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TECHNOLOGY

e-Book

A GUIDE TO BUILDING AUTOMATION SYSTEMS AND CMMS INTEGRATION

Contents

Integrate CMMS with BAS

Monitors and control the environment in your building

Why You Should Integrate Your Asset Maintenance Software with Your Building Automation System

If you're like other business owners, you're always looking for cost-effective solutions to your company's problems. Regardless of what type of business you own, maintaining the building that your company is housed in is a huge expense. It's important that everything in your building runs smoothly, and for that to happen, you need to make sure your building maintenance staff is performing at its best. While using asset maintenance software is a great option, when you integrate your asset maintenance software with your building automation software, it saves you a lot of time and money.

What is Asset Maintenance Software?

Asset maintenance software helps your maintenance team stay productive. The software is designed to reduce downtime, save you company money, and help you eliminate vast amounts of paperwork. With asset maintenance software you can:

- Monitor your company's equipment to catch problems before they arise
- Concentrate on preventative maintenance instead of costly corrective maintenance
- Ensure proper maintenance schedules are upheld for all your company's equipment
- Record and track tasks that are completed and any inventory items used
- Help you keep track of your inventory so that you know that you have important parts on hand and that you aren't storing or ordering items that you don't need
- Generate, distribute, and track work orders
- Analyze trends and spot reoccurring problems

Because it can monitor and analyze everything your building maintenance staff needs to take care of, your asset maintenance software is one of your company's most valuable tools. When you integrate your asset maintenance software with your building automation software, you'll be amazed at how efficient your maintenance staff becomes.

What is a Building Automation System?

Building automation software monitors and controls the environment in your building. When you have complete control over your building's environment it reduces your energy expenses, reduces worker complaints, reduces your maintenance costs, and simplifies your building's operation.

With a building automation system, you can:

- Control your heating, ventilation, and air conditioning systems
- Control the lights in the building
- Set alarms that notify your maintenance staff when problems arise
- Optimize the quality of the air in the building
- Analyze data to determine when you need more or less

By controlling the environment in your building, your employees are less likely to complain about uncomfortable working conditions, and creating a comfortable working environment also increases your employees' productivity. When you optimize the quality of the air in the building, you help prevent your employees from getting sick, so that they feel well enough to come to work. Maintaining a comfortable and efficient work environment is an important factor for any business, and when you integrate your building automation system with your asset maintenance software, you can use the same system to control your environment and ensure that all your company's equipment is running efficiently.

Save Money and Increase Productivity

When you integrate your asset maintenance software and your building automation system, your company's maintenance team has access to all of the information they need on a single system. Whether they are monitoring the building's temperature or analyzing how efficiently the air conditioner is running, it can all be done by using the same software. Because everything is completed using the same system, it's easier to train new employees, and the faster your new employees get up to speed the less money your company is spending.

Because integrating asset maintenance software and building automation system allows maintenance team to see all the information, they need to do their jobs in the same place, staff will become more productive. With the ability to see what work orders are in progress, what work orders are open, and what work orders have been closed, your staff can easily stay on task, and therefore their productivity will increase. Also, with a streamlined system in place, you won't need as many employees to get the job done right.

Integrating the two systems also saves your company money. The system will provide you with all the data you need to make your building run as efficiently as possible. You can set your system up so that the building is always at a comfortable temperature, put all your buildings lights on a timed schedule, and analyze how well your equipment is running so that you can avoid costly problems all with the same software.

Set Up an Alarm System

One of the great things about integrating your asset maintenance software with your building automation software is that you can set up an alarm system that automatically notifies your maintenance manager if a major problem arises. Because the integrated system is accessible via the Internet, your building manager can access the situation remotely and instruct the on-site maintenance team how to handle the problem. This way, problems are resolved right away and there's no need to wait for your building manager to arrive at the building before an important problem is resolved.

Keep Your Building Up-to-Date

With asset maintenance software and building automation system integrated, you can effectively monitor every aspect of the building and the equipment. You can track maintenance schedules for all your equipment to ensure that everything is running as efficiently as possible. When your equipment is running at its highest potential, it helps reduce your monthly energy costs, and it's less likely for your equipment to break or need repaired. Taking the time to integrate your asset maintenance software and your building automation system helps you streamline the entire process. Not only does it save your company money, but it helps increase employee productivity by keeping everyone on the same page.

BACnet enabled CMMS

Communication protocol for BAS

BACnet enabled CMMS

As buildings become “smarter,” they are becoming more communicative. Besides the automation side of these buildings, there are also increasing ways that buildings, assets, software, and maintenance teams are communicating back and forth.
While CMMS programs started as a good way to simply organized maintenance plans, they can now be a powerful resource for data, analytics, predictive maintenance, and notifying other systems and technicians about critical breakdowns, failures, and alarms. Part of what makes this communication possible is BACnet. BACnet is a communication protocol for Building Automation and Control (BAC) networks that leverage the ASHRAE, ANSI, and ISO 16484-5 standard protocol.

BACnet was designed to allow communication of building automation and control systems for applications such as heating, ventilating, and air-conditioning control (HVAC), lighting control, access control, and fire detection systems and their associated equipment. The BACnet protocol provides mechanisms for computerized building automation devices to exchange information, regardless of the building service they perform.

One important tool that BACnet can now communicate with is a CMMS. A CMMS previously generated work orders based on time or user identified breakdowns. With a BACnet system integrated into CMMS, maintenance teams can be automatically and instantly notified by BACnet enabled devices, which are running 24 hours a day.

