PLAYING THE PROJECT MANAGEMENT GAME AND WINNING

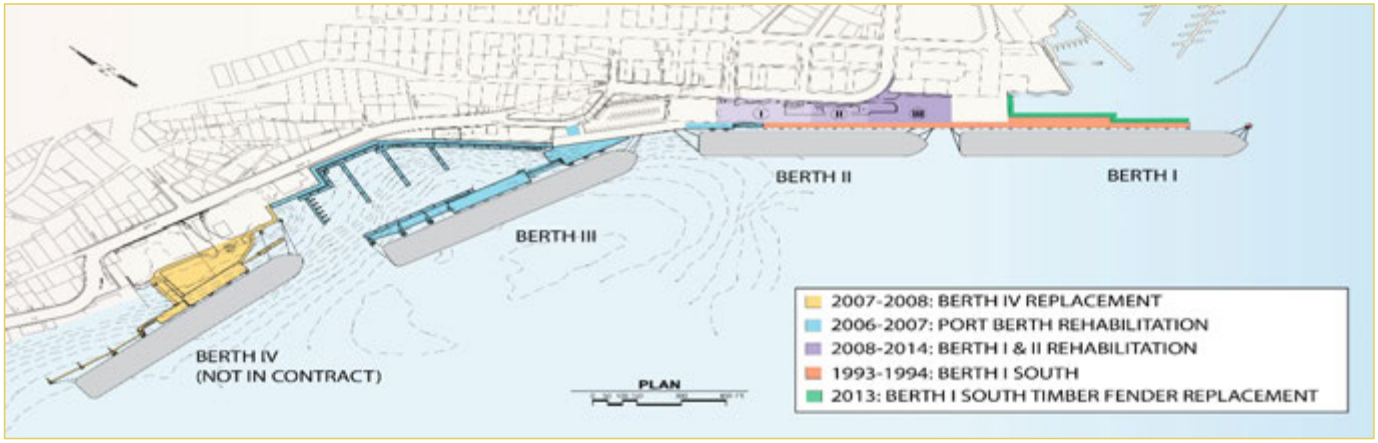
Project Management Approach

Typical Project Phases

1. Project Scoping
2. Detailed Design
3. Construction

Project Management Approach

Phase 1: Project Scoping



- Plan the project:
  - What are you trying to do?
  - What is your plan to DO it?
- Deliverables
  - Detail design criteria
  - Project schedule

