



8-year-old carpet HOST® restored, then HOST maintained for 5 years.



15-year-old carpet in a high school HOST restored, then HOST maintained for 8 years.

CASE STUDY

Carpets in Schools can Outperform Hard Surface With **NO DOWNTIME** and **NO SPOTS WICKING BACK**

Missouri School District Maintains Superior Appearance at a Fraction of Previous Costs.



CASE STUDY

It wasn't the appearance of the wet extracted and bonneted carpet that was unacceptable when the Lee's Summit Missouri School District decided to look for an alternative cleaning and maintenance process. It was the mold.

Several hundred square feet of carpet and a number of books in the library were lost due to an HVAC equipment malfunction. The district, just south of Kansas City, Missouri, realized that high humidity caused this and was determined not to repeat that kind of damage, and the associated cleanup and replacement expense in their other facilities. They knew they had to limit the use of moisture in a building.

Nine years later, Lee's Summit is justifiably proud of consistently clean, well maintained carpet – some 20 years old. They're also pleased with the carpet maintenance system that is saving them money, improving the efficiency of custodial crews, and that has remediated other potential mold-producing incidents: HOST®.

In this case study, you will learn how Lee's Summit has adapted the HOST System to fit the way custodial crews in their schools clean. Is it the approach HOST recommends or even the way other districts around the country are achieving success with HOST? Not exactly. But success speaks for itself. In the "Show Me" state – a nickname oft credited to a remark made in 1899 by Missouri's U.S. Congressman Willard Duncan Vandiver: "I come from a country that raises corn and cotton...I'm from Missouri, and you have got to show me." – Lee's Summit shows us that with proper training, HOST can be used to efficiently clean, restore and maintain even old and abused carpet in a way that is highly cost-effective and adaptable to most any cleaning routine.



Geoff Greeley, Racine Industries, Inc., vice president of market support and development:

"We think we know the best way to use our products, but visiting facilities that maintain carpet and/or clean tile with HOST is always a revelation. Experience in the 'field' is always an opportunity to reassess and broaden our thinking. We share what we know with customers, and they do the same with us. We hope that what we and Lee's Summit learned from one another, as discussed in this case study, proves of value to you."

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The Lee's Summit Missouri School District

"It's one of those unfortunate things. Maintenance always seems to be the first place that people look to cut. And it's counterintuitive; because you end up paying more to fix things that are not maintained...keep up is easy; catch up is hard." –School Building Manager

Nearly 17,600 young people attend the 18 elementary schools, three middle schools, three high schools and a technology academy in the Lee's Summit School District. Lee's Summit also includes an early childhood center, a special education facility, an alternative high school, a swim/dive facility and a handful of administrative and support buildings. Ranked among the top educational systems in the U.S. by *Money* magazine in 2010, it earned Missouri's highest recognition for academic achievement, the Distinction in Performance Award.

Lee's Summit shares the goal of school districts nationwide, to maximize the dollars available for its primary mission – education. For those responsible for maintaining clean and safe facilities – in the central office and each and every school – this translates into the need to think creatively and develop ways to work smarter for efficiency and cost savings. When it comes to floor care, the focus of this study, efforts small

and large are helping the district achieve its goal:

- Attached felt-feet to the bottom of chair legs to protect flooring and make it easier and less expensive to maintain.
- Installed The Andersen Company Waterhog™ mats at building entrances to trap dirt and ice melt before they soil hard floors and carpet throughout a facility.
- Rigorously apply cleaning standards to everything to assure that even when

budgets limit cleaning equipment purchases, for example, all available equipment is clean and maintained in good working order, ready for operation.

- Monitor the performance of custodial employees through a multi-layered inspection program that ensures each job is executed to the specified level of quality.
- In 2002, designated HOST the all-district carpet cleaning system.



