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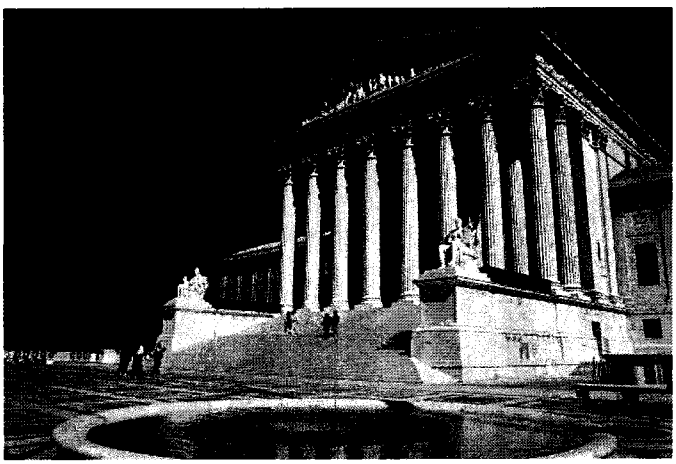
THE BEST PEOPLE ON EARTH

40th Annual Meeting

ASFE
Industry Snapshot
Membership Economic Survey

Gordon M. Matheson, Ph.D.. P.E., P.G.

Friday, April 17, 2009
8:30AM - 8:35AM



Industry Snapshot

March 2009

On-Line Survey

- About 37 firms responded
- Confidential
- No data on size of firm
- 80% of responses from firms with presence in , "Northeast", "North Central" and "West".

Results

- 81% of firms have seen decline in work.
- Greatest decline is in "Private" and "Commercial" work.
- 67% of firm report a decline in number of proposal in last 6 months.
- 61% of firms have laid-off staff due to decreased work load.
- 32% of companies have laid-off more than 10% of their staff; 27% more than 15%.
- 38% have not laid off any staff.

Results, continued

- Support and field staff have been laid-off by 70% to 80% of the firms who have done layoffs.
- 50% of the firms have laid-off "Project" people.
- 27% of firms expect more layoffs.
- Those who plan on adding staff expect to add at the field, entry and project levels.
- 0% expect to add senior managers.

Results, continued

- 47% of firms expect business to improve over the next 6 months.
- 28% expect declining conditions.
- 63% of firms expect revenue to decline.
- 19% expect a slight to significant revenue increase.
- 83% report a decline in backlog.
- 53% report a decline in backlog of more than 10%.
- 65% are Pessimistic or Very Pessimistic about the state of the economy. 0% are Very Optimistic.

On That Happy Note!

- Dr. Stephen Fuller –George Mason University
- Mark Steiner, P.E. - ACEC

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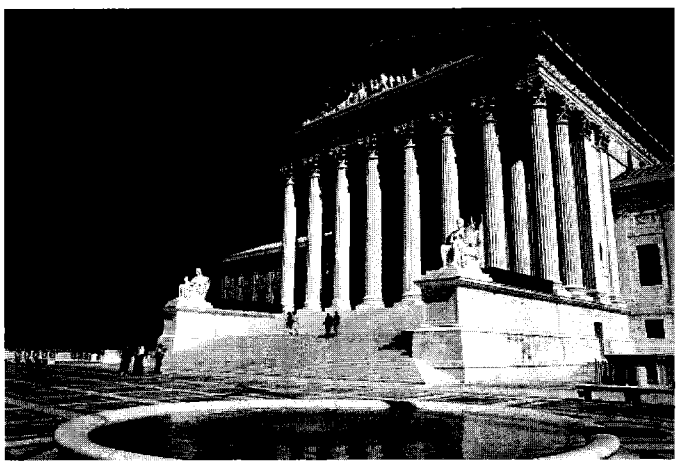
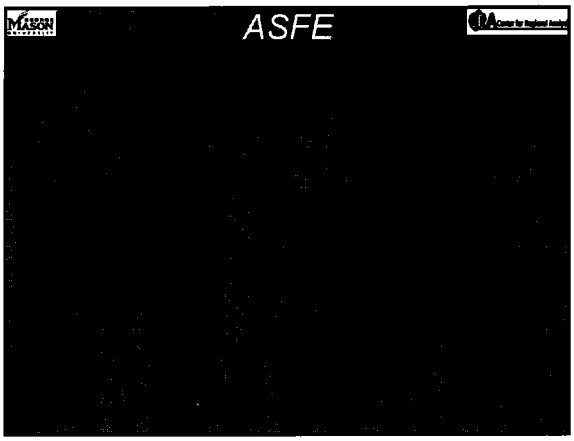
The New Administration's Legislative Priorities and Their Impact on the Geoprofessional Community

Stephen S. Fuller, Ph.D.

