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Williams Notaro & Associates, Inc.

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION CONSULTING ENGINEERS

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The Power of a Punch List

by Elena R. Daly

When determining the scope of services for a project, do not overlook a valuable step in the construction phase – the punch list. "Punch list" takes its unusual name from the historical process of punching a hole in the margin of the document next to each item on the list, which indicated the item was complete and acceptable to the engineer. Two copies of the list were punched at the same time to provide an identical record for the engineer and contractor.

Today, punch lists are used to verify that the installation is in general conformance with the contract documents. Additionally, punch lists can be incorporated into the contract agreement as milestones to be completed prior to payments.

The punch list process is comparable to a home inspection, and most people would not consider purchasing a home without a home inspection. Just as the home inspector conducts a walk-through examination of a home to identify systems or components requiring attention, the engineer conducts a walk-through examination to determine if the work complies with the design, identify damaged components, and confirm that specified equipment has been installed in accordance with the construction documents. Unsatisfactory items are recorded on a punch list and given to the contractor to remedy.

Depending on the complexity and size of a project, your scope of services should include an intermediate walk-through as well as a final walk-through, both with written punch lists. Intermediate walk-throughs allow the engineers to identify potential problems before they develop into major problems.

For example, during a recent intermediate walk-through, WNA observed that the piping accessories were missing at a pump installation. If this condition was observed at the final walk-through, the insulation would have already been installed, the piping would have been filled and it would have taken more time and expense to correct the installation compared to correcting it before the system was operational. The contractor would have to shut-down the system, drain it, disassemble it, and fix it after hours or over the weekend possibly delaying the move in date.

"The WNA team was key to the success of our recent office space refurbishment project... your participation in the punch list process resulted in the correction of critical items that would have severely impacted my business in the future…"

R. Jack Chapman, President/CEO
Praxis, Inc.

Other examples of common punch list items include:

- Unauthorized product or material substitutions which can affect both equipment performance and the quality of the project.
- Incorrectly labeled equipment, piping and electrical panels.
- Unauthorized revisions, such as incorrectly routed or sized ductwork, which can adversely affect airflow, HVAC system performance, and noise levels resulting in a poorly performing system and comfort problems.
- Improperly sealed ductwork, resulting in air leakage, poor system performance, additional energy consumption, and poor occupant comfort.
- Improperly insulated piping and ductwork. Without a sealed vapor barrier, condensation and other moisture-related issues can occur.
- Incorrectly supported equipment, ductwork, or piping resulting in potential safety hazards.
- Missing or incorrect equipment accessories, such as missing vibration isolation devices. Left undetected, this results in noise vibration from the equipment transmitting into the bordering office space. Other commonly missed accessories are strainers or isolation valves on pump installations.

The punch list reports result in advanced identification of potential problems, better performing and longer lasting systems, cost savings arising from credits that may result from substitution of materials, and a reduction in last minute schedule delays.

So when deciding on the scope of services for future projects –- don't underestimate the power of a punch list.

Elena R. Daly
Office Manager
Elena Daly holds a BS in Business Administration from the University of Maryland and has over 18 years of professional experience including administrative and executive support, program management, marketing and web site maintenance.

Enter to Win $100 in Free Gas

Every season we feature a photo on our web site that illustrates the importance of including Construction Administration in the Engineering scope of work. Even small, seemingly unimportant installation deficiencies can cause poor system performance, increased maintenance, or reduced equipment service life. Visit our web site at **www.wnainc.com** and enter the Installation Blooper Contest by viewing the current blooper photo and selecting which multiple choice response best identifies the installation blooper. Correct respondents are automatically entered to win a $100 gift card to Shell Oil. Our next winner will be chosen May 30 so enter today!

Winner

Congratulations to Laura Yamaguchi, CE, Principal of Azure Engineering in Oakland, California. She correctly identified the installation blooper in our Winter contest and enjoyed a $50 Shell Oil Gas Card.

Laura also holds the title of our first "two time" winner, so yes - past winners are eligible to win again.

Enter this season's contest at **www.wnainc.com** and you could be the next winner of a $100 Shell Oil Gas Card. Drawing will be held May 30.

Contest

Our Winter Blooper Contest (above) features a classic example of why your engineer should perform regular site visits and a punch list during construction. The blooper photo shows a "creative" solution in which electrical wiring was run through linear diffuser plenum destroying the integrity of the plenum. Additionally, fixing this specific issue would cost substantially more if it were discovered after the drywall ceiling was installed.

Unfortunately, these type of installation mistakes are more common than people realize and can have a huge negative impact on the performance of the HVAC system. Minimize oversights by including Construction Administration in the Engineering scope of work.

Did You Know?

While LED lighting has been used mainly in a decorative capacity, LED lighting is now available, on a limited basis, for general purpose office and outdoor lighting applications.

Several companies are producing downlights, linear lights, accent lights, parking lot pole lights, and area lights using optic systems that incorporate LED lamps in clusters, to produce uniform and directional distribution patterns and color correction.

LED lighting will not immediately replace fluorescent lighting. However, because LED's consume 40% - 60% less energy than conventional incandescent and HID lighting the upfront cost of LED lighting can be justified by the energy savings payback period and the reduced cost of maintenance over the life of the lighting system.

LEED Accredited

Lucas Bartee, mechanical engineer with Williams Notaro & Associates, Inc., recently earned his LEED Professional Accreditation which distinguishes building professionals with the knowledge and skills to successfully steward the LEED certification process.

LEED is the Leadership in Energy and Environmental Design Green Building Rating System, and managed by the Green Building Certification Institute (GBCI).

Lucas Bartee EIT (center) is congratulated by WNA principals Ken Notaro PE (left) & Bob Williams PE (right)