Lee's Summit Facilities Services Headquarters

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History: Carpet cleaning in the Lee's Summit District

The Lee's Summit schools use carpet from a wide variety of mills: Patcraft, Designweave, Mannington, Forbo, Mohawk and Lee's. Before HOST, this carpet was wet extracted and bonnet cleaned and experienced the related problems: delamination, ripples, mold, fast resoiling due to sticky detergent residues, wick-back, and streaks after the wet carpet dried.

A building manager recalls the cumbersome routine she encountered when she began bonneting and wet extracting classrooms 26 years ago. This included changing water three to four times during the process, the amount of time required for the cleaning itself, downtime – often days – while rooms dried and the disruption of displaced furniture and equipment, plus the time and labor required to put rooms back together again.

"Today in high schools, one custodian can move down a hallway and clean 14 to 16 classrooms in a day (shift), and they're ready to use," said a building manager. When wet extracting, they cleaned just six classrooms in that same amount of time.

Lee's Summit first tried HOST in the 1980s. A building manager recalls the experience of cleaning carpet with HOST spotZAPPER® brushes, the HOST Reliant® (a machine with counter-rotating brushes for deep cleaning and pile lifting), an inadequate vacuum and minimal training.

"They (purchasing administrators) told us, 'Here it is (HOST SPONGES® Dry Carpet Cleaner). Throw it on the rug and work it in.' At the time it worked OK, but you'd still see spots there, and no one told us anything about how to get those up...those of us who'd been around here for a while...were a little skeptical," she said.



In a district where two-thirds of the square footage in 18 elementary schools is carpet as are all classrooms and media centers in the other schools, and even the hallways in one of its high schools, finding the most efficient, cost-effective way to maintain all of that carpet was no minor concern.

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Moisture and Mold

"People don't think ten years out about the replacement cost of carpet. If they go in and mess it up with bonneting or wet extraction and have to replace it at half the life cycle... That's a huge number in a district this size or any district, any school for that matter." –Building Manager

Following the wet extraction/mold incident that prompted the search for a new way to clean and at the recommendation of their carpet mill, in 2000 Lee's Summit again gave HOST a try, for the first time since the 1980s. Principals pooled their schools' resources to buy the district's first HOST Liberator® extractorVAC® (eVAC®). Shortly thereafter, HOST was designated the all-district carpet cleaning system. The next year, HOST was put to the test. During a stretch of rainy weather, mold developed in carpet in an area of a school under construction that was inadequately sealed up. After removing the excess water with a wet/dry vacuum, HOST cleaning saved the carpet and eliminated the need for costly replacement.

The potential for moisture-related damage to school carpeting, a result of wet carpet cleaning or broken pipes/flooding or the incident above, is more common than might be imagined. In 2010 alone, Lee's Summit recorded broken sprinkler pipes in a school classroom and other broken pipe

related water incidents in three other schools. In each case, the excess water was removed with a wet/dry vacuum, fans were run to dry the area, and the affected carpet was HOST cleaned and restored with no residual staining or odor.

Staff with experience of both the old and new ways Lee's Summit has maintained carpet note the differences in cleaning methods.

"I prefer the HOST," said one building manager. "With wet extraction, there is the drying time and also the humidity issue in the classrooms. Especially when the night set back times are set back to 80 degrees!! The wet extraction also damages the carpet glue and then carpet has wrinkles in it."

"I have used wet extraction and bonnet carpet 'cleaning' methods. I prefer HOST over those methods," said another.

"When we used wet extraction here we had to wait until at least the next day for the carpet to

dry. Because of the moisture, we would run the AC continuously to prevent mold or mildew growth. It's hard to tell if you got a spot out until the carpet dries, so you could end up tying a room up for three days doing the carpet. Most of the time the spots would wick back anyway – very annoying," another explained.

Still, familiar ways of doing things die hard. While he has been exclusively HOST cleaning his school for the past five years, another building manager described combining HOST cleaning in selected areas with wet extraction for a few years before transitioning exclusively to HOST. Again, moisture related problems were the impetus for the complete switch.