Project Management Approach

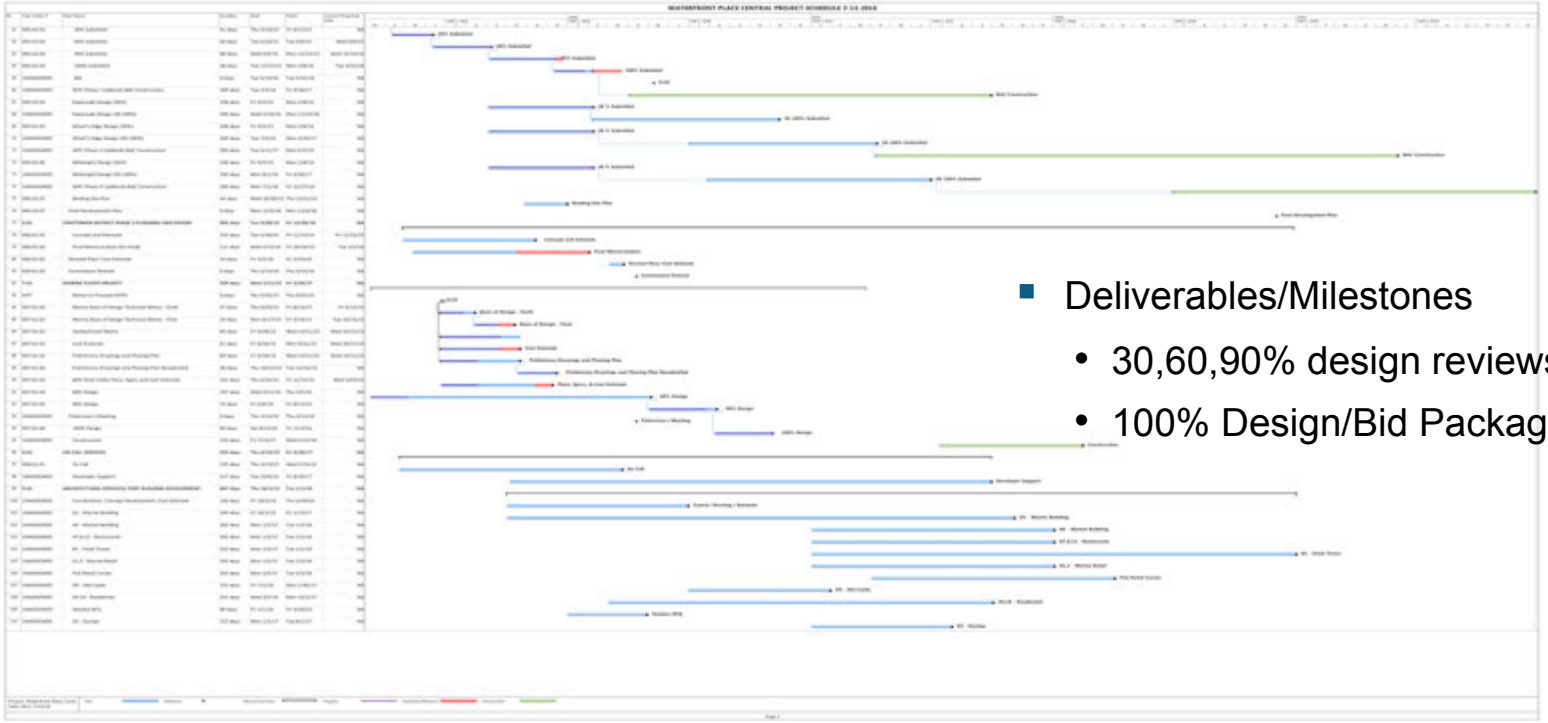
Phase 2: Detailed Design

Engineering Manager's Role: *Work the Plan*

- Plan the project:
  - Get everyone focused
  - Manage the team
  - Deal with changes
  - Keep everyone informed

Project Management Approach

Phase 2: Detailed Design



- Deliverables/Milestones
  - 30,60,90% design reviews
  - 100% Design/Bid Packages

Project Management Approach

Phase 3: Construction

Engineering Manager's Role: Continue to *Work the Plan*

- Interface with Contractors/Owners
- Oversee construction QC
- Deal with changes
- Verify contractor is delivering the expected project

Success as a Project Manager

1. Manage your time
2. Utilize technology
3. Get support
4. Celebrate!

Success as a Project Manager

1. Manage your time
   - Focus on the important things first
   - Take things one at a time
   - The 80/20 rule
   - Learn to say “No”
2. Utilize Technology
   - Find the right tools for the project
3. Get Support
   - Find a PM mentor
   - Take a class or read a manual
4. Celebrate
   - Celebrate milestones and project closeout

Tips for Owners:

Tips for Selecting and Working with Architects and Engineers

- Qualification and Performance Based Selection
- Quality Assurance Program
- How To Select and Work Effectively with Consulting Engineers: Getting the Best Project (2012 Edition) ASCE
  http://ascelibrary.org/doi/abs/10.1061/9780784411957
  - Functions of the consulting engineer
  - Common types of engineering services
  - Methods of determining compensation for services
  - Recommended procedure for interviewing and selecting a consulting engineer

Project Management – Owner Tips & Tools

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History of Project Management

Projects are Rewarding

Process

- Excellence in Project Management is achieved through a structure process that includes multiple phases:
  - Planning
  - Executing
  - Monitoring & Controlling
  - Closing

The process balances the key project constraints and provides a tool for making decisions throughout the project based on stakeholder values, performance metrics, established procedures and project goals.

