

A worker wearing a yellow hard hat and a high-visibility safety vest is shown in an industrial setting. He is pointing at a control panel on a piece of machinery with his right hand while holding a tablet in his left hand. The tablet displays a software interface with various data points and charts. In the foreground, another tablet is shown, displaying a 'Request Work Order' form with fields for requester, request type, priority, and a description. The background is filled with industrial equipment, pipes, and machinery, suggesting a factory or maintenance environment.

MasterLibrary

From Assets to Actions

A practical guide to building a digital Preventive Maintenance program


K12 Facility Directors are faced with a range of challenges everyday. Supporting and sustaining aging buildings with limited budgets and resources can be hard enough. But K12 facility professionals have additional responsibilities when it comes to safety, security, community feedback and regulatory compliance.

With so many different aspects of the job to juggle, building predictable processes for the maintenance of the building and its assets is essential. This guide is intended to help facility directors build a preventive maintenance program that is practical (not theoretical) with real tips and ideas.

We might be biased at MasterLibrary, but to us it all starts with facility maintenance software. Your team must move from paper notes or personal recall to a digital platform to automate your routine tasks, document your team's work on an asset and plan for your future budgets.

A woman with brown hair, wearing a light blue button-down shirt, is looking at a tablet computer. She is standing in a server room, with rows of server racks filled with equipment and cables visible in the background. The lighting is blue and the overall tone is professional and technical.

Increase system performance and usable lifetimes with regular Preventive Maintenance of technology assets including equipment spaces and racks, controllers, and endpoint devices.



Reduce Work Order completion times and service-call durations by digitizing your district's floor plans and facility assets.

Benefits

There are a lot of reasons why school districts don't want to get started with digitizing their assets and PMs. In the short term, it's hard to see the benefits when there's seemingly a long upward climb to get started. And it's easy to feel overwhelmed on knowing where to start. We will address these legitimate concerns in a later section, but here are some key benefits districts realize when they do invest in a digital PM program. Think about how these would make your life easier today.

Equipment reliability and longevity

By conducting regular inspections, servicing, and proactive repairs, preventive maintenance ensures that equipment and assets function optimally. This approach minimizes unexpected breakdowns, reduces wear and tear, and extends the useful life of equipment and systems. Consequently, it reduces the need for costly emergency repairs or premature replacements.

Cost savings

Preventive maintenance often leads to substantial cost savings in the long run. Regular upkeep prevents major malfunctions, reducing the likelihood of reactive repairs or replacements. It also helps in controlling operational costs by improving energy efficiency and reducing resource wastage. This, in turn, helps take surprises out of your annual budget, smoothing over your expenses from year-to-year.

Improved safety and compliance

Regular maintenance checks ensure that equipment meets safety standards and regulatory requirements. This contributes to a safer working environment for students and employees. Compliance with safety regulations also minimizes the risk of accidents and potential legal liabilities.



Eliminate the need for technicians, staff, and contractors to sort through storerooms of paper documentation with a secure cloud-based Facility Management platform.

Better planning and resource allocation

A structured preventive maintenance program enables better planning for both short-term and long-term facility needs. With scheduled maintenance tasks, managers can allocate resources, such as staffing/labor, materials, and budget, more effectively. Predictable maintenance schedules allow for improved budget forecasting and resource management.

Environmental impact reduction

Properly maintained equipment consumes less energy and resources. Preventive maintenance helps in identifying and fixing issues that lead to energy inefficiencies, reducing the facility's carbon footprint and contributing to sustainability efforts. We are seeing this become more important in school districts where environmental issues are important in the community.

Improved community satisfaction

Maintaining a facility at its best reflects positively on the community and school district. It creates a positive image, instills confidence in stakeholders, and enhances the teacher and student satisfaction. A well-maintained facility indicates professionalism, reliability, and a commitment to quality.

While short term investment of time to get PMs into the system provides long term improvements/efficiencies, adopting a more rigorous PM process seems daunting, in the long term it proves its value. The amount of labor hours you save and the amount of additional utility you can add to your assets by extending its useful life is worth it. It's a proactive strategy that ensures a facility operates at its peak potential while minimizing risks and maximizing its lifespan.