Let’s say a motor pump fails or goes into a critical state. This information is picked up via BACnet and can then be sent to several other building systems. One system would be a CMMS, which when notified by BACnet, can automatically generate a work order with a list of procedures, replacement parts, and other information pertinent to the breakdown. And this information can be automatically emailed or sent to the mobile device of a qualified and available technician as soon as it occurs using the CMMS capabilities.

Besides just relaying immediate information, a record of these alarms is stored in the CMMS for important history data which can be viewed and analyzed through reporting, KPIs, and analytics tools. With this data you can predict future breakdowns, view trends, calculate cost history, and many other critical assessments of maintenance data.

Companies such as Johnson Controls, Honeywell, Siemens, and Schneider Electric are the leaders in Building Automation Systems (BAS) using BACnet technology and handle different strategies for different assets. A large campus or facility may use multiple BACnet programs. A good CMMS program can pick up information from multiple BACnet programs. That will limit the amount of downtime and increase reaction time to critical assets and processes.

The integration of BAS and CMMS offers several benefits to the smooth operation of the building:

- Immediate response to any alarm condition or critical alerts by a qualified technician.
- All details are available in the work order, so it minimizes wasted efforts and trips.
- The use of “run time” values minimizes the need for unnecessary preventive maintenance (based on the calendar only).
- Overall better utilization of maintenance resources, better equipment operating conditions, and satisfied tenants, all work towards making a building “smarter” and more efficient for the building owners.

The BAS – CMMS Connection

The combined software systems streamline building operations

The Building Automation System – CMMS Connection

Eagle Technology's Proteus CMMS (Computerized Maintenance Management Software) is the only solution with direct integration to virtually any BAS on the market. Building Automation System – CMMS Connection indeed. When a CMMS system is integrated with a Building Automation System (BAS), it will process alerts and alarms from the BAS and then incorporate them automatically into a standard work order process. The integration between BAS and CMMS is significant because they create a comprehensive tool that leads to better smart building management, energy reduction and cost savings.

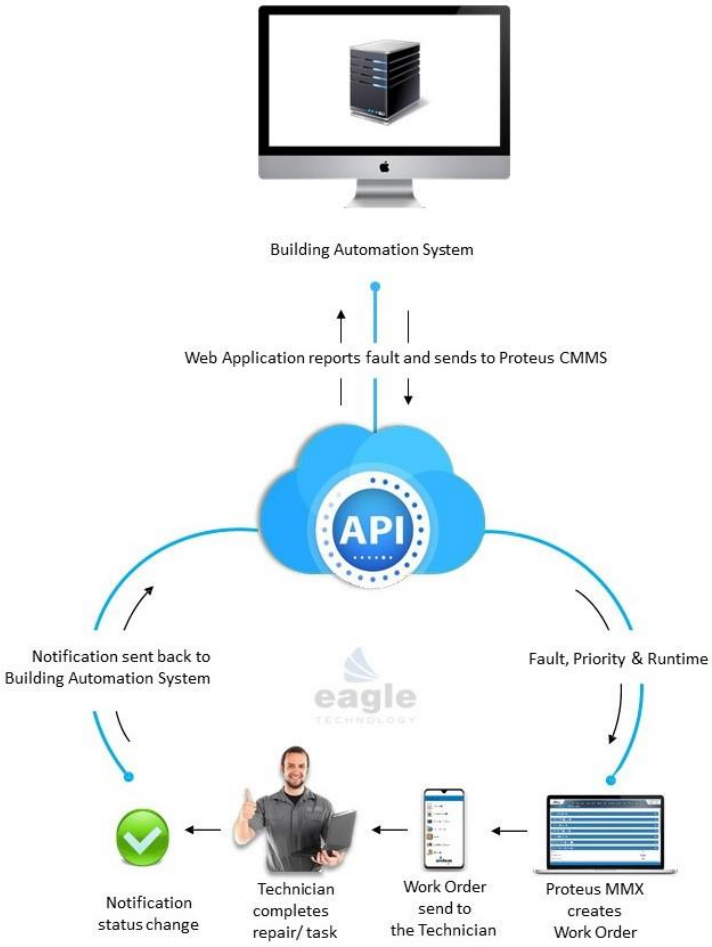
The BAS is the centralized network of a building that connects software with hardware. It monitors and controls the environment by uniting electricity, lighting, plumbing, HVAC, the water supply and drainage systems, all at a single control center. What's more is that a BAS will monitor and adjust various levels such as temperature, for example. As a result, building occupants can always expect a comfortable environment. The BAS also connects to the fire alarm system and other alert systems and can be programmed to make small adjustments like dimming the lights. As much as a BAS system enhances building efficiency, integrating a CMMS solution creates a comprehensive tool for optimal building management.

The CMMS interfaces with BAS monitoring and alarm systems. When a CMMS gets a signal, it can generate a work order instantly. With mobile capabilities, the work order can be delivered to a mobile device that encourages instant response. This means that repairs and emergencies are handled quickly. Another very advantageous benefit of integrating a CMMS system with BAS is CMMS data capture.

Information that is collected by BAS is transferred into the CMMS solution. Over a period, this data exposes patterns such temperature changes and faulty sensors or changes in controls. Through the analytical abilities of CMMS software management can make decisions that lead to energy reduction and cost savings.

CMMS software also brings preventive maintenance work orders to a smart building. Preventive maintenance helps the building operations do a better job of keeping a regular preventive maintenance schedule on equipment for optimal performance. For example, a CMMS can pick up run-time information from HVAC equipment which will trigger a maintenance work order based on that run-time.

Integrating CMMS and BAS establishes a smart building management system that has far-reaching capabilities. The two software systems combined streamline building operations and expose problems that might not otherwise be addressed. Ultimately, with efficient building management, the building occupants will also remain content.



