WHAT’S INSIDE

1 Introduction

2 Chapter 1: Digging Through Data

4 Chapter 2: Audits vs. Inspections

7 Chapter 3: Breaking Down Budgeting Barriers

12 Bonus Resources
INTRODUCTION

Implementing a preventive maintenance model in a facilities department can be challenging, even for the most seasoned facility professionals. Many times facility teams are so overloaded with reactive, last-minute maintenance and repairs they can hardly breath, let alone think about tackling more proactive maintenance. This often leads to plans for a preventive maintenance strategy falling on the back burner.

To break the reactive cycle, facility teams need a series of tools to effectively strategize for their department. But the tools needed to set a preventative maintenance plan in motion can’t be found in a warehouse or garage.

Preventative maintenance plans require a repeatable three-step system to be effective.

For this reason, we’ve put together the Facility Management Preventative Maintenance Guide. Inside you’ll find a combination of easy-to-understand information paired with free tools and resources to use in your own department.

Specifically, you’ll be introduced to:

- **Digging Through Data**
  Why finding the right facility data is the first step that building managers should take when preparing to implement a preventative maintenance plan
  
  See page 2-3

- **Using Audits vs. Inspections**
  How facility audits and inspections are different, how they can be used, ways to document them in a facility management software and why they can help your team provide safer, more accessible spaces for occupants
  
  See page 4-6

- **Breaking Down Budgeting Barriers**
  Ways to structure and communicate a facility management budget to leadership teams so they are more likely to fund your projects
  
  See page 7-11

After reading this ebook, you’ll be ready to kick off your own departmental strategy that will benefit both your buildings and team. So sit back, relax and bask in the fact that this time you won’t need to physically make a pitstop to pick up your toolbelt.

We’ve got you covered.
Preventative maintenance plans don’t just focus on the upkeep of certain assets. Work orders scheduled for the future, while a part of the proactive puzzle, won’t fully unlock the potential of a preventative strategy. Instead, a successful preventative maintenance plan requires work upfront before it can truly be implemented.

Before implementing a plan, facility teams should always analyze the portfolio of buildings that need to be effectively managed. Because of this, facility teams need to prioritize collecting, organizing and understanding any building data that has accumulated over the history of the facility.

**Pre-Preventative Maintenance Strategy**

**Collecting and Organizing Data**

The first step to take before implementing a preventative maintenance plan involves examining buildings and their assets. To do this, facility managers should start with finding a way to walk each facility to update floor plans. This step can require a lot of work, so it’s important that building managers strategize about the best way to complete this task.

**External Collection Process**

Many organizations don’t have the overhead available to assign building teams to updating and validating floor plans and asset information. Companies like AkitaBox specialize in collection and validation services to alleviate internal workload stress. This comes in useful for facility teams, especially when:

- Floor plans are not in a digital format
- Floor plans are not up-to-date
- Floor plans are not available at all
- Staff does not have time to walk buildings themselves
- There is a deadline to collect and upload data
- Facility software has missing data sets

In most cases with the right partner, these data collection services can be completed by a partner in less than 90 days. This gives facility teams the opportunity to incorporate a preventative maintenance plan faster and with minimal interruptions to every day operations.

**GUIDE TIP**

Does outsourcing the data collection process sound like the best method for your organization? Find out more about AkitaBox’s data collection and implementation process [here](#).
Internal Collection Process

If facilities are small enough and staff bandwidth is available, facility teams can walk the vicinity and update information on floor plans themselves. This method requires that floor plans be up-to-date for the most accurate results. It’s important to note that if this process is conducted in-house, staff is given specific instructions on what information to collect so that the process focuses on what’s important to document and doesn’t become overwhelming. To do this, assets should be given priority. There are a number of key data points that should be collected.

