



# Executing the Design-Build Project for Success: *Effective Management Tools*

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# Agenda



- Recognizing the DB Project Environment
- Objectives: Starting with the End in Mind
- Project Management is a VERB
- Management Tools to Achieve Objectives;  
*What is Not measured, will likely Not be Achieved*
- Some Lessons Learned



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# The DB Environment

## How is it Different from Design-Bid-Build

- Compressed Schedule w/ concurrent and often “dependent” activities in design, procurement and construction
- Most impact of changes early in the project
- More interfaces (hand-offs) within project team – more opportunities for fumbles
- More opportunity for innovation between design and means / methods of construction



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## The DB Environment – How is it Different ?

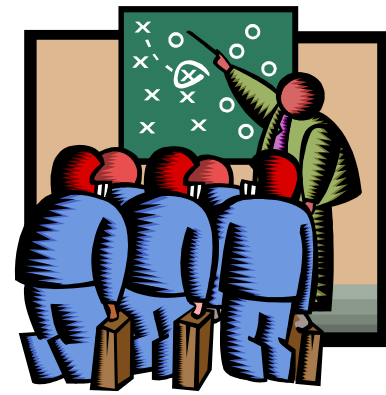
- Cost / Schedule significantly impacted as design develops to determine final quantities, subcontract and purchase scopes, and construction labor productivity.
- Continuous new information and obstacles that need “integrated and collaborative solutions”
- New teams and learning curves – marriage of different cultures, attitudes, preferences, approaches, prejudices, and agendas.



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# Design Build Team

*more parties involved / active concurrently*



- Lead constructor
- Lead designer
- Specialty constructors
- Specialty designers
- Specialty consultants
- Specialty design - builders
- Major suppliers
- Supply - installers
- Other suppliers



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# Project Objectives

## Starting with the End in Mind

- **Quality** – better than, or meet specifications
- **Schedule** – early, or meet contract requirements
- **Cost**- less than, or meet contract budget
- **Safety** – no accidents, no days lost due to violations
- **Community Support** – awareness, recognition, accommodation
- **MBE / WBE Involvement** – above, or meet goals with meaningful participation



- **Client Satisfaction** – exceed, or meet expectations



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# Project Management is a “Verb”

If not moving forward, you’re moving backward.

If not being pro-active, you’re being re-active.

If not improving, you’re falling behind.

If not setting the pace and creating the focus,  
you’re just one of the pack.

**If you’re not leading, you’re following !**



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To meet Project Objectives,  
DB Project Management needs to  
manage risks as a TEAM sport.

Define responsibilities – incentivize  
people to fill gaps and be accountable to  
each other:

“Win as a Team or Fail as a Team”



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**“ A Problem anticipated is a problem  
half-solved”**

Quote: Peter Drucker

**“Success is as much the result of an Attitude  
as it is the result of a Process”**

Quote: Chuck Williams



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# Major PM Tools - The Process Part

Risk Management Plan (Major Risks)

Trend Program (Change)

Project Schedules (Time)

Earned Value Analysis (Productivity)

Quality Management Program (Quality)

Safety Program (H&S)

**Commitment to these tools is an investment in  
project success**



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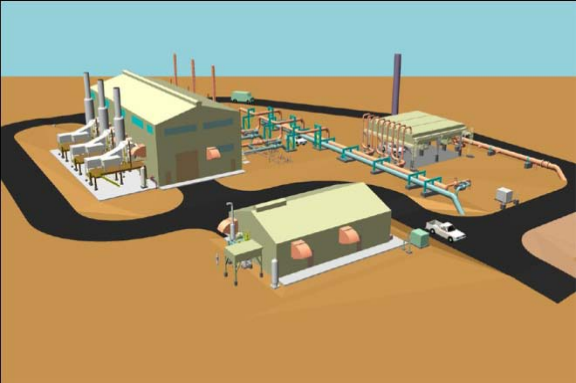
# Risk Management Plan

(for major plausible and serious risks)

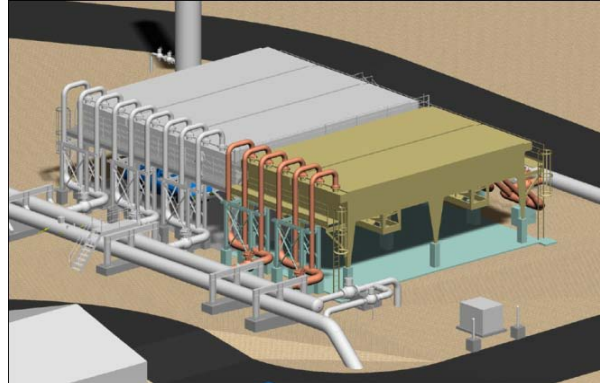
- Prepare and monitor as a Team
  - Identify specific items
  - Quantify (probability and severity)
  - Evaluate alternatives to address
  - Decide Strategy to avoid / transfer, insure or manage
  - Assign responsibility
- Periodically status and update / adjust



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# Trend Program



Methodology for early identification of potential changes that can impact cost and schedule.

