



“People don’t get an opportunity to test drive their buildings, so we need to get it right the first time, every time.”

PSF People - Chris Lawson

Chris has proven himself to be a valuable asset to PSF Mechanical, Inc. and our customers. Chris’ team-oriented attitude, excellent communication skills, and ability to coordinate with other team members have made him one of PSF’s top foremen. Chris has provided leadership under very demanding conditions, at the 576,000 ft² Downtown Chicago Nordstrom project, and on the build-out of 1700 Seventh Avenue.

Chris spent 2 years in Chicago running the Michigan Avenue Nordstrom and Oakbrook Nordstrom Rack Projects simultaneously. He is happy to be plying his trade back in the Northwest, where he lives with his family in Kingston, Washington.

Is Your New Construction Energy Code Compliant?

The new Washington State Energy Code and Seattle Energy Code will impact all new and some existing buildings.

- Prescriptive compliance methods may only be used for wood framed walls.
- 60% threshold for lighting alterations.
- To take advantage of the 75% glazing area allowance for ground floor retail, you must use low-e coatings.
- Enhanced HVAC and lighting controls are required for larger buildings and systems.
- Required commissioning reports for HVAC and Lighting can impact issuance of Certificates of Occupancy.
- Kitchen and fume hood changes.

The Seattle DCLU is adopting the 2000 WSEC with 1997 Seattle Amendments on July 1, 2001 as the 2000 Seattle Energy Code (an interim move). A more restrictive energy code is under final review and comment, and is expected to be adopted in the Fall of 2001. Some highlights of the proposed 2001 Seattle Energy Code are:

- Replacement water-cooled HVAC equipment must have economizers.
- T.I. work using 60% new materials & equipment must comply with the new code for the entire space or floor.
- VAV air systems using electric energy for heat must meet envelope requirements for electric resistance heat (this is a significant revision).
- The prescriptive method maximum glazing area allowance for electric heat systems will be reduced from



Capital One Paper Transport

- a maximum of 40% to 30%.
- Garage exhaust systems over 15,000 CFM must have CO controls and time clock controls.

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DeVRY Expands to Washington State

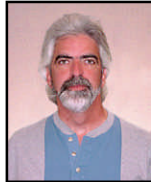


General Contractor: GLY

PSF Team:

Project Manager
Mike Halcom

Field Foreman
John Chenoweth



Founded in 1931, DeVRY is opening its 20th campus, a 100,000 ft² education facility in Federal Way. The campus will feature contemporary classrooms, many with laptop hookups, networked to an instructional server and to be equipped with specialized equipment for instructor/student multimedia presentations. With strong emphasis on superior technology and equipment, you can expect to find the following:

- An electronics lab with ninety-four 2-student work stations, an oscilloscope, a signal generator, a multimeter and power supply.
- A physics lab with laptop computers to simulate physics experiments.
- A computer network lab with work-

stations to build real-life networks.

- A telecommunications lab with workstations and up-to-date equipment.

This kind of equipment puts an exceptional demand on an HVAC system. PSF Mechanical, Inc. has designed and installed a state-of-the-art HVAC system to meet these special demands. The system incorporates high efficiency DX rooftop equipment with 100% airside economizers for maximum cooling efficiency.

To meet the cooling needs for such an extreme electrical load, there is a built-in equipment capacity of 3.0 watts per square foot. This also allows for potential future tenant revisions without major modifications to the HVAC system.

'Codes' (cont..d)

- The use of series fan terminals on VAV systems (popular in Class A buildings) has been restricted.
- All HVAC rooftop equipment over 1.75 tons will require economizers (even computer/switchgear rooms).
- The allowance for non-economizer equipment will be reduced to 10 tons or 5% of system capacity (a significant reduction).
- HVAC equipment minimum efficiencies are increased, while lighting power allowances are decreased.