Project Requirements

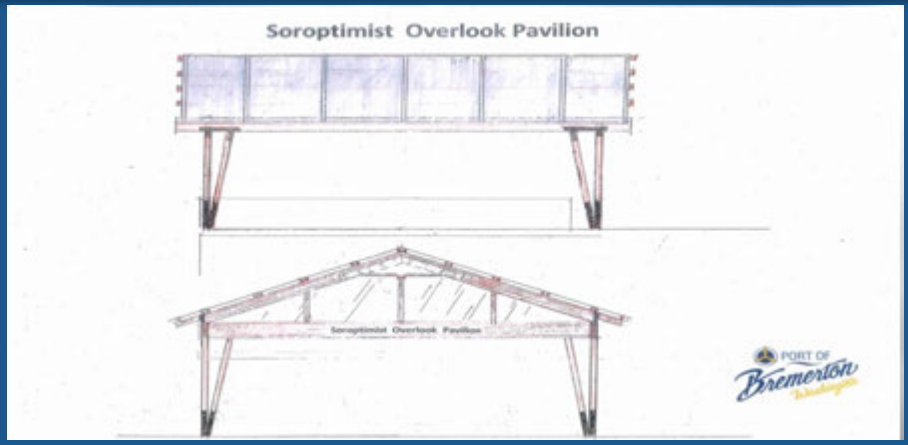
- Project inception and preliminary planning require:
  - Thoughtful definition of goals and needs (Project Scope)
  - Master planning to accommodate anticipated future needs
  - Evaluation of project alternatives;
  - Identification of site requirements; funding requirements
  - Budget authorization cycles and/or financial impacts; and project phasing.

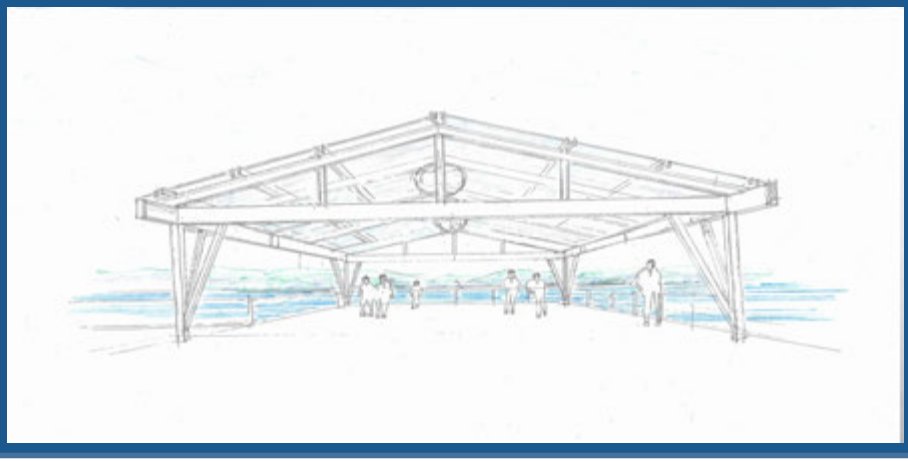
Good Projects Provide Value

- Value for the money in construction requires completing a project on time, on budget and to a level of functionality that meets the determined needs.
- A well-programmed project will continue to provide value and meet user needs throughout its lifetime and will contribute positively to the environment in which it is located with a wide range of social and economic benefits.
- Early investment in planning, programming and design can help deliver these benefits and avoid unnecessary costs and delays.

Prepare a Summary

- Simple format for each project summary – executive summary & statistics. Use some checklists.
- Even for small projects make sure there is drawing or picture with good description of work.





Scope Management

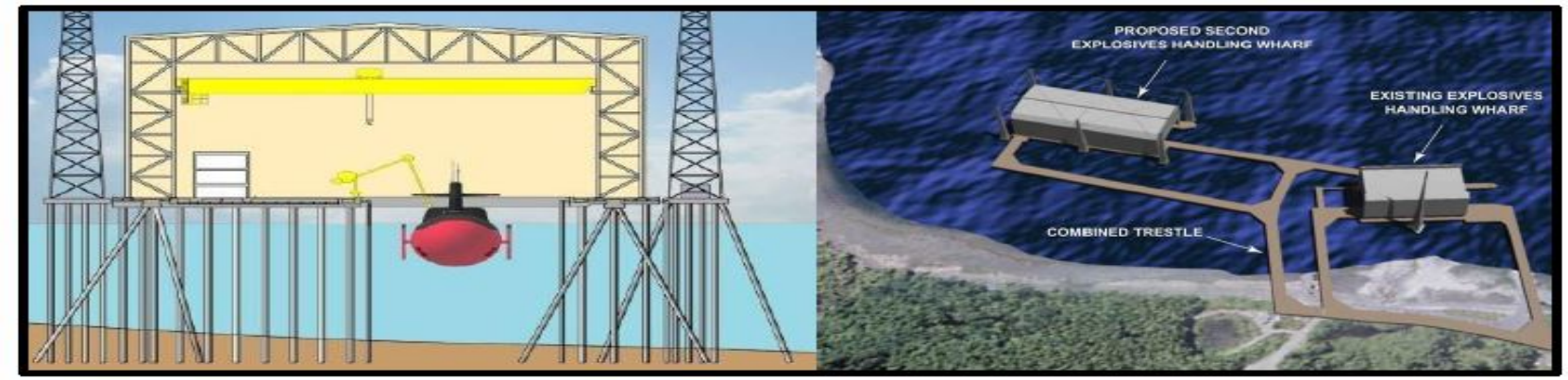
- Project scope is the work that must be performed to meet a client's program goals for space, function, features, impact and level of quality.

