



Design Project Management

Institute for Facilities Management



1 - AIA Continuing Education Credit



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Continuing
Education
Provider

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Continuing
Education
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Course Description

Design Project Management

This class will focus on basic effective fundamental procedures for managing the project design process.

Topics include how to understand and administer the design process, how to interview, select and hire a design consultant, how to get the best from your architect/engineer, how to work and communicate with your campus client, effective communication strategies, what to look for in design reviews, and the importance of program and budget conformance.

Review successful processes for value engineering, effective team management, communication, and basic project manager..... skills.



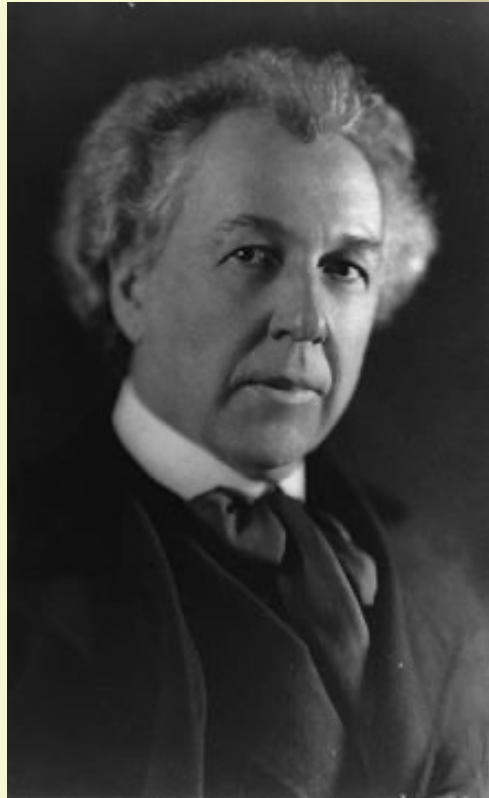
Part 1
Design Process

- Design Process
- Project Schedules
- Project Deliverables
- Designing For Value



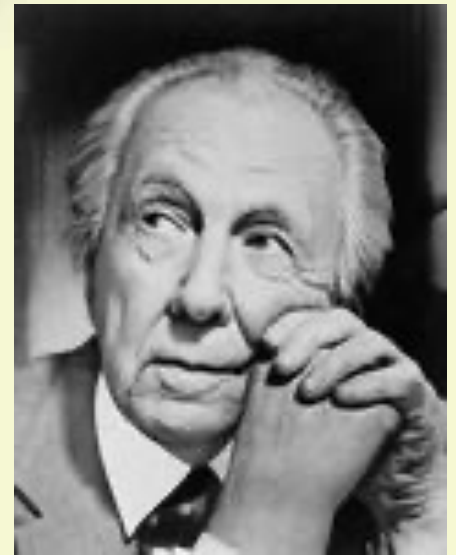


How do you get ideas?



Frank Lloyd Wright

Chicago studio shut down from 12-2
In perfect silence

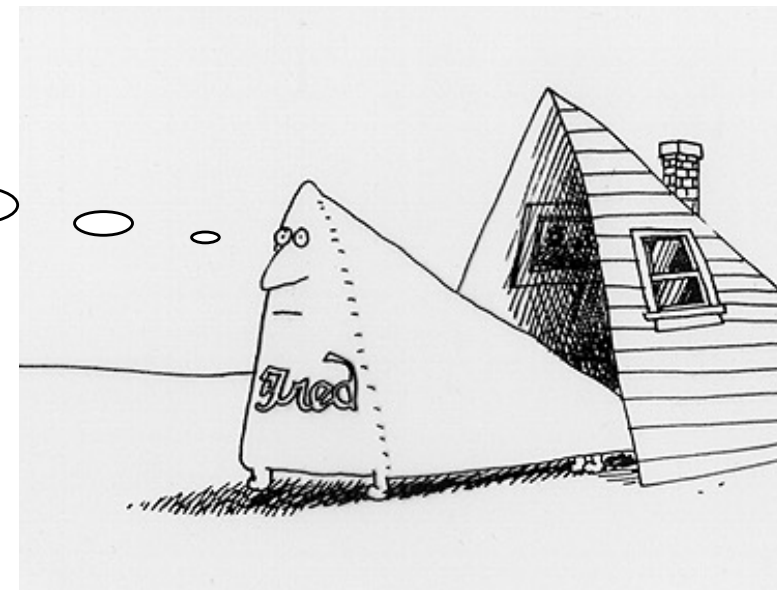




What is Design?

Now that's a
good design !

Moments of Inspiration
Periods of Hard Work
Continuous Activity



Fred's House

Table Talk



Is there a problem with designers making changes to the project during construction?

What problems can this cause?

What are some solutions to these problems?

Table Talk



Some designers seem to continue changing things even into construction, is that an issue?

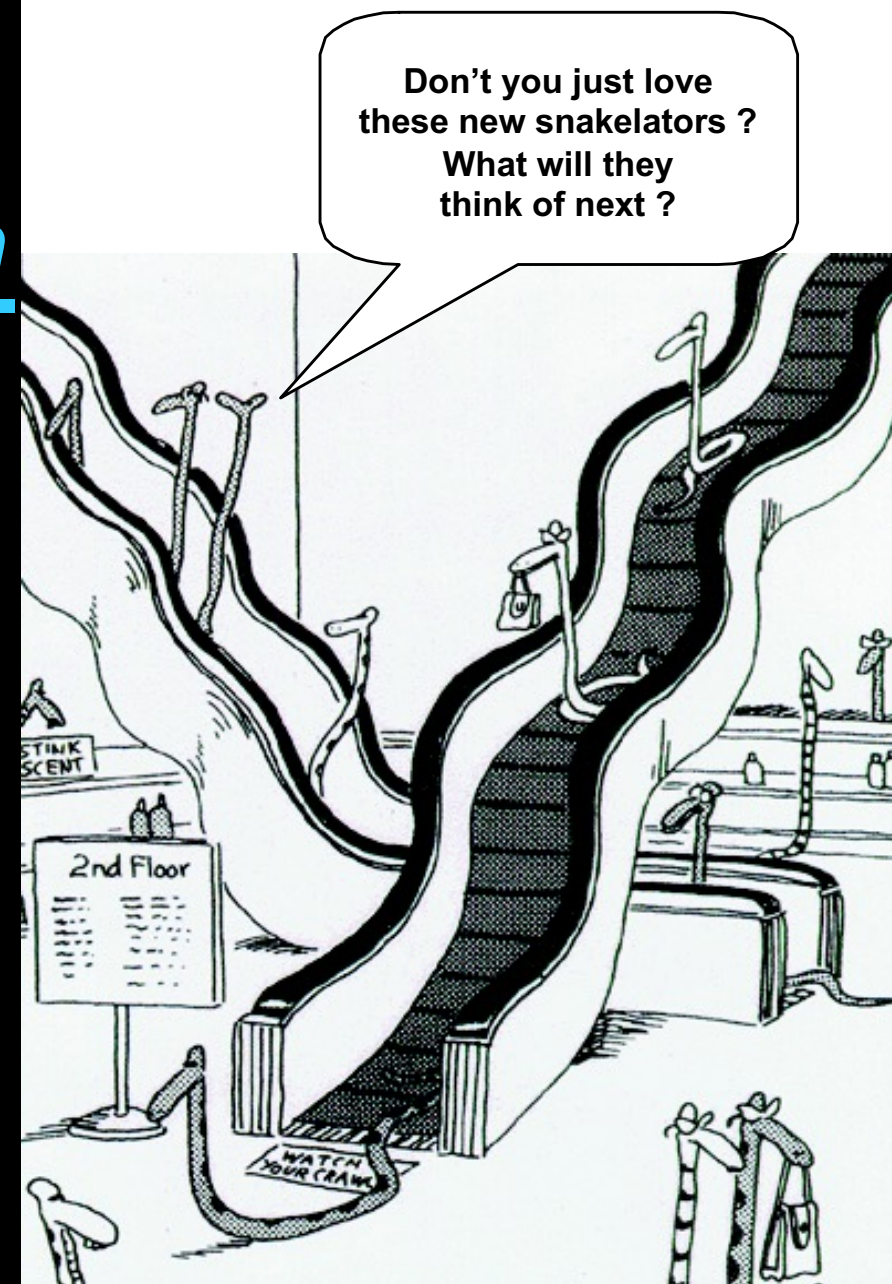
Why?

What can be done about it?



Influences on Design

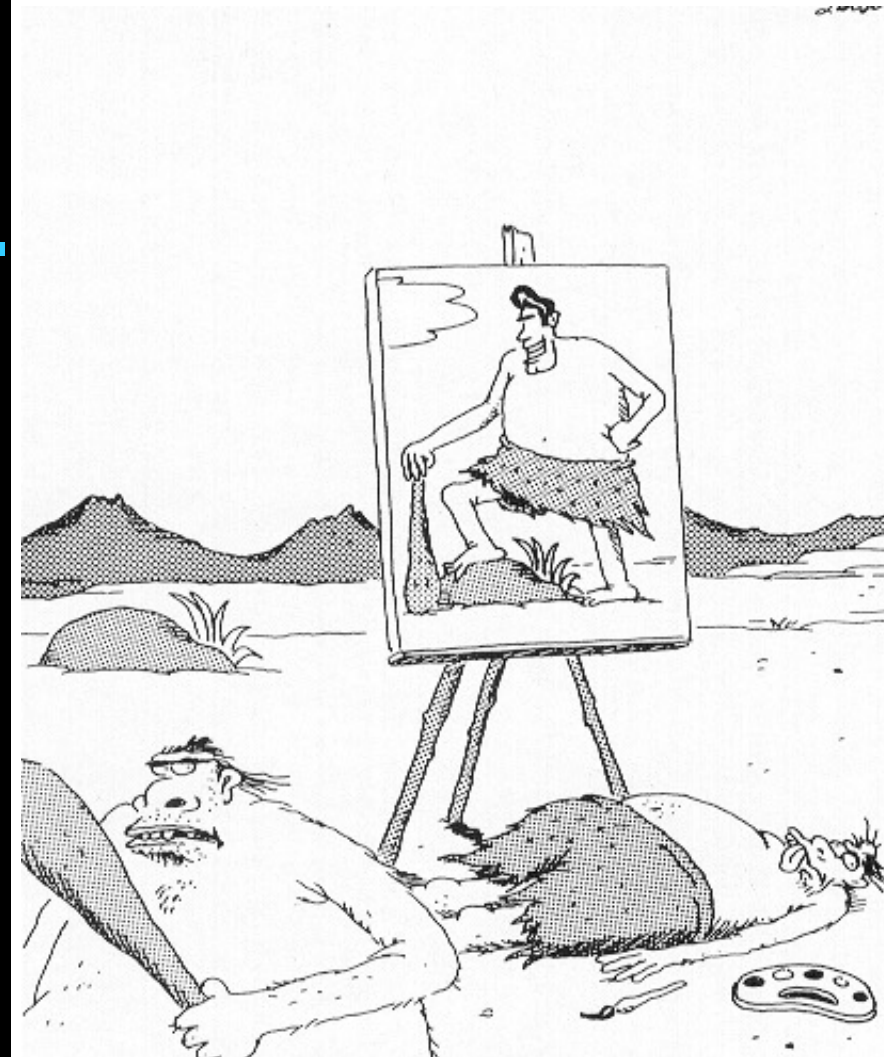
- Program
- Codes / Regulations
- Site / Context
- Technology





Influences on Design

- Program
- Codes / Regulations
- Site / Context
- Technology
- Cost / Schedule



Early Art Critic

What cost pressures do you face?

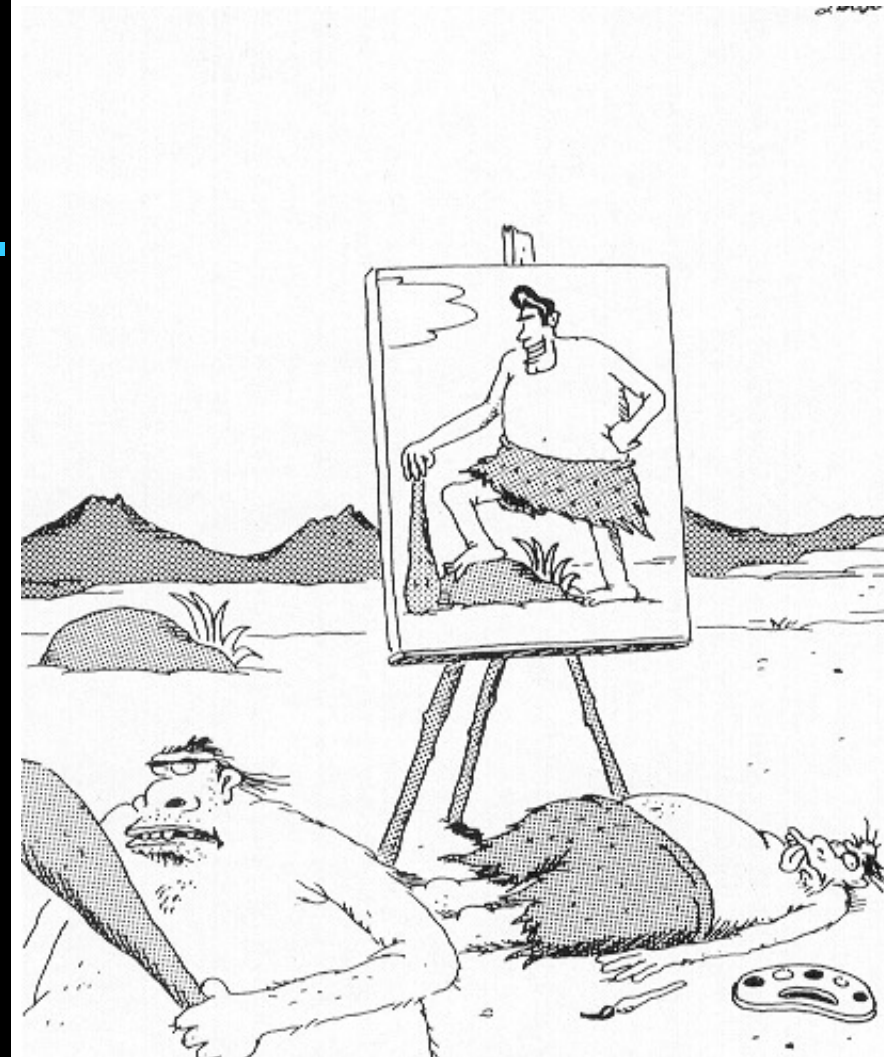


Vice President wanted 20% of projects to come in “over budget”!



