



# **Facility Planning & Management:**

# **Building Information Management**



**Kraus-Anderson®**  
FACILITIES GROUP

# Food for Thought

- You can't manage anything if everything is a crisis.
- You can't do everything at one time, but you can do one thing at one time.
- That which is planned takes precedence over what is not planned.
- Plan ahead just don't plan the results.
- If you keep doing the same thing, don't expect different results.

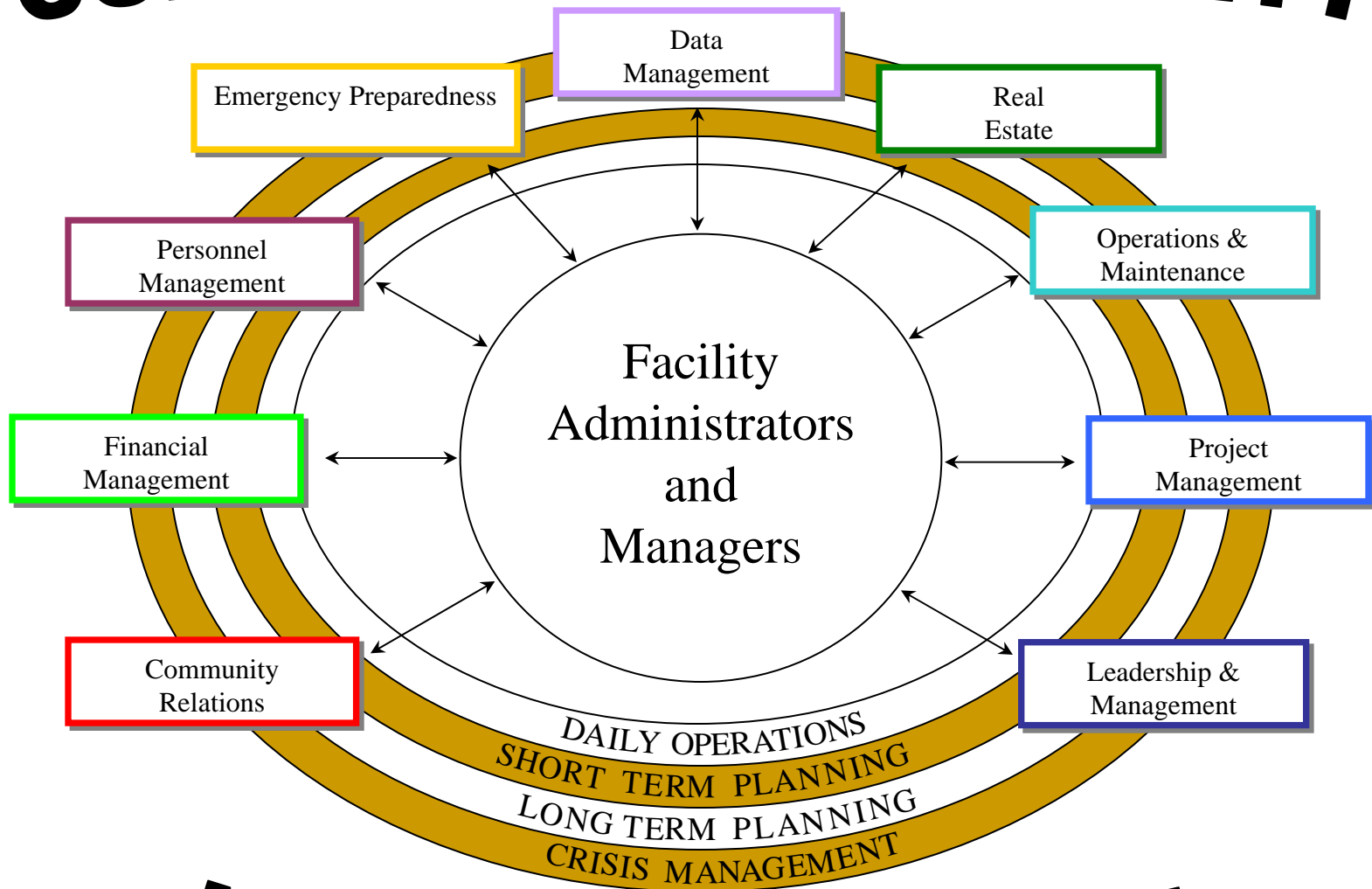


# A Facility Manager's Top Ten Responsibilities

- Operations & Maintenance
- Project Management
- Leadership & Management
- Finance
- Problem Solver
- Community/Political Relations
- Technology
- Real Estate
- Emergency Preparedness
- Comprehensive Long Range Planning