Schedule Management

- A project schedule defines the processes and establishes a timeline for delivering the project. Avoiding missing deadlines for delivery of key project components is a key objective of schedule management.
- Comprehensive project schedules will identify all of the project's stages, phases and activities assigned to each team member mapping them to a timeline that measures key dates that are used to keep track of work progress.

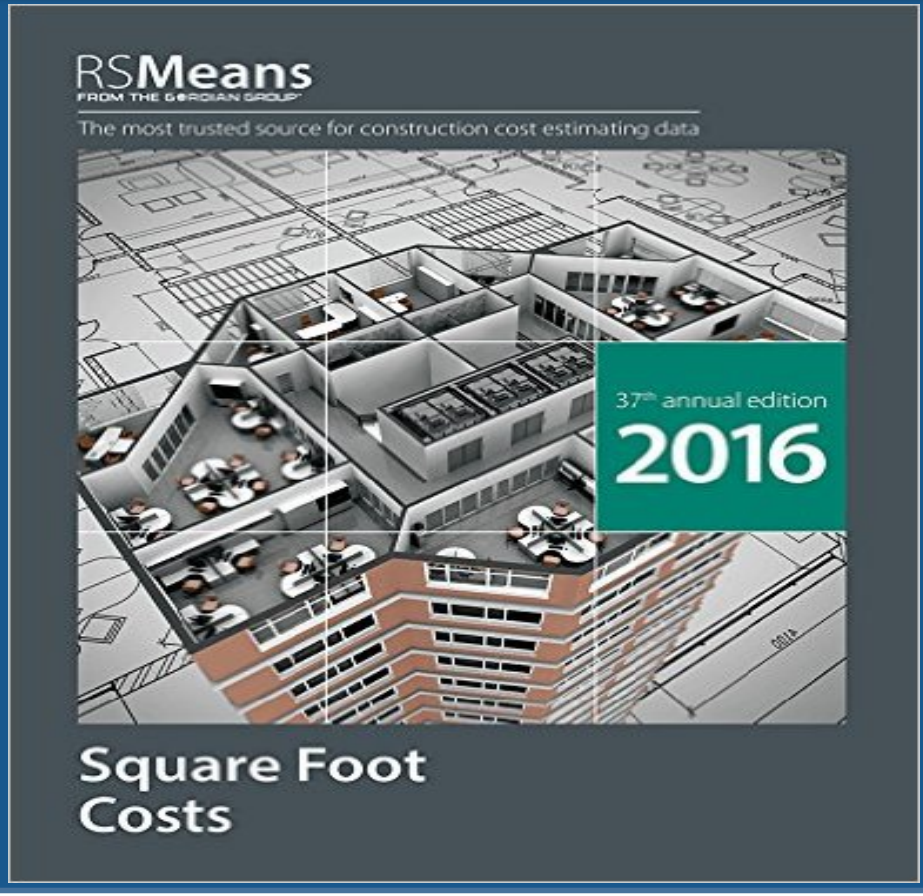
Cost Management

- Project costs are measured and analyzed in many ways throughout a project, from planning, programming and design to bidding, construction, turnover, and post occupancy. First costs, cost-benefit ratios, and life-cycle costing are a few examples of how a project's cost-effectiveness can be evaluated. The control of costs requires continual and systematic cost management and monitoring to
compare actual costs incurred against targeted budget numbers.