Influences on Design

- Program
- Codes / Regulations
- Site / Context
- Technology
- Cost / Schedule
- Client



Early Art Critic

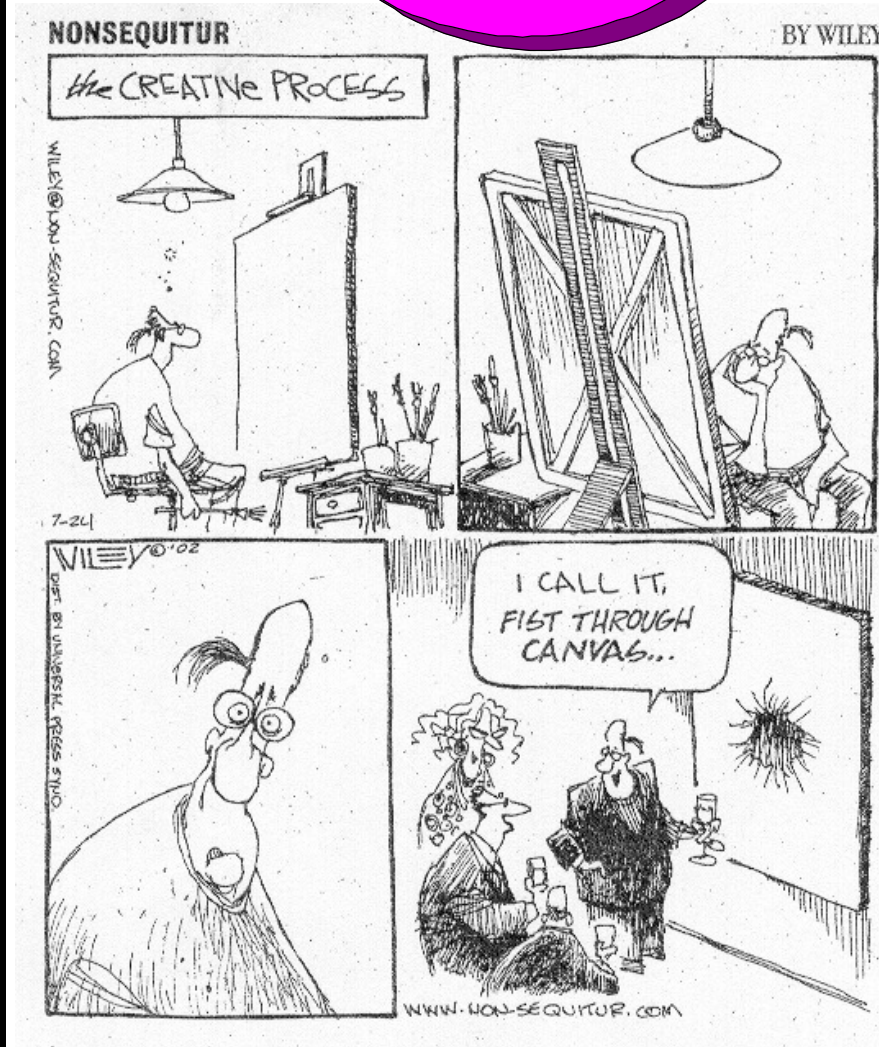
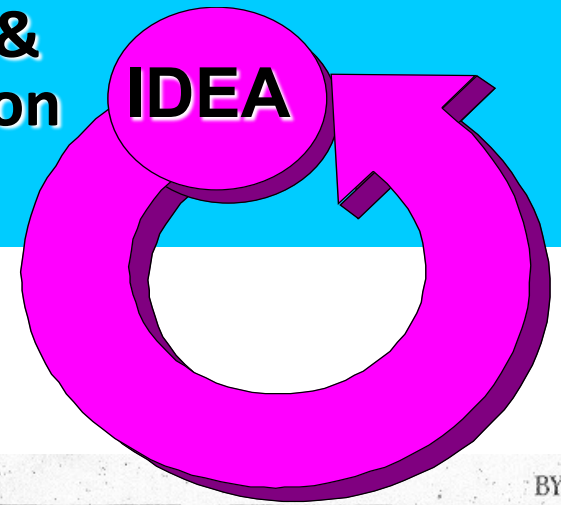


Design Process

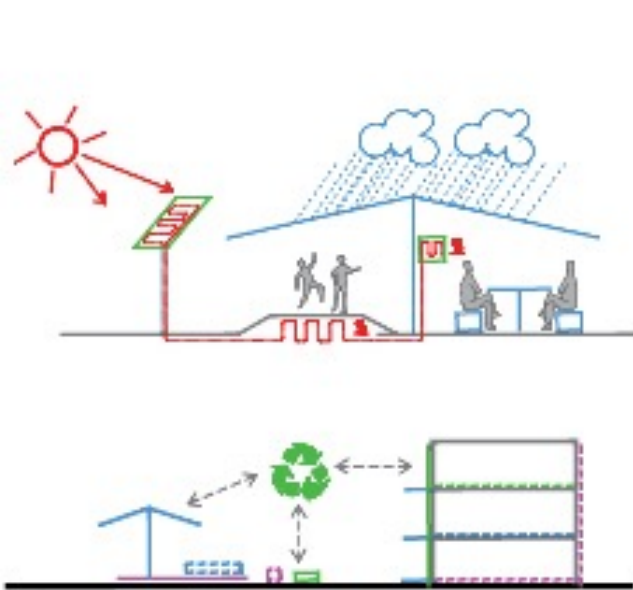
- Analysis
 - Program
 - Site
 - Code
 - Scheduling
 - Cost
 - Constructability
- Synthesis
 - Goals
 - Concept
 - Alternatives

Design &
Reflection

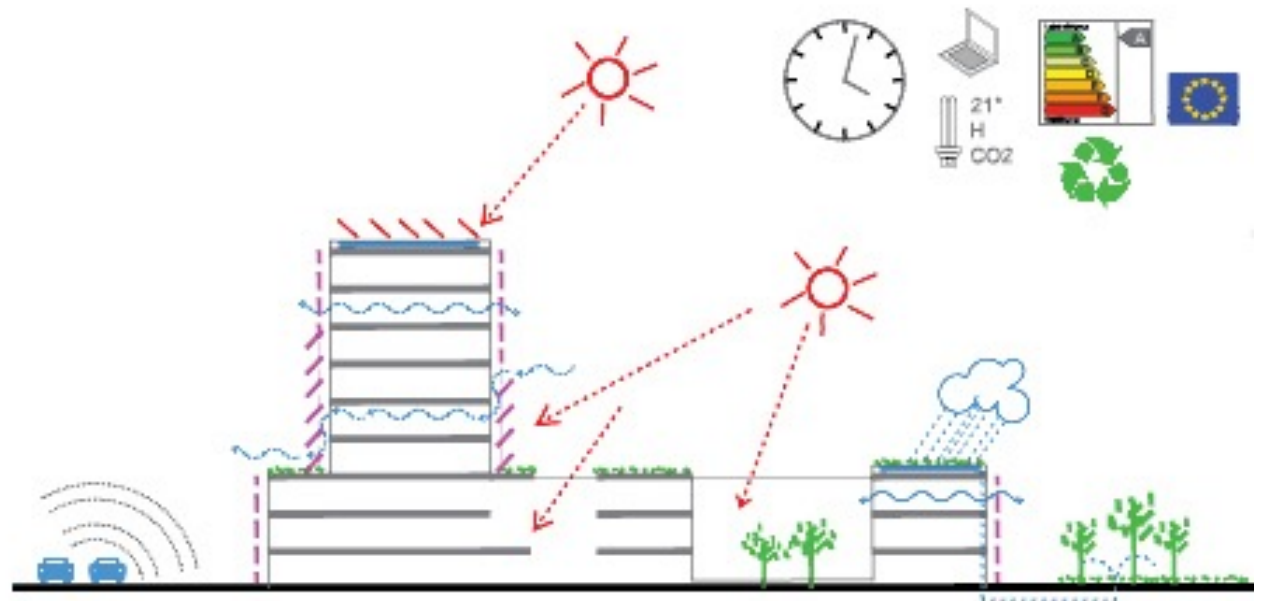
IDEA



How many design schemes do you require?



Eco-friendly design of public space elements



Goal - highest energy efficiency



Design Phases - Deliverables

- Schematic Design (SD)
 - Plans / Elevations / Renderings
 - Sections / \$ Estimate
 - Outline Specifications
 - Design Summary / Analysis
- Design Development (DD)
 - Expanded SD Set
- Construction Documents (CDs)
 - Detailed Plans



Prairie Dog Developers



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Deliverables

11.3.7.1 The Design Professional shall provide to the Owner the hardcopies (HC) and the electronic files (E) of the documents identified below:

	PREDESIGN	SCHEMATIC DESIGN	DESIGN DEVELOPMENT	CONSTRUCTION DOCUMENTS	BIDDING	CONSTRUCTION PHASE
DESIGN OPTIONS						
DESIGN SUMMARY (BASIS OF DESIGN)						
TABULATION OF AREA						
CODE ANALYSIS						
DESIGN CALCULATIONS						
PATH OF TRAVEL REPORT						
MAJOR EQUIPMENT LIST						
AIM ASSET TAG LIST						
MEASUREMENT & VERIFICATION PLAN						
PROJECT COST ESTIMATE						
LIFE CYCLE COST ANALYSIS						
PROJECT SCHEDULE						
PROJECT MANUALS - SPECIFICATIONS						
DRAWINGS						
SCHEMATIC DESIGN BOOKLET						
ICRA FORM (UIHC ONLY)						
ENERGY ANALYSIS						
ARC FLASH ANALYSIS						
PHOTOMETRICS AND LPD COMPLIANCE FORM						
FURNITURE BINDER						
MEETING MINUTES						
RESPONSE TO (BLUEBEAM) REVIEW COMMENTS						
DESIGN STANDARDS DEVIATION REQUESTS (AS APPLICABLE)						
PROJECT WARRANTIES LIST						
SFMO SUBMITTAL						
SEALED CONSTRUCTION DOCUMENTS						
BIDDER INTEREST SUMMARY						
SEALED ADDENDA (AS APPLICABLE)						
SUBSTITUTION REQUEST RECOMMENDATION (AS APPLICABLE)						
ARCHITECTURAL BID DOCUMENTS (.DWG)						
EVALUATION OF BIDS						
JOBSITE OBSERVATION REPORTS						
FINISHES BINDER						
INSTRUCTIONS TO CONTRACTORS (AS APPLICABLE)						
SHOP DRAWINGS / SUBMITTALS						
SUBSTANTIAL COMPLETION PUNCH LIST(S)						
FINAL COMPLETION LETTER OF RECOMMENDATION						
RECORD DOCUMENTS						



Accurate plans are important



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Communication

Design

All Project Phases

Communication

Client

Programming

Professionals

Schematic Design

Design Development





Design

All Project Phases

Communication

Client

Programming

Professionals

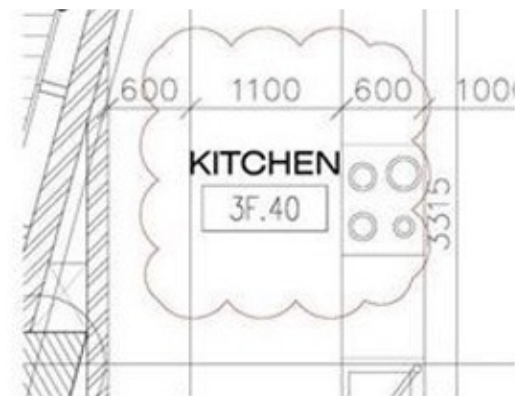
Schematic Design

Design Development

Contractor

Contract Documents

Construction



Revision #46 dated 1/5/11



How are the quality of design team drawings?

Has CADD / BIM helped or hurt?

Table Talk



Should designers & contractors always be financially responsible for their mistakes?