Mark E. Steiner, P.E.

Friday, April 17, 2009
8:30AM - 10:45AM

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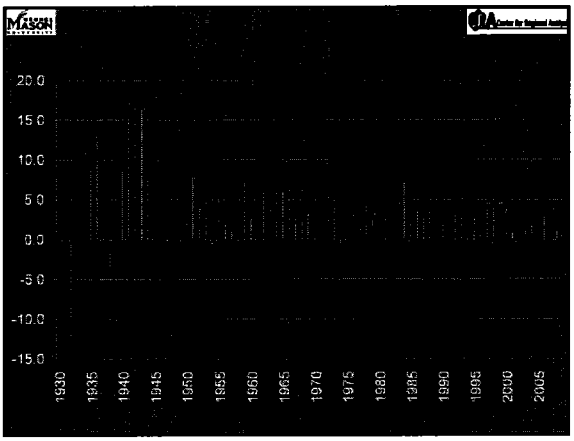
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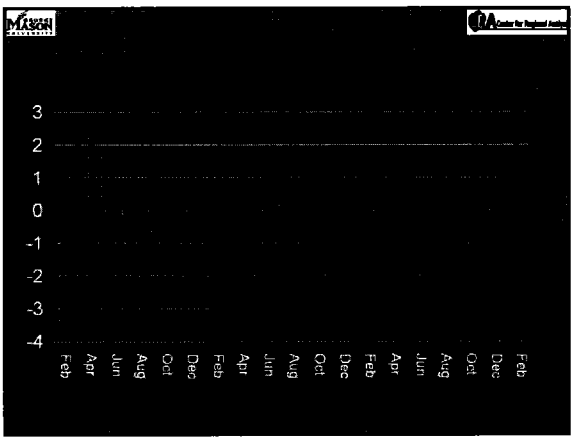
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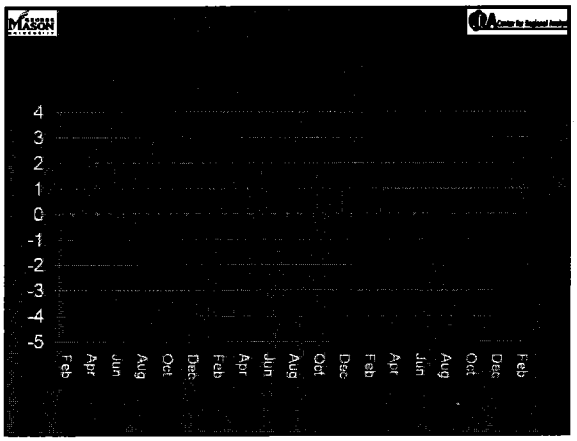
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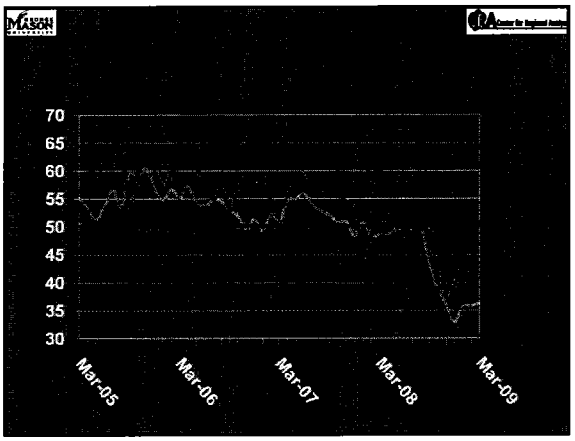
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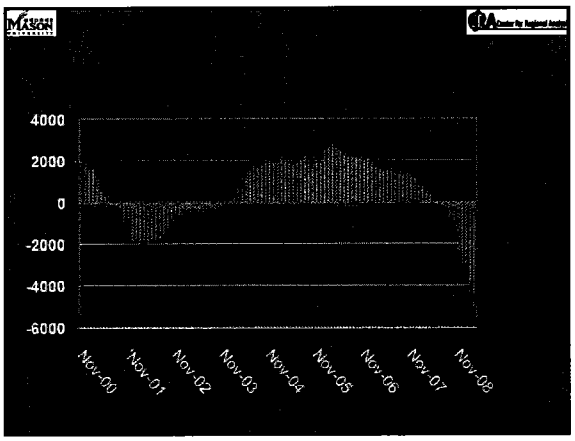