Budget & Cost Estimating

- Use vendors but not just one
- Find comparables – other similar construction projects; go to other Marinas & Ports
- Means Estimating Guides
- Square Foot Costs
- Assembly Costs
- Understand costs and where you are in project development; apply contingencies



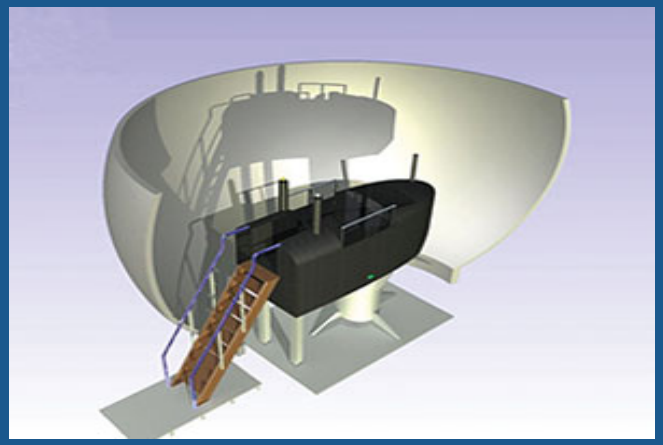
More Cost Tips

- Construction project: about 20% to 25% is site work, if utilities are nearby
- Project costs: a general rule of thumb 50% is labor and the other 50% is materials/ equipment
- You might be able to save 10% by going into an in depth cost analysis, Value Engineering, changing some materials but compromises will need to be weighed.

Design Stage

- Once a design team has been agreed upon and assembled, the owner needs to coordinate and manage the project's design phases. Design management requires:
  - the oversight of schedules and budgets
  - review of key submissions and deliverables for compliance with program goals and design objectives
  - verification of stakeholder input for inclusion
  - and appropriate application of the owner's design standards and criteria.

Equipment



Delivery Methods

- There are many approaches to achieve successful project design and construction. The Delivery Methods are driven by the project's scope, budget and schedule. Some of these methods include:
  - Traditional (Design/Bid/Build),
  - Integrated Delivery Process (where all stakeholders have a financial incentive to work together to produc the desired results)
  - CM (also called CMc, or Construction Manager)
  - Design-Build, Bridging, Lease/Build and Lease Buy Back.

The selection of a delivery method will in turn influence the team composition, schedule, budget, and management plans to be followed throughout the process.

Contracting

- Cast a wide net……
- MRSC — send out invite for a future date of Invitation; a pre-bid notice.
- But also take advantage of locals that may not have ever done work with your Marina / Port.
- Try to get some of the trades / vendors you run into in the area or see on the streets to participate.

Construction Stage

- This stage should include all of the components involved with construction and documentation for the project. The team members involved in this phase will be responsible for
  - Requests for Information (RFIs)
  - Change order management, conflict resolution, inspections, submittal reviews, adhering to schedules and coordinating timely payments.

  Oversight in this area is critical because it has significant impact on a project's total cost.

Project Management Tips

- Whoever your client is — listen. Learn as much as you can about background and politics / what has been developed or planned already.
- You can say no — how you say no — best with options, redirection of better methods or materials.
- The site work and environmental might involve over 50% of the time involved and it's getting harder. Do your due diligence work on site issues — right of ways, legal, utilities, easements — become a detective. EIS, EA's, variances, biological assessments, DIS — other permits could take over a couple years or more.

More Tips

- Use local planners at city or county. You can have pre-application meetings for usually $100 / $200. Talk to all departments at the same time — get instant feedback and info on zoning/planning, building, fire marshal and public works.
- Breakdown your program like a Value engineer. Look more at functions and don't get carried away with design mandates / agendas. Bring in outside opinions. Review all the tasks (Work Breakdown Structure – WBS)
- Spend time going over options / other costs. Package projects / phase them / options for future — how to handle equipment.
- Buildings last a while — make sure they are flexible. Clear span structure so that rooms can be adjusted. Don't be afraid to tear down building (it might become historic after 50 years). Look at how your buildings can be master planned.
- A/E: Talk about specific tasks and use a standardize form. Rule of thumb is at least 10% for architectural / engineering support.

Project Management Don'ts

- Don't go into a project like you know everything – get some experts to help.
- Don't wait until you are done with design to bring in others for knowledge / expertise; continually review along the way
- Don't leave project unattended or transfer without teaming / good transition. You have to keep garden "watered". Keep checking in.