"I don't think we switched to HOST because of appearance wise, I think we had good looking carpets all the way through. I think the reason we switched was the mold and mildew, just taking down the moisture in the building," he said.

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Training Makes the Difference

"Seeing bonnet and seeing extraction and the first round of HOST (the district's introduction to HOST in the 1980s) and back to extraction and then back to being properly trained with HOST, there's to me just no comparison." –District Custodial Supervisor and Former Building Manager

Lee's Summit designated HOST its district-wide carpet cleaning system nearly a decade ago. Committed to the district's success with the HOST process, their distributor, Pur-O-Zone, delivers the superior support to make that happen.

At the outset, the Pur-O-Zone rep demonstrated techniques to help Lee's Summit achieve the results it desired with HOST. Three years following the introduction of HOST, the district held additional training for all building managers and key staff. They then shared the techniques they learned with cleaning crews in the schools, such as the proper application of HOST SPONGES to prevent unnecessary overuse, which wastes money without improving cleaning.

Still, this tour of six Lee's Summit schools confirmed that even users who are getting excellent cleaning results using HOST can benefit from additional tips and training that will take their carpet maintenance to the next level.



For example, during its first seven years, one of the district's three high schools cleaned its 60,000 square feet of carpet on two levels with bonneting and wet extraction. For the past five years, the school's carpet has been HOST cleaned only. District inspection reports describe how the appearance of this carpet, much of it original to the building, has been restored to 100%. This is no small accomplishment, given a heavy schedule of activity in the building that limits the time crews can

devote to carpet maintenance and cleaning.

During our tour, the high school's building manager was well satisfied with the convenience of cleaning with HOST, "The HOST has helped in the summertime because of ease of being able to get back into the rooms faster. We don't have to wait a day for it to dry to throw stuff back in. We can have the guys go through and HOST it and as soon as they're done, they can start loading stuff back in."

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Although he uses HOST “99% of the time,” he did describe difficulties treating spots. This made him question the advantages of HOST versus wet extraction, at least for spot removal.

“In the past you would see a stain, you’d hit it with a wet extractor and it would go away... and then it would come back up. Now when you use the HOST, you know a lot of times because you’ve spotted it just in that area, you see HOST SPONGES that might stick in there because it’s too wet. So you’d get a little spot there a couple days until you vacuum

all the HOST SPONGES out then it disappears,” he said.

Still, the highly satisfactory appearance of the school’s now 15-year-old carpet proved that the manager and his cleaning teams were successfully removing spots with HOST. And HOST eliminated the wick-back following wet extraction that he recalled and which is typical of that process. Still, he needed to better understand how to use HOST for more effective spotting. The HOST representatives offered several suggestions:

- Thoroughly vacuum spotted areas with the Liberator eVAC

to thoroughly remove dirt and debris before doing any other spot treatment.

- Work spots with HOST SPONGES and the Liberator eVAC—and then thoroughly vacuum them up.
- In many cases, rubbing the spot with a microfiber cloth dampened with plain water or HOST Spot Remover will be sufficient to remove spots in areas that have been thoroughly vacuumed with the Liberator eVAC. We always use HOST SPONGES after to absorb any residues.



15-year-old carpet in a high school HOST restored, then HOST maintained for 8 years.

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HOST Cleaning for the Way You Work

"So we took the proper steps to make sure we got everybody educated, including ourselves, and it's been nothing but a success story, as far as I'm concerned, ever since." –Building Manager