Leveraging Facility Maintenance Software

The most effective way to implement a preventive maintenance program is to first implement a facility maintenance (FM) platform, often referred to as a CMMS (Computerized Maintenance Management System).



We have found that most school districts do not have a need for an enterprise level CMMS system. They come with a lot of features that you'll never use, a high price tag, and a rigorous onboarding and training program. Instead, we recommend choosing a solution that is scalable for your needs but easy to use—making adoption with your team frictionless. The right solution should support you throughout a building's lifecycle—from planning, to building and ultimately managing the building's assets. Your software can become the source of truth for all your assets in this case; allowing your team to reference information based on the full history of the asset and make data driven decisions based on that context. Here's how a facility management platform can help support your efforts.

PMs

One feature of a FM platform that has the most impact on both admins and staff is the preventive maintenance module. At the admin level, it's for peace of mind that important maintenance routines are being performed consistently to get the most out of the equipment. Using a PM procedure template makes sure that maintenance checks are being performed on time and with repeatable steps so that nothing gets missed and assets are checked consistently, regardless of the staff/team member that is performing it.


From a tactical standpoint, PMs logged in a FM platform ensure that there is a forever- audit trail. It holds documentation showing when and by whom an inspection was performed, all while keeping the documentation easily accessible from the system. This is valuable both for longevity of assets but also liability purposes. Being able to prove that a safety inspection was performed with the proper steps can save lots of headache in the event that something happens.

Warranty documentation

Never miss out on another warranty opportunity. Sometimes warranty claims are not submitted due to lack of documentation. When they can prove that maintenance was performed at the suggested intervals it's easier to submit the claim on a big ticket item. Additionally, having the warranty documents linked to the assets allows for easy recall and reference to the dates of coverage. A digital platform seeks to replace your binders and folders that contain this information today and move them to the cloud where they become searchable and tied directly to the assets in your system. This saves a considerable amount of time manually searching for your warranty information.

Staff training

Leverage your asset data, stored O&Ms, PM procedures to help train new staff and ensure consistent workflows. Schools in particular are struggling with staff retention. It's critical that districts do not lose historic knowledge with staff turnover. Make sure that important details are logged in your digital platform at the building and asset level to make training new staff easier.



Due to their high usage and costs, HVAC systems have some of the quickest and easiest Returns On Investment (ROI) of any Preventive Maintenance procedures.

Getting Started

Assuming you have a facility management platform in place, the next step is actually the hardest step—getting started. We recommend a crawl-walk-run approach when it comes to getting a PM program in place. Pick a small subset of assets to start... whatever will have the highest return on value for you and your district. Some starting points to think about:

High maintenance assets

Assets that have to be maintained on a quarterly or monthly basis.

Assets you can self perform


You won't get as much value if you chose assets that you outsource maintenance on. Typically those assets will have documentation from the vendor. Choose assets that your team owns.

Assets that are expensive when they fail

Examples include rooftop units, large boilers, building wide circulation systems.

Assets with serviceable parts

Assets with serviceable parts like filters, belts and bearings.



Ensure facility assets subject to regular inspections—water fountains, fire extinguishers, AEDs—are all part of an automated PM software solution.

To take it a step further, we've created our top ten list of assets to start with that have the highest value add. Start with one, a few or all of these to begin building your PM program.

AEDs

More attention recently has put on Automated External Defibrillators inside of school buildings. This is another critical life safety asset, like fire extinguishers, that makes sense to start building a robust audit trail of inspection and checks. Most AED units require annual battery and pad replacement. AEDs are also critical to document from a safety planning awareness standpoint.

Tip Having a digital floorplan where AEDs are clearly marked can make all the difference in times of emergency.

Drinking fountains

Drinking fountains are an easy asset to start with because every building has them and they require regular lead tests and filter changes.

Fire extinguishers


Fire extinguishers are another easy asset to start documenting digitally. Most districts require monthly inspections, annual replacements and re-certifications. They are easy to set up PMs for because they have multiple recurring schedules. It is also very valuable to have a more robust audit trail of inspections and checks in your system.