# COMPREHENSIVE FACILITY



# MANAGEMENT SYSTEM

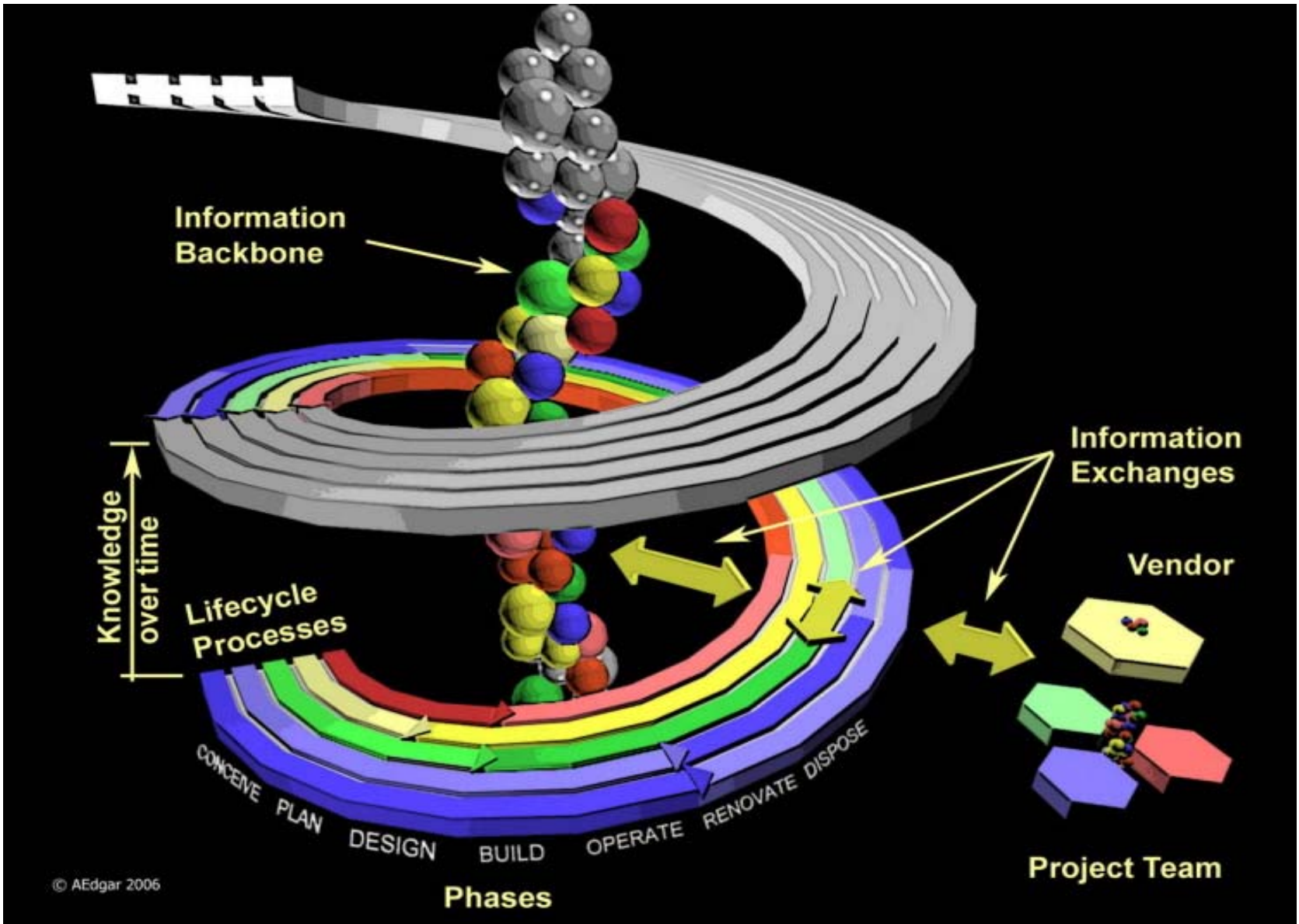




# Building Information Management

- An approach to building design, construction and management:
  - Predictive project development
  - Operations & Maintenance
  - Space utilization
  - Capital assets
  - Long Range Planning
- Collect data once and then allow it to be used, improved, and passed along to others throughout the lifecycle of the facility
- Not a technology, however, it is supported to varying degrees by different technologies
