DOCUMENT MANAGEMENT

For Facility Managers

The Challenges

The Benefits

The ROI

Good document management is critical for facility managers who are responsible for the safety of thousands of people who work or live on their campuses. They must keep the buildings and campus in top shape and, therefore, need to have quick access to information when problems arise. In order to keep facilities running and disruption at a minimum, documents need to be easily found and managed so that equipment can be fixed, roofs repaired, pipes turned off, and fuse boxes identified.

Document Management Goals

- Quick access to documents from anywhere
- Logical indexing criteria
- Search capabilities
- Easy collaboration/sharing
- Improved security
- Protected from disasters

Good document management systems allow users to be more efficient, accurate, and collaborative. Documents can be accessed from any device, anywhere on campus, and can be password protected. Additionally, documents can be easily shared with colleagues, contractors, and other staff.

Good document management saves time, space, and money!

UNIQUE CHALLENGES *for facility managers*

Document Management is a big challenge for Facility Managers:
- Long retention periods
- Large-format documents are cumbersome
- Multiple versions of the same document
- Staff turn-over
- Documents are far from the job sites
- Life Safety Risks
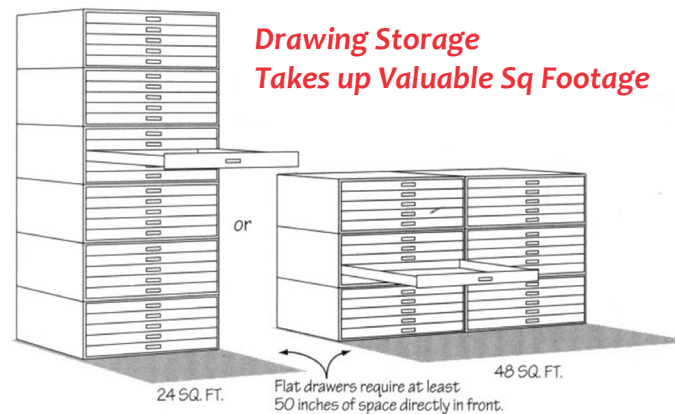
Long Retention Periods
The document retention period for facility documents is much longer than most other industries. In fact, the majority of building-related documents need to be retained throughout the life of the building. Therefore, depending on the age of the structure, documents must be kept for decades. Even if extensive above ground renovations may have happened, often the below ground infrastructure remains the same as when the building was built; and the only way to know about such information is by reviewing the original building construction documents.

Large-Format Documents
Another document management challenge in the facility management industry is the size of the documents. Blueprints and drawings are very difficult to manage and store. They take up a lot of space! They are also very hard to file, organize, and locate when needed. Plan rooms usually have between 30-50% in duplications and superseded sets. It can often take a lot of time to locate a particular set of drawings when needed for a repair, or in an emergency.

Outdated Documents
Facility documents are not static documents. They are working documents. Changes are constantly being made to buildings and campuses. If detailed notes are not kept, problems can arise in the future. Red line and As-Built drawings are usually the most valuable documents in a facility manager's possession. It is necessary to know which documents are the most current and up-to-date. Costly mistakes can be made when working from an outdated version of a project. During renovation projects, many change orders occur when information is lost or outdated. These can be extremely costly mistakes.

Drawing Storage Takes up Valuable Sq Footage

24 SQ. FT.   or   48 SQ. FT.
Flat drawers require at least 50 inches of space directly in front.

Staff Turn-Over and Loss of Institutional Knowledge
A huge challenge for facility management is staff turn-over. Gone are the days when you have maintenance and engineering staff who stay at one facility their entire careers. The institutional knowledge of how the buildings are built, the changes over the years, and the quirks of each space are often lost when key staff members retire or leave. It is a huge challenge for the next person who takes the position because they do not know what information exists, where to find it, or who to ask. Big mistakes can occur when a facility is being run blind.

PROBLEMS WITH PAPER *for facility managers*

Distance From Job Site
Another challenge occurs when drawings are stored in a particular place on a campus or building, but the repairs need to happen elsewhere. Therefore, staff members are required to go to the plan room to locate a drawing or document and then return to the job site, wasting valuable time.

Life Safety Risks
Finally, facility managers are responsible for ensuring the safety of all the people who use and work in their buildings. They need quick access to all life safety drawings and documents. They must be able to have the fire protection information accessible at all times. They need to respond to fires, floods, leaks, or any other catastrophes, which may put peoples' lives at risk. If documents are lost or destroyed, it can drastically slow recovery times.