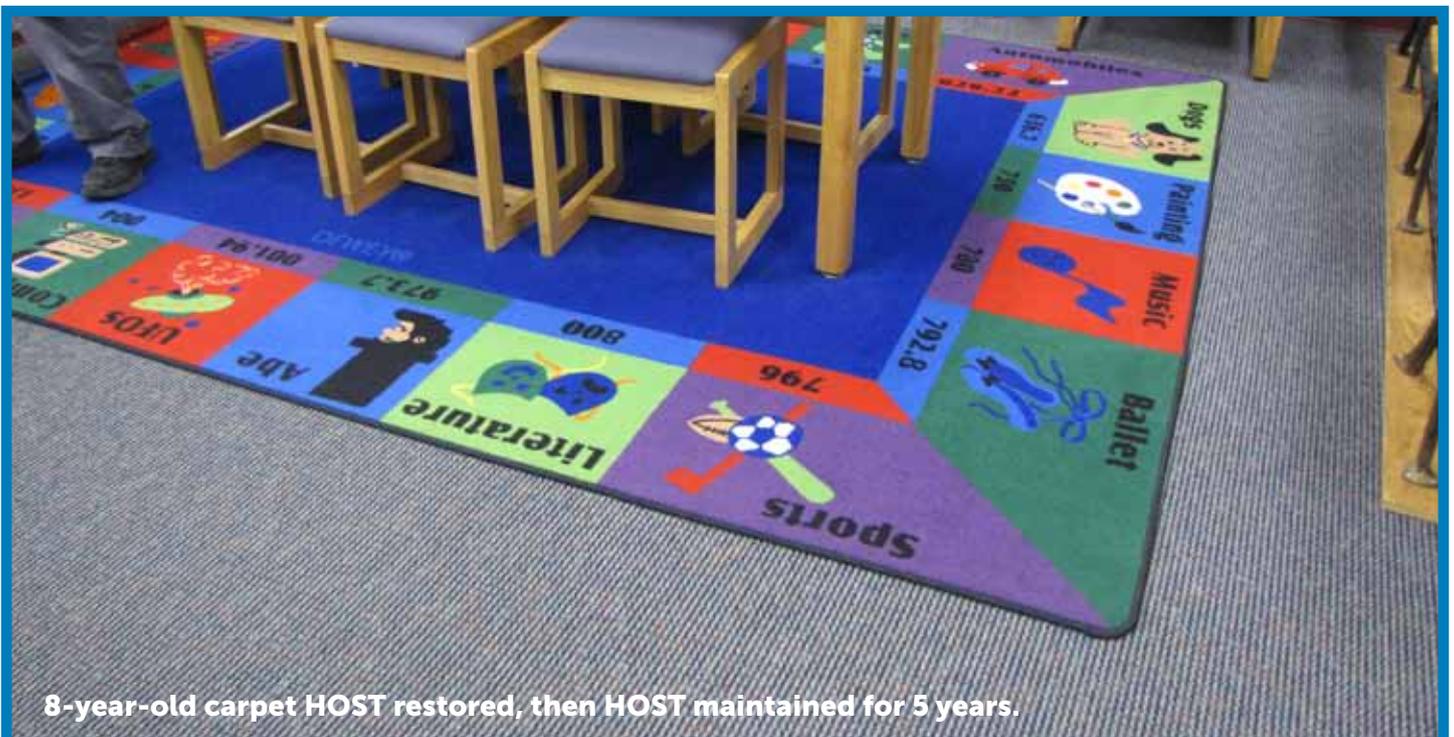
The dirtiest rooms in one elementary school, a nine-year-old building, are cleaned once annually using the Liberator, as directed by the school's building manager. Her crews also use the Liberator for vacuuming when cleaning spots. She describes their cleaning process, "We vacuum it first with the regular vacuum, and then we go over it. We put the spot stuff down first to see if that takes care of it, then come back with the HOST SPONGES and scrub it in. Like I said you

have to wait and then come back and vacuum it. Before we do that we'll take the HOST machine and vacuum it, like use the brushes, pile lift it and vacuum it up, then we'll put the HOST SPONGES down and use the spotter if necessary."

This building manager is pleased with the HOST cleaned carpets and with its convenience, "You pull it (the hopper) out and dump it in the trash. You don't have to run down to the slop sink, don't

have to wash it all out." But for this building manager, "The best thing about it is you can do the room and set right up without having to wait two or three days for it to dry. Wet extracting requires a long time to dry – a day or more for bonnet or wet extracting."