3-5% value added



Project Schedules

- **A/E Selection**
- **Contract Negotiations**
- **Schematic Design**
- **Design Development**
- **Construction Documents**
- **Bidding / Contract Award**
- **Construction**
- **Close Out**
- **Warranty Period**



At this rate...you'll never finish on time!

DESIGN PRODUCTION SCHEDULE

Example of Typical Design Production Schedule (Originally Prepared for The Logan School - Partial Schedule Only)



Week of February 27

Consultant Coordination Meeting

MDA:

Coordinate meeting

Consultants:

Advise of what information required to develop preliminary budget, design

Advise of Survey, Testing, or existing conditions information needed from Owner.

Provide first pass square footage cost information

Review Diagram Options.

Building Committee Meeting:

Information, Overview, Roles

Logan:

Authorize commencement of Civil Engineering

Review and approve Schedule

Information to be provided by Owner (Identify items and schedule: asbestos, survey, hazardous material tests, easements, other items?)

MDA:

Agenda and presentation materials



Week of March 6

Building Committee Meeting:

Diagrams of overall design solutions

Cost data based on Square footage Costs

Logan:

Decision on selection and approval of diagram

Review first pass square footage costs.

MDA:

Agenda and presentation materials

Perhaps set false deadlines to enforce real schedule

Denver Fire Department
Commission for Disabled

Logan:

Representative may want to attend

MDA:

Set up and conduct meetings with regulatory agencies

Consultants:

Mechanical, Electrical, Civil meet w/ regulatory agencies as required

Site Visits:

Review of Existing conditions in portion of the building to be renovated

Structural: squash court wall



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Design for Value

Designing for Value

Maintainability





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Design for Value

Designing for Value

Maintainability

Life Cycle Cost

Value Engineering





May need to call it “Value Shifting”



Value Management Approach

Tier 1

- Gypsum Board (FC/reg)
- Simplified Structure
- Direct Purchase

Tier 2

- Lighting Package

Tier 3

- Scope Reductions



If we delete that foolish two-hour wall,
We'll be right on budget.



Designing for Value

Maintainability

Life Cycle Cost

Value Engineering

Total Cost of Ownership

Design for Value

Ned Beally, of Beally Construction Co., helps his children with a Lego® Mindstorms™ robotics project.

©RICHTEINMANT



Oh big surprise.
Another announcement
of cost overruns and
delays.



Part 2 The Project Team

- Assembling The Team
- Selecting The Team
- Team Members & Roles

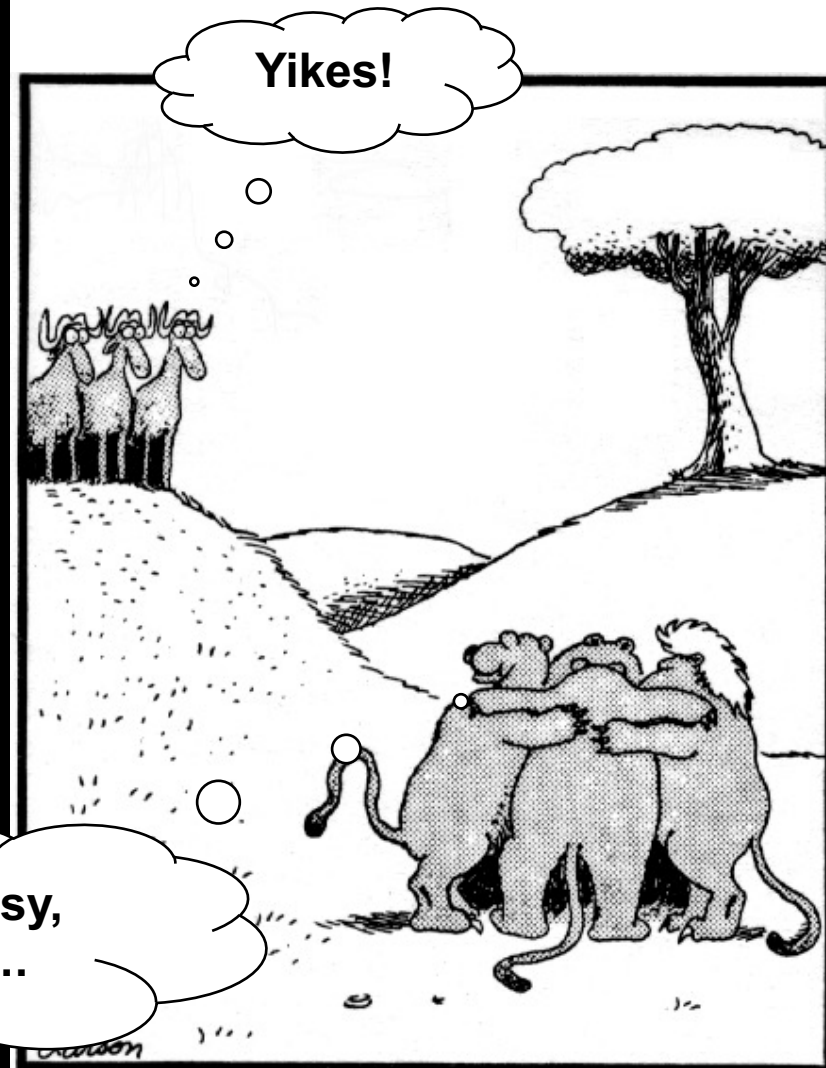


Wildlife Day Shifts



Assembling The Team

- Owner
- Consultants
- Construction Team
- Supporting Cast





The Project Team

Owners

- Client
- User

Project Team

We need a planning committee to create a task force to develop a team to determine the next step.





The Project Team

Owners

- Client
- User
- Committees

Project Team

We need a planning committee
to create a task force
to develop a team
to determine the next step.





The Project Team

Owners

- Client
- User
- Committees
- Facilities Mgmt
- Others

Project Team

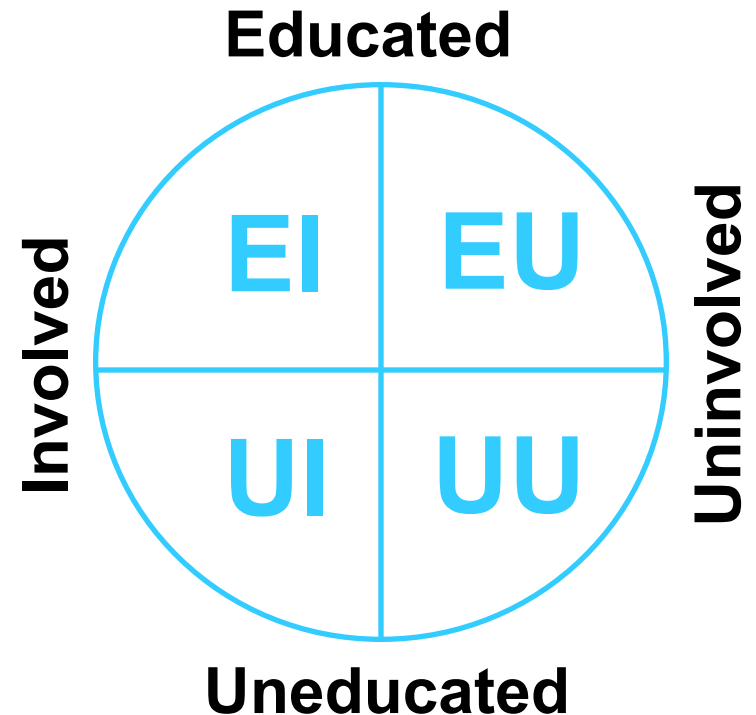
We need a planning committee to create a task force to develop a team to determine the next step.





Owners

- Experienced
Educated / Involved
Educated / Uninvolved
- Inexperienced
Uneducated / Involved
Uneducated / Uninvolved

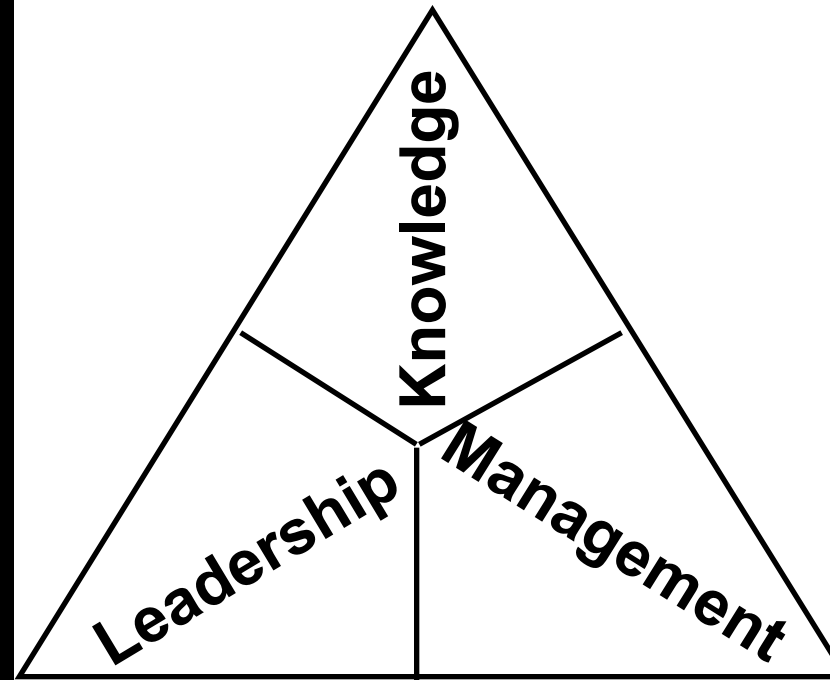




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Consultants

*What is a
Consultant ?*





www.dilbert.com scottedams@aol.com



8/24/98 © 1998 United Feature Syndicate, Inc.



What is a Consultant ?

Professional Advice

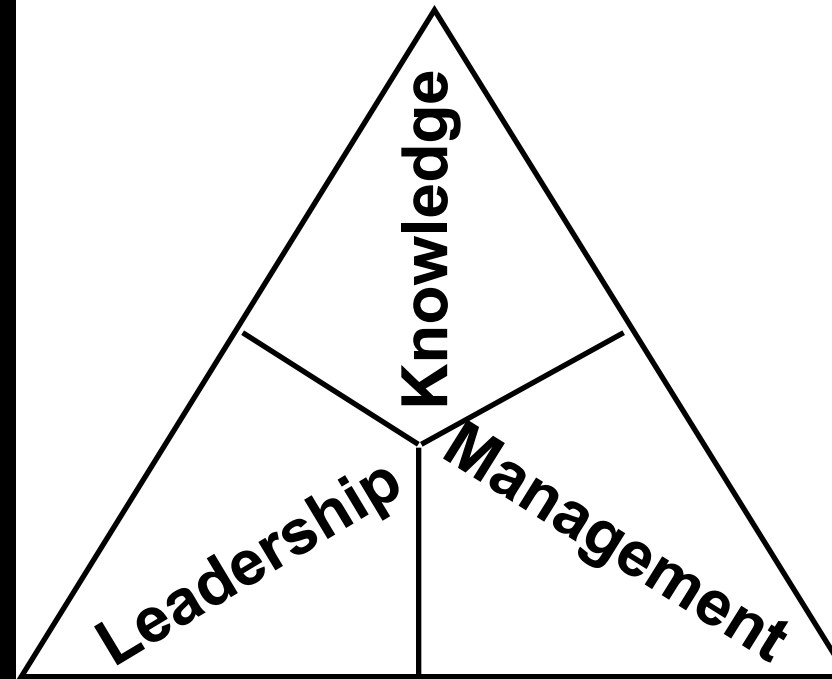
Knowledge / Expertise

Leadership (transformational)

- Doing the Right Thing
- Inspiring

Management (transactional)

- Doing Things Right
- Day to Day Activities





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Design Team

The Design Team

Designers

Architect - Usually Prime





The Design Team

TEN Deadly Sins

1. Team Changes
2. Multiple Contacts
3. Schedule Delays
4. Over Design
5. Negative Approach
6. Low Quality Product
7. Slow Response
8. Slow Review
9. Weak Leadership
10. Close Out

SPEED BUMP

BY DAVE COVERLY





What You Should Do

- Have a Clear Decision-Making Process
- Develop a Complete Program
- Establish an Adequate Budget
- Establish a Realistic Schedule
- Communicate Effectively
- Hire a Compatible Firm
- Guard Against Scope Creep
- Deliver Bad News Promptly
- Expect to Pay Reasonable Fees

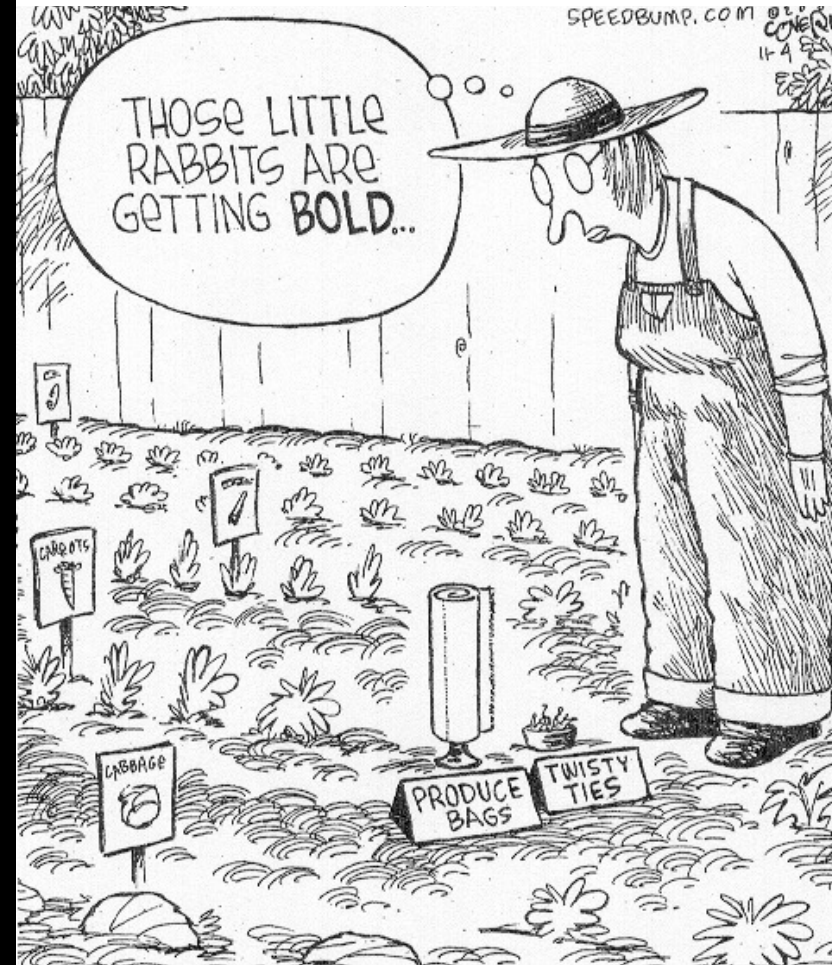


Beemer—\$28,000
Fire hose—\$300
Knocking the glass out of this
car—PRICELESS!!