- Collaboration

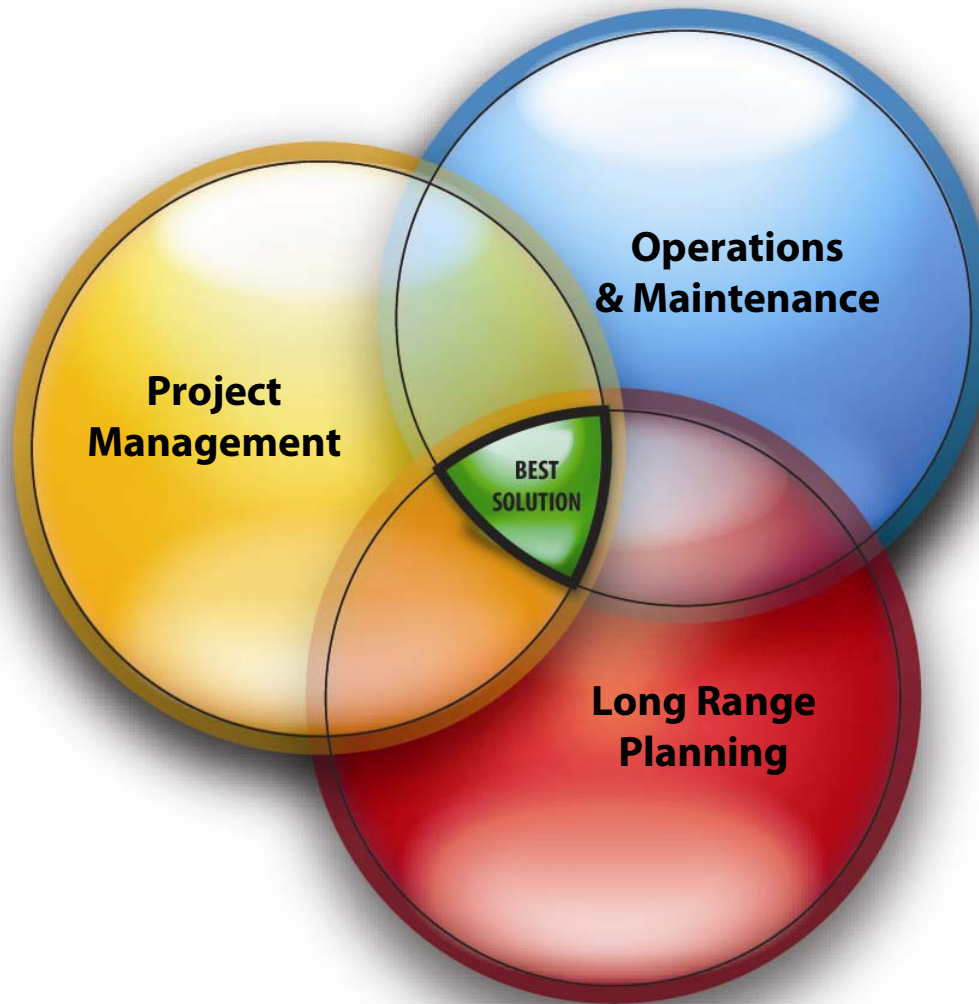




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# Building Information Management



# Operations & Maintenance Management

- Micro Level Data
- Work order/request
- Corrective Maintenance
- Preventive & Predictive Maintenance
- Space Utilization
- Energy Management
- Asset Management
- Computerized Maintenance -  
Management Systems (CMMS)
- Computer Aided Facility Management  
(CAFM)