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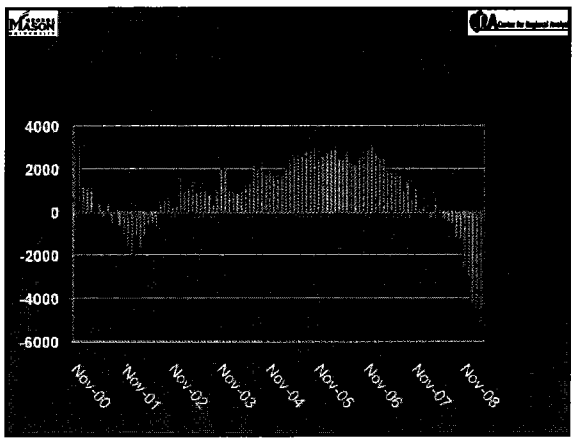
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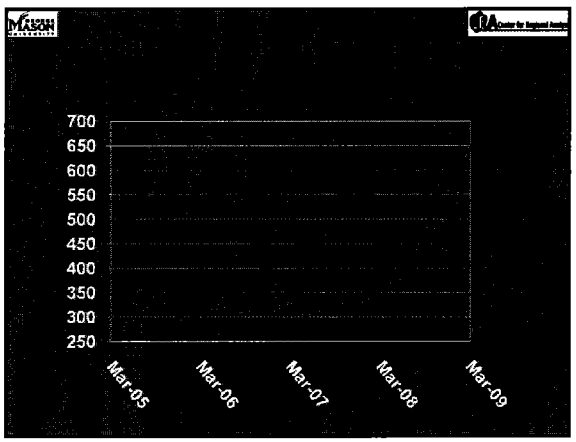
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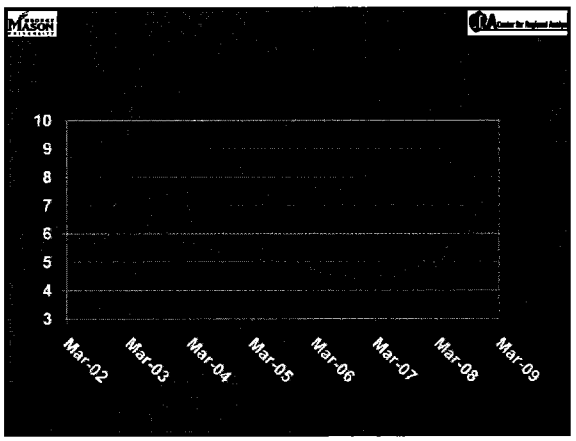
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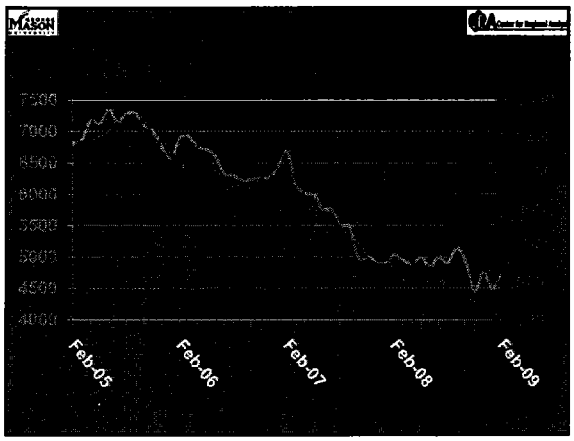
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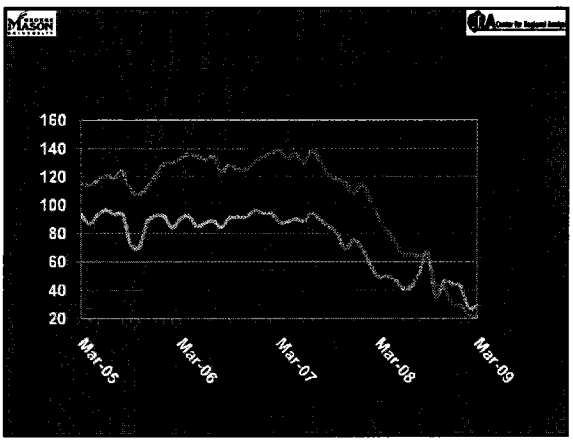