Air handlers

Here's an easy asset that every building has. Air handlers require regular belt and filter changes and they are simple to go around and check. Setting up PMs for all of your air handlers might seem tedious at first, but once they are in place, they are easy to manage and update.

Rooftop units

Rooftop units are expensive assets for your buildings and are a good option to start tracking for that purpose alone. For critical assets, getting them on a digital PM plan will ensure you are focused on the proper care of those assets to get the most out of them. Start with regular filter changes, annual inspections and connecting any warranty documentation to those assets and build from there. It is always worth interviewing your team to log any additional insights they have on these units as well.



Plumbing systems including boilers, sump pumps, and water tanks benefit from automated Preventive Maintenance due to the immediate threat of water damage.

Unit ventilators

Another asset that requires regular filter changes. Getting your unit ventilators on a regular PM schedule can be an easy win for you and your team and increase classroom comfort.

Emergency lighting

We put emergency lighting on the list because it's one that requires regular battery changes and inspections. It's also important to document the locations on a digital floor plan.

Electric breaker panels

Breaker panels are probably not top of mind when you think of PM schedules, but just think about how important they are to your building. They are critical. And they are an easy one to start documenting for. Locational awareness is key. In school buildings breaker panels can be hidden in closets and rooms and not always in obvious places. Documenting where they are, especially when third parties need access to them, is the first step. Create a PM to make sure electric panels are kept clear so you don't fail an inspection.

These are some suggested starting points that will hopefully take some of the guesswork out for you on where to start. Make a plan to incorporate all of these assets into your PM system over time. Remember, you and your team are most likely already creating a manual log of these maintenance tasks but they are not tied to anything. When you tie your asset via a digital platform, you will begin to see a history and “story” of the asset—helping your team better diagnose and service it and helping you better plan for the long term budget of your assets.

Sump pumps

This is another high-value asset you should put on your list. Sump pumps are not expensive assets per se, but when unexpected failure happens with them it can be very costly. For example, that new \$20k gym floor your district put in last year can be ruined if you have a sump pump failure. Take the time to add your sump pumps to your PM schedule to regularly check and clean them out. It could save you thousands of dollars and downtime and major headaches if they are ignored.

Technology head-end equipment

Depending on your district this could be outsourced or something manage in house in tandem with your IT team as your technology assets converge in your building. Examples of your technology equipment include the PA system, Phones, WAN, Phone DMARC, Security, Fire Alarm, Access Control, and Video Surveillance. It's important to have a plan to capture all of these assets and regularly check them.

Creating Processes that Stick

Implementing a new process at your district involves a proactive and ramped up approach. Follow the process below to optimize your transition to a digital PM program.

Planning

Your first step is defining the objectives of this process, outlining the steps and setting realistic timelines. Typically the objective is to get your asset data into a digital format to reap all of the benefits listed in section one. We strongly suggest starting with a small subset of assets and slowly building more and more into it as your team gets more comfortable.

Communication

This is often overlooked or under-emphasized, but really important as you take your team through this process. Clearly communicate the reasons for the change, the benefits (including the direct benefits to team members) and how it aligns to your facilities strategic goals. Address concerns and involve stakeholders early on in the process.

Finding your champions

There will be folks on your team resistant to change and others that are more excited about it. Anticipate the resistance, but focus on the people that are embracing the change. They can be your champions to the rest of the team. They are going to help you implement your process with less friction and can be more hands on with the people resistant to change. Give them extra recognition and support to motivate them to keep pressing on with the change.

Training and support

This is critical when adopting a new platform, on top of implementing new PM processes. Be sure to provide step by step training on the software and go through common use cases that the team will use the software for. Next, provide training on your PM process and how you would like your team to perform PMs that are in the system. By using software, you can ensure standardization of the PM through procedures, no matter who on your team is performing the PM. Don't be afraid to reach out to your support team for assistance.

Monitoring and evaluation

Continuously monitor the progress of the new process, gather feedback, and make adjustments as needed. Evaluate its effectiveness against predefined goals.

Celebrating milestones

Once you have your first set of PM's up and running, be sure to acknowledge this as a milestone. It's important your team realizes the value they are creating for your district through this process. Set up PM goals over the course of a month, semester or year and track progress.