Paper Documents are Fragile
Additionally, paper documents are extremely vulnerable because there is often only one copy of the document. The information could be lost forever if they become misplaced or damaged. They are usually stored in the most at risk locations in a building such as the basement or penthouse. Moisture, changes in humidity and temperature, dirt, and mold can severely damage the documents. Once the information is gone, the cost to replicate it is extremely expensive!

HOW MUCH PAPER DO I HAVE?
Estimating Tools

Drawings

Binders

Project Files

Large-Format Drawings
- A flat file drawer holds up to 200 sheets
- A 5 drawer flat file holds 1000 drawings
- A roll of drawings can average 15-100 sheets

Binders
- 1" binder holds 200 sheets of paper
- 2" binder holds 400 sheets of paper
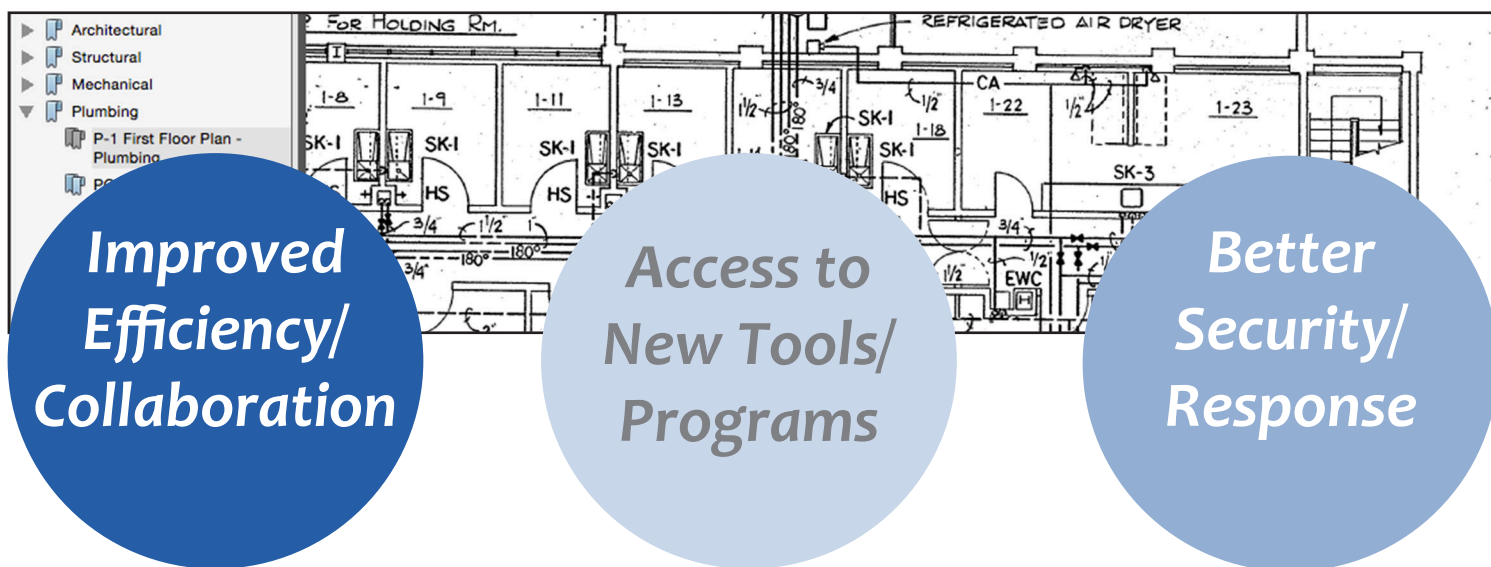- 3" binder holds 600 sheets of paper

Small-Format Documents
- A standard banker box holds 2000-2500 pages
- A linear foot is 1800 sheets
- An inch is 150 sheets

Did you know?

A plan room has typically 30-50% in duplications and superseded sets.

**Keep in mind, quantities could double if documents are double-sided.

BENEFITS *for facility managers*

Improved Efficiency/ Collaboration

Access to New Tools/ Programs

Better Security/ Response

Good Electronic Document Management

Many of facility managers' document management challenges can be solved with good electronic document management. As younger generations become facility managers, they are looking to have all of their information at their fingertips on the computer. They do not want to look at old, dusty, dirty drawings in the plan room. They prefer the efficiency of searching for a document in a web browser than in a damp basement.

