



Ed Arvin (L) and Jim Critchlow (R)  
getting the job done!

# QUARTERLY

*Trusted Since 1898*

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## Winter Projects

Projects that PSF will be working on this year:

### AISU Health Center

- Scope: Sheet Metal Installation
- Prime: Engle Mechanical
- PSF PM: Amy Roberts

### McMurray MOB

- Scope: Design & Install HVAC
- Architect: Collins Woerman Arch.
- GC: Foushee & Associates
- PSF PM: Marshall Nichols

### Nintendo 4820

- Scope: Lobby Expansion
- Architect: LPN / Royce Berg
- GC: GLY Construction
- PSF PM: MyAnn Tyner

### Nordstrom La Cantera

- Scope: Design & Install HVAC
- Architect: Callison Architecture
- PSF PM: Walt Clear

### OHMC Outpatient Cardiology

- Scope: Design & Install HVAC
- Architect: Wangerin & Associates
- GC: GLY Construction
- PSF PM: Marshall Nichols

## Entertaining Projects: Loews Theatre at Alderwood Mall

PSF has nearly completed work on the new 92,948 square foot Loews 16-theater multiplex project located in Lynnwood. This new facility will accommodate up to 3,992 eager movie fans. No need to worry about long lines at the concession area though – there are multiple customer service points adjacent to the six (6) popcorn poppers, plus a commercial cooking area to serve those with more voracious appetites.

The HVAC systems provide a total of 255 tons cooling capacity (via custom AAON gas/electric rooftop units) for the theaters, concession areas and projection mezzanines. There are also independent systems serving the walk-in coolers and freezers, counting room and file server room. Extensive sound attenuating treatment includes



Loews Theatre - Lynnwood, WA

Photo provided through S.D. Deacon General Contractors

the use of special acoustical liners within the air distribution systems, acoustical sound attenuators at mechanical units, spring isolation, plus ultra-low velocity distribution with flex couplers and offset elbows at all run-out ducts. Ceilings are approximately forty (40) feet above the finished floor level.

An Alerton energy management system is being used to control and schedule the HVAC systems, as well as for ventilation demand control. Ventilation demand control uses CO<sub>2</sub> (carbon dioxide) sensors to monitor occupant levels at individual theaters and at the concession areas. The signals generated from the sensors are used to reset outside air at the rooftop HVAC units, reducing the amount of energy consumed for tempering ventilation air, while maintaining proper levels of ventilation.

The new theater complex will be located at “The Terraces”, adjacent to the Food Court at the southwest end of Alderwood Mall. Scheduled opening is March '05. We'll see you there this spring!

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## Tech Talk - Filters Part 2 of 3

Last issue we looked at filters for removing particulates from the air. This issue we will look into filter systems



designed to remove gaseous contaminants. Often, gaseous contaminants are associated with industrial processes. However, people today are much more aware of gaseous contaminants generated within the typical home and office work environments. This is especially true of brand-new facilities because many new products outgas at high initial levels. For example: paint, carpet, vinyl, particle board, varnish, stains, furniture, plastics, rubber, treated wood, cleaners and solvents all give off gaseous contaminants. Add to these sources fumes from cooking, indoor manufacturing (soldering, cleaning, gluing, etc.) and now you have a real chemical brew to deal with. By the way – we haven't even addressed what's going on outside the building (maybe there's a pulp mill, brewery, sewage plant, etc, just down the block).

There are several common methods for removing gaseous contaminants, including:

**Condensing Precipitator:** For hot gasses it is possible to use a condensing precipitator system to remove gaseous contaminants. This system cools the contaminated air stream, causing the contaminants to condense into droplets that can be collected onto an electrostatic precipitator, or even with conventional media filters.

**Spray Dry Scrubber:** Spray dry scrubbing may be used to remove acidic gaseous contaminants. An alkali spray is used to

react with acid gases, forming a salt. The final particulates are then filtered using conventional media or impingement filters.

**Wet Pack Scrubbers:** Wet pack scrubbers remove soluble gaseous contaminants by passing the gaseous contaminated air stream over a liquid-wetted packing, allowing for absorption of the soluble contaminants into the packing.

**Gas Adsorption Systems:** Gas adsorption systems use porous solid materials that have huge internal surface areas, such as activated carbon, activated alumina, silica gel, or molecular sieves. Usually the solids are placed in a large "bed" through which the contaminated air stream is passed. Depending upon the targeted contaminants, multiple beds with different solids may be used. For example, the central air filtration system at the Frank Russell Building in Tacoma uses a series of filters, including pleated media filters, activated carbon filter trays, activated alumina (impregnated with potassium permanganate) in filter trays and high efficiency "Riga-Flow" cartridge filters. The pleated filters remove rocks and birds. The carbon trays target odorous contaminants. The activated alumina targets sulfur dioxide (typical output from pulp mills) plus formaldehyde and

ethylene (typical indoor contaminants). The high efficiency cartridge filters target fine particulate matter. "Impregnated" media refers to a media that contains a reactive chemical, spread over its internal surface area. The reactive chemical can be targeted to specific contaminants, substantially improving the effectiveness of a given media.

**Thermal Oxidation:** Thermal oxidation essentially "boils down" to "cooking" the contaminated air stream. Thermal oxidation can be used to convert VOC's (volatile organic compounds), organic aerosols and other odorous materials into CO<sub>2</sub> and water vapor.