Sustainability

In the long run, be sure your process is sustainable and effective. Develop feedback loops and listen to your team on ways to improve. Remember, the hardest part is getting started. Once your assets are on PM programs, it will make your team's job easier than before.



How MasterLibrary Can Help

MasterLibrary offers a full suite of facility management solutions to the K12 space. Below are select products and services that apply to this guide.

WorkOrders Facility Maintenance Software

ML Work Orders is a user-friendly work order management system geared towards the K-12 facility space that offers everything you need to easily and efficiently manage your maintenance work orders, assets, inventory, and preventive maintenance schedules. ML Work Orders handles both facility and IT-related work orders to save time and reduce expenses while decreasing service-call response times and durations.

masterlibrary.com/products-modules/ml-work-orders/

Schedules Facility Request Software

Our all-in-one facility scheduling, rental, and reservation software for schools. Paper-based documentation is now a thing of the past. Staff and community satisfaction is improved with integrated invoicing and real-time reporting provided securely anytime via a web-enabled device. Processing times are cut from weeks to minutes and expenses are recovered much quicker.

masterlibrary.com/products-modules/ml-schedules/

Drawings Interactive Floorplans

ML Drawings is asset tracking software that provides the quick and easy way to access, edit and customize your floor plan drawings. Our DIY asset mapping tool enables you to build a dynamic, graphical view of your assets by location and type.

masterlibrary.com/products-modules/ml-drawings/

MasterLibrary PROFESSIONAL SERVICES

ML Pro Services offers our facilities and technology specialists act as an extension of your district staff to help leverage all the benefits of our software applications quickly and easily. Return On Investment is typically measured in months with extended systems usability, more efficient service and maintenance, and improved capital planning.

masterlibrary.com/services/

Get critical facility assets surveyed with a Professional Services Asset Survey

The following asset types are surveyed onsite by ML Pro Service providers as part of the Standard Assets package. These asset types typically will get the most value from automated PM procedures in ML Work Orders as they require regular inspections for maintenance and/or to reduce liability. Other asset types not listed here can also be surveyed; ask for details.

SYSTEMS		ASSET TYPES	
ARCHITECTURAL	Exterior Doors	Roof Access	Roof Drains
	Overhead Door	Elevators	Partition Walls
ELECTRICAL	Generator	Electric Meter	Electrical Switch Gears
	Emergency Lighting	Transfer Switch	Transformers
	Electric Breaker Panel	Exit Lights	
FURNITURE, FIXTURES, AND EQUIPMENT	AED	Playground	Knox Box
	Bleachers - Interior	Eye Wash Station	First Aid Station
	Fire Extinguisher	Ansul System	Hood
	Kitchen Equipment	Bus Garage Equipment	
MECHANICAL	Boiler	Expansion Tank	Unit Ventilator
	Cabinet Unit Heater	Tank - Heating	Unit Heater
	Chiller	Fuel Tank	Rooftop Unit
	Condensing Unit	Gas Valve - Main	Makeup Air Unit
	Air Handling Unit	Pumps	
	Exhaust Fan	Split Units	
PLUMBING	Air Compressor	Gas Meter	Drinking Fountain
	Sump Pump	Fire Dept. Connection	Water Meter
	Backflow Preventer	Water Softener	
	Hot Water Heater	Water Valve (Main)	
TECHNOLOGY	Network Rack	Door Entry Intercom	Lockdown Button
	Fire Alarm Control Panel	Security Video Camera	PA Speaker (exterior only)
	Card Reader	Blue Light - Lockdown	



Extend systems' lives with digital PM procedures

Once your facility assets are surveyed, ML Professional Services staff will setup related Preventive Maintenance procedures in your ML Work Orders account.

These PM procedures use industry-standard, step-by-step process procedures to assist in the compliance of product service, warranty, and other needs. We can then work with you to get the PMs assigned to specific staff or contractors at required service intervals.

Automating your Preventive Maintenance Work Orders helps extend systems' lives, increases uptime, and improves building tenant satisfaction.

Step-by-step inspection and maintenance procedures help ensure that work is reformed according to industry standards and warranty requirements.



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