



[research / education]



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Buildings for Advanced Technology Workshop II
Mesa, Arizona

Implementing A Cost Management Strategy in Laboratory Design

January 23, 2004

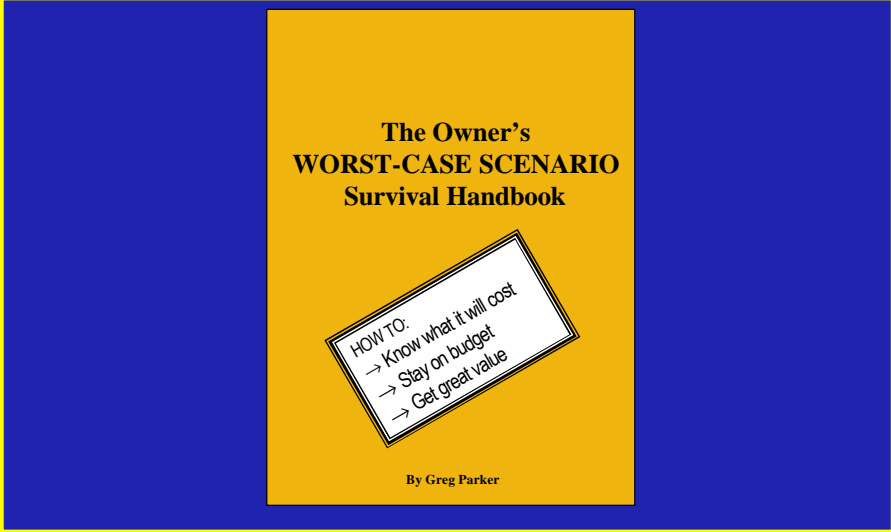


Case Studies

- ✓ Pharmaceutical – 8 of the top 10 Fortune 500
- ✓ Institutions - New Life Sciences Complex
- ✓ Hi-tech – Semi Conductor Manufacturers



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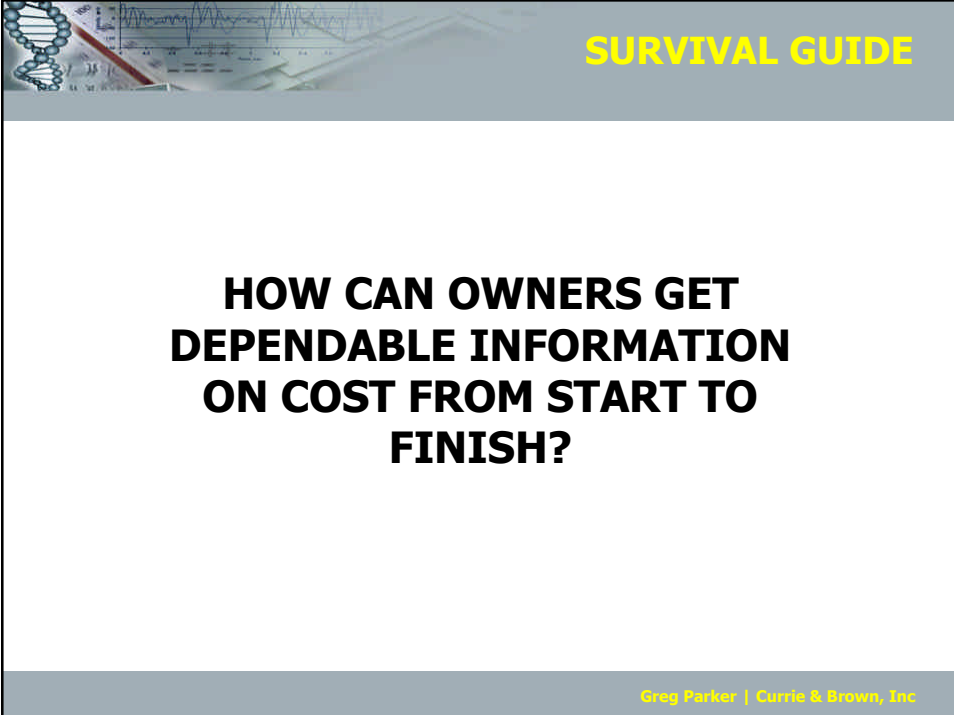


**The Owner's
WORST-CASE SCENARIO
Survival Handbook**

HOW TO:
→ Know what it will cost
→ Stay on budget
→ Get great value

By Greg Parker


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SURVIVAL GUIDE

**HOW CAN OWNERS GET
DEPENDABLE INFORMATION
ON COST FROM START TO
FINISH?**

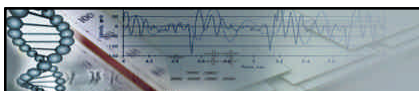
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Hence these questions ?