In another elementary school, another building manager follows a different process. Her crews pull the furniture



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in several classrooms from the carpet to the tile. She then spends 20 minutes removing spots and another 30 minutes per room cleaning with the Liberator as she was trained – vacuuming north, south, east and west. She discovered that if she lets the HOST SPONGES dry completely before vacuuming them up, they do not clog the elbow in the Liberator hose, and the machine itself stays cleaner. So, she likes cleaning several rooms with the Liberator and HOST SPONGES in the morning and vacuuming up all the dried material after lunch. “I like to do

one step and then go back,” she explained.

She appreciates how quickly HOST dries, compared to wet extraction, which required fans and a day or more of drying time. This was especially true during hotter weather when, as part of energy saving measures, the school’s setback temperatures at night went back to 80 degrees, keeping humidity levels in the school high.

One of the primary advantages of cleaning with HOST is being able to clean one side of a room,

return the furniture and complete the other side, because the HOST cleaned carpet dries so quickly. As HOST representatives, we thought this approach was unorthodox. However, it does work and easily fits the way she likes to work.

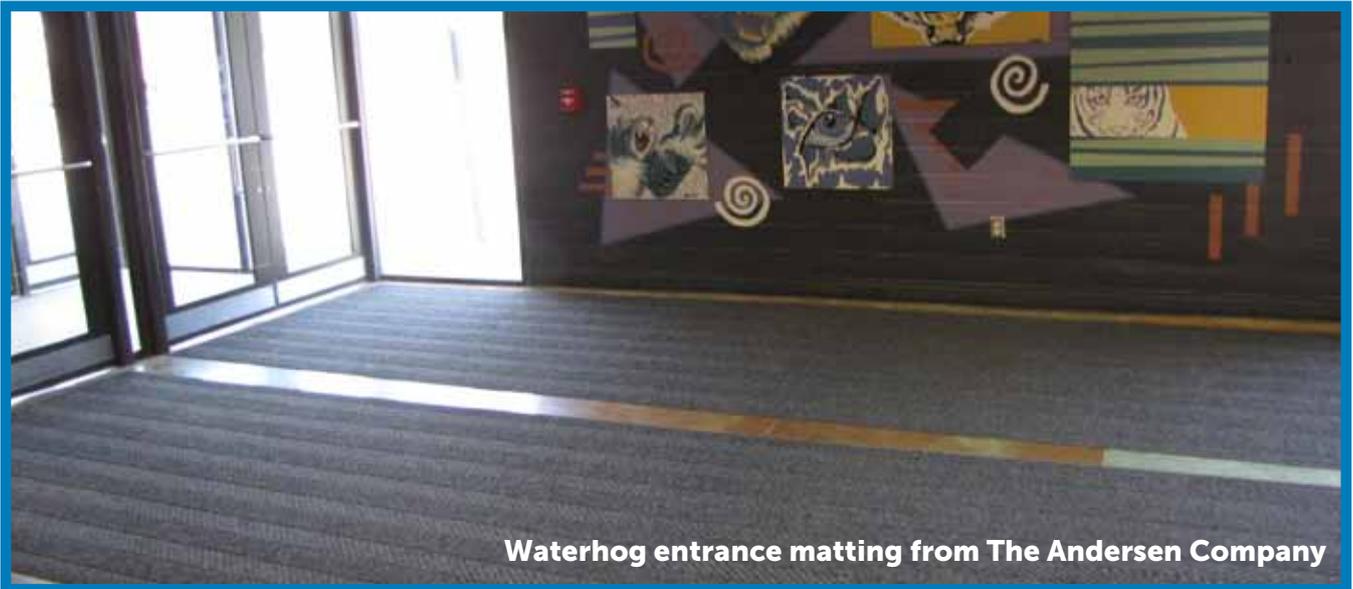
Despite the different approaches to cleaning, the carpet in these schools, as in the others visited for this case study, was extremely clean and well maintained. Both building managers were well satisfied with HOST.