System Integration

Giving facility managers system capabilities

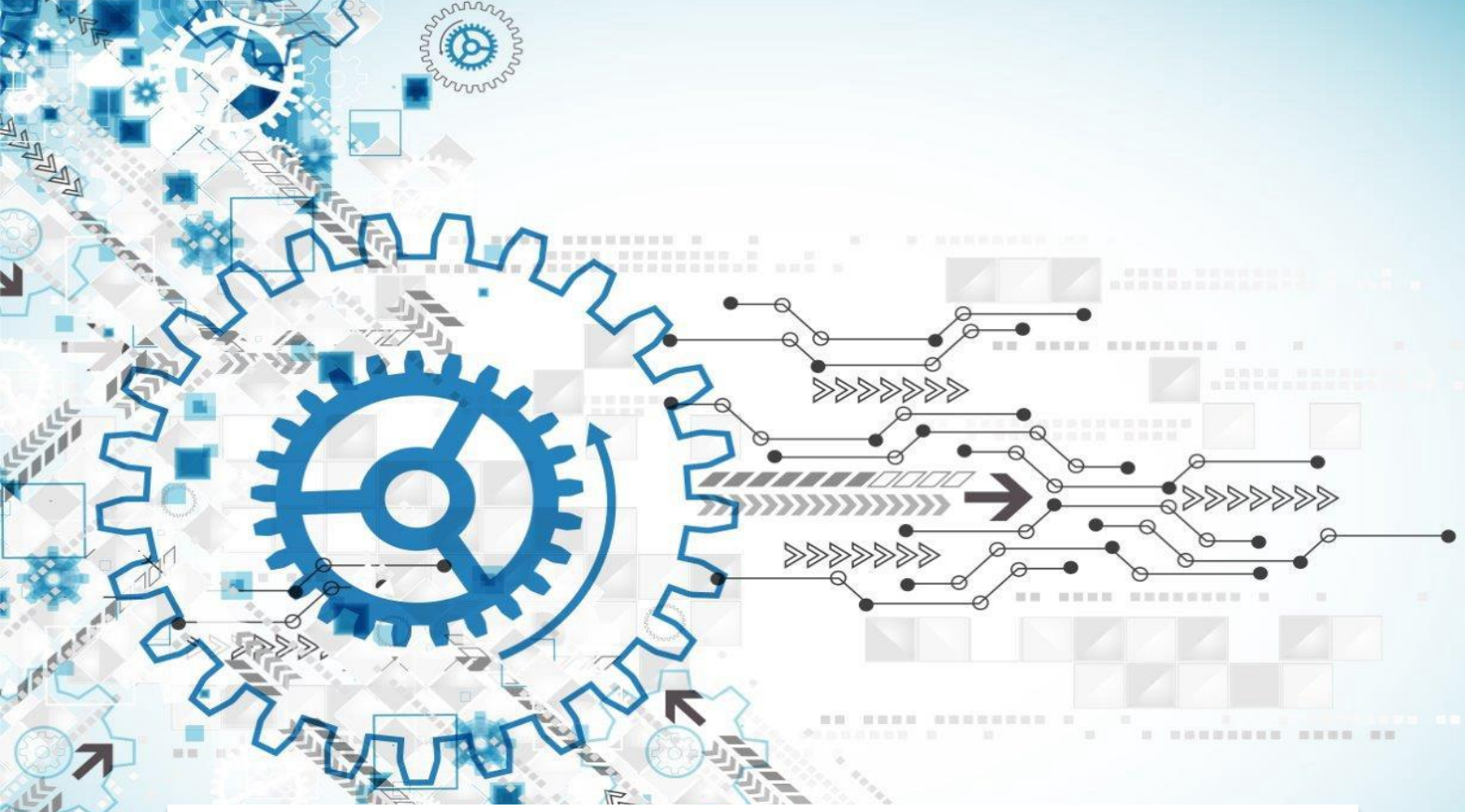
How System Integration can help building managers

Constantly changing regulations and higher demands from tenants put a lot of pressure on building managers to improve overall efficiency. Whether you manage a large building or a small building, integrating your building automation system so that you can use a top-of-the-line facility management and maintenance software program has multiple benefits, including:

- Reduced downtime
- Real-time data that can help you make managerial decisions
- Increased productivity and employee retention
- Ability to control maintenance expenses
- Lower operating and utility costs
- Helps you optimize labor usage

Not only does integrating a building automation system help you lower costs and reduce downtime, but it makes future planning a lot easier. When you combine system data, your facility manager isn't limited to analyzing data from one system at a time. Instead, they can access all their data in one place, making maintenance decisions simpler and smarter.

One of the most important benefits of linking two systems is that it gives facility managers system capabilities that neither system offered on its own. For example, once your systems integration is complete, the fire alarm would trigger the HVAC system to control ventilation and smoke and the elevator system to either bring the cabs to the bottom floor or provide cabs for quick evacuation. Without an automated systems integration both components would need to be adjusted separately and manually.



Benefits of System Integration

Making facility management more efficient

8 Benefits of System Integration: Efficient Facilities Management

System integration is a hot topic these days due to the increasing advances in building automation technology. Software such as BAS (Building Automation Systems), CMMS (Computerized Maintenance Management Systems), security software, and building performance visualization software can now be integrated into one seamless system. An integrated system promotes efficiency and reduces costs, but without integration, facilities management can be very cumbersome.

When individual systems are not integrated, facilities staff must learn how to operate each element separately. For example, the fire alarm system triggers the HVAC system to control smoke and ventilation, the access control system provides an exit for evacuation, and the elevator system brings the cabs to the floor. These separate elements must be manually adjusted at different times and does not promote efficiency. When it comes to better facilities management and truly efficient methods, system integration needs to be established.