- Q1. How do you organize the project team for effective cost management?
- Q2. What do we need to know or do to predict the final cost?
- Q3. What can a client expect to know, when, and with what accuracy?
- Q4. What influences the accuracy?
- Q5. How do we manage uncertainty and risk, what is "contingency"?
- Q6. What can we do to help clients manage costs?

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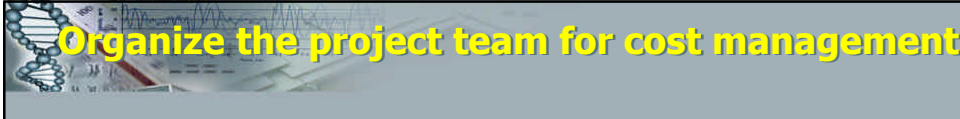


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QUESTION 1

HOW DO YOU ORGANIZE THE PROJECT TEAM FOR EFFECTIVE COST MANAGEMENT?

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Organize the project team for cost management

- ✓ **As a single team working in a flat coequal organizational structure**
- ✓ **With a single point of responsibility for the design and cost**
- ✓ **Regular design and project review meetings independent of the client**
- ✓ **Continuous intra-team communications**
- ✓ **Communicating a single message to the client**

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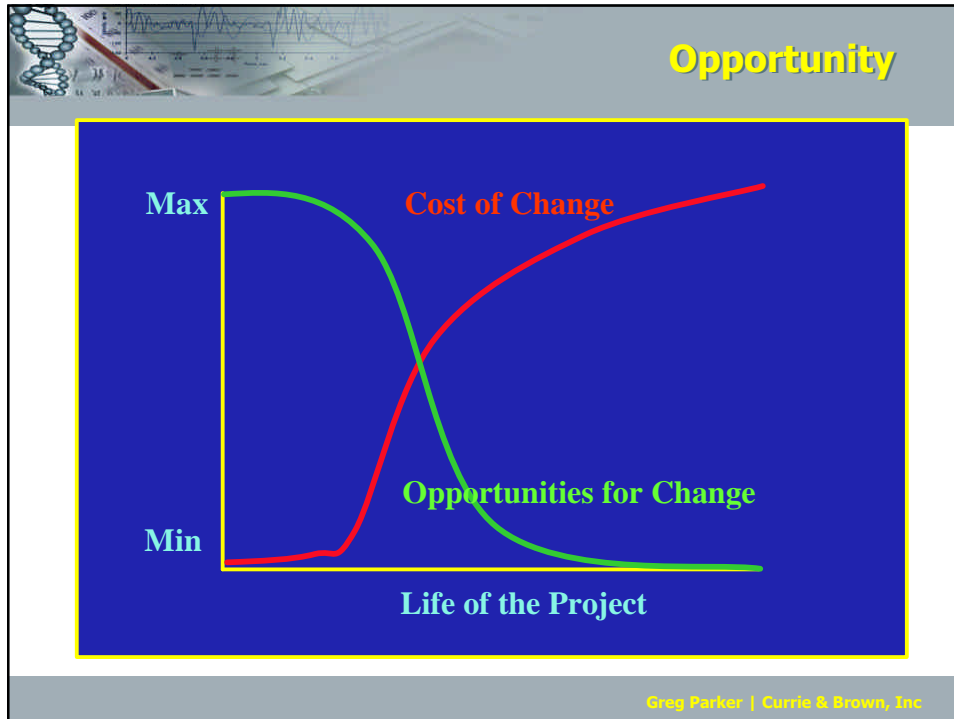


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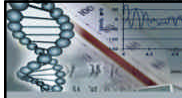
2ND QUESTION

WHAT DO WE NEED TO KNOW OR DO TO PREDICT FINAL COSTS?