CASE STUDY

Stopping Dirt and Debris at the Door

"It will clean up Waterhog quickly and efficiently whereas other vacuums will not." –Building Manager



From one Lee's Summit school to the next, the high standards of carpet cleanliness were apparent and overall, consistent. When a school's carpet did appear slightly less well maintained than the norm, the cause could be traced literally to its doorsteps.

The district is gradually transitioning from the thin matting, now rented for placement at building entrances, to heavy duty walk-off mats. Several Lee's Summit schools have installed Waterhog mats. While heavy duty construction makes this matting superior at trapping

dirt, debris (including ice melt used during winter months) and moisture, it also makes it difficult to remove with the typical commercial vacuum. Lee's Summit schools that use Waterhog mats at entrances report excellent results vacuuming their mats with the Liberator eVAC.

A Lee's Summit high school that installed the new matting also reported a 90% decline in slips and falls during inclement weather, preventing injuries to students and staff.

Lee's Summit is discussing ways to make the new mats

affordable, particularly in light of tight budgets. The district maintenance coordinator explained that while the district-wide budget for such purchases is limited, individual schools have their own budgets as well. She argues that eliminating the cost of mat rental will offset the expense, and the heavy duty matting will enhance the buildings and make them safer, as the dramatic decline in slips and falls at the high school seems to prove. "Plus, you're doing less cleaning everywhere else. It's all about keeping the dirt outside," she explained.

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Keeping it Green

Like those charged with maintaining clean, sanitary and safe facilities for school districts across the country, Lee's Summit is committed to using products that are safe for the environment.

In cases where suitable replacements for not-so-green have yet to be identified, state mandates have grandfathered in products that are already in use. When it comes to any new product – green or not – Lee's Summit is careful to test before making a purchase.

"We look for the Green Seal™ certified logo as well as read up on what's going on in the industry. We attend the ISSA Show and look at their recommendations. We look at the USGBC® LEED® program and go through just about any resource we can. We also study MSDS sheets. However, we won't purchase anything until we've tried it to make sure it works. No matter if it's 'green' or not," explained a district administrator.

Racine Industries provides Lee's Summit with a green product that is safe, effective, Green Seal certified, USDA



certified biobased and recognized as part of the EPA's Safer Detergents Stewardship Initiative.

Setting Standards

Clean carpet, like anything else, takes planning and effort. Lee's Summit sets standards district-wide that drive expectations for everything from how to clean hard floor to which vacuums to use and how they must be maintained.

The district's inspection program spells out a system of checks and double checks for quality execution of all custodial activities. Every elementary school building manager must inspect each

custodial responsibility once every two weeks. In secondary school, the check must be carried out monthly.

Expectations are always clear up front. No report can be completed unless an inspector walks through with the employee, points out issues, and offers the individual ways to correct them.

Building managers submit completed quality control reports to the district office. During evening hours, district managers inspect to verify the reports submitted by the school inspectors. And, as a final safeguard, a top manager will occasionally check to

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verify the accuracy of the district managers' inspections. These follow-up inspections confirm the results of the initial inspection or call attention to discrepancies.

The quality of the work for which an individual is reviewed must not fall below a threshold of 85%.