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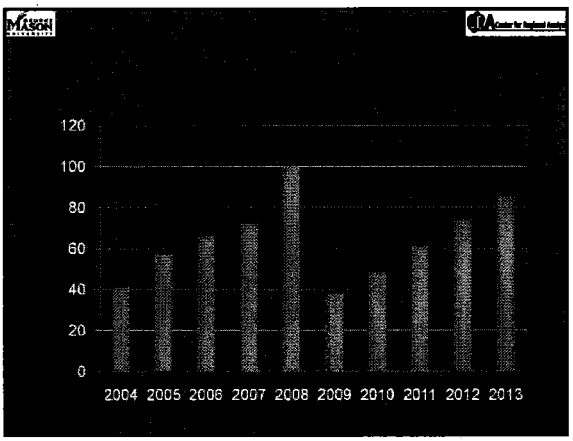
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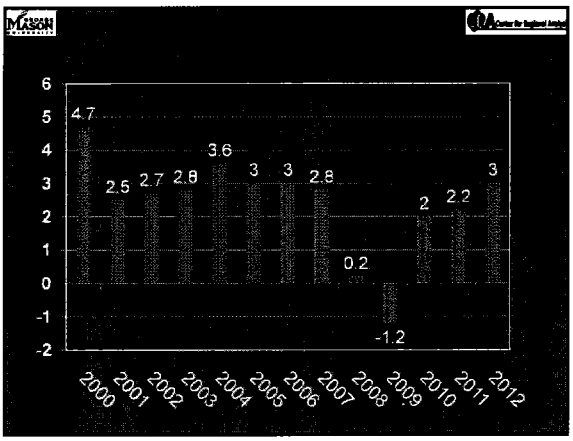
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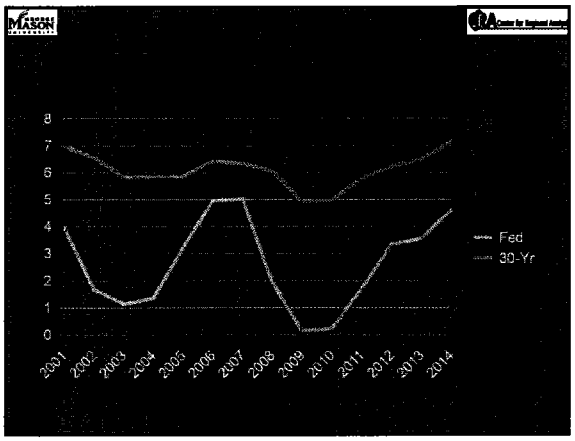
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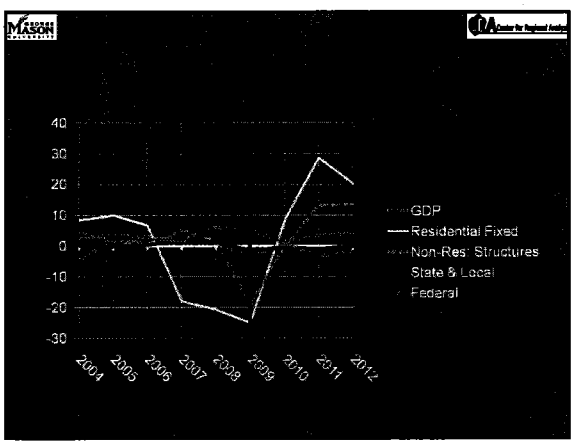
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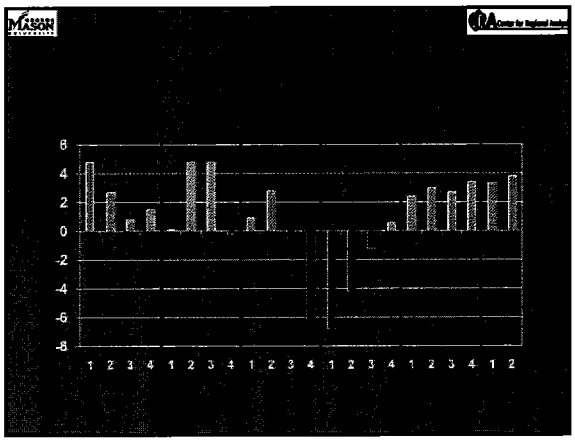
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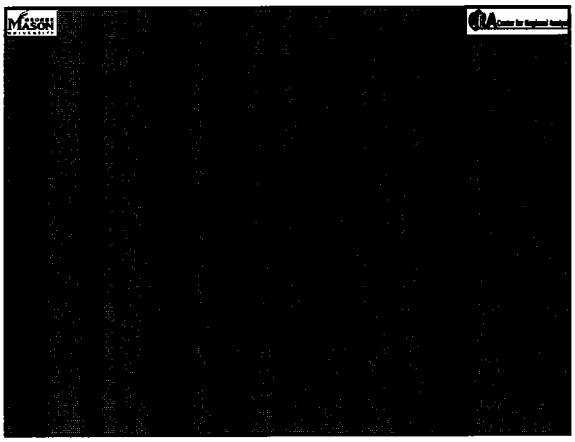

