



Williams Notaro & Associates, LLC

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION CONSULTING ENGINEERS

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To Spend Or Not To Spend...

by Robert O. Williams, PE

To Spend Or Not To Spend? That is the question. The economy is slow, credit is elusive and everyone is cutting back to save money and wait for better times.

For many industries, that may be a savvy strategy. However, these are great times for the facilities management industry. Nuts you say? Consider that for the first time in almost a decade, construction and raw materials costs are dropping. Without a substantial backlog, contractors are re-evaluating their overhead and aggressively looking for work. Even equipment suppliers, seeing a reduction in sales and an increase in inventory, are becoming more aggressive in their pricing practices.

In this market, your construction project dollars go further. More can be done with less, and you are likely to get the "A - Team" from your contractor. Projects that were considered by contractors as tedious, ordinary or mundane, are now receiving attention from several companies. Bids are closer to budgets, and schedules are shorter. Now is time to do that infrastructure upgrade, replace that old chiller, and implement those energy conservation measures.

Unfortunately, the opposite is occurring. Facility management budgets are slashed, funding for projects already underway is withdrawn, and plans for badly needed maintenance projects are put on hold. In addition, short-cuts to good construction practice are implemented to save money. Cheap low efficiency equipment is purchased, permit requirements and regulations are ignored, and architects and engineers are excluded from the design and construction phases of the project.

While all of these methods reduce the initial cost and appear to have merit, they usually result in higher long term costs or even substantial remedial work. In many instances, the work performed under these constraints

is demolished and replaced once the overall impact of the "cost-only" driven decisions becomes apparent.

For example, when replacing a boiler, the cost difference between a high efficiency boiler and a low efficiency boiler is minimal compared with the overall project cost. Yet the decision to install the cheaper boiler



will impact the facility for many years in the form of higher energy costs and additional maintenance. As energy costs rise (and they will), the higher operating costs will quickly offset any initial savings. Additionally, the lower efficiency equipment may prevent the building from obtaining an ENERGY STAR or LEED rating, thus further reducing the facility's marketability to environmentally conscious tenants or purchasers. The only option, should a LEED or ENERGY STAR rating be desired, is to replace the recently installed boiler with a high efficiency boiler at a substantial cost premium.

The economy will rebound and the demand for office space will increase. End-users will stress environmental responsibility and demand more energy efficient and better performing facilities. We are witnessing this trend now. ENERGY STAR or LEED certified facilities are top priorities for many companies, with some limiting their search to only LEED or ENERGY STAR certified facilities.

It is difficult to spend when everyone else is saving. However, by waiting for the economy to rebound, you will pay more and get less. Take advantage of the down-turn to maximize the value of your dollars and to position your facility for better times. Now is the time to get ahead of the competition.



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Principal

Mr. Williams specializes in mechanical system development, design, and construction support, and has been working in the Washington, DC area for over 27 years. He worked for both international and local firms prior to founding **Williams Notaro & Associates** in 1996.

Win a \$100 Shell Oil Gift Card

Every season we feature a photo on our web site that illustrates the importance of including Construction Administration in the engineering scope of work because even small, seemingly unimportant installation deficiencies can cause poor system performance, increased maintenance, or reduced equipment longevity.

To enter, visit our web site www.wnainc.com Correctly identify the installation blooper and you are automatically entered to win a \$100 gift card to Shell Oil. A winner will be drawn on March 20, so enter today. Winner will be announced in our Spring newsletter.

Congratulations to our last winner, Jeff McWhirt, PE, CEM, CPQ, Senior Electrical Engineer with The MITRE Corporation in McLean, Virginia. He correctly identified the installation blooper from our Fall 2008 contest and received a \$100 Shell Oil gift card.



What's Wrong With This Installation?

Our Fall 2008 blooper showed how a garden hose was improperly being used to discharge the high pressure blow-off valve to the drain (see #1). This created a potentially unsafe condition because if the pressure relief valve opens, the hose may or may not withstand the pressure and the temperature of the water and could fail.

In addition, the electrical conduit is not supported and does not terminate in an approved manner, as required by the NEC, leaving the conductors unprotected and subject to damage (see #2).

Finally, the wire terminations are not terminated in an approved junction box (see #3).

This is a real photo in which three bloopers were identified, and reaffirm the importance of Construction Administration in the engineering scope of work.

Did You Know?

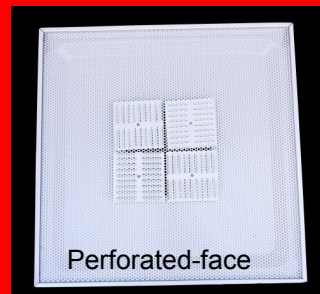
Did you know that the type and size of supply air diffusers can significantly impact the performance of your HVAC air distribution system? These performance differences affect the noise, efficiency, and the air distribution effectiveness of your system and should be carefully considered when selecting diffusers.

Larger neck sizes, for the same airflow, provide quieter diffusers and have lower pressure drops, but result in a shorter throw. A diffuser's throw is critical to ensuring effective mixing of the air to reduce the occurrence of temperature gradients within the space.

Two common types of supply air diffusers are perforated-face and louvered-face diffusers. Typically, louvered-face supply air diffusers can provide more air, with better distribution, and at a reduced noise level compared to the perforated-face diffuser with the same neck size. Below is a typical comparison of these two different types of diffusers with the same

8" neck size operating at 200 cfm:

	Perforated-face	Louvered-face Performance & Benefit
Noise (NC)	17.4	14.7 Quieter
Throw at 100 fpm (feet)	4.7	7.7 Better throw
Total pressure drop (inches of water)	.059	.054 Less pressure drop, More efficient



Supply air diffusers that have been improperly sized or selected can result in:

- ◆ poor air distribution and mixing
- ◆ drafts and comfort problems
- ◆ elevated noise levels
- ◆ decreased efficiency

If your facility is experiencing problems with noisy diffusers, drafts, or comfort problems, the solution may be as simple as replacing the diffusers. Please contact **Williams Notaro & Associates** if you would like additional information or to discuss the information above.