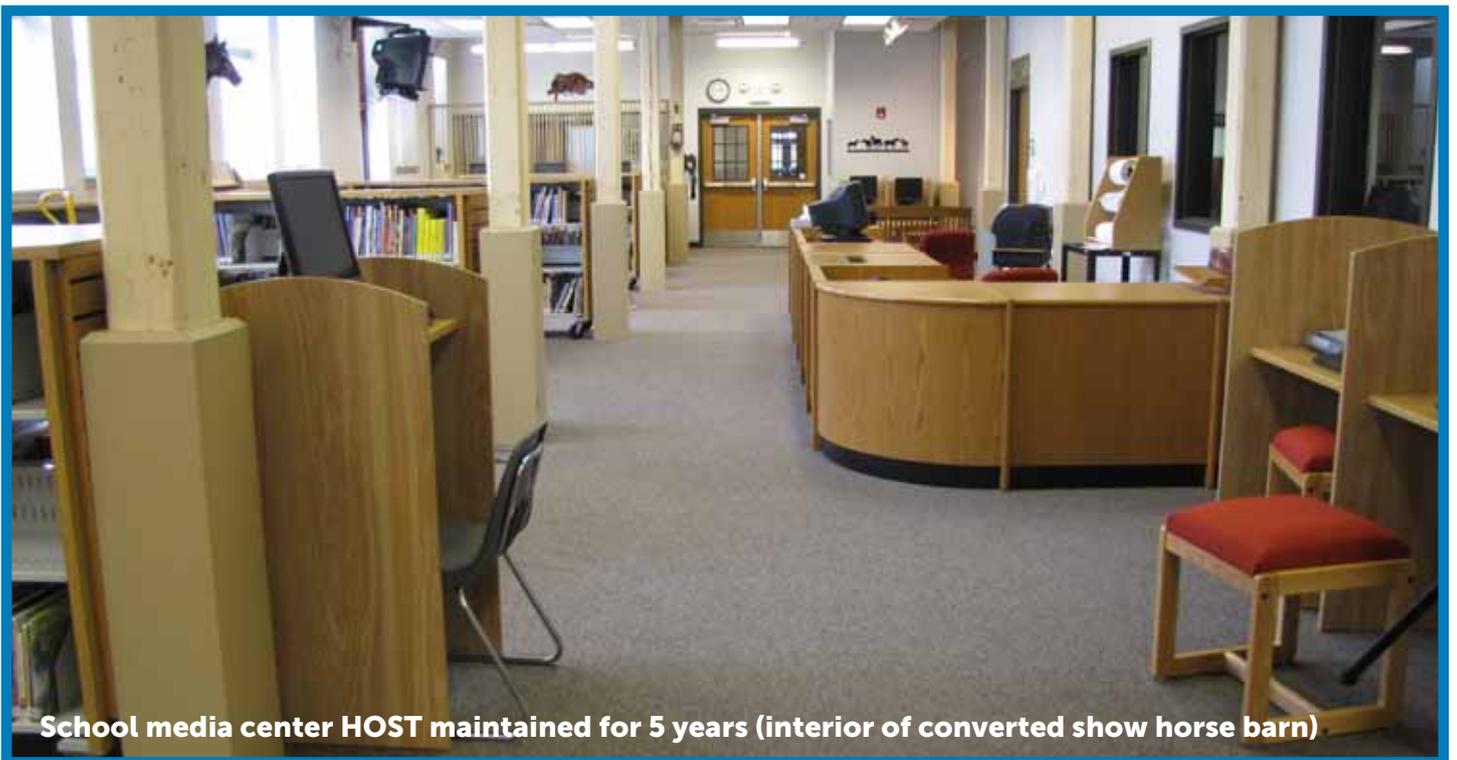
"When we hire a custodian, they're in a probationary period; that first 90 days is crucial. And we coach as we go, and we hate failures so we try to make sure that at the end of 90 days we've got a custodian that we can

work with and that can follow instructions. And if we don't, then we have to do what we have to do and move on," the district supervisor explained. "In the program's first year, 97% of employees scored 85% or higher on their quality reports. The year before the visit that produced this study, 99% scored at that level."

"We have a job to do and we try to make sure it's done and we check and we double check and we triple check...there could be maybe a potential for people to grade themselves higher than

they should. Or be a friend to a person they are checking on. Well our group is a small group so it's hard not to be a buddy. That's why we have to make sure we check behind the checker," the district manager explained.