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- ### Know or do to predict the final cost?.... From the client
- ✓ **Defined scope; program, criteria, etc.**
 - ✓ **Total project budget; hard and soft**
 - ✓ **Timely decisions**
 - ✓ **Appreciation of major cost drivers**
 - ✓ **Prioritization: cost vs. quality vs. time**
 - ✓ **Strategy and schedule for project delivery**
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**Know or do to predict the final cost?....
In design**

- ✓ **Early investigation of design options & development of comparative costs**
- ✓ **Stay focused on the primary requirements of the project**
- ✓ **Provide best available (best guess) information to minimize unknowns**
- ✓ **Continuously identify new risks**
- ✓ **Consider ways to improve value**

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**Know or do to predict the final cost?....
In estimating**

- ✓ **Understand where the design is headed and its history**
- ✓ **Use relevant "benchmarks"**
- ✓ **Know current and local labor and material costs, trends and conditions**
- ✓ **Continuously manage risk and value**
- ✓ **Track changes**
- ✓ **Gap analysis**

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3RD QUESTION

WHAT CAN A CLIENT EXPECT TO KNOW, WHEN AND WITH WHAT ACCURACY?

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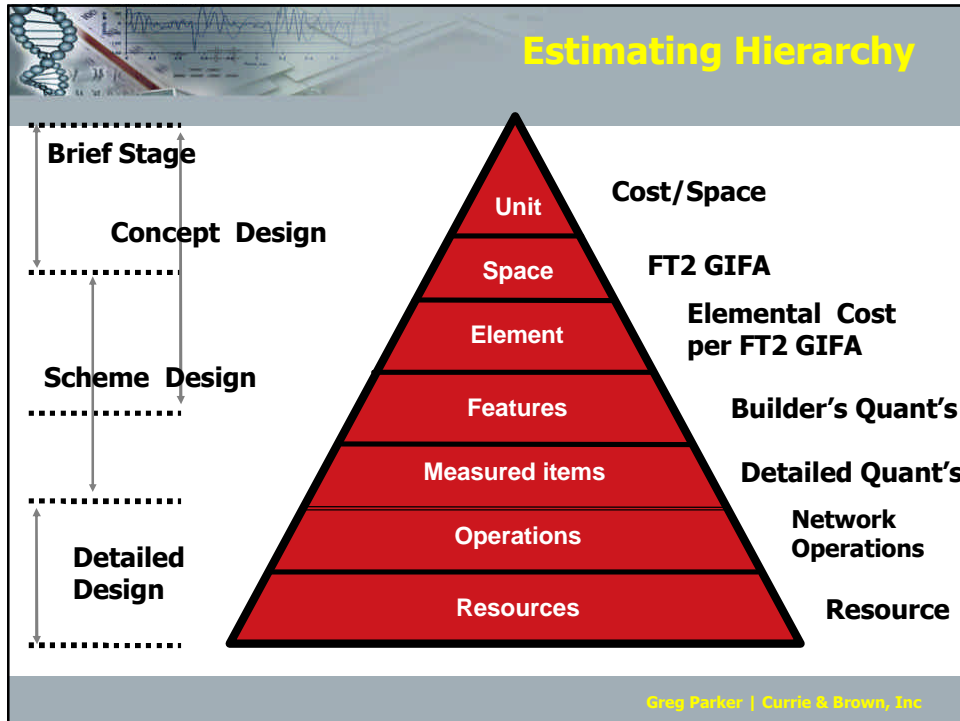
Accuracy

Project Stages:

Inception	Feasibility	Concept Design	Detailed Design
↓	↓	↓	↓
↔ 25% ↔		↔ 15% ↔	
↔ 10% ↔		↔ 5% ↔	
Unit/Space	Space/Element	Builder's Quant's	Detailed Quant's

Estimating Techniques:

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4TH QUESTION

WHAT FACTORS INFLUENCE THE ACCUARACY OF AN ESTIMATE?