It's an approach – a discipline – an absolute necessity

Addresses potential changes before cost & schedule impact

Trend Base is the “as Sold” Budget and Schedule

Some changes resolved internal to DB Team, and others with the Owner

Program starts during proposal and continues immediately after NTP



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# The Trend Program

## Proactively Manages Changes

Entire team is responsible to identify and report potential changes.

Changes are registered & evaluated: Action to either avoid, mitigate or accept.

Trend Base – Budget and Schedule - is trended / forecasted as changes are resolved.

Trends and Trend Base status reported monthly



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# Trend Program Tools

- ❖ Reporting Format to identify potential trends
  - ❖ Trend Register that lists, tracks and statuses trends
- ❖ Monthly Report that indicates impacts / deviations to the Trend Base.



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# Engineering and Mobilization Schedule

90 - 120 day Schedule of initial activities submitted w/ proposal or within 10 days after NTP

3 Week rolling detail Schedule indicates design submittals, permitting activities, and key mobilization activities, including subcontractors to be engaged and major procurements to be committed

Schedule progress updated each month



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# Baseline Schedule

Project Schedule indicating all major activities to meet Contract dates, including all milestones; submitted to Owner within 90-120 days after NTP

3 month rolling summary, and 3 week rolling detail work schedules

Baseline Schedule updated monthly, incorporates actual progress, resolved trends (including client approved change orders) , and a re-forecast of the portion to complete.



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# Earned Value

## Productivity of Budget and Schedule

Compares actual time / budget expended to planned time and budget for major design and construction activities

EV analysis indicates where schedule and budget is headed for each major activity

Realistic planned progress verses time and budget curves must be established for each major activity



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# Schedule EV - Productivity

If 40 % progress is planned by X date, and actual progress is 30% by that date, time productivity is 0.75 and forecast of that activity is  $1 / 0.75$  or 1.33 – a 33% time overrun of that activity.

Key is to establish realistic plan curves of progress vs time, with defined deliverables



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# Budget EV - Productivity

If planned Budget expenditure by that same X date for that activity is 400k, but actual expenditure is 200k, budget productivity is  $0.5 / .75$  or  $0.667$  times the total budget for that activity.

**Activity is late, but not spending planned budget – perhaps not employing needed people or other resources - to achieve desired progress !**



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# Quality Management Program -

- ❖ Include QC and QA for both design and construction
  - ❖ Define clear reporting relationships and assigned responsibilities
- ❖ Establish Quality Plans for each major work activity /category with contract requirements & references
- ❖ Document and track Quality issues to evaluate & measure performance: time to resolve, severity, number, potential schedule / cost impact.
  - ❖ Communicate Quality in regular meetings



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# Safety & Health Program – People Tools

- Senior Management Commitment
- Management (Prime /subs) – “Head Shed” Mtg.
- Initial Orientation & Training - - and renewals
- Drug /alcohol test; prehire - random-post accident
- Tool box meetings: vary the lead ; assign craft responsibility
- Incentive programs – celebrate team results



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# Safety & Health Program - Work Tools

- Work Activities / Categories – specific Safety Plans
- Safety Inspections – include responsibilities at craft level.
- Initial Use and Weekly checks:
  - Construction Equipment certifications / condition
  - Construction Materials certifications / condition
  - Safety equipment / materials supply and condition
- Bi-weekly Safety Meetings – include in subs meetings



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# A Few Lessons Learned

Clearly define organization roles and responsibilities

Do LEARN the Contract (in detail); Notice reqmt's

Maintain the Client relationship – @ multiple levels

Don't cancel Team coordination meetings / calls

Do the things you least want to do - FIRST

Document client and subcontractor communications

**Don't ever compromise Safety** (esp. confined space)



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*“Begin with the End in Mind*

# The Journey Toward Design – Build Success



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