The Impact of the New Administration's Legislative Priorities on the Engineering Community

Mark E. Steiner, P.E.
Senior Policy Director

ACEC *The Voice of America's Engineering Industry*

Administration Priorities

- **Economic Stimulus and Recovery**
  - Infrastructure Investment
  - Job Growth
  - Financial Restructuring
  - Restoring Global Trade
- **Energy and Climate Policy**
- **Health Care**
- **Education Enhancement**

The Engineering Community is Impacted by All

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Administration Governance Approaches

- **Increased Transparency/Accountability**
- **Greater Oversight/Government Forces**
- **Full and Open Competition**
- **Competitive Procurement**
- **Fixed-Price Contracts**
- **Cost-Benefit Analyses**
- **Distributional Fairness**
- **Limiting Outsourcing/Inherently Governmental Functions**

The Engineering Community is Impacted by All

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Pluses and Minuses

Pluses:

- **Increased Infrastructure Spending**

Minuses:

- **Rushed Spending May Limit Design**
- **Business Restrictions (oversight, taxes, etc.)**
- **Unionization**
- **Increased "Insourcing"**

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Infrastructure Related Economic Stimulus

- **Disbursed to State and Local Governments by the American Recovery and Reinvestment Act of 2009:**
  - **$27.5 billion for Roads and Bridges: $8.25 billion sub allocated to metropolitan areas by population. States must obligate 50% of the funds within 120 days (localities not constrained) the balance within a year.**
  - **$1.5 billion for DOT discretionary grants (highways, bridges, transit, rail, ports, and intermodal connectors.**
  - **$8.4 billion for Transit projects: $6.9 billion for capital projects. States and local agencies must obligate 50% of the funds within 180 days, the balance within two years.**
  - **$1.3 billion for Aviation.**
  - **$9.3 billion for Passenger Rail.**

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Economic Stimulus (cont.)

Disbursed to State and Local Governments:

- **$4 billion for Wastewater and $2 billion for Drinking Water; 50% of the funds to be obligated within 1 year, balance within 2 years; also, 50% of the funds must be used for loan forgiveness, negative interest loans, or grants.**
- **$100 million for "Brownfields" remediation.**
- **$3.2 billion for Energy Efficiency and Conservation and $3.1 billion for Energy Efficiency and Renewable Energy.**
- **$53.6 billion for Education: ~$ 7 billion for repair, modernization, or renovation of teaching facilities**
- **$25 billion in school construction bonds (non-interest bearing)**

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Economic Stimulus (cont.)

Direct Federal Projects Spending:

- $4.6 billion for the USACE water resources.
- $7.12 billion for DOD repair and modernization (incl. hospitals).
- $1 billion for VA major construction.
- $5.5 billion for GSA federal buildings.
- $2.35 billion for DOI infrastructure (incl. NPS and BuRec).
- $2.14 billion for DHS (incl. airport screening and checkpoints, USCG bridges, broader entry, and HQ building).

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Economic Stimulus (cont.)

Direct Federal Projects Spending:

- $19.9 billion for DOE (incl. $6 billion for facilities cleanup, $4.5 billion for electric grid modernization, $3.4 billion for fossil energy R&D, and $6 billion for innovative technology).
- $2.57 billion for DOA (incl. Dept. facilities, Forest Service, NRCS watershed, rural waste, waste water, and community).
- 42.5 billion for community and Indian heath centers (another $10 billion for NCR that can be used).
- $800 million for Superfund and underground storage tanks cleanup.