What You Should Not Do

- Do Not rely on clairvoyance (6th sense)
- Do Not make impossible promises
(over promise – under deliver)
- Do Not accept sloppy work
- Do Not expect perfection
- Do Not expect added scope for free





Architect Expect

- Clear Direction
- Instantaneous Decisions
- Tightly Defined Scope
- Comfortable Budgets
- Fair Treatment
- Profitable Fees
- Quality Design Expectations

You Expect

- Exceptional Service
- Adherence to Budgets
- Meeting Schedule Milestones
- Comprehensive Services
- Complete Drawings
- Cost Effective Design

Architect May Get

- Ambiguity
- Extensive Collaboration
- Scope Creep
- Inadequate Budgets
- Unreasonable Contracts
- Gift Opportunities
- Low Design Expectations

You May Get

- Nonchalance
- Budget Busters
- Delays
- Requests for Additional Fees
- Errors & Omissions
- Extravagance



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Design Team

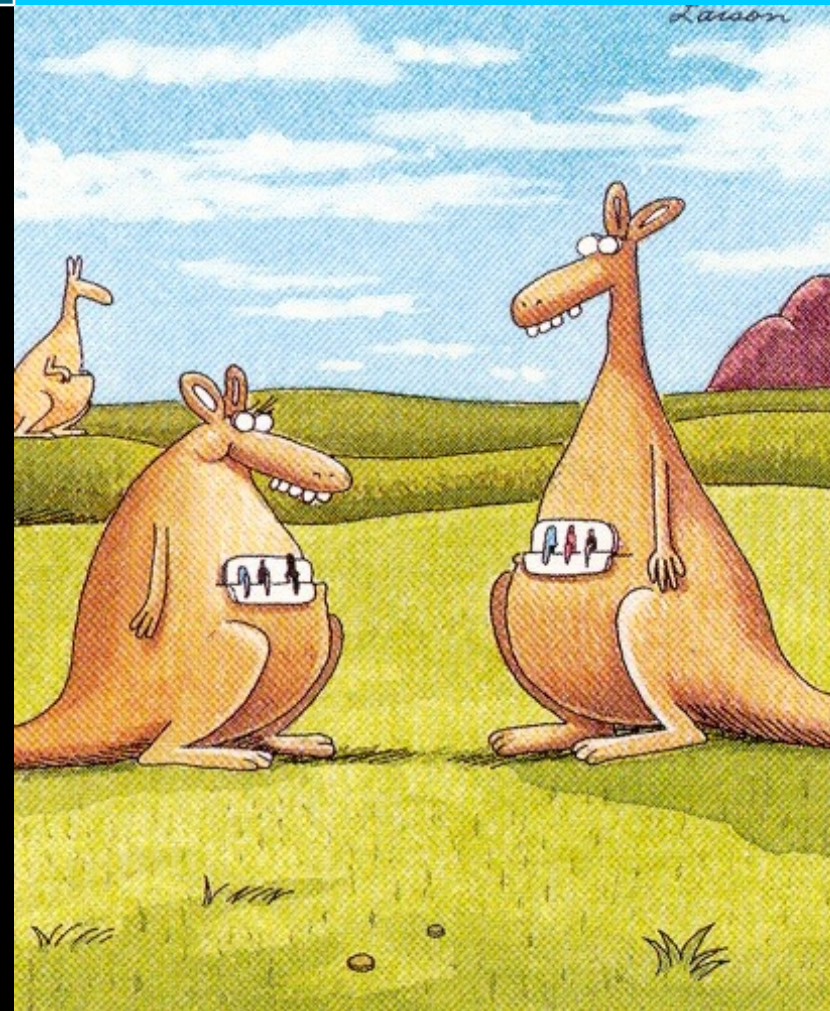
The Design Team

Designers

Architect - Usually Prime

Engineers

25% to 65% of Cost



“Engiroos”



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Design Team

The Design Team

Designers

Architect - Usually Prime
Engineers

25% to 65% of Cost

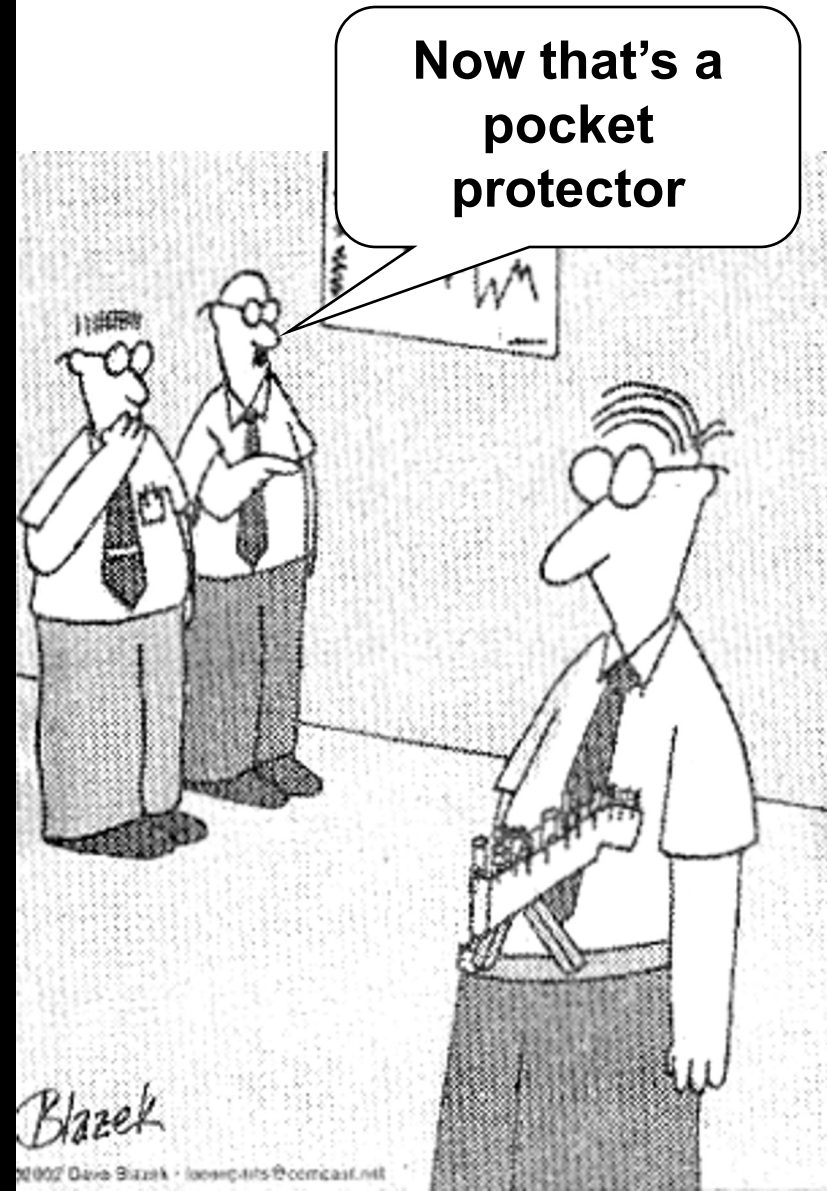
Others

Planner

Commissioning Agent

Landscape Architect

Interior Designer





The Construction Team

- Contractor
 - GC - avg. < 10 employees
 - Design Build
 - Construction Manager
- Subcontractors
- Suppliers
- Laborers

WANT TO HEAR A
CONSTRUCTION JOKE?



I'M STILL WORKING ON IT

CONTRACTOR'S GUIDE TO CHANGE ORDERS

The Art of Finding,
Pricing, and Getting Paid
for Contract Changes and
the Damages They Cause

Andrew M. Civitello, Jr.



The Project Team

- Supporting Cast

Finance Accounting
Insurance / Risk Mgt.
Regulators



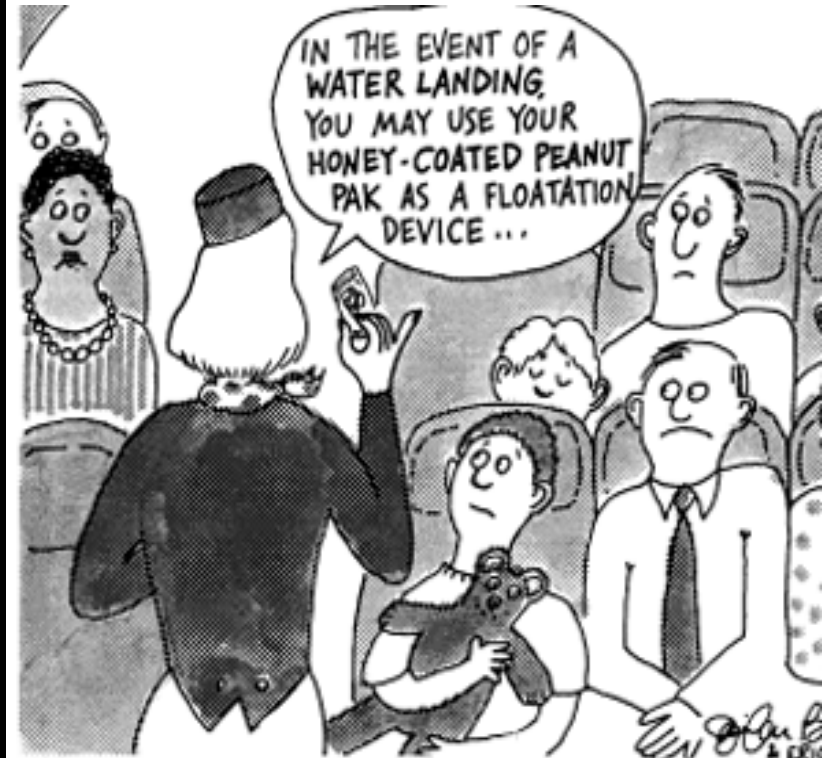
A new federal law requires all on-site service technicians to wear low-riding-pants privacy shields.