No Physical Space Restrictions

Document retention becomes less of an issue once the information has been digitized. It is becoming less expensive to store information electronically. Vast amounts of information can be stored on servers or in the cloud for very little money. The physical size of the documents does not matter. Also, the condition of the documents does not deteriorate; plus, they take up no physical space; and they do not get lost if named properly.

Access to Information from Anywhere

Another huge advantage of electronic files is the ability of many people accessing the information from their desktops, phones, or tablets. Information travels with you instead of you going to where the documents are stored. This permits staff to find information while on the job site. Additionally, staff can be made aware of past changes and make current changes immediately. There are many applications which control different versions of the same document such as added notes, red lines, or other kinds of mark-ups.
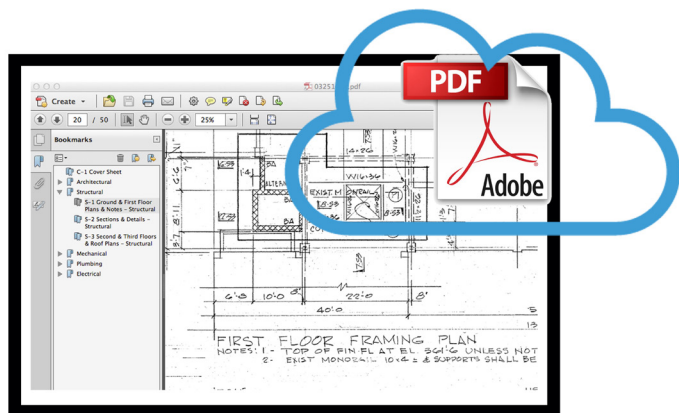
Greater Collaboration/Security

Finally, digital documents are easily shared allowing greater collaboration. Facility managers can share documents with architects, contractors, or other vendors. They can also share important safety documents with other departments and emergency services such as the police and fire departments.

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A Single Digital Library with Standardized Filing and Naming Conventions

Documents must be filed and named logically and simply in order to be useful, because poor electronic document management can lead to even greater problems or challenges. Today, facility managers usually have half of their documents in a paper format while the remaining documents are in an electronic format but poorly organized. They have documents in numerous locations such as on servers, hard drives, CDs, or in the cloud. They need help reviewing and sorting the electronic information and putting it all in once place, with the end result being a digital library with a standardized filing and naming convention. This is where an Electronic Document Management System is very useful.