Read about the following 8 benefits of system integration to see how it makes facilities management more efficient:

Benefit #1: Single Workstation

System integration allows facilities managers to work from a single workstation. Problems can be solved, and changes can be made with a few clicks rather than visiting multiple computer systems. It simplifies the process and makes it easy to manage.

Benefit #2: Energy Savings

Integration can reduce energy consumption and bring significant energy savings. Tying together and monitoring temperature fluctuations as well as making necessary adjustments or repairs to equipment can produce energy savings almost immediately.

Benefit #3: Lower Labor Costs and Improve Operations

Reduced energy consumption isn't the only benefit, companies see reduced labor costs through streamlined operations.

Benefit #4: Improve Response Time

When integration is done properly, real-time alerts will be sent via work orders or alarm systems. Many software companies now offer mobile capabilities, so management can get alerts through their cell phone or other devices.

Benefit #5: Performance

Integrated systems perform well. Most users of integrated systems are satisfied with how the technology operates, which demonstrates that in general, system integration meets expectations and is easy to use.

Benefit #6: Data Collection

The wealth of data that is collected by systems integration will lead to better decision making. Data ranges from the temperature fluctuation, routine maintenance, to power outages and under-performing facilities.

Benefit #7: Software and Device Compatibility

Most modern vendors make software products that are compatible with each other. For example, Eagle Technology's Proteus CMMS software integrates with several BAS systems such as Honeywell, Johnson Controls and Tridium. In fact, increasingly more compatible devices and software are available on the market today.

Benefit #8: Multiple Sites

Integration can include multiple buildings on multiple sites and is not limited to one individual building.

After reading through the benefits of systems integration, are you compelled to make your management system more efficient?

Get the most out of your building automation

Data that will lead to better decisions

Get the most out of your building automation

As a busy facility or plant manager, you know that time is money. When the boiler breaks, or the air conditioning goes out, you want to be alerted immediately. A Building Automation System (BAS) has this capability, but it can't create work orders. When your BAS detects a problem, it sends alarm. If you have integrated a CMMS system with your BAS, it will *automagically* convert the alarm into a work order. This work order can be delivered to your smart phone or tablet instantly, making it easy to get the boiler and the AC back up and running in record time! Unfortunately, not all CMMS systems can integrate with your BAS. Eagle Technology's Proteus CMMS is the only one on the market that integrates with *virtually all* Building Automation Systems. They include Johnson Controls, Honeywell, Tridium, Siemens, and more.

Not only does Proteus issue work orders due to an alarm/alert from you BAS, but it will also act as a "data repository" for all your equipment that your BAS can see. This is very useful in the long run, because over time, reports created from this data will lead to better decisions for your company and prevent failure.

But what about the *one thing* that your boss likes to hear the most? Cost reduction!

After installing Proteus CMMS, our customers often see a 5% reduction in their overall maintenance budget within the first few months of using CMMS software.

Proteus CMMS also offers a suite of tools that leads to better daily maintenance management, and huge cuts to your budget. Proteus CMMS supports:

- Asset management
- Preventive maintenance
- Inventory management
- Labor management
- BACnet
- Data storage
- Mobility
- Multiple buildings
- Energy management
- Paperless management
- Reporting
- And more

Intelligent Smart Buildings

The intelligent building has become a lean energy and money saving machine

What makes an Intelligent Building Smart

Just a few years ago intelligent buildings were seen as the wave of the future with few examples. Now they are on their way to becoming to the new tradition in construction and building management, especially with the evolution of LEED certification. What makes all this possible? The answer to that question is: integrated data systems. By combing convergent infrastructures, Building Automation Systems (BAS) and CMMS (Computerized Maintenance Management Systems), the intelligent building has become a lean energy and money saving machine.

Conduit convergence is the foundation of an intelligent building, and is often planned for new construction, but any existing building can have it installed. It is a cabling infrastructure that shares a common network. This includes many components such as HVAC, lighting, parking, security, and elevators. It is then all integrated onto one IP or Ethernet network and converted into IP by a control system. This is where the layers of the software tie together in order to create the elements of a comprehensive building management system.

Building Automation Systems (BAS) such as Honeywell, Johnson Controls and Siemens, are interfaced directly with the IP control system. Typically, BAS begins with the control of mechanical, electrical, and plumbing systems. A BAS can provide a wealth of data related to your building performance, which leads to improved decision making, especially when you integrate a CMMS (computerized maintenance management software) solution with a BAS.

Eagle Technology's CMMS software is an incredibly powerful analytical tool with many benefits. It goes beyond a simple maintenance and asset management software program; it acts as a data repository for intelligent buildings. Data is collected and organized for immediate action and long-term review. This is how companies can reduce energy consumption, as well as reduce company expenditures.

Eagle Technology's CMMS software is an incredibly powerful analytical tool with many benefits. It goes beyond a simple maintenance and asset management software program; it acts as a data repository for intelligent buildings. Data is collected and organized for immediate action and long-term review. This is how companies can reduce energy consumption, as well as reduce company expenditures.

Even as early as the implementation process, a lot of companies discover that they will save millions in energy costs, as well as inventory and labor costs. A CMMS solution is programmed to pull information from assets like the HVAC system. Over a period, this data exposes patterns such as temperature changes and faulty sensors or changes in controls. Other examples of important data include service, repair history, and how many hours that were worked. That kind of information is leveraged by CMMS users to make decisions regarding costs and productivity. Another important feature of Eagle's CMMS solution is that it collects the data in real time, so that there is no delay in the data stream that will impede important decision making.