More Project Don'ts

- Don’t assume everything given is accurate. Check out all your info.
- Don’t underestimate project logistics and operational issues:
- Height of work $$
- Phasing of work $$
- Keeping occupants in operations while doing work $$
- Barges / Disruptions / working around boats while you are doing work $$

Resources

- WBDG – Whole Building Design Guide

Division 35 - Waterway and Marine Construction

https://www.wbdg.org/ccb/browse_cat.php?c=3

- Architectural Graphic Standards

- Internet for your Products. Use Contractor / Architect Library Specifications, Drawings in CAD files & pdf

- LEED USGBC U.S. Green Building Council

http://www.usgbc.org/Docs/Archive/General/Docs18697.pdf

Communications & Closure

- Use speaker phone or cell with speaker on — get others in your office
- Conference calls — meeting of the minds and follow-up
- Document decisions — 200 – 300 emails for each project
- Archive: Keep drawings, get CAD / get your piling & geotech records. Date your documents.
- As-builts- help the next project manager or maintenance manager

Owners Challenge

- You as Owner: You have to develop your clients concepts — sometime your own, you have to sell ideas and make things happen!
- You are in the drivers seat.
- Go forth and generate your project.
- Be bold with your ideas.

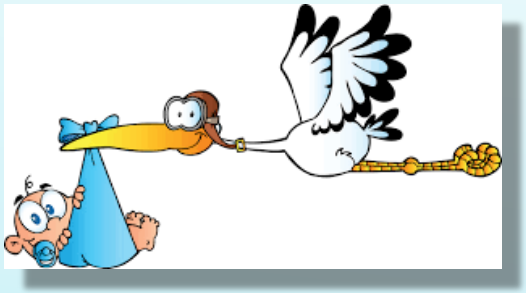
PORT OF Bremerton Washington

OPERATIONAL PROJECT MANAGEMENT

Project management from design through operations with the emphasis on the needs of physical plant maintenance

THE PROJECT HAS BEEN DELIVERED AND IS IN YOUR HANDS ……..

NOW WHAT?



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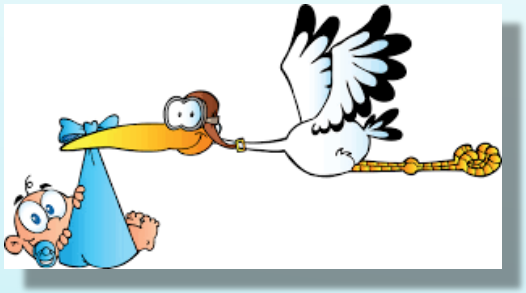
NOW WHAT?

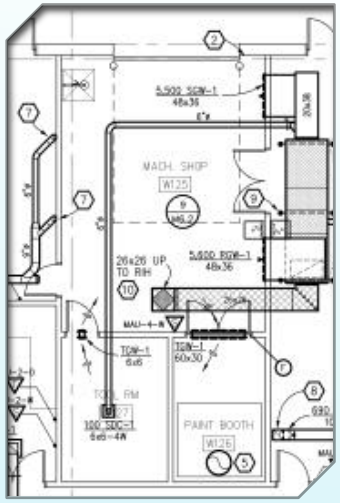


Consider the opportunities that were available that could have made the difference between a common end of project to that of a professionally managed closeout transition for your facility staff.

The approach would bridge the gap between construction phase and facility operations beyond today's standard measures. ***The opportunity requires staff involvement from a facility operations point of view.*** It would begin with operational analysis and requirements set during the design stage.

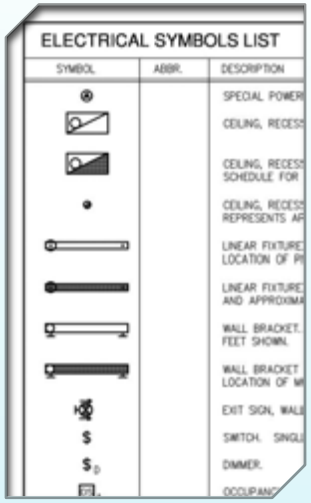
Documentation during the construction phase would improve the transition of construction into operations which would be managed to include; asset identification, warranty period, and facility operations start up.