The Project Team

- Supporting Cast

Finance Accounting
Insurance / Risk Mgt.
Regulators
Legal
Others



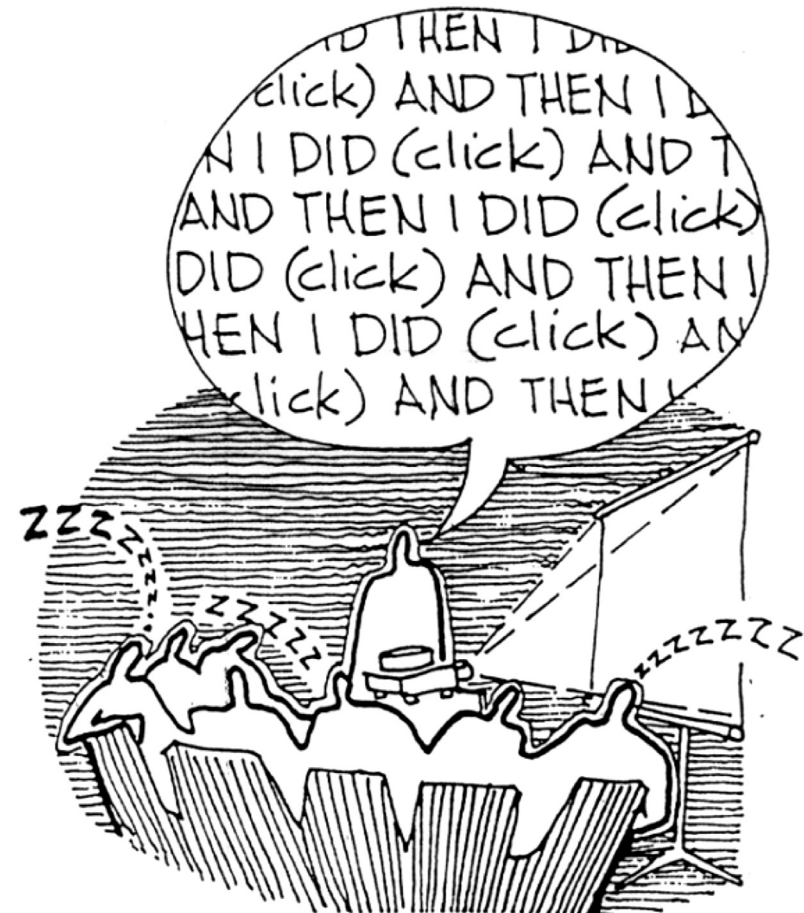


Selecting the
Design Team

- Approaches to Selection

Direct

- Resources
- Experience
- Ability
- Compatibility
- Cost
- Ideas





Selecting the
Design Team

- Approaches to Selection

Direct

Resources

Experience

Ability

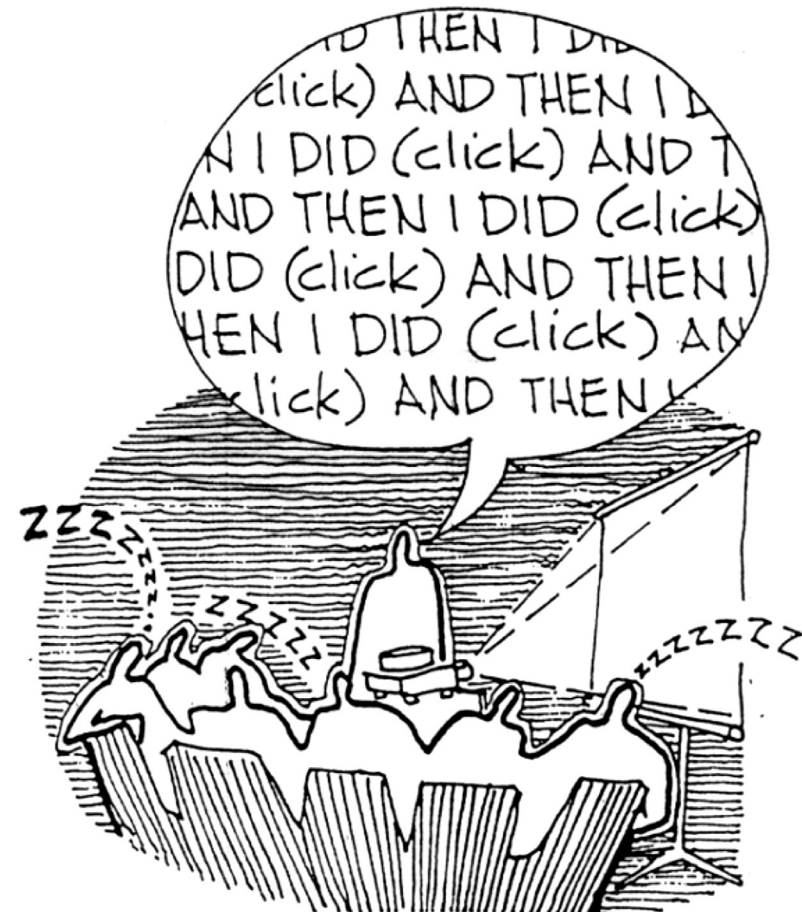
Compatibility

Cost

Ideas

Comparative – "Brooks Act"

Competitions



ENR

Engineering News-Record

enr.com

The McGraw-Hill Companies

May 5, 2003 \$5

► **LAWSUITS:** Possible multibillion-dollar trust fund could resolve construction and other asbestos damage claims

► **PRACTICE:** Virginia DOT requires more licensed engineers on jobs

IMPORTING Star ARCHITECTS





Selecting the Consultants

- Owner Selects
- Prime Selects Subs
- Combination

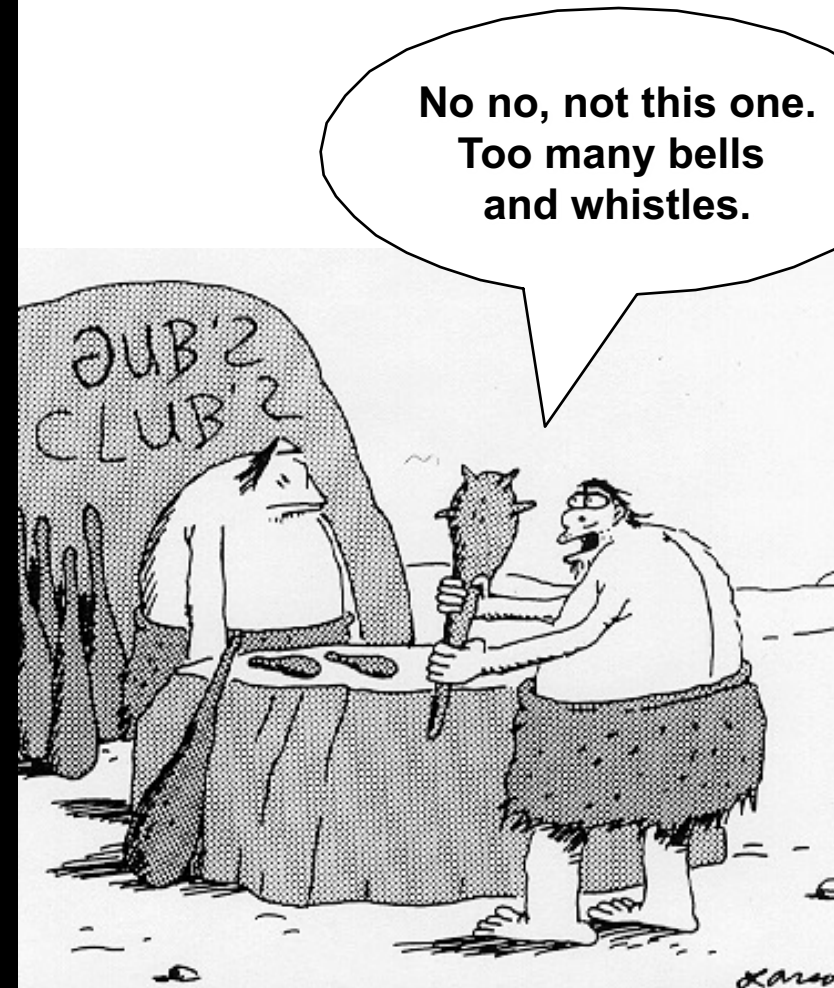




Part - 3

Design Process Tools

- Communication
- Negotiations & Fees
- Design Process Tools





Communication

Communication

- Talking
- Listening

Effective communication

=

80%+ of project problems





Communication

- Talking
- Listening (what not to do)

Mind Reader
Rehearser
Filterer
Dreamer
Comparer





Communication

- Talking
- Listening (what not to do)

Mind Reader

Rehearser

Filterer

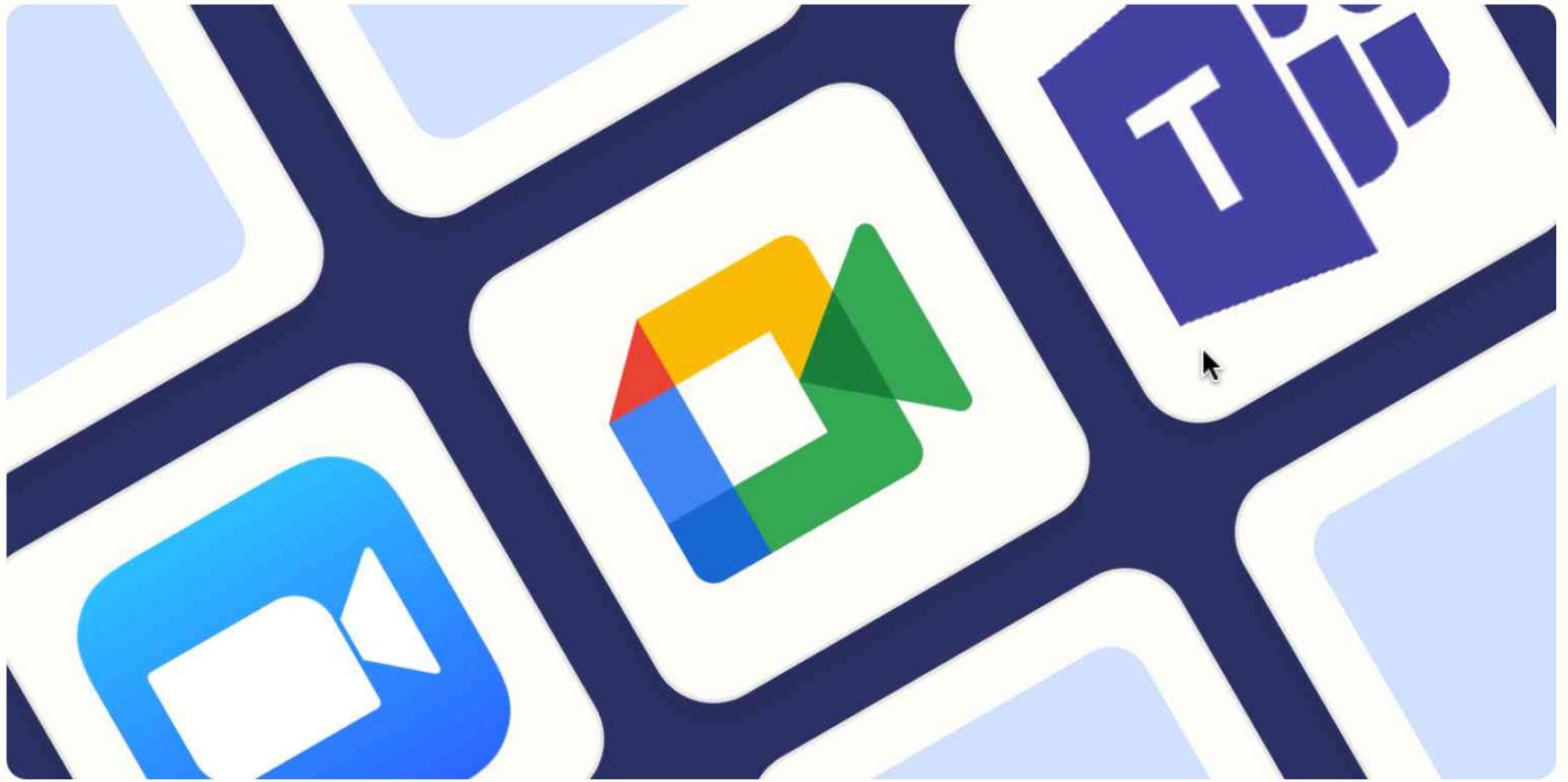
Dreamer

Comparer

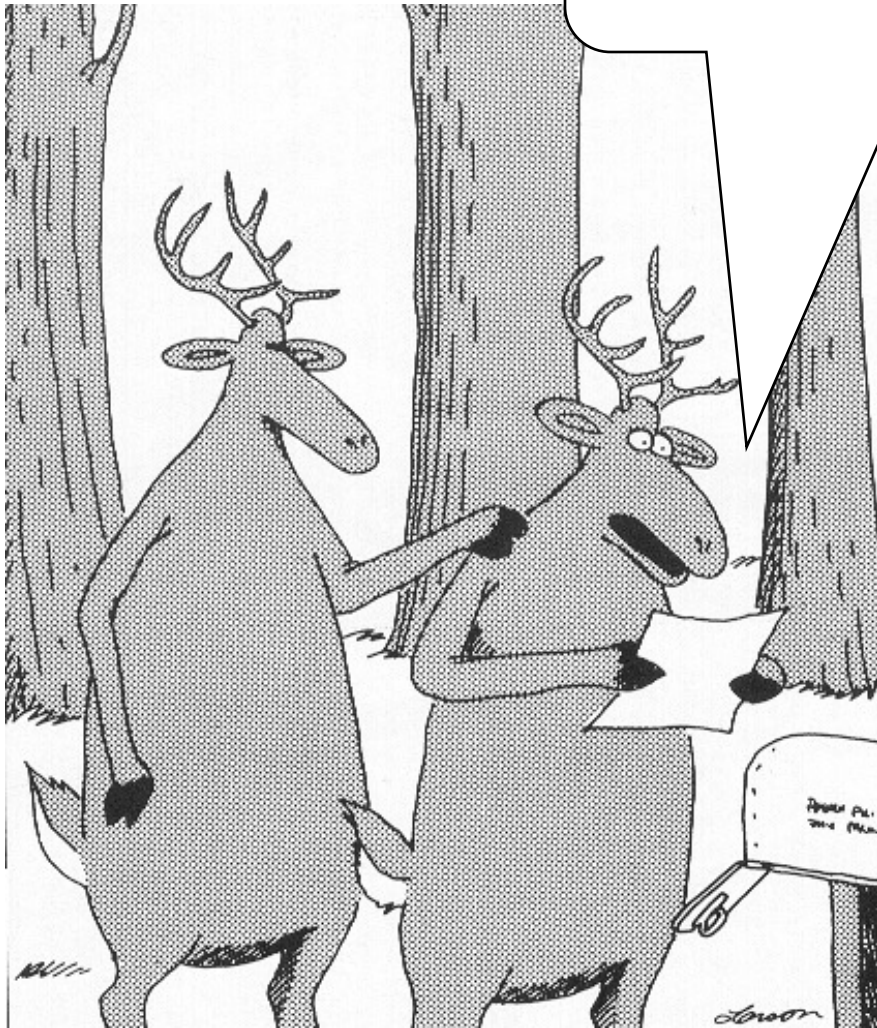
Derailer

Placator









Oh no!
It's from Connie!
She's written me a John Deer
letter.