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**Influence on an estimate's accuracy....
Scope**

- ✓ **Change: additions and omissions**
- ✓ **Client's ability to manage their requirements including providing detailed information**
- ✓ **Continuous focus on the original scope of the project**
- ✓ **A design that is consistently and iteratively developed**

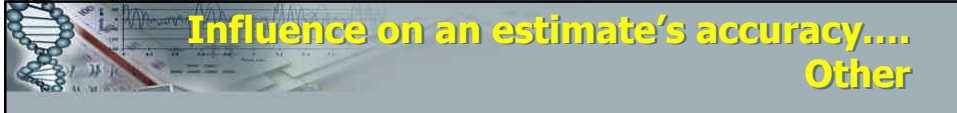
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**Influence on an estimate's accuracy....
Timing**

- ✓ **Sufficient time to develop quality information**
- ✓ **Timely decisions**
- ✓ **Construction schedule and project phasing**


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Influence on an estimate's accuracy....
Other

- ✓ **Safety, protocols, local conditions, site restrictions, etc.**
- ✓ **Procurement and buyout strategy**
- ✓ **Type and quality of construction documentation**
- ✓ **Market conditions!!!!!!!!!!!!!!**
- ✓ **Risk!!!!!!!!!!!!!!**

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5TH QUESTION

**HOW DO WE MANAGE UNCERTAINTY
AND RISK, HENCE WHAT IS
CONTINGENCY?**

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Uncertainty & risk, hence what is "contingency"
Firstly...

✓ **NO!!!! project is risk free!!!!**

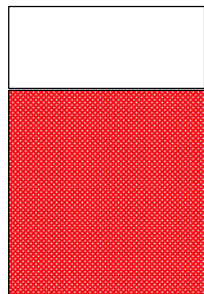
✓ **It can't be ignored**

✓ **It can be managed**

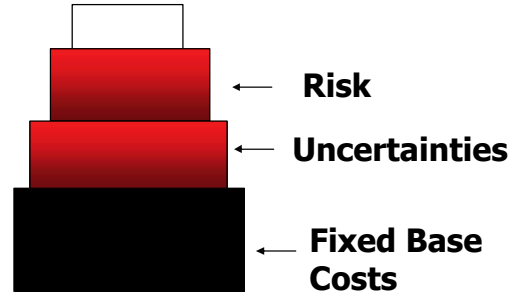
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Quantitative Risk Assessment

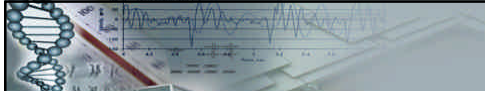
Traditional
10% Contingency?



Cost Modeling
Calculated Contingency



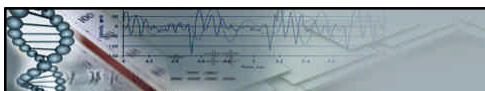
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Definitions ?

- ✓ **Base Cost** – know we need it and how much it is
- ✓ **Uncertainty** – know we need it not sure how much
- ✓ **Risk** – there is a possibility we may need it
- ✓ **Contingency** – the allowance set aside to be risk adverse

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6TH QUESTION

WHAT CAN BE DONE TO HELP CLIENTS MANAGE COST? ?

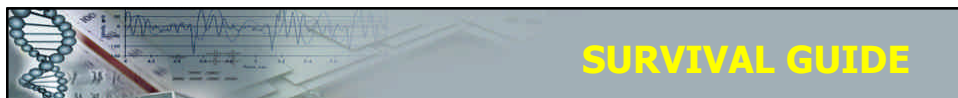
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Help clients manage costs by helping them to ...

- ✓ Understand the costs and what is driving them
- ✓ Understand their options
- ✓ Make sound and timely decisions
- ✓ Understand and manage risk
- ✓ Understand opportunities for value & any associated downsides


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FEEDBACK

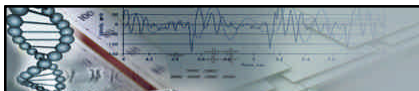
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LIFE SCIENCES COMPLEX Key successes

- ✓ Team effort early & with the 3 owners
- ✓ Strong leadership & thorough planning
- ✓ Clear statement of needs: “world class” image, but with high efficiency & value
- ✓ Options (design and VM) with cost models (yes, it cost time and money); no back-tracking or redesign
- ✓ Detailed above & below line budgets
- ✓ Trackable estimate from the start, built from \$/SF (net and gross) to quantities

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AND FINALLY

3 TIPS.....

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End User – Get it Right First Time



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Make sure the Design Works



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No short cuts during Construction



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The Owner's WORST-CASE SCENARIO Survival Handbook

**The Owner's
WORST-CASE SCENARIO
Survival Handbook**

To [your name]
- Greg

with best wishes

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By Greg Parker

If you act now...autographed copies only \$999.99

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