As we move forward into a more environmentally conscience future and attempt to reduce costs, continuing emphasis will be placed not only on the intelligent building, but how to leverage the data output of the intelligent building. Integrating a BAS system and CMMS software with a building's convergent structure provides the solution necessary to make decisions that will reduce energy consumption and related costs.

Smart Building, Smarter Savings

A reduction in necessary maintenance, fewer service calls, and lower energy bills..

Smart Building, Smarter savings with a CMMS

With the ever-increasing complexity associated with today's automated buildings, the breakdown of a critical system is a risk building and facility managers work hard to avoid. Making your building (s) "Smart" is a must to remain competitive in today's environment. What makes a Smart Building? A Building Automation Systems or BAS is at the heart of Smart buildings.

A BAS controls a building's functionality, including heating, ventilation, air conditioning (HVAC), lighting systems, and often water, fire and life safety. Beyond integrating all these separate functions, BAS technology can continually collect millions of data points from numerous sensors and meters.

Making your Smart Building "Smarter"

A BAS is the centralized network of a building and connects various building systems software with hardware. It monitors and controls the environment by uniting electricity, lighting, plumbing, HVAC, the water supply and drainage systems, all at a single control center. What's more is that a BAS will monitor and adjust various parameter levels such as temperature, humidity, etc. A BAS can also connect to the fire alarm and security systems and can adjust like dimming the lights during sunlight. As a result, building occupants can always expect a comfortable environment.

As much as a BAS enhances building efficiency, integrating to a CMMS (Computerized Maintenance Management Software) creates a comprehensive tool for optimal building management. A CMMS holds the potential to open doors to coordinating and blending facility-related programs for controlling costs and saving time and work hours in the process. The result is a reduction in necessary maintenance, fewer (or less frequent) service calls, and lower energy bills.

In a recent study by CABA (Continental Automated Buildings Association), one of the largest impediments to utilizing software tools to provide building owners with a true "Intelligent Building" is the ability to integrate technologies.

Integration gives you the ability to easily control how your building operates;

- Utilize energy more efficiently
- Reduce utility costs
- Comply with regulations
- Meet the needs of your tenants
- Increase response time in emergency situations.

Smart building technology investment payoff

Cost savings are easily realized through this streamlined approach to building and facility management when you integrate BAS with a CMMS.

Eagle Technology's Proteus CMMS is the only solution with direct integration to virtually any BAS on the market. When Proteus CMMS is integrated with a BAS, it will process alerts and alarms from the BAS and then feed them automatically into a standard work order process. The integration between BAS and CMMS is significant because it creates a comprehensive tool that leads to better building management, energy reduction and cost savings.

Most BAS includes the capability to email alarm notifications. With this approach, information that is collected by the BAS is transferred into Proteus CMMS. Over time, this historical data exposes patterns such as temperature changes and faulty sensors or changes in controls. Through the analytical abilities of Proteus CMMS, management can make decisions that lead to energy reduction and cost savings.

CMMS software also brings preventive maintenance work orders to a smart building. Preventive maintenance helps the building operations do a better job of keeping a regular preventive maintenance schedule on equipment for optimal performance. For example, a CMMS can pick up run-time information from HVAC equipment which will trigger a maintenance work order based on that run-time. Preventive maintenance based on run-time allows you to optimize your maintenance resources by eliminating unnecessary maintenance.

Simple, Efficient and "Smart"

Integrating CMMS and BAS establishes a smart building management system that has far-reaching capabilities. The two software systems combined streamline building operations and expose problems that might not otherwise be addressed. Ultimately, with efficient building management, the building occupants will also remain content.

Push the envelope and make your SMART building even "smarter" by integrating your Building Automation Software (BAS) with Proteus CMMS.

By implementing a CMMS, you need to know the ROI. Here's how you do it, in 4 easy steps.

1. State your Case

It's hard to get something you don't ask for. If the key stakeholders aren't aware of operational needs, how can they be expected to sign off on anything to address those needs. Explain expanding your existing building automation capabilities as an investment that you expect to generate a positive return on. That's because a well-integrated CMMS solution reduces the overall time spent on maintenance resources, that means less bodies doing smarter work, saving you money in the long run. The more specific you can be with executives the better, so do your homework, define your processes, and ask the right questions.

2. Set Goals

Making sure you get the most out of what we offer depends on how well you understand your needs. That's why we encourage clients to focus on defining specific metrics for success. Once the Key Performance Indicators are in place, everyone will start to see a clearer picture of the baseline operational costs, which is the first step toward optimizing performance.

When getting started on your goals, we suggest prioritizing areas you feel are currently underperforming. These are the types of changes that move the needle, with the positive changes reflected as ROI.

3. Work toward those goals

In order to calculate your ROI, you're going to have to be specific with the goals you set, as these are the same benchmarks you'll be expected to deliver against. We suggest starting small. Oftentimes, the most obvious changes are the easiest to carry out as well as the most impactful.

Eagle's Proteus system is capable of just about anything, and overtime, our customers find themselves leveraging the system for more and more as additional needs arise.

A few good starter goals:

» Automate purchasing & reorder of parts

» Track your inventory and attach a value to items

» Manage In-house and contract labor

4. Leverage BAS Integration

Many of our customers currently use a Building Automation Solution from providers like Siemens, Honeywell, Schneider, or Johnson Controls. Eagle's CMMS platform is like steroids for a BAS, supercharging the capabilities and allowing for entire new classes of capabilities.

For instance, you know that an AHU filter will need replacing when a specific pressure drop across the filter bank is reached. By tying that information in with your BAS, we can set up an alarm in the BAS around this event, automating a work order. The work order includes the needed personnel for the change, the asset location, as well as the location of the replacement part. The system can even go as far as reordering the replacement part if it detects they're running low on inventory.