Body Language	55%
<u>How</u> we say it	38%
<u>What</u> we say	7%





e-mail



- Talking
- Listening
- Writing

Communication





- Talking
- Listening
- Writing
- Meetings

Where minutes are taken and hours are lost

Communication



**The haircut
designed for
meetings**



Communication

- Talking
- Listening
- Writing
- Meetings

Alternatives

Prepare Agenda / Send Ahead

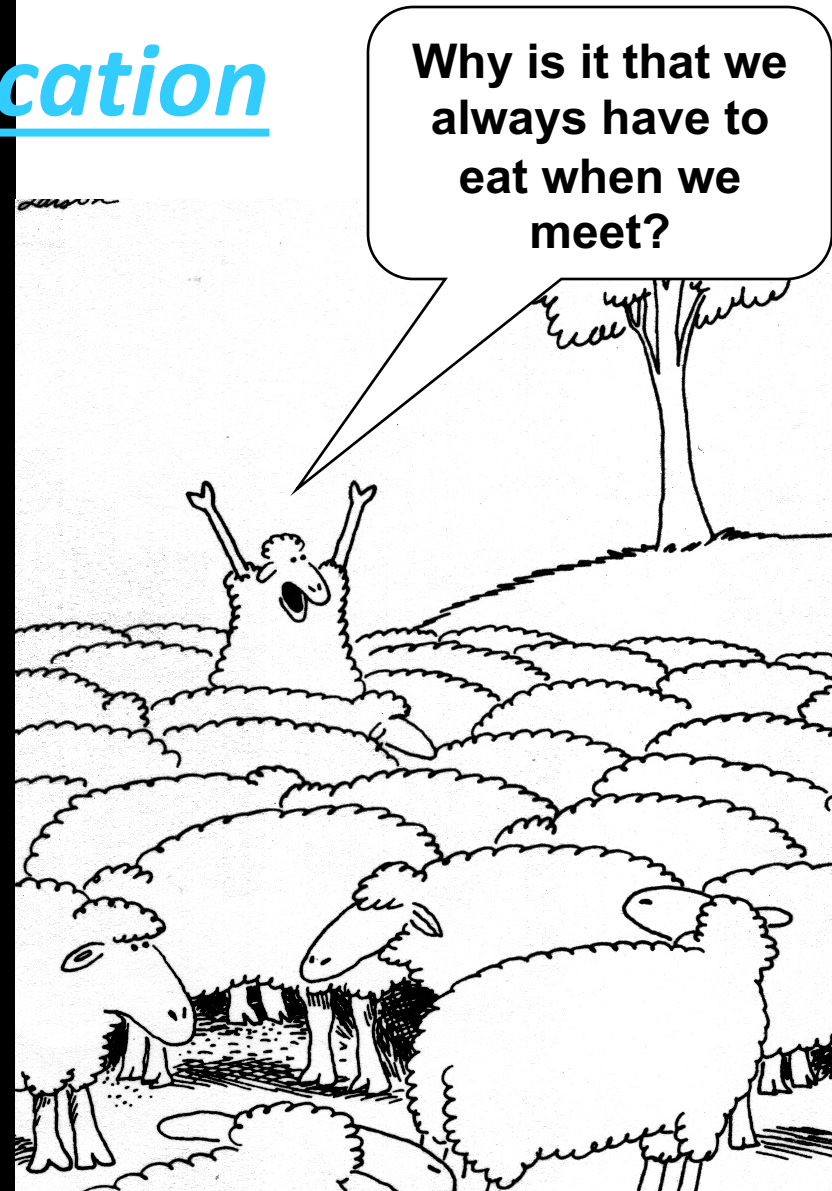
Start / Finish on Time

Last to arrive takes minutes

Short 'n Sweet

Prepare

Confirm

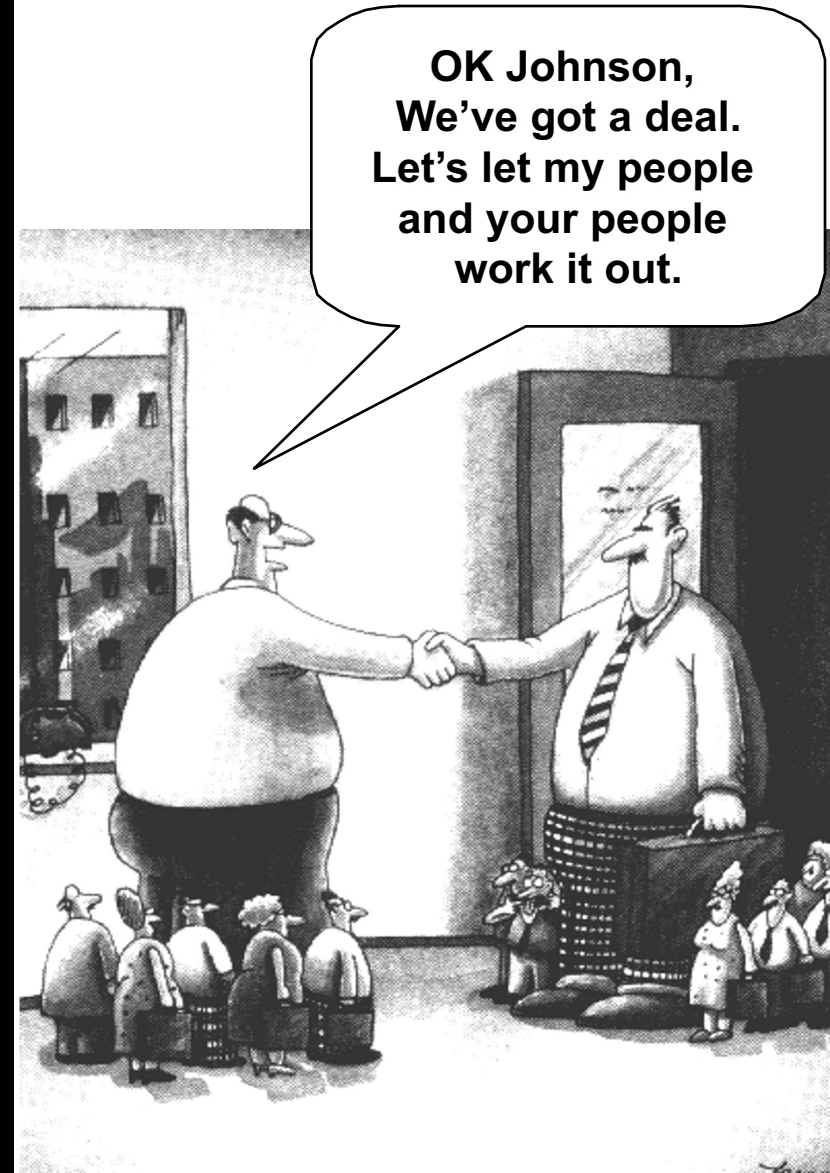




Negotiations & Fees

- Fee Structure
- Negotiating

Fees

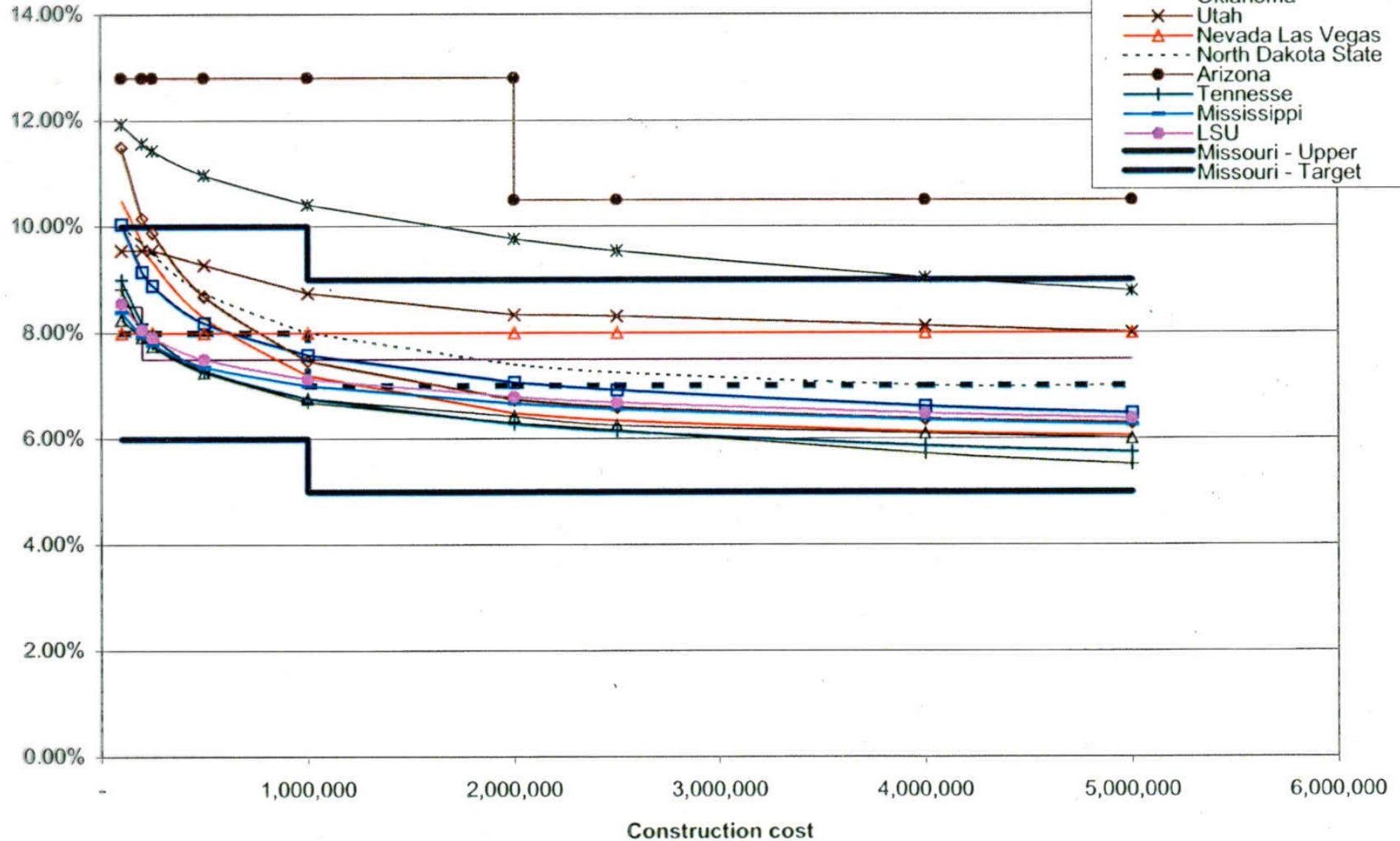


How much should a reasonable fee be?



801	940
476	469
6,373	7,494
<hr/>	
11,385	12,144
2,328	3,315
5,289	5,899
281	382

Fee Curves Type A New Construction

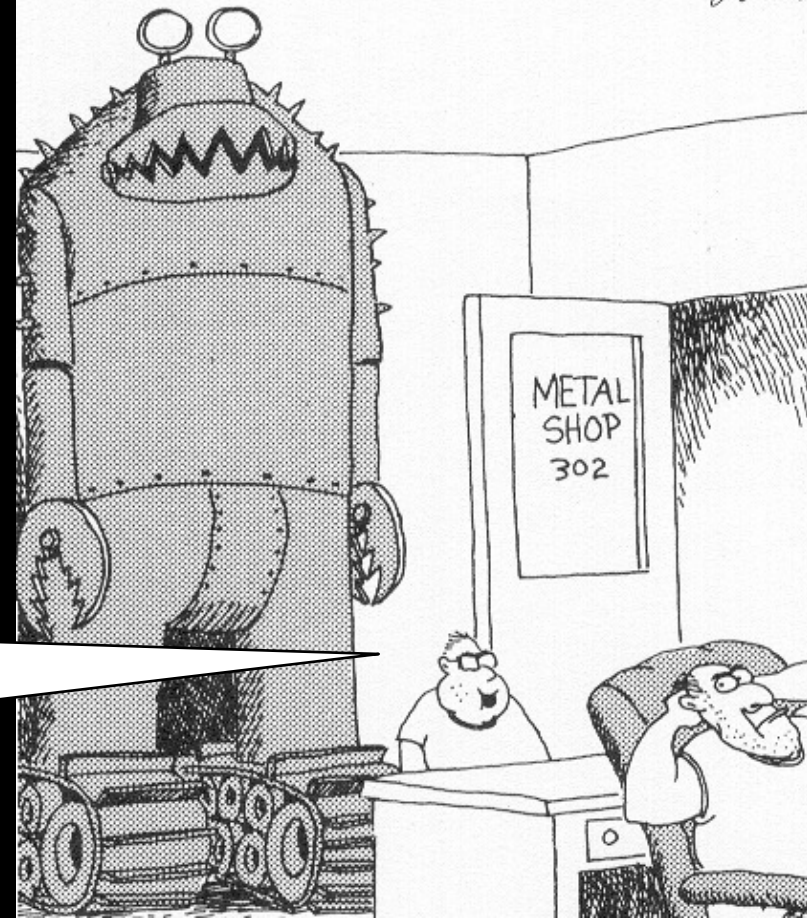




3 Types of Negotiations

- Soft
- Hard
- Principled

My project is ready for grading,
Mister.
Hey, I'm talking to you!