<table>
<thead>
<tr>
<th>Identifiable Asset Information</th>
<th>Asset Location Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Asset Name</td>
<td>□ Building Name</td>
</tr>
<tr>
<td>□ Category (HVAC, Plumbing, Electrical)</td>
<td>□ Floor</td>
</tr>
<tr>
<td>□ Type (Air Compressor, Boiler)</td>
<td>□ Room Name and Number</td>
</tr>
<tr>
<td>□ Manufacturer, Model and Serial Number</td>
<td>□ Specific Location on Floor Plan</td>
</tr>
<tr>
<td>□ Photo of Asset, Name Plate and Surrounding Area</td>
<td></td>
</tr>
<tr>
<td>□ Condition</td>
<td></td>
</tr>
</tbody>
</table>

Understanding Data

The data that is collected during a walkthrough of a facility portfolio is only useful when interpreted the right way. The data that is collected onsite during a walkthrough should be imported into a facility management software that can record the data, create work orders for future repairs on assets collected and ultimately schedule preventative maintenance planning tasks.

In a 2018 survey conducted by AkitaBox, 56% of facility managers reported using a computerized maintenance management software (CMMS). But almost 40% of respondents also said they have considered switching their solution because it wasn’t the right fit. Preventative maintenance plans are directly tied to the usability and efficiency of the right CMMS. If a CMMS doesn’t process the data in a way that’s easy to understand, most preventative maintenance plans stall.

Instead, building teams should invest in a facility management software that provides two ways to interpret data: a comprehensive list view and a visual-based map of buildings and their assets. List views give staff an easy way to filter through assets quickly, and this can expedite processes like inspections. However, a visual map of facilities can tell custodians, maintenance technicians and even contractors where they need to go and equipment they need to bring before stepping foot in the facility.

**GUIDE TIP**

Are you already using a CMMS or comparing a number of solutions?
Download our free Key Features Checklist to make sure your software works for your team.
After initial data collection has been completed, the next step facility teams should take on a proactive journey is auditing and inspecting their buildings using the records that were just collected. Audits and inspections are critical to keeping a facility operating safely and efficiently, but staff need to know how to correctly use the two.

Audits and inspections are typically used interchangeably in the facility management industry, so it can be confusing when trying to understand what each means and how to use these tools properly.

In the maintenance industry, there is one main type of auditing and three main types of inspections.

**Differentiating Between Audits and Inspections**

**Audit**
A technician takes an inventory of assets, spare parts, space or other variables to identify what does and does not exist.
*Example: A space audit can be conducted to verify floor plan dimensions.*

**Internal Inspections**
A facility technician goes through the facility inspecting all fire extinguishers. They document any issues and create work orders to ensure follow-up is completed.
*Example: An electrician goes through the facility at night to do a lighting audit. They document any issues and schedule work orders to ensure follow-up is completed.*

**Third-party Inspections**
A third-party building inspector or local compliance officer does an unofficial walk through of a building to document any hazards and compliance issues. Some inspectors also provide a condition report, used for preventative maintenance planning.
*Example: A new facility manager is hired and wants a compliance report to help with the documentation and prioritization of projects. They hire a third-party inspector for an evaluation.*

**Regulatory Inspections**
A government agency does an official evaluation of the building and reports what is and is not compliant. Any problems identified must be addressed.
*Example: The Joint Commission surveys a healthcare facility, and they document areas of non-compliance. At the conclusion of the survey the facility manager works with their team to quickly address any outstanding issues.*

Scheduling and conducting an audit or inspection incorrectly could lead to safety and efficiency measures being missed. To mitigate confusion, use the guide below that shows an easy breakdown of which term should be used.
**Audits**
Are they required? **No**
Conducted how often? **As Needed**
Who conducts? **Internal Staff**
How are they formulated? **Checklist**

**Internal Inspections**
Are they required? **No**
Conducted how often? **As Needed**
Who conducts? **Internal Staff**
How are they formulated? **Checklist**

**Third-Party Inspections**
Are they required? **No**
Conducted how often? **As Needed**
Who conducts? **Contracted Inspectors or Government Officials**
How are they formulated? **Written Report**

**Regulatory Inspections**
Are they required? **Yes**
Conducted how often? **Varies by Facility**
Who conducts? **Government Officials**
How are they formulated? **Written Report**
While most facility managers understand the importance of internal and third-party inspections, they typically dislike regulatory inspections because they can generate more work, result in fines and point out costly problems. But, remember to keep inspections in perspective. They are designed to keep facilities safe and accessible for all occupants. The data and information the inspector provides is valuable and can be used to:

- Understand the nuances in what the inspector is looking for so the facility management team can be better prepared for next year
- Provide constructive criticism so occupant safety is ensured and problems are not repeated
- Develop a foundation for discussions on future improvements or projects

After an inspection, there will most likely be a list of ideas to address. The best way to keep these organized is to create work orders in a facility management software and monitor their status. Once all of the issues have been addressed, the inspector may have to return to verify the fixes, so having proper documentation makes the review quicker. For future reference, the inspection report should also be stored in the facility management software or dedicated inspections software and linked to the building.

**Preparing for Inspections**

Inspection violations can have long-term consequences if a facility is not up to par, so it is important to be prepared. Facility teams should be prepared to:

- Provide the inspector a list of assets including all makes, models and installation dates. This list can be easily downloaded from a facility management software and can help the inspector provide a more accurate condition report.
- Walk the facility and grounds to look for any potential compliance infractions. An easy way to do this is by following the Inspection Preparation Checklist.

Keeping facility information, documentation and data organized helps ensure facilities stay compliant as buildings evolve to meet occupant needs. Whether a facility is expanded, remodeled or moved, a facility management software can help teams stay organized as they navigate these requirements.

*Disclaimer: Inspection regulations may vary by state and industry, please check with your local agency for additional details.*
A preventative maintenance plan requires planning to stay up and running. Preventative maintenance plans require a balancing act of staff work hours, asset repairs and replacements. For this reason, it’s essential for preventative maintenance plans to include budgeting.

Before crunching numbers, there a number of fiscal terms that facility teams will need to familiarize themselves with. Using the correct terms will not only affect the cost of maintenance, but can also directly impact hiring and staffing.

**Budgeting Terms and Definitions**

**Allocation**
A certain amount of funds are designated for a specific expenditure or project.  
*Example: An air handling unit needs to be replaced the next year and a certain amount of funds are set aside.*

**Appropriation**
Money set aside with a specific purpose in mind.  
*Example: An amount of money is budgeted to replace a boiler.*

**One-Time Cost/Fee**
An expense the organization only pays for once.  
*Example: The facility department purchases a piece of equipment, such as an air filter.*

**Profit and Loss (P&L) Statement**
A chart summarizing how the department managed its funds, including its original budget, revenue and expenses. Normally this is reviewed by leadership teams on a monthly, quarterly and annual basis.  
*Example: The Facility Director, VP of Operations and Chief Operating Officer get together each month to review the departmental spend.*

**Recurrent Costs**
Static expenses repeated throughout the year.  
*Example: Employee wages, software subscriptions and utility bills.*

**Reserve**
Profits or funds that have been appropriated for a particular purpose. Reserves are sometimes set up to purchase fixed assets, cover reactive maintenance or unexpected repairs.  
*Example: The Facilities Director sets aside $2000 each month for reactive maintenance projects.*
Steps to Creating a Budget

Creating a budget for a facilities management department is not an exact science, but taking the time to understand spending trends and budget for the future is critical to proactive maintenance strategies. To do this, there are nine steps to help get control of the facility budget.

1. Talk to Finance

Finance directors will have a budget range in mind for the facility management department. Talk with them before the process starts to see if any large increases or decreases. During budgeting season, finance will be the biggest help in answering questions about how the organization approaches spending and budget development.

If new to an organization or position, remember to ask:

- How does the budget proposal process work? What are my deadlines?
- What should I have prepared and what types of deliverables does the leadership team need to review?
- What factors will impact next year’s budget?
- What is our budget cycle?
- How do I account for capital improvement costs?
- How often are budgets reviewed?
- How do budget amendments work?
- If I have questions or want to talk to someone about my department’s budget, who should I connect with?