In this case, a CMMS is creating additional value in the BAS, something to be taken into consideration when calculating ROI.

Save Time and Money with Integration

Lower costs and reduce downtime

Save Time and Money with Systems Integration

Constantly changing regulations and higher demands from tenants put a lot of pressure on building managers to improve overall efficiency. Whether you manage a large building or a small building, integrating your building automation system so that you can use a top-of-the-line facility management and maintenance software program has multiple benefits, including:

- Reduced downtime
- Real-time data that can help you make managerial decisions
- Increased productivity and employee retention
- Ability to control maintenance expenses
- Lower operating and utility costs
- Helps you optimize labor usage

Not only does integrating a building automation system help you lower costs and reduce downtime, but it makes future planning a lot easier. When you combine system data, your facility manager isn't limited to analyzing data from one system at a time. Instead, they can access all their data in one place, making maintenance decisions simpler and smarter.

One of the most important benefits of linking two systems is that it gives facility managers system capabilities that neither system offered on its own. For example, once your systems integration is complete, the fire alarm would trigger the HVAC system to control ventilation and smoke and the elevator system to either bring the cabs to the bottom floor or provide cabs for quick evacuation. Without an automated systems integration both components would need to be adjusted separately and manually.

Common Issues with Integration in Existing Buildings

Automation systems in older buildings often use proprietary or legacy network protocols, which need to be mitigated **(migrated)** to open protocols. Changing the system protocols is a necessary step. Unfortunately, it's also a step that too often causes headaches. The good news is that if you have a detailed plan in place for each integration phase, you can work around even the toughest network protocol issues.
In addition to network protocol issues, some other common issues include:

- The original as-built drawings for the building may not be available
- It can be difficult to find existing cable pathways
- Organizational issues that involve coordinating facility management and the information technologies (IT) department

Keep in mind that while these issues are common, none of them should deter you from integrating your building's systems. If you're aware of problems you're facing during the planning stage, it's unlikely that you'll encounter any problems that can't be resolved.

Creating a Plan for a Successful Integration

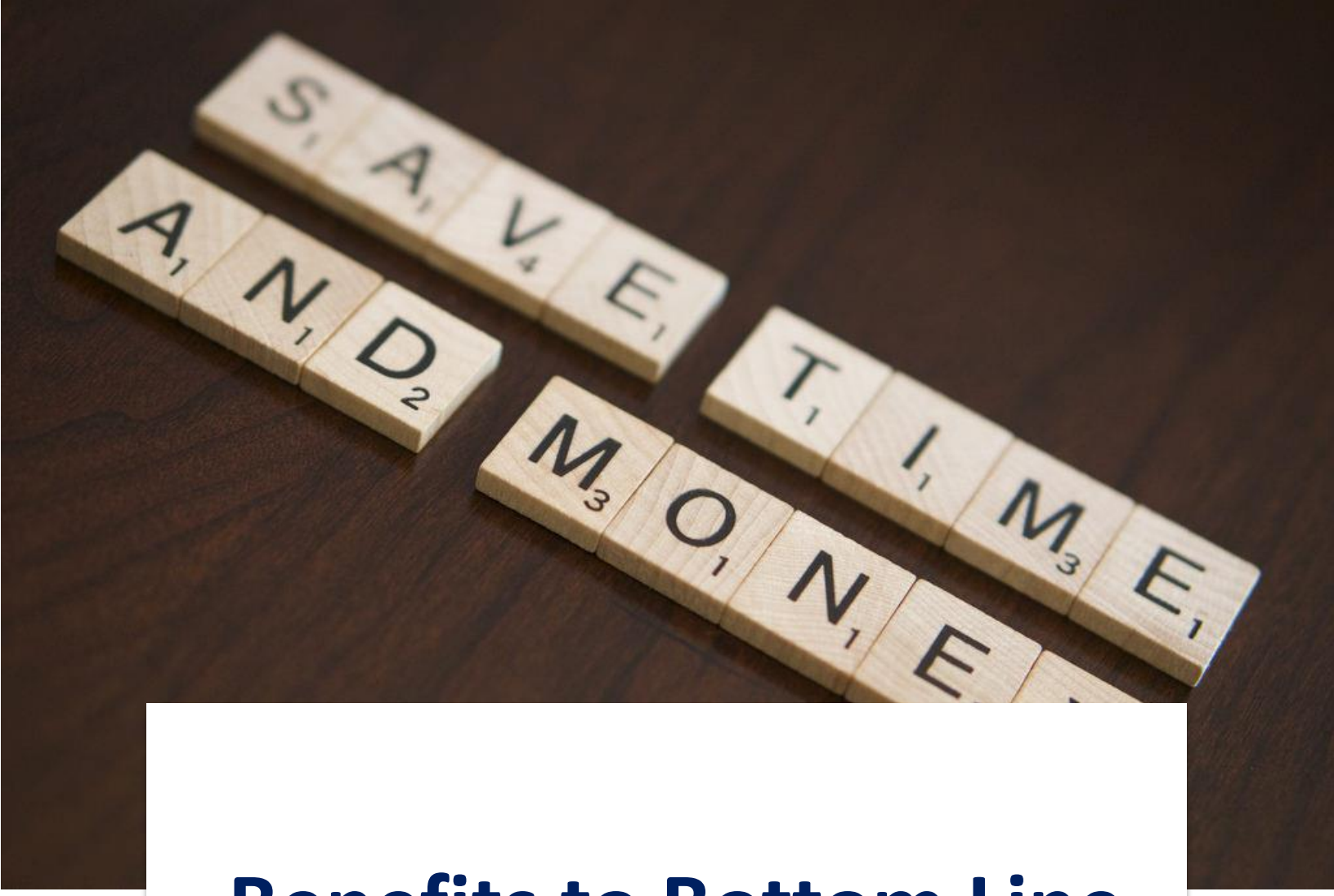
Now it's time to discuss creating a plan for your successful integration.
Before you begin integrating your systems, it's important that you gather all the information you can find about your building's existing systems. By the end of the process your facility manager needs to know the details of every system inside and out. Once you have all the data in front of you, it's easier to identify opportunities that provide additional functionality and automation.