Types of Negotiation

	Soft Negotiation	Hard Negotiation	Principled
The Goal	Reaching and Agreement	Winning	Mutuality: A Wise Outcome
Participants	Friends	Adversaries	Problem Solvers
About the Relationships	Make concessions to cultivate the relationship	Demand concessions as a condition of it	Separate people from the problem
Trust of Others	You do	You do not	Proceed independent of trust
Your position	You change readily	You dig in and hold	Focus on interests, not on positions; explore interests
Your bottom line	You disclose	You hide and mislead about	Avoid having a bottom line
To reach agreement	You accept one-sided losses	You demand one-sided gains	Invent options for mutual gain
You insist on	Agreement	Your position	Insist on using objective criteria; yield only to principle
Contest of Wills	You try to avoid	You try to win	
Pressure	You yield to	You apply	
The Architect's Fear	I'll probably lose	I'll endanger the relationship	



Design Process Tool Kit



<http://www.colorado.edu/facilitiesmanagement/appa/>

*Still active – compliments of Steve Thweatt

Tool Kit

**Project Manager
Multi-Tasking**



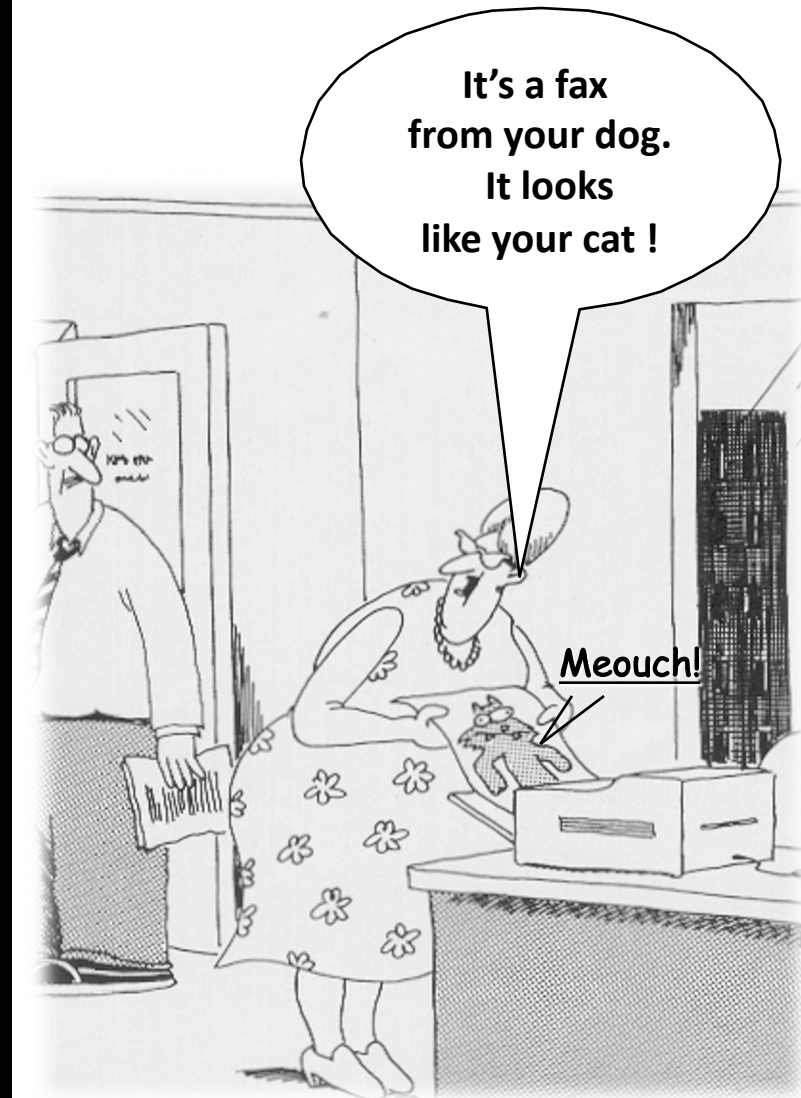
What tools can you share?





Part 4 - Managing The Process

- Project Management
- Project Managers
- Project Budgeting





What Is It ?

“The balancing of design, schedule and budget to meet the clients' expectations”



Project Manager



Who Are They?

- Design Team
- Owner
- Contractor

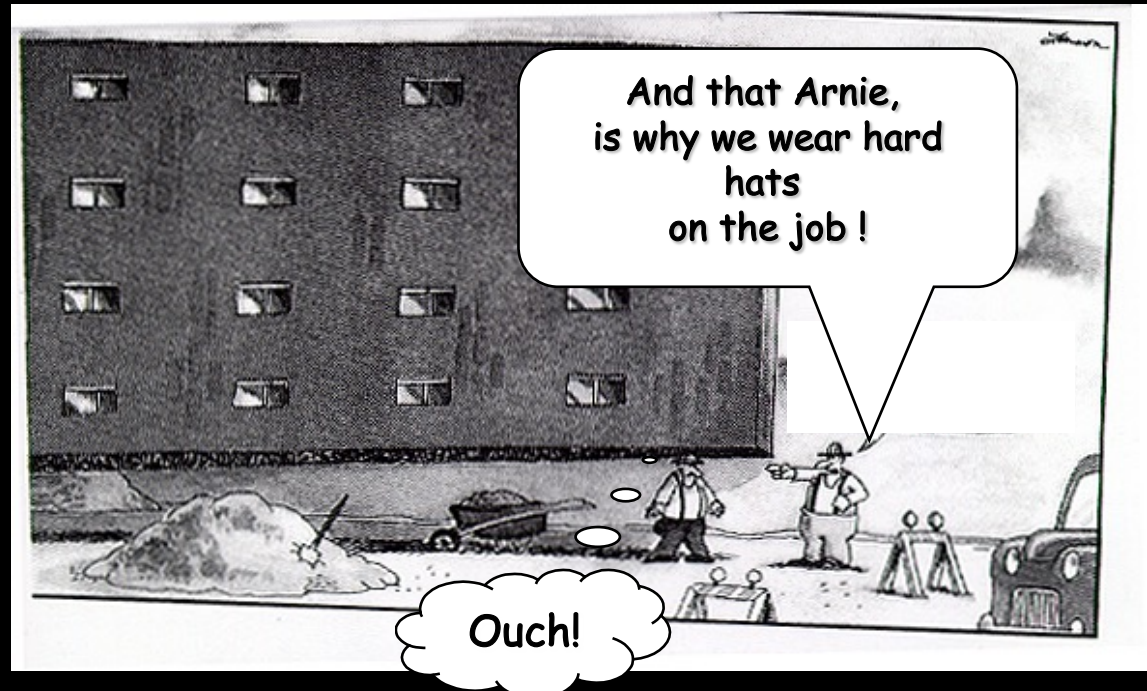
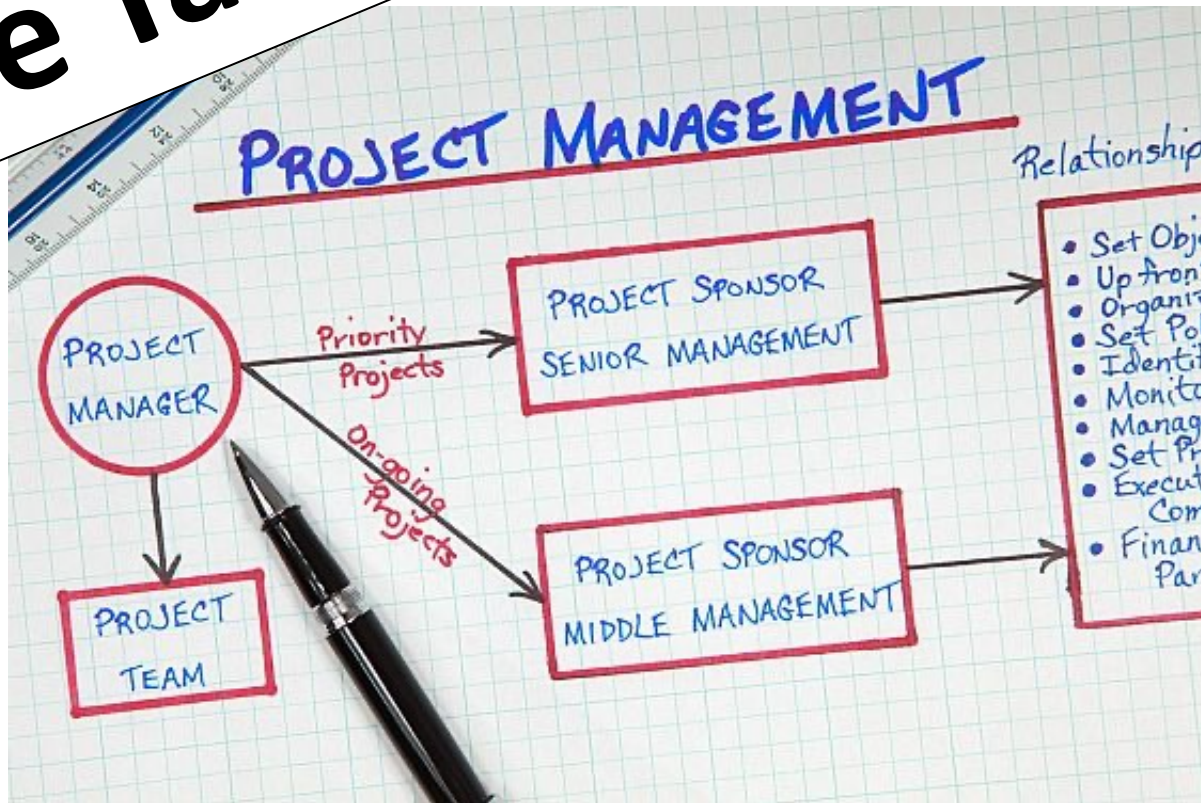


Table Talk

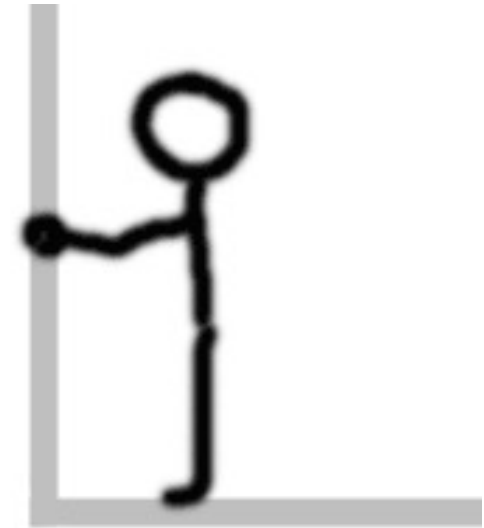


What is the appropriate number of projects that a project manager can effectively handle?