2. Research Past Spending

The easiest way to forecast next year’s spending is to look at previous years, including everything from staff time to office supplies. Get the full picture by connecting with a supervisor or finance director, as they should have records of:

- Staff wages
- Facility Maintenance Costs
- Technology and office-related expenses
- Repair, replacement and alteration expenses
- Capital improvement projects

Ideally, these records will be available for the last five years since capital improvement projects, staffing changes, technology rollouts and other one-time costs can artificially inflate budgets; for reference, the two largest expenses are typically energy costs and staffing.

3. Budget for Staff

Staff budgeting is the most consistent and predictable factor of a facility management department. Employee wages and benefits will typically remain static, and turnover does not usually disrupt the forecast. The most ambiguous variable is the amount of overtime hourly employees will document. Sometimes overtime can be predicted if a certain season or event is associated with more work and funds can be set aside, or a facility manager can typically work with their finance team to reallocate funds to cover this unexpected cost.

GUIDE TIP

Structure your own departmental budget with an easy-to-use spreadsheet. Download our free Facility Management Departmental Budget Template to get started.
4. Identify Future Facility Needs

Budgeting for future facility needs is done with a condition assessment. These reviews can be performed by an assessor or building inspector, and they typically provide a report that defines a building’s current state in terms of age, design and construction method. The data that is collected from the inspection should be immediately imported into the facility’s facility management software. Specifically, these reports should include:

- Documentation of structural problems, including photos
- Documentation of compliance concerns, including photos and recommendations
- Condition reports of assets, including photos
- Forecast of what assets will need repairs or replacement in one, five and 10 years

If a third-party inspection and condition assessment is not a possibility, the facility maintenance team can also do an internal inspection with the help of a facility management software. Using the facility management software, teams can:

Delegate Inspection Tasks

Split the workload of performing inspections between employees with work orders so they understand what assets they should be inspecting. Internal inspections can be time consuming for teams, but work orders make communicating the process more streamlined.

Map Asset Condition with Pins

Technicians can change the color of asset pins to reflect their condition. For instance, assets in good condition can be tagged with a green pin. If the asset looks like it will need to be repaired or the assets condition indicates it will need attention in the next five years, the pin can be turned yellow. If it needs immediate attention or to be replaced in the next year, it can be marked red. This visual assessment can be supported with photos and linked back to a specific asset pin.

Track Repairs and Degradation

In an ideal world, all budget proposals would be approved, but that does not always happen. When the budget for projects is approved, schedule work orders to complete the project, such as when to start requesting quotes, when the repair will take place and any internal inspection notes. If the project does not get funding, track the degradation of the space or asset so it can be easily communicated in next year’s budget meeting. Photos can also be taken and any relevant notes can be linked to the asset.

Store Inspection Reports and Proposals

Inspection reports are valuable to short- and long-term facility planning. Associate these assessments and proposals to a specific asset in the facility management software for easy reference.

5. Get Quotes for Repair, Restoration and Alteration Projects

Reach out to the facility’s preferred vendors as documented in the facility management software, and have them submit an estimate for assets and spaces needing repairs, restorations and alterations, ensuring a more accurate forecast. Use these estimates as a baseline for future request for proposal (RFP) submissions. Often times facility teams will skip this step and make their own assumptions, leading to overly-inflated repair and project costs.
6. Planning for Unexpected Expenses

Planning for the unexpected seems like an oxymoron, but it is critical in facility management. The best way to anticipate these costs is to create a reserve maintenance fund in case of emergencies. Typically, this will be categorized under capital projects, as can be seen in the budget template. If this fund is not used to pay for unexpected expenses towards the end of the year, look at allocating to an underfunded project.

Unexpected expenses are a fact of life, especially when operating a facility. Slush funds or reserved maintenance funds may not always cover those unexpected costs. How do you find help outside your organization? Look to local or state energy conservation initiatives for potential grants and purchase support. Most states, have at least one state-led initiative that offers resources and financial support to businesses looking at sustainable facility equipment.

**GUIDE TIP**

Some facility management software can use conditions saved in work orders to provide probability of failure data for more accurate capital planning. Check out Akitabox Capital Management to learn more.

7. Break Down the Budget

Combine all the research and start writing down each forecasted expense. Be prepared with justification for any cost increases in the form of quotations or condition assessments.