**Catalytic Oxidizers:** Catalytic oxidizers do the same thing that thermal oxidizers do, and are very common. In fact, most of us drive around with one hanging underneath our car every day! Catalytic oxidizers use the same oxidation process used by thermal oxidizers to neutralize contaminants, but usually at a much lower temperature. A catalyst (such as palladium in the case of our automotive catalytic converter) enables the oxidation to occur at these cooler temperatures. Certain contaminants can "poison" a catalyst, rendering it ineffective. For example, the lead in leaded gasoline will poison the automotive catalytic converter.

The most common commercial (non-industrial) application of the above-described filtration methods is probably the gas adsorption bed-type filter system. One of the obvious application examples would be the bed-filtration systems used at most major airport terminal buildings, as well as in many of the typical surrounding buildings. The specific target for filtration would be jet fuel and jet exhaust contaminants being introduced via the outdoor intakes.



## International Code, “What’s the Big Deal?”

The 2003 International Code was adopted last year by local municipalities in the State of Washington. It officially replaces the 1997 Uniform Codes as of last July for most of the municipalities. The Uniform Code has been the model code in this State for as long as most people can remember. The Seattle’s DPD website states “...first major update to Seattle’s construction-related codes in 30 years...”

This new code is the result of corroboration between the three organizations of building officials responsible for developing and enforcing building codes in the United States. The organizations are, Building Officials and Code Administrators (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International (SBCCI). The acronym ICBO may be familiar to some people; it’s the

organization responsible for the Uniform Codes.

These three organizations came together and co-founded the International Code Council (ICC) in December 1994. The purpose was to reduce the complexity of the regulatory system. The Council’s mission was to develop a single model code that would eventually be adopted worldwide.

ICC has spent the better part of ten years converting the code sections within the three existing model codes into an International Code. Each completed section of the International Code replaces the related regional codes published by each of the ICC founders. Uniform adoption will lead to a consistent enforcement and higher quality construction while lessening the bureaucratic burden.

It’s still too early to know the effects of the transition to the new code. We

should have a better idea by the middle of this year, as reviewed by the code officials. The ICC has been diligent about educating the industry by providing classes throughout the United States. You can find more information about these classes on their website, <http://www.iccsafe.org>.

We are enthusiastic about the transition to the new code and the benefits it brings not only locally but also for out of state projects. There are many jurisdictions that still utilize their own codes, such as Chicago, Miami and New York. The acceptance of the International Code by municipality also does not necessarily mean that the entire code has been adopted. It should be verified with each jurisdiction to see which codes have been adopted. The list will vary even between nearby jurisdictions, for example Seattle and Bellevue.

## Seattle Marketplace

Many people outside of (and some inside) the construction business here in Seattle do not appreciate just how unique this marketplace is. Ask any major HVAC equipment manufacturer, “what area of the country has the most advanced, innovative market?” and most will reply “Seattle”. There may not be any single reason why this is so. However, Seattle has always enjoyed a unique environment. We are isolated enough by geography to be just a little bit out of everybody’s way. Seattle is gritty. Though not as cool as California, or as sophisticated as New York, Seattle has always stood out from the rest of the country. Maybe it’s a bit of “pioneer spirit” hangover from the Yukon Gold Rush days. Adventurous people moved “West”. Really adventurous people moved “Northwest”. Those who settled in California may not have struck gold. However, they did get plenty of golden sunshine. You have to be a little different

to live somewhere where the sun disappears for weeks at a time (we won’t even talk about those people who stayed in Alaska).

So, what is so unique about Seattle’s construction market? Until just a few years ago no developer outside of this area would have used a design/build contractor to build a high-rise building, biotech facility or hospital. Too risky. Non-traditional. You just don’t do that. Times have changed some of that, yet Seattle still has the most innovative design/build reputation. We constantly seek out better, more efficient ways to build, to save energy, to deliver the best while consuming the least.

Many of the innovative advances in mechanical system design and construction have grown out of the Seattle marketplace. Some of the very earliest medium and low temperature systems were designed and built here. There were working thermal ice storage systems here

even before our then “screaming low” utility rates could justify them. Today Seattleites are applying green building technologies and under floor air delivery systems, constantly searching for better ways to deliver comfort.

Seattle has an environmental conscience.

Seattle is non-conformist.

Seattle strives to be cutting edge.

Seattle is a little innocent.

Seattle is ideas.

Yes, Seattle is different.

Certainly Seattle has its share of people who want nothing out of their ventures but profits. However, we like to think that there is a significantly different attitude at work here. We have a lot of people who care about what they do and want to make a difference. Some make that difference just by being different. Many make that difference by being better – making a conscious positive impact on our world. Count us in the latter group.

## Servicing the Future - Norm Warden

Norm started his career in the service business in 1965, following a 5-year apprenticeship in Fitters Local 467. He advanced from Journeyman to Foreman, Superintendent and ultimately to Service



Norm Warden - PSF Service Manager

Manager. In addition to his field experience, Norm has received training over the years specifically in Sales, Customer Service and Management as it relates to the Service Industry.

Norm has built Service Departments from scratch, has turned around poorly performing departments and has worked for one of the largest service companies in the US (in two separate locations).

Norm has been successful mainly because he has always maintained a customer- focused approach; he relates well to the field mechanic's perspective, and is committed to bringing a team mentality to his service group.

Norm understands that not all customers are alike, have differing expectations, and is adept at ensuring their expectations are satisfied. He is a technically competent, straightforward

and honorable leader, and we are proud to have him as a PSF team member.



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