Eton School
Federal Way
Forest Ridge School of
the Sacred Heart
Highline
Inchelium
Mount Vernon
North Thurston
Odessa
Olympia
Orcas Island

Orondo
Pateros
Portland Public
Schools, OR
Reardan-Edwall
Selkirk
Shoreline
Wenatchee
Wishkah Valley

Universities/Colleges

Bates Technical College
**Big Bend Community
College**
Clark College
Clover Park Technical
College
Columbia Basin College
Community Colleges of
Spokane

Everett Community
College
Highline Community
College
Lake Washington
Institute of Technology
Olympic College
Peninsula College
Pierce College
South Puget Sound
Community College
**Tacoma Community
College**
The Evergreen State
College
Washington
State University
Energy Program
Wenatchee Valley
College

Municipalities

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City of Tumwater
Clark County
Jefferson County
Lakehaven Utility
District
Pierce County Library
System
Sound Transit
Thurston County
Whatcom County

Miscellaneous

Hopelink
Meydenbauer Center
Multicare System

Washington State Agencies

Corrections
Early Learning
Ecology
Employment Security
Enterprise Services
Fish & Wildlife
Health
Licensing
Military
Natural Resources
Parks & Recreation
School for the Blind
Social & Health Services
State Patrol
Transportation
Veterans Affairs

*Our warm welcome to new members in **bold blue** type.
We look forward to serving your facility and operations needs.*

Ice Melt

Continued from page 5

they must determine when they will be most effective.

Salt is available in both solid and liquid forms. In solid form, salt bores into the ice, converting to brine once it reacts with the moisture of the ice. This is typically performed as a de-icing technique, also referred to as a post-storm application.

In liquid form, salt is applied as brine, preventing bonding between the snow/ice and the paved surface. This is typically performed as an anti-icing technique, which is also referred to as pre-treating.



**ENERGY/FACILITIES
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ENERGY PROGRAM

**The 2016 Energy/Facilities
Connections Conference will be
May 3-5, 2016.**

Mark Your Calendars!