Traits of a Good PM

- Organized

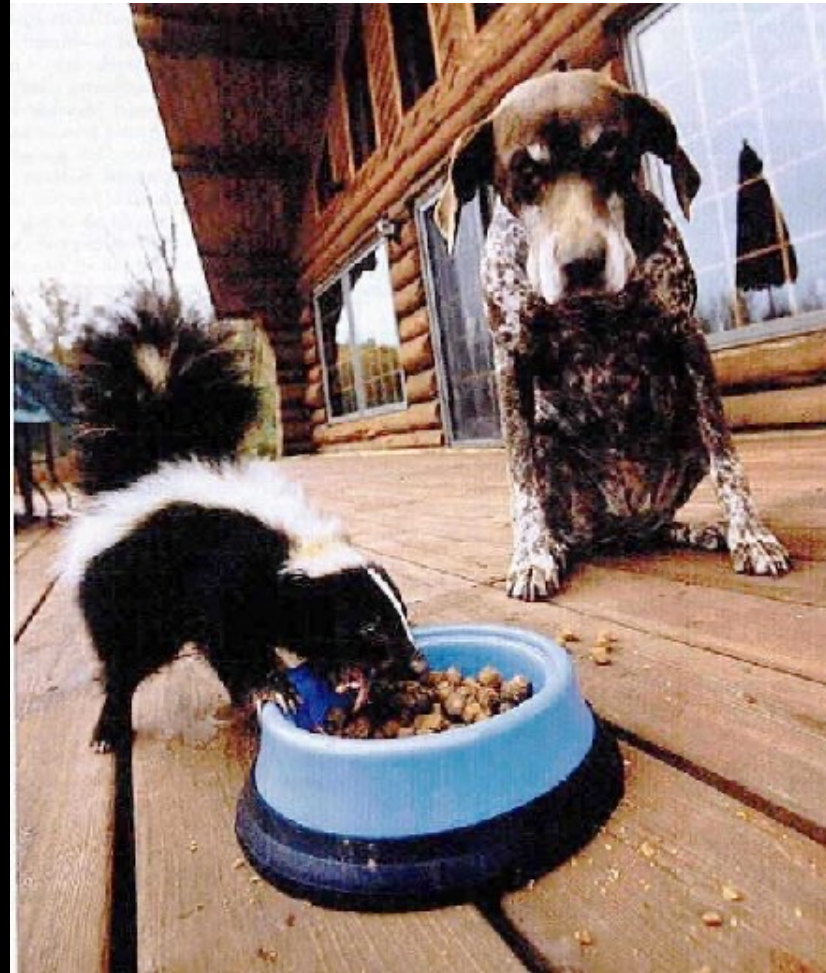


Project Manager



Traits of a Good PM

- Organized
- Broad based
- Good communicator (listener)
- Proactive
- Leads by example
- Consistent
- Follows through
- Holds people accountable
- Delegates well
- Patient & wise





PM Pitfalls

- Delegation Errors
 - No One Can do Better
 - I Can Do It Faster
 - I Have to Fix it Anyway
 - It Takes too Long to Explain
 - I'll be Disappointed
 - I'm Not in Control
 - It Won't be Perfect

I JUST SPOKE WITH THE
PROJECT MANAGER



I FIND YOUR LACK OF
PROGRESS DISTURBING



PM Pitfalls

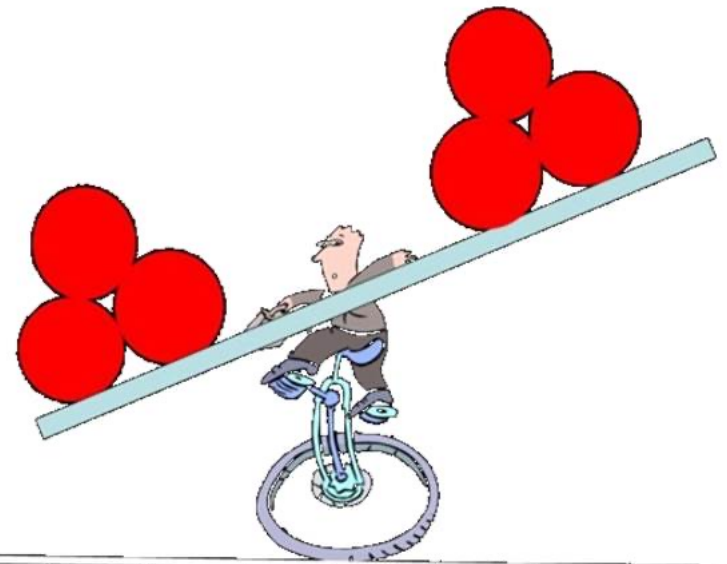
- Delegation Errors
- Micro vs. Macro
- Analysis vs. Synthesis
- SOP vs. Flexibility
- PM vs. PM
- Image vs. Substance





PM Tips

From the mouth of babe's...





Managing Client Relations

Leadership

1. Know your client personally
2. Understand your client
3. Be a partner
4. Foster trust
5. Demonstrate credibility
6. Anticipate – don't react

Management

1. Keep your files organized
2. Respond to requests promptly
3. Meet your commitments
4. Issue regular progress reports
5. Be persistent when you need input

Most important – No Surprises!



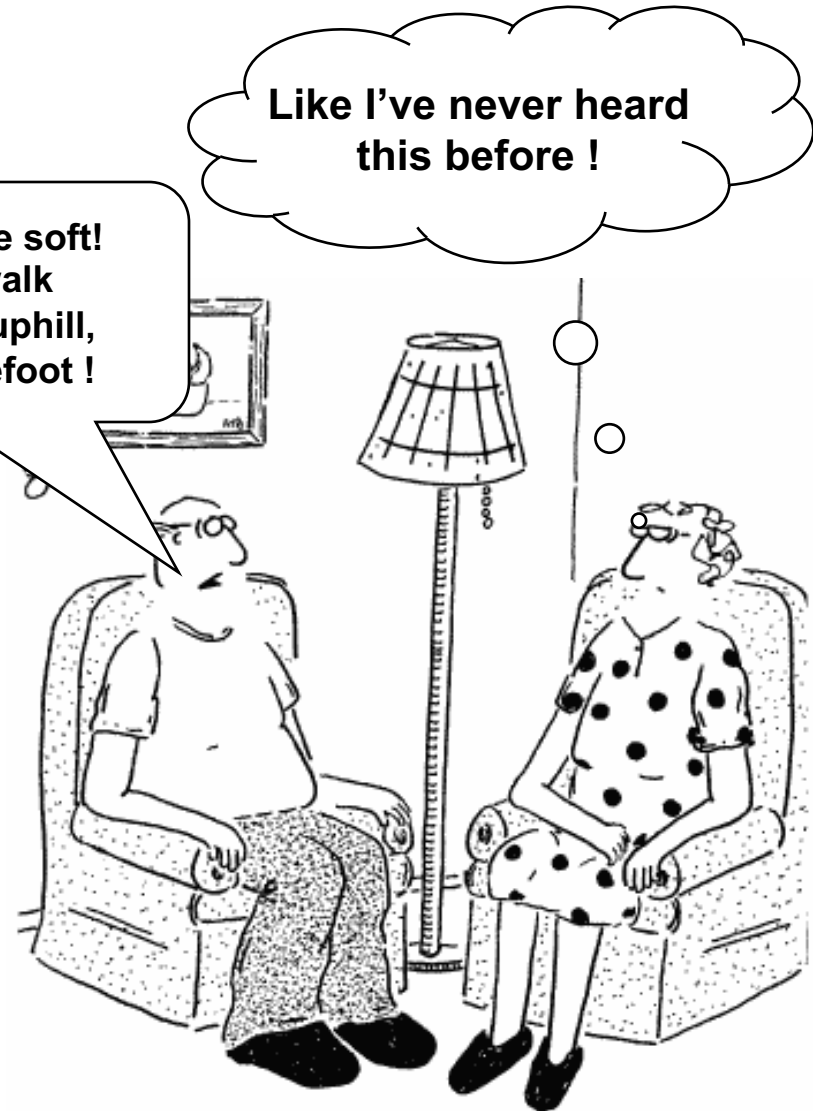
Managing the
Project

Develop Project Mgt. Plan (PMP)

- The 90/10 Rule

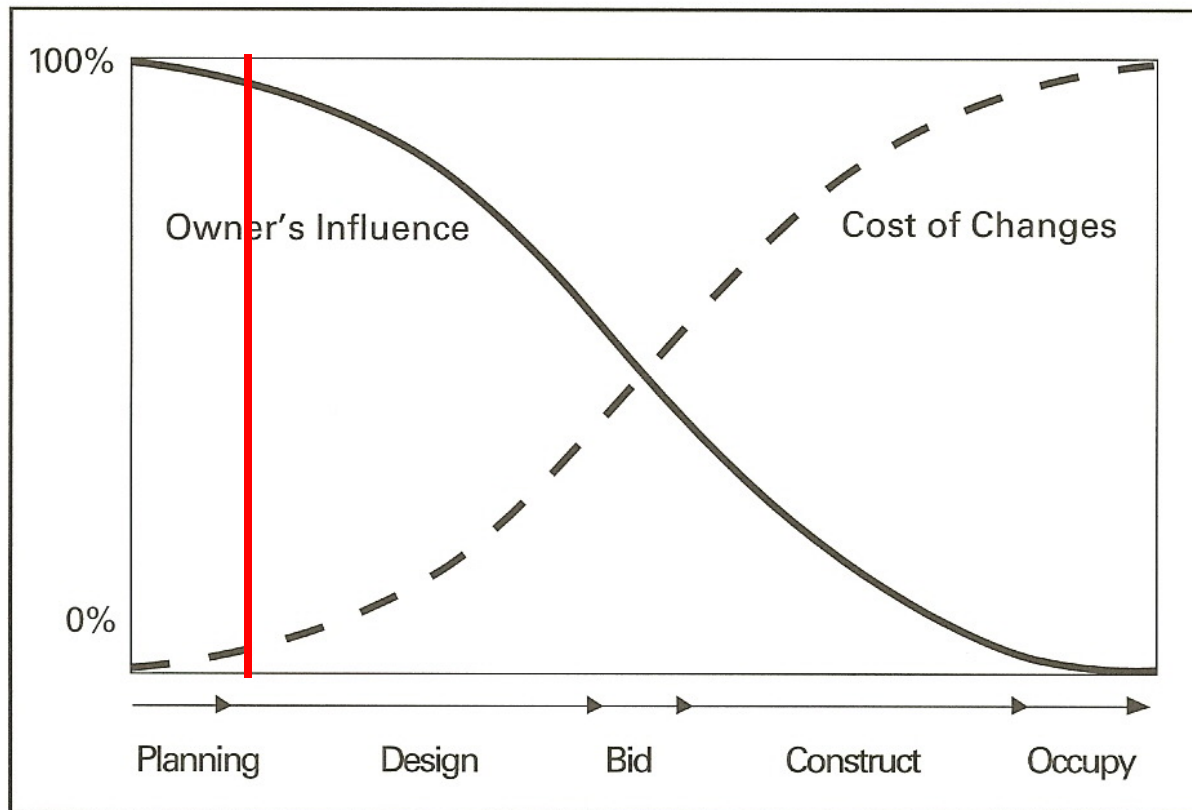
Today's PM's are soft!
We used to walk
to each project uphill,
both ways, barefoot !

Like I've never heard
this before !





The 90/10 Rule





- **PMP** (Understand Project and Desired Outcomes)
 - Vision/Goals/Objectives / Critical Factors for Success
 - Communication Plan
 - Scope
 - Schedule
 - Financial Plan
 - Quality Control Process
 - Change Management Process
- Involve Key Stakeholders
- Identify Constraints



- **PMP** (Understand Project and Desired Outcomes)
 - Vision/Goals/Objectives / Critical Factors for Success
 - Communication Plan
 - Scope
 - Schedule
 - Financial Plan
 - Quality Control Process
 - Change Management Process
- Involve Key Stakeholders
- Identify Constraints
- Assemble Team / Empower the Team
- Resolve Conflicts
- Encourage Risk Taking



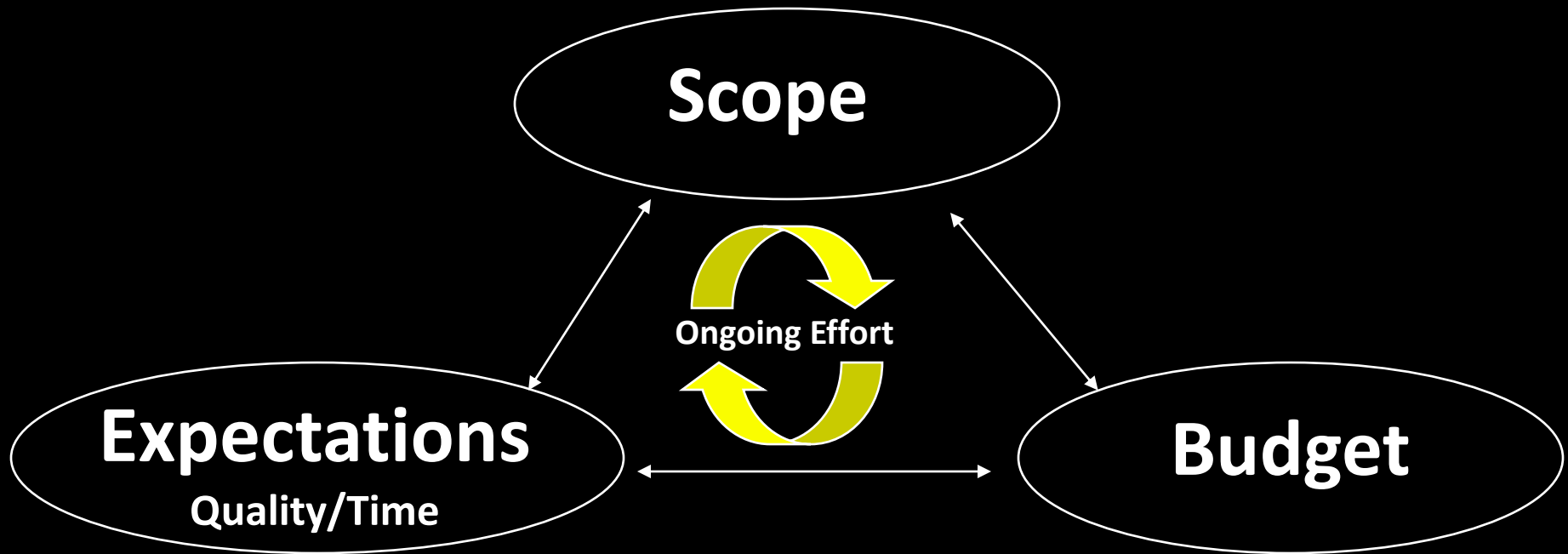
Project Budgeting

- Cost Management Principles
 - Realistic Expectations
 - Cost Data
 - Scope Control





Alignment



Projects Need to Start Right to Finish Right



APPA Institute Design Project Management

Problem Solving

*What Keeps You
Up at Night ?*





**This concludes The American Institute of
Architects Continuing Education
Systems Course**