Integration with New Tools/Programs

Finally, everyday new and exciting tools are being developed to improve processes for facility management from building automation systems, FM automation, BIM, GIS, and countless other tools. All of these systems rely on accurate information. They often link to source documents such as the O&M manuals, warranties, and drawings. These tools become a great source of knowledge once the historical documents have been integrated.
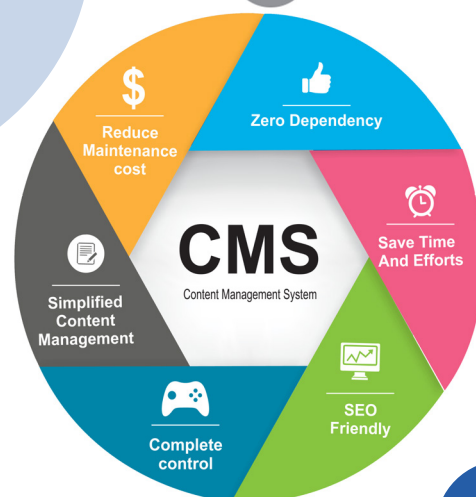
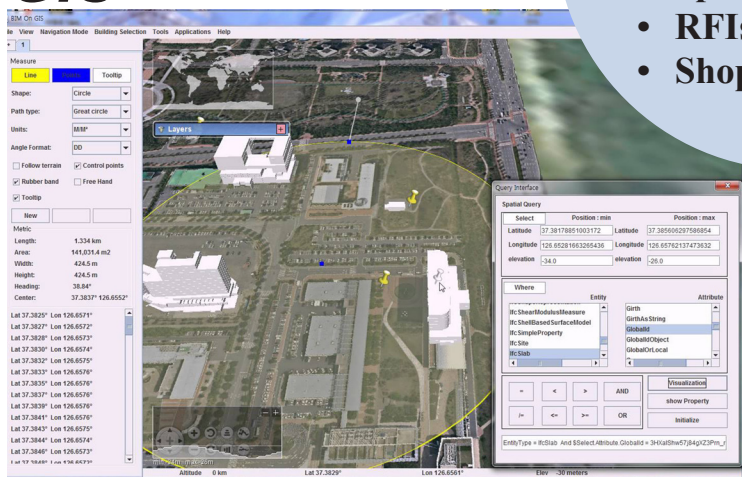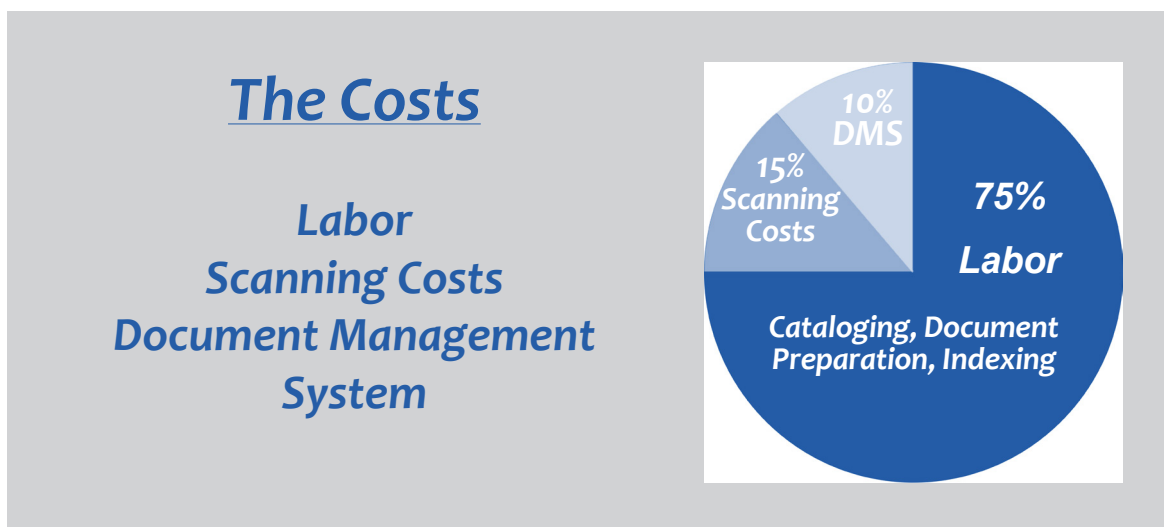**BIM**

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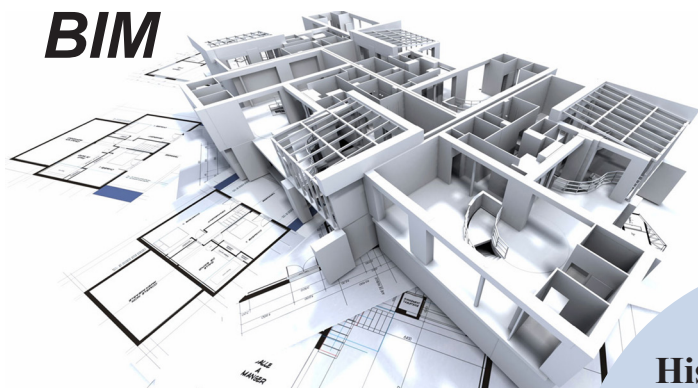
GIS
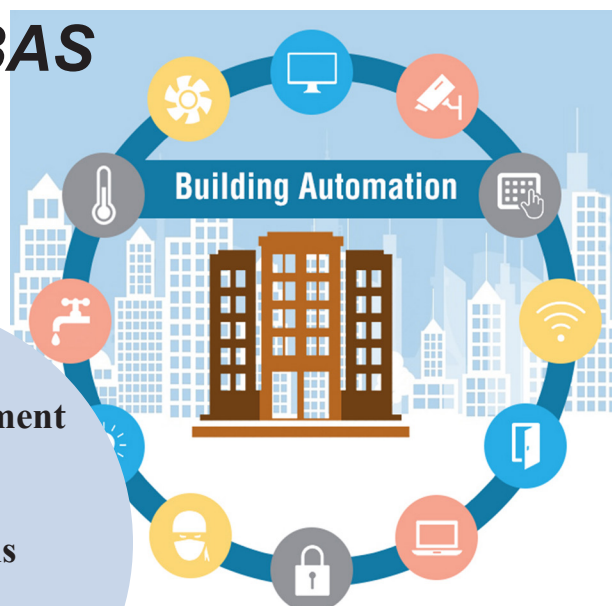
Historical Document Integration
- Drawings
- O&M Manuals
- Specifications
- RFIs
- Shop Drawings