Here’s an example of a broken down personnel budget:

### Facilities Department Staff Budget Example

<table>
<thead>
<tr>
<th>Department</th>
<th>Title</th>
<th># of Employees</th>
<th>*Wage</th>
<th>**Total = # of Employees x Wage x 49</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering and Operations Staff</td>
<td>Director</td>
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<td>$65</td>
<td>$127,400</td>
</tr>
<tr>
<td></td>
<td>Manager</td>
<td>1</td>
<td>$45</td>
<td>$88,200</td>
</tr>
<tr>
<td></td>
<td>FTE Hourly</td>
<td>4</td>
<td>$20</td>
<td>$156,800</td>
</tr>
<tr>
<td>Safety and Environmental Staff</td>
<td>Director</td>
<td>1</td>
<td>$65</td>
<td>$127,400</td>
</tr>
<tr>
<td></td>
<td>Manager</td>
<td>1</td>
<td>$45</td>
<td>$88,200</td>
</tr>
<tr>
<td></td>
<td>FTE Hourly</td>
<td>2</td>
<td>$20</td>
<td>$78,400</td>
</tr>
<tr>
<td>Ground Staff</td>
<td>Manager</td>
<td>1</td>
<td>$25</td>
<td>$49,000</td>
</tr>
<tr>
<td></td>
<td>FTE Hourly</td>
<td>4</td>
<td>$18</td>
<td>$141,120</td>
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<tr>
<td>Custodial Staff</td>
<td>Manager</td>
<td>1</td>
<td>$25</td>
<td>$49,000</td>
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<tr>
<td></td>
<td>FTE Hourly</td>
<td>4</td>
<td>$18</td>
<td>$141,200</td>
</tr>
<tr>
<td>Benefits</td>
<td>ALL</td>
<td>24</td>
<td>$24,000 Quarterly</td>
<td>$96,000</td>
</tr>
</tbody>
</table>

*Wages based on average US hourly rates as of September 2020
**Hourly wage x 40 hours per week x 49 working weeks (accounting for vacation time and holidays)
8. Communicate Budgets with Examples

All organizations require different formatting and details in budget proposals. Look at previous facility management budgets and how other departments present their requests before creating the your proposal. Remember to consider the following potential problems prior to submission.

Leadership teams do not always understand how the buildings work and what effort is required to maintain the current building state.

Solution: Outline what the team has accomplished in the last year and how it impacts other departments. Things to highlight:

- Department’s employee structure
- Number of work orders and service requests completed last year
- Number of work orders or preventative maintenance tasks deferred due to staff shortage
- Number of square feet/acres the department maintains
- Facility Condition Index
- Major repairs completed and maintenance deferred

Most budgeting teams do not have a mechanical background or knowledge of required maintenance procedures.

Solution: Combine pricing research with a story about why the purchase is important. With every request, make sure to include:

- Asset location
- Asset age
- Standard asset life expectancy
- Asset/part/system needed
- Any warranties that could still be active or about to expire
- Photo
- Estimated replacement cost
- Asset or system’s purpose
- Recurring maintenance or mechanical problems
- Estimated value

9. Share the News

Keep your leadership in the loop with project status reports and a project closeout report. This will help reassure the team that the investment is being used appropriately and the timeline for incurred cost savings are being monitored.
4 — BONUS RESOURCES

For more information and tools on creating a preventative maintenance plan for your facilities, check out the resources below.

Free Facility Manager Resources

AkitaBox.com/resources

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calculator.AkitaBox.com

Find out how much a facility management software like AkitaBox could save you through easy access to information and more efficient teams.
About AkitaBox

At AkitaBox, we are revolutionizing building operations and facility management by empowering our customers with fast, accurate, and actionable data. Our robust, visual platform helps drive performance across hundreds of organizations in the higher education, healthcare, commercial real estate, government, and manufacturing industries.

Our suite of cloud-based software solutions helps teams simplify their operations, reduce risk, and solve their complex facility challenges. With an easy implementation process, customers can get quickly get access to their entire data set and solution.

For more information, visit akitabox.com.