Your plan would include:



I. DESIGN REVIEW

- ☑ **Form a team with the designers and engineers**
- ☑ **System compatibility**
- ☑ **Equipment life cycle analysis**
- ☑ **Inclusion of close out documentation & expectations into the project documents**
- ☑ **Strive to 'raise the bar' of standard traditional services that are typically offered – Extended warranties, service contracts, Preventative Maintenance (PM) planning**
- ☑ **Life cycle analysis**
- ☑ **What will the maintenance cost 1yr/5yr/10yr/20yr**



II. CONSTRUCTION PHASE

☑ **Familiarize & train staff with plans & specifications**

What is a CSI Master Format? Hint: Construction Specification Institute

WIKIPEDIA: ***The Construction Specifications Institute (CSI) is an organization that keeps and changes the standardization of construction language as it pertains to building specifications. CSI provides structured guidelines for specification writing in their Project Resource Manual***

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

06 00 00 WOOD, PLASTICS, AND COMPOSITES

06 01 00 Maintenance of Wood, Plastics, and Composites

06 01 10 Maintenance of Rough Carpentry

06 01 10.71 Rough Carpentry Rehabilitation

06 01 10.91 Rough Carpentry Restoration

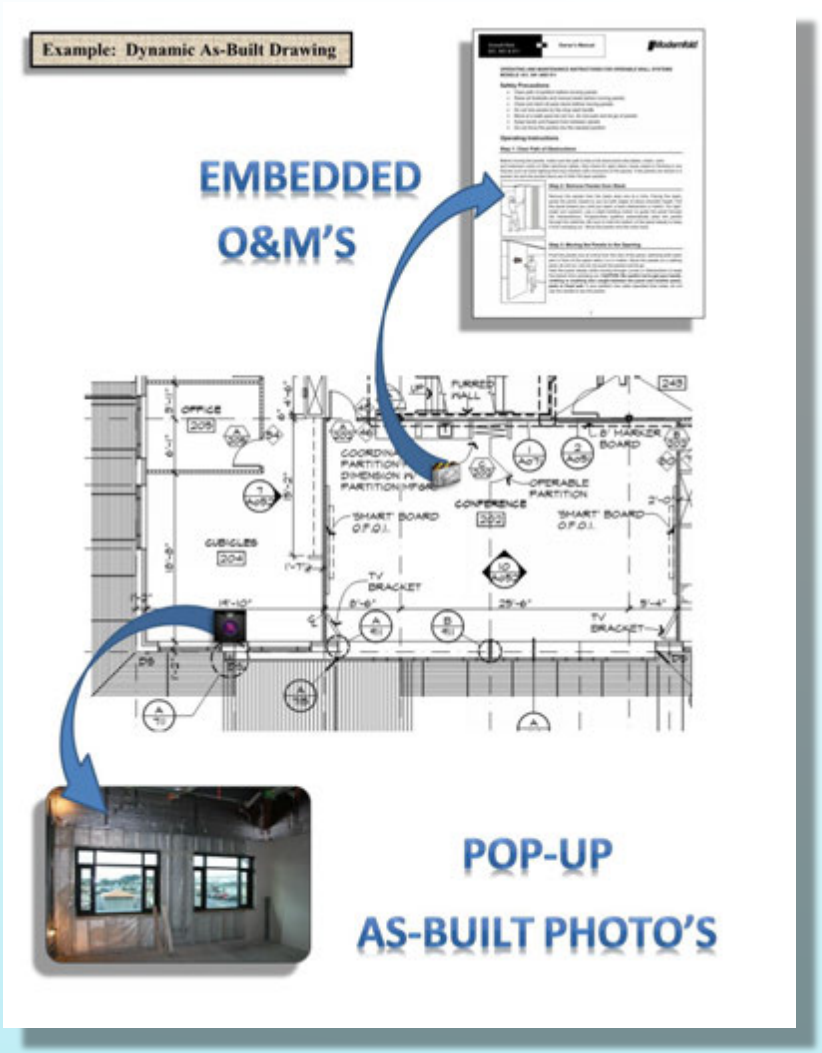
06 01 10.92 Rough Carpentry Preservation

II. CONSTRUCTION PHASE

- ☑ **Photo documentation and management *from an operational standpoint***
- ☑ **Equipment accessibility verification**
  - ✓ **Think like the largest member on your team**
  - ✓ **Can you change that belt or turn the valve?**
  - ✓ **Is the access safe? Will you be burned, trapped, drown, cut or fall?**
  - ✓ **What will you damage during access?**