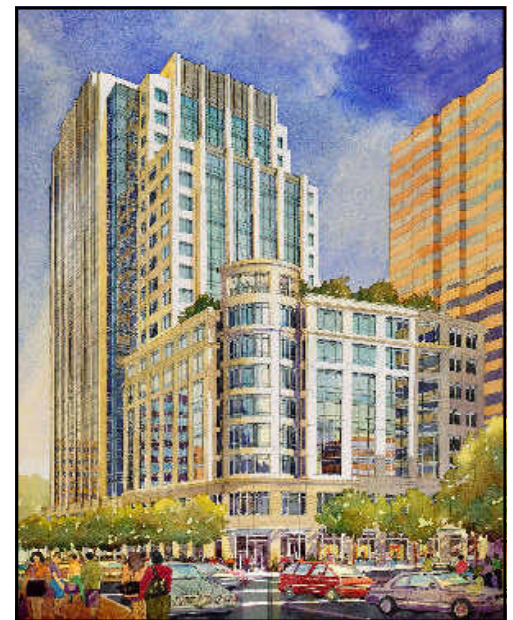
In general, the new 2000 WSEC continues the trend towards greater efficiency and making the code user-friendly. The city of Seattle is taking a more aggressive stance. Seattle would like to have new buildings meet higher efficiency standards, and have existing buildings incrementally brought up to standards similar to new construction projects. More information on these codes and other links may be found at PSF Mechanical's web site (*located at www.psfmech.com*).

1700 Seventh TI is Nearly Complete

Nordstrom and Merrill-Lynch will soon be moving into 450,000 ft² of Class A high-rise space in downtown Seattle. The new Clise tower project is located in the heart of Seattle's downtown office and retail core, just 2 blocks from Nordstrom's Flagship Store and their Corporate Headquarters Building.

The tenant HVAC system designed and installed by PSF includes Trane series type VAV terminal boxes. These boxes boast a number of benefits; constant volume air distribution to the occupied space, more accurate temperature control, and elimination of stratification in the heating mode are some examples. The design offers energy saving strategies such as waterside economizer coils on the Liebert computer room air handlers. The coils allow for free cooling when ambient conditions permit.

Project Manager Andy Read concludes; "This fast-track multi-floor tenant build-out has gone exceptionally smooth. The entire design/build team has pulled together to make things happen".



1700 Seventh Avenue

General Contractors: Sellen, Edifice, McCarthy
PSF Team:

Project Manager
Andy Read P.E.

Field Foreman
Chris Lawson

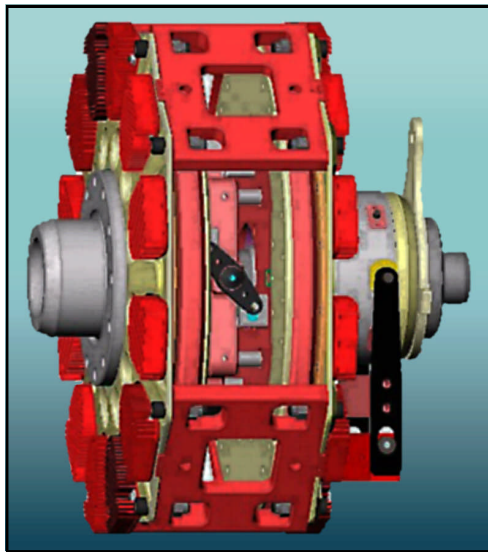


Product Watch: 'MagnaDrive'

As energy continues to be a hot topic, a new product has hit the market that is sure to get some attention. The MagnaDrive is selling itself as an alternative to the Variable Frequency Drive or VFD, which has been the only effective option to controlling motor speed and in the process reducing energy consumption. The VFD controls motor RPM's by changing input power voltage and frequency to the motor, raising or lowering the RPM's as required. Without a VFD the motor runs at full speed even at times the building load doesn't require it, costing building owners thousands of dollars per year. While the VFD controls motor speed electronically, the MagnaDrive controls it mechanically, using a magnetic field coupling and rare earth magnets. The drive is a simple yet brilliant product.

You might ask, why would we want an alternative to the VFD. The answer is, the VFD has some drawbacks:

- As the motor slows down, damaging heat builds up in the motor windings.
- As power is manipulated, VFD's can create harmonic distortion, which can damage equipment, cause interference with computer networks, or even damage the VFD itself.
- A more expensive inverter duty motor is required.