District supervisors also set high standards for how schools must maintain their cleaning equipment. Crews know that the condition of the tools of their trade will be noted as a regular part of the inspection process, and they will be held accountable.



School media center HOST maintained for 5 years (interior of converted show horse barn)

CASE STUDY

Apples to Apples: Comparing HOST and Wet Alternatives

"We love the product (HOST). I don't understand why everybody doesn't use (it), I mean in this application, where the schools are so busy and time is of the essence." –Building Manager

The HOST tour of the Lee's Summit schools was an opportunity to visit with professionals who have extensive experience maintaining carpet with both wet methods and HOST. Given this history, we were anxious to know their assessment of how wet cleaning and HOST compare.

"It doesn't," a building manager told us. "On average it would take one hour and 20 minutes to complete a room. You couldn't pay me to go back to wet extraction. Or bonnet - especially bonnet. I don't know why that stuff is so popular but, just the torque on your wrists... and the adhesives and what it does to the bond of the carpet with the floor."

Lee's Summit building managers confirmed what we've heard from those who maintain carpet using HOST in other school districts and commercial facilities concerning the time-savings of using the HOST cleaning



process and our low-moisture cleaner: "We may save a whole day of work in the summertime...."

"I just want to say that I never want to go back to an (wet) extractor. They are worthless," offered another.

One high school building manager, while pleased with how well HOST cleaned the carpets in his building and with the performance of his trouble-

free and reliable Liberator eVAC, did have a concern – the cost of HOST SPONGES.

Based on the amount of HOST he reported using and the square footage of the carpet he was cleaning, the HOST representatives and his district managers calculated that the school's actual material cleaning costs amounted to a very reasonable **1.1 cents** per square foot per year. That's 0.7 pence per square foot per year.

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The building manager's misunderstanding was two-fold: he was comparing the price of a bottle of the solution used for wet extraction and the price of his 30 pound bucket of HOST SPONGES. He was looking exclusively at the price of materials without considering the full costs involved in clean: actual carpet cleaning time and labor, machine clean up time, energy consumed (to dry wet carpet), and that rooms with wet carpet are unusable sometimes for days while the carpet dries. The HOST representatives

helped the building manager understand the full cost of wet extraction compared to HOST cleaning. They also reiterated the importance of vacuuming with the Liberator eVAC to keep carpet clean, which minimizes the amount of cleaning material needed to maintain cleanliness.

Another building manager had this to say about the experience with HOST in his school, "I prefer the HOST System for the following reasons: little to no dry time; we don't have to worry about

summertime humidity creating a mold problem; the difference between a clean and a dirty carpet is visible after using the Liberator eVAC; the Liberator is easy to use and maintain; it does a better than average job removing spots; the HOST SPONGES smell good (to me at least); it will clean up Waterhog mats quickly and efficiently whereas other vacuums will not. Overall, it saves our school approximately 50 hours per summer clean up compared to using wet extraction."

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Conclusion

During our tour of Lee's Summit schools:

- We saw seven-year-old carpet, exclusively HOST maintained, 15-year-old carpet that had suffered the effects common to wet extraction, and everything in between.
- We noted an observable difference in the condition of carpet in schools using heavy-duty walk-off matting at entryways and those that do not.
- We saw very few spots and carpet that looked good,

clean and in excellent repair from school to school.

- We spoke with building managers who have incorporated HOST as part of their existing cleaning routines, and are pleased with the convenience of HOST maintenance as well as with the cleanliness of their carpets.

Anxious to improve already solid results, district supervisors invited our comment and critique even as they graciously shared the details of their

system with us. We noted where additional Liberator eVACs—particularly in schools where crews must clean carpet on two levels or spend more time vacuuming with the Liberator eVAC overall—would improve the appearance of carpet.

This school district in the "Show Me" state showed us what's possible in carpet maintenance when you are committed to superior results, open to better products and procedures and hold people accountable.

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