# CMMS/CAFM

## Successful Implementation

- Used throughout the organization
- Work & material management are integrated
- Performance indicators are used to gauge success and guide activities
- Maximize the life of the asset
- Overall maintenance costs have been reduced
- Maximum use of space
- Supporting information for staffing, projects & long range planning



# Operations and Maintenance

## Institutional Memory



MicroMain Maintenance Management

File Edit Records Insert Window Exit

Sample Data -

Work Orders Property: Show All Asset: Show All Clear Filters

Work Order 5 - Finish out space

Issue WO

Work Order Description Summary Labor Parts Other Costs Tools Lost Time Inspection Documents

<b>Service</b>	Finish out space	Status	Requested	<input type="checkbox"/> Printed
<b>Property</b>	Santa Rosa Apartments	Substatus		<input type="checkbox"/> Inspection
<b>Building</b>	Administration Building	Type	Demand	<input type="checkbox"/> Documents
<b>Asset</b>	SR-Administration Building	Priority	2	<input type="checkbox"/> Warranty
<b>Location</b>	Parent SR-General	Due	6/9/2009	<input type="checkbox"/> Lockout/Tagout
<b>Department</b>		Standard	120.00 hours	<input type="checkbox"/> Safety
<b>Account</b>	<none>	Taken By	(nibala)	<input type="checkbox"/> Shutdown
<b>Requester</b>	Patricia Phone	Vend Doc Num		<input type="checkbox"/> HIPAA Regulated
<b>Shop</b>	General Maintenance	Vend Doc Type		<input type="checkbox"/> PFI Related
<b>Supervisor</b>	Bell	Downloaded	<input type="checkbox"/>	Risk Level 0
<b>Subshop</b>		Mobile User		
<b>Project</b>	Remodel Admin Offices	WO Source		
<b>Report</b>	Work Order	Class		
<b>Find Number</b>	5 6/18/2009 1:35:35 PM			
<b>Find Asset</b>				

Records: 2 of 23

Required field. Brief description of the maintenance. Double-click to open Service form.

NUM

# Capital Renewal Project Management

- Plan & manage all phases of projects
  - Develop scope
  - Identify project team and plan
  - Generate alternative strategies
  - Identify & secure needed resources
  - Coordinate and monitor project
  - Control change orders
  - Evaluate results of project
  - Project close out documents
- The difference between a project manager and a good project manager is how they handle the last 10% of the project.



# What is Building Information Modeling?

## Linked, Automatic, Dynamic, 3D Data

The screenshot displays the Revit Architecture 2009 interface for a project named 'Staples-Motley ES 07-10-08.rvt'. The software is running in a multi-view environment. The left-hand side shows the 'Basics' ribbon and a project browser with a tree view containing levels, ceiling plans, 3D views, elevations, renderings, and area plans. The main workspace is divided into four panes:

- Top-Left Pane:** A 'Door Schedule' table with columns for 'Family and Type', 'Count', and 'Cost'.

Family and Type	Count	Cost
Double-Glass 1: 72" x 82"	1	2500.00
Double-Glass 1: 72" x 82"	1	2500.00
Double-Glass 1: 72" x 82"	1	2500.00
Double-Glass 1: 72" x 82"	1	2500.00
Double-Glass 1: 72" x 82"	1	2500.00
Double-Glass 1: 72" x 82"	1	2500.00
Double-Glass 1: 72" x 82"	1	2500.00
Double-Glass 1: 72" x 82"	1	2500.00
Double-Glass 1: 72" x 82"	16	40000.00
Double-Panel 1: 68" x 80"	1	2000.00
- Top-Right Pane:** A 3D perspective view of the building model, showing a multi-story structure with a central tower and surrounding landscape. A scale bar indicates 1/8" = 1'-0".
- Bottom-Left Pane:** An elevation view of the building facade, showing a section with windows and a door. A scale bar indicates 1/8" = 1'-0".
- Bottom-Right Pane:** A floor plan view of the building, showing the layout of rooms and corridors. A scale bar indicates 1/8" = 1'-0".