MagnaDrive Coupling fully assembled with magnet rotor assembly inside conductor assembly

- The VFD has a life of about 10 years.
- Power quality has to be very good.
- Dependability, while improved, is still an issue (particularly relative to power surges and drops, etc.).

The MagnaDrive claims to be superior to the VFD in all of these categories. And, MagnaDrive maintains this product including first cost and maintenance making it about 10% less expensive.

The jury is still out on this product because of the limited amount of time that it has been on the market. However, if the reviews and analysis hold true, the MagnaDrive promises to be a significant benefit (superior efficiency is realized at higher part loads) to the HVAC industry.

Summer 2001 - Northwest Projects Under Construction

The following are some of the key projects that PSF will be working on this summer:

Edmonds Office Building

- 32,000 ft² Design/Build Shell and TI Buildout
- General Contractor: Ferguson
- PSF PM: Lisa Horn

Virginia Mason Medical Center

- 28,000 ft² Shell/TI HVAC Install
- General Contractor: Sellen
- PSF PM: Andy Read

Northlake Office Building

- 60,000 ft² Design/Build "Tech-flex" building
- General Contractor: GLY Const.
- PSF PM: Tom Kulinski

University of Puget Sound

- Jones Hall 59,000 ft² Sheet Metal Install for Stirrett-Johnson
- General Contractor: Sellen
- PSF PM: John Parks

Quadrant Redmond Ridge -

Granite Court BP-2

- 58,000 ft² Design/Build Shell & Core
- General Contractor: GLY Const.
- PSF PM: Walt Clear

Delta Society to Open Animal-Assisted Training Facility

An unusual and challenging HVAC project, the Delta Society, not only will involve maintaining the comfort of people, but also companion animals. The Delta Society is an animal training facility that is dedicated to the concept of human-animal companionship as a benefit to the health of humans. As graduates of the training, the animals go on to become therapy animals in health care facilities, and service animals (assisting people with disabili-

ties). Delta Society was founded in 1977, in Portland, Oregon with the idea that animals can be more than just pets.

The project is located in the Quadrant East Campus Corporate Park, with GLY Construction as the General Contractor. The building is 31,476 ft² of educational, animal training, and office space. Two discrete Variable Air Volume Systems serving office and training functions will be incorporated. The Delta Society project is in the permit-

ting phase at this time, with an estimated start date of June 2001.



HVAC Talk: So What Exactly is a Ton?



Tons of work, tons of concrete, tons of steel. So what are those HVAC guys talking about when they say they want to plunk a two hundred ton unit on the roof? Well, when we HVAC types talk tons we actually *are* referring to weight, *just not the weight of our equipment.*

Before the days of mechanical refrigeration, buildings were cooled by blowing air across blocks of ice. A common unit of cooling capacity became the “ton”, referring to

the amount of heat removed by melting a ton of ice.

We still measure cooling capacity in “tons”. The conversion rate used for capacity calculations is 12,000 BTU/H (British thermal units per hour), the amount of energy it takes to melt one ton of ice in one hour.

OK, so is my 100 ton HVAC Unit the same as his? Well, sometimes yes and sometimes no. HVAC equipment is rated in “nominal” tons at ARI (Air Conditioning and Refrigeration Institute) conditions. ARI conditions refer to standard temperatures and atmospheric conditions selected to equate and compare the performance of various manufacturers’ equipment.

When a contractor tells you that you are getting a 100 ton unit, he may be quoting ARI performance. This can result in some major confusion. Correcting for actual local conditions may result in up to a 17%

reduction in actual vs. ARI performance, so Joe contractor may actually be giving you 85 “real” tons. Even less if he corrects for actual rooftop temperatures (5 to 7°F warmer than ambient) when selecting the unit.

The proper way to determine if your equipment has the “right” tonnage is to compare actual performance to actual load conditions. The actual performance numbers should indicate “sensible”, “latent” and “total” capacity for a correct comparison.

Like to get on our mailing list? Send your name and address or email address to: sales@psfmech.com

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