Some of the areas you should consider are:

- Setting up a system for off-hours activation
- Event scheduling management to control lighting, doors, and the HVAC system prior to scheduled events
- Setting the HVAC and lighting systems up so that they coincide with the amount of sunlight coming into the windows during the day
- Using a power monitoring and control system to provide data that triggers energy reduction sequences

With any building systems integration the goal is to have one database that links to other business systems and facility management systems. This way, one software platform is used by everyone, making everything more efficient. When you combine your building automation system and your facility management system, it also integrates data that's used in accounting, budgeting, and purchasing, allowing you to access building automation functions, as well as the financial side of facility management in the same place.

There is no reason why an older building can't reap the same benefits of newly constructed buildings. While it takes some time to plan and implement the transition, it doesn't have to be difficult to integrate systems with an existing building.



Benefits to Bottom Line

Making future planning a lot easier

How Integrating Systems Benefits Your Buildings Bottom Line

Making the decision to integrate systems within existing buildings isn't easy. On one hand, there are numerous problems that you could run into during the process. On the other, integrating the system will give you advanced functionality, more focused and meaningful information, and building automation. The fact is, existing buildings come with some baggage. They usually have some preexisting issues that must be resolved during the systems integration process. But the long-term benefits often outweigh the preexisting issues and with a little planning it's possible to avoid most challenges.

The Benefits of Systems Integration

Constantly changing regulations and higher demands from tenants put a lot of pressure on building managers and building owners to improve the efficiency of their buildings. And, as the popularity of "green" buildings grows, the demand for improvement will continue to increase. Whether you manage a large building or a small building, integrating your building automation system so that you can use a top-of-the-line facility management and maintenance software program has multiple benefits, including:

- Reduced downtime
- Real-time data that can help you make managerial decisions
- Accurate budget data
- Enhanced function and life of assets
- Increased productivity and employee retention
- Ability to control maintenance expenses
- Lower operating costs
- Lower utility costs
- Helps you optimize labor usage
- Improves tenant satisfaction

Not only does integrating a building automation system within your existing building help you lower costs and reduce downtime, but it makes future planning a lot easier. When you combine system data, your facility manager isn't limited to analyzing data from one system at a time. Instead, he or she has access to one database that contains information from multiple systems. And, with all the pertinent information located in the same place, it makes it easier to spot anomalies and make future plans to reduce the building's overall expenditures.

One of the most important benefits of functionally linking two systems is that it gives facility managers system capabilities that neither system offered on its own. For example, once your systems integration is complete, the fire alarm would trigger the HVAC system to control ventilation and smoke and the elevator system to either bring the cabs to the bottom floor or provide cabs for quick evacuation. Without an automated systems integration both components would need to be adjusted separately and manually.

Common Issues with Integration in Existing Buildings

One of the biggest issues that you face by integrating systems within an existing building occurs when older buildings already have building automation systems installed. Automation systems in older buildings often use proprietary or legacy network protocols, which need to be mitigated to open protocols. Changing the system protocols is what allows the systems to communicate between each other, so it's a necessary step. Unfortunately, it's also a step that could cause you numerous headaches. The good news is that if you have a detailed plan in place for each integration phase, you can work around any issued caused by your current network protocols.

In addition to network protocol issues, some other common issues include:

- The original as-built drawings for the building may not be available
- It can be difficult to find existing cable pathways
- Organizational issues that involve coordinating facility management and the information technologies (IT) department

Keep in mind that all these issues are issues that are common in older buildings. However, none of these issues should deter you from integrating your building's systems. If you're aware of any problems you're facing during the planning stage, it's unlikely that you'll encounter any problems that can't be resolved.

Creating a Plan for a Successful Integration

Before you begin integrating your systems, you need to have a multiple-phase plan. It's important that you gather all of the information that you have that refers to the capabilities and features of your building's existing systems. This includes documentation about the building's subsystems, points' lists, as-built drawings of the building, control drawings, system versions, model numbers, network architecture, server locations, a profile of past work orders, and any energy data that you can compile. When you're gathering the information you need, don't count any data out. By the end of the process your facility manager needs to know the details of every system inside and out, so you can't have too much information compiled. Also, the more information you have available, the easier it is to plan and the faster the project will go.

Once you have all the data in front of you, it's easier to identify opportunities that provide additional functionality and automation. Some of the areas you should consider are:

- Setting up a system for off-hours activation
- Event scheduling management to control lighting, doors, and the HVAC system prior to scheduled events
- Setting the HVAC and lighting systems up so that they coincide with the amount of sunlight coming into the windows during the day
- Using a power monitoring and control system to provide data that triggers energy reduction sequences