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THE COSTS *for digitizing documents*

The Costs

**Labor
Scanning Costs
Document Management
System**

10%
DMS

15%
Scanning
Costs

75%

Labor

*Cataloging, Document
Preparation, Indexing*

Per Sheet Scanning Cost
When deciding whether to convert from a paper-based filing system to an electronic filing system, all costs and savings need to be taken into consideration. Usually, the cost of digitizing a plan room filled with blueprints, O&M manuals, project files, and other documents necessary for facility managers to do their jobs effectively is a relatively expensive, but it is a one time cost. You only have to scan the documents once in order to get them into a digital format. The per sheet scanning cost is relatively small compared to the total cost of the project.

Labor
It takes a lot of time to convert paper documents to electronic files. Therefore, 75% of the cost is associated with the labor it takes to do the work. First, it is necessary to research and catalog the documents deciding what is pertinent, what should be discarded, and what should be scanned. Usually a plan room has 30- 50% in duplications and superseded sets of drawings. Also, it is important to follow the same cataloging philosophy for the small-format documents such as O&M manuals, specification books, and project files prior to scanning. Labor is also needed to prepare the documents for scanning such as repairing damaged documents and removing staples. Finally, it takes a lot of time and labor to properly index the files so that they are digitally organized and named properly.

Document Management System (DMS)
The cost of the Document Management System can vary greatly in price depending on the complexity of the system that is chosen. It can range from a very simple database and file folder structure to a complex tool designed to provide facility managers with a wide range of capabilities. A full DMS should have Auto CAD viewers, work flow modules, mark-up tools, and a wide range of document sharing and indexing capabilities. These systems will often cost more to set-up in the first year and then a yearly maintenance fee would be associated there after. A facility manager needs to make sure that they can support the yearly maintenance costs when choosing their DMS.

> Consider hiring a professional firm to help with the initial review process, scanning, and upload of documents into the DMS. The process can take weeks/months to complete.

CALCULATING *the Return On Investment*

How much is paper really costing your department?

Calculate Document Handling Costs:
- **Storage Costs**
- **Copying Costs**
- **Labor Costs**
- **Document Distribution Expenses**

It is necessary to think about the true cost of storing your irreplaceable documents in a paper format. Ask yourself the following questions:

Storage Costs
How much space are your documents taking up?
Could you use that space for more useful purposes?
Are you paying for expensive flat files or storage cabinets?
Are you paying for off-site storage?

Copying Costs
How much are you paying to copy and print your documents?

Labor Costs
How much time does it take you and your staff to find a document in your plan room?
How many hours are wasted looking for information?
How much time is spent travelling to the plan room from the work site?

Document Distribution Expenses
How much do you pay for overnight shipping and mailing of documents?
How long does it take to share information?

CALCULATING *the Return On Investment*

The Hidden Returns

Continuity
Can new staff find information when needed?
When staff leave or retire, is their institutional knowledge captured and shared?

Reduction in Change Orders
Can you find all the documents necessary when starting a renovation or construction project?
Are you missing important information?
Too many mysteries?
How much money are you spending on change orders because the architect and engineer could not find the historical information necessary prior to starting the project?
This aspect, alone, could provide your return on investment many times over.

Risk Reduction
How exposed are your most valuable documents to fire, floods, pests, and mold?
How many times have your drawings been "borrowed" but never returned?
How expensive is it to recreate all of the information that is lost? Can it be recreated at all?
This also could provide the return on investment many times over.

Non-Financial Benefits
How will this system improve meeting regulatory compliance needs?
How will improvements in communication and collaboration benefit the facility?
How much time will be saved by using existing information instead of recreating it?
How valuable is a more secure and accessible archive of facility assets?
How can it improve customer service?
Will better document availability lower risk factors and errors?
Will employees be happier?

Can I afford to wait to implement a document management system?

True Story:

The city of Gaithersburg, MD, kept all of the drawings for the city in the Court House basement. There was a terrible flood and all of the paper got wet and ruined. A few months prior, the city scanned all of the documents. So, instead of a terrible disaster, the city simply threw the paper away, and repainted the space.