III. CLOSEOUT – STARTS WITH THE FIRST SHOVEL OR PILE DRIVEN!

- ☑ Starts with the end in mind
- ☑ O&M verification, quality and accuracy
- ☑ As-Built verification
- ☑ Site specific system training with video documentation
- ☑ Set up a Maintenance Management System
- ☑ Preventative Maintenance (PM) tasks & scheduling from O&Ms
- ☑ Extra stock – paint clearly marked in full 1 gal cans, tile, carpet, specialty fasteners, etc.
- ☑ Creation and management of a "Dynamic As-built" plan set

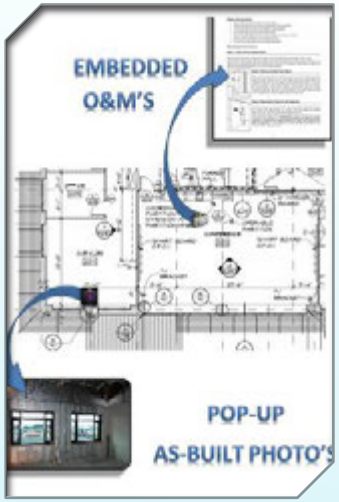

Example: Dynamic As-Built Drawing
EMBEDDED
O&M'S
POP-UP
AS-BUILT PHOTO'S
OFFICE
209
CUBICLES
204
CONFERENCE
203
FURRED WALL
OPERABLE PARTITION
"SMART" BOARD
O.F.O.I.
TV BRACKET
248

IV. WARRANTY PERIOD

- ☑ **Continue commissioning – Don't wait……..turning it on, pushing the buttons and looking under the hatch can save thousands of dollars in the future**
- ☑ **Warranty registration and conditions *(read the fine print for PM requirements and follow-up)***
- ☑ **Warranty term verification and log**
- ☑ **Warranty issue identification and closure management**
- ☑ **Asset/system performance evaluation**
- ☑ **11th month walkthrough inspection – *Is the stainless steel rusting?***

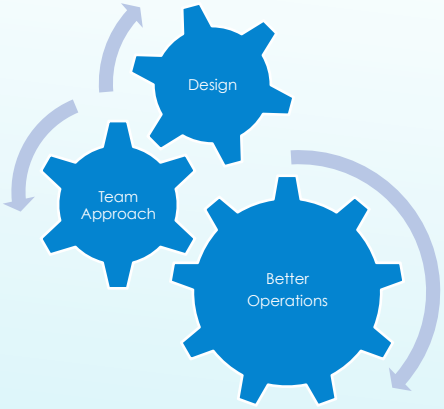
V. FACILITY OPERATIONS

- ✓ **It's yours - What were they thinking?**
- ✓ **How do you keep it new and increase the ROI - *easier if it was specified!***
- ✓ **Asset inventory and identification – *easier if it was specified!***
- ✓ **Systems & controls - customization/training and management – *easier if it was specified!***
- ✓ **Continued training and certification – *easier if it was specified!***



CONCLUSION

The transition between construction projects into operations is often undefined and lacks standardization. There can be a disconnection between construction activities and facility operations. Construction services are inherently designed to push for the projects end while operations receives a roll of plans and is expected to understand complicated operational systems. Project photos if taken by construction field staff are rarely organized or are irrelevant to operations and become useless once passed to the end user. O&M manuals can be unorganized, unreadable or contain incorrect information. Although considered a vast improvement to paper, As-built drawings are now passed to the owner in current PDF and CAD file format but remain as "flat information".



OPERATIONAL CLOSEOUT MANAGEMENT WOULD SEEK TO:

- ☑ Extend the services of the traditional project management role and strive to improve the knowledge of facility staff with an organized team building approach
- ☑ Improve the overall quality of closeout documentation, using the project specifications and bidding process
- ☑ Benefit the end user by providing a consistent transition and vendor relationship that has long term operational budgets in mind
- ☑ Prepare the facility operations staff to manage the new property with the tools to quickly respond to the needs of the physical plant
- ☑ Use modern technology and dynamic information programs, that would set a high bar for sustainable care and maintenance of the new asset

IT'S YOUR BABY……NOW WHAT ARE YOU GONNA DO??