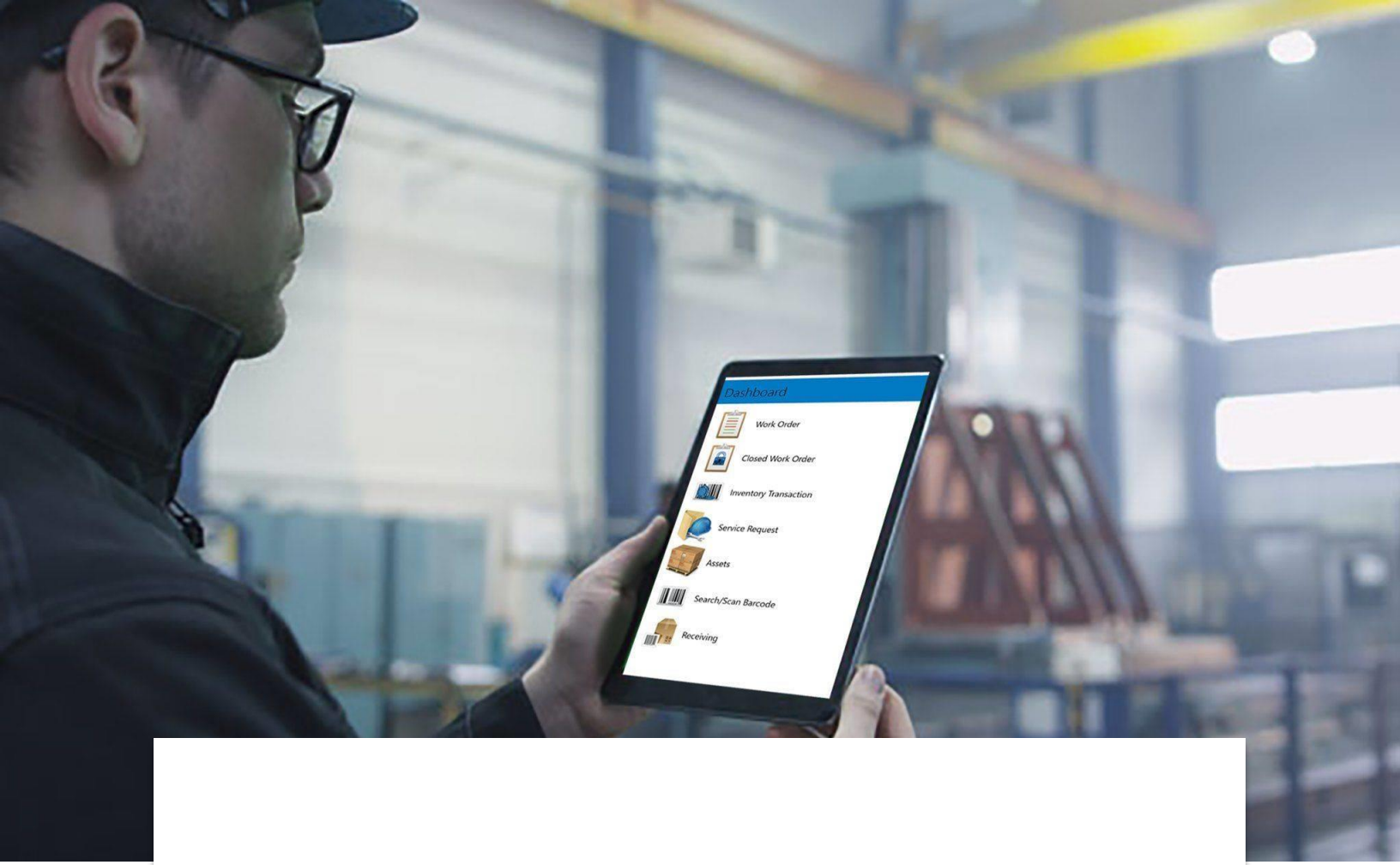
With any building systems integration the goal is to have one database that links to other business systems and facility management systems. This way, one software platform is used by everyone.

So, in addition to including building controls in your plans, you should consider including common facility management applications that can:

- Manage the building's assets
- Create and manage work orders
- Schedule preventative maintenance
- Manage the building's inventory

When you combine your building automation system and your facility management system, it also integrates data that's used in accounting, budgeting, and purchasing, allowing you to access building automation functions, as well as the financial side of facility management in the same place.

There is no reason why an older building can't reap the same benefits of newly constructed buildings. While it takes some time to plan and implement the transition, it doesn't have to be difficult to integrate systems with an existing building.



Proteus CMMS

Maximizes returns by effective administration of properties

Proteus CMMS

Today's facilities are more complex and automated than ever before. The intelligent building maintenance management capabilities of Proteus MMX, with its unique building automation interface, gives the facility manager a sophisticated link to ease the job of facility maintenance management.

Building Automation Systems (BAS)

Integrating Proteus MMX and BAS establishes a smart building management system that has far-reaching capabilities. The two software systems combined streamline building operations and expose problems that might not otherwise be addressed.

Manage Multiple Buildings

Mange multiple buildings simultaneously, collect and centralize key data necessary for an optimal and most cost-effective property management.

Service Request

Service Request module for Proteus MMX allows remote users to submit requests for service via web browser. This module is an advanced communication tool that brings work order software directly to end users eliminating both administrative time for data entry and lost requests. Service is improved through faster response times and better communication.

Other Features include:

- Schedule Preventive Maintenance with Multi-cycle options
- Automatically generate work orders
- Track inventory and vendors
- Automatically print, email or optionally send work orders to a Mobile Device
- Multiple currencies and multiple languages
- Purchasing Module
- Integrates with Building Automation Systems
- Powerful Report Generator
- Tenant service requests online

Proteus CMMS

Proteus MMX never takes a day off.

Maximizes returns by effective administration of properties.

Proteus MMX is a cloud-hosted Next-Gen Computerized Maintenance management solution (CMMS), offering all the features of a traditional solution, preventive maintenance scheduling, work orders and asset management combined with latest digital trends as Enterprise Resource Planning (ERP), Artificial Intelligence Integration, and IoT system connectivity.

Discover how you can use Proteus MMX to schedule preventive maintenance, manage multiple buildings, capture maintenance data and so much more.

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