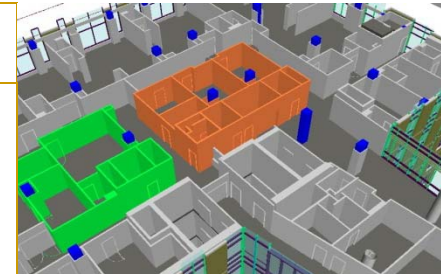
The status bar at the bottom of the window shows 'Ready' and 'NUM'.



## How can BIM be used for planning?

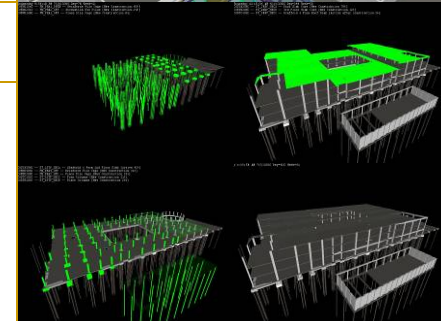
### Design Visualization

Visualize building early in the process to support and accelerate the decision making process



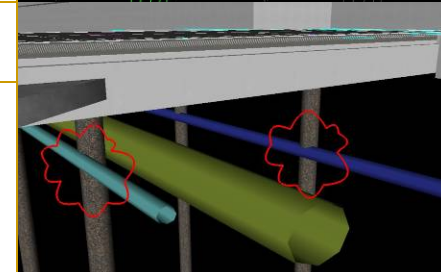
### Schedule Visualization

Visualize construction process to review and optimize the construction sequence and the schedule



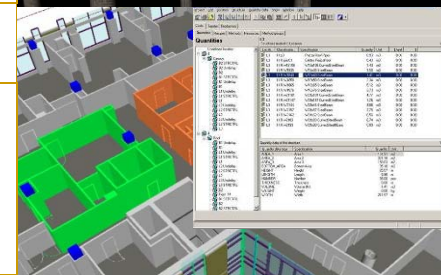
### Design Validation

Integrate 3D models of all trades to identify interferences and constructability issues before they materialize in the field



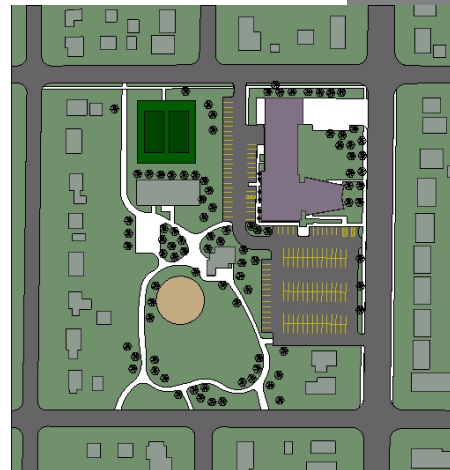
### Estimating

Tie scope of project to a price;  
Manage scope changes more efficiently



# How can BIM be used for project planning? (Cont'd)

- Data quality
  - Accurate (coordinated, consistent & computable)
  - long term information – Institutional memory
  - Utilizes legacy software
- Model can be shared with other firms  
(Architectural/Engineering)
- Cost Estimating
  - Accurate and error free



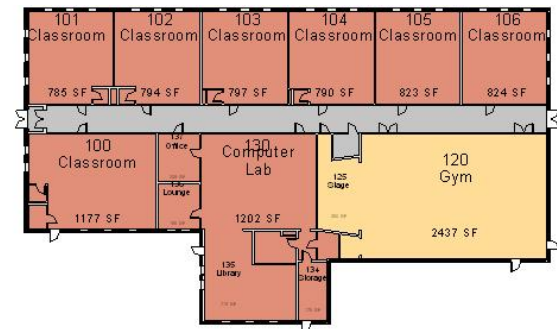
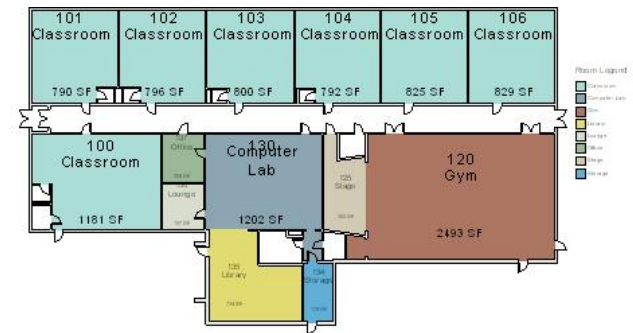
# Long Range Plan Development

- Allows One to be Pro-Active; Not Reactive
- Encourages Efficiency and Value
- Encourages Involvement & Goal Setting
- Encourages Data Collection/Retention
- Is Politically Expedient/Leads to Funding
- Provides Communication Tool
- Exhibits Professionalism
- Provides Peace of Mind



# Planning Tools – What to Look For

- Comprehensive
- Can Manage All Types of Data
- Web or Network Based – Accessible from several locations
- Visually Interesting
- Easy to Use
- Incorporates Benchmarking and Metrics
- Dynamic – Not Static

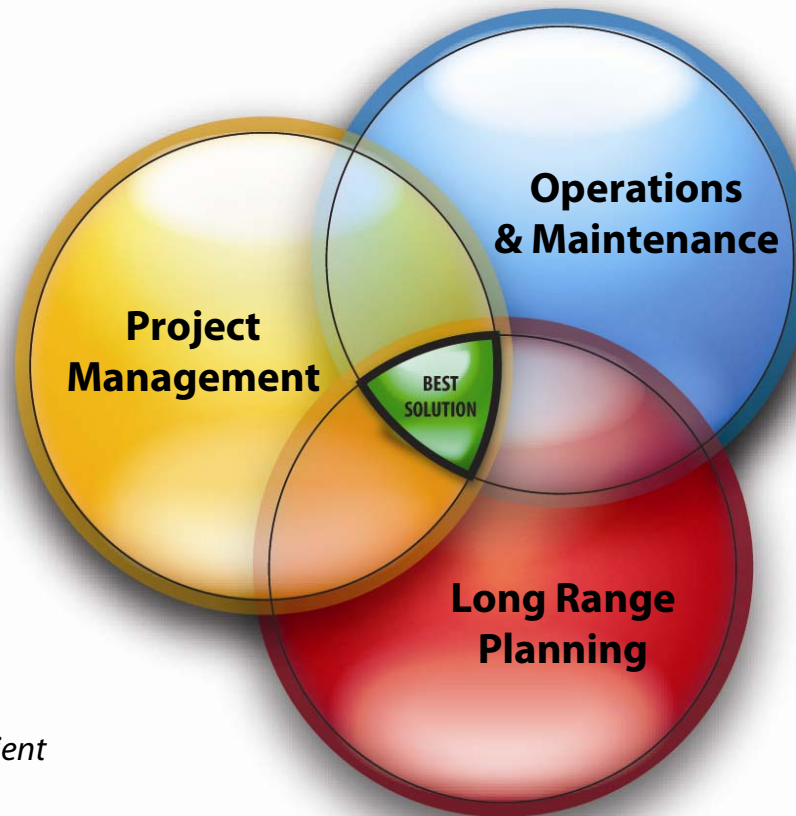




# Building Information Management

## Project Management

Accurate building drawings  
BIM  
Design/Project Visualization  
Cost Estimating  
Information Collaboration  
Close out documents



## Operations & Maintenance

CMMS/CAFM  
Specific Asset Information  
Work Order/Request  
Supporting Information for Capital  
Projects & Long Range Plan  
Space Utilization  
Institutional Memory  
Establish Metrics & Benchmarks

## **Balanced Process:**

- *Being Proactive & More Efficient*
- *Align Expectations Early*
- *Establish a Clear Path for Success*
- *Create the **Best Solution***
- *Creates **Best Opportunity for Success***

## Long Range Planning

Budgeting for capital projects  
Proactive  
Establish Metrics & Benchmarks  
Communication Tool  
Life Cycle Analysis



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**Thank You!**

**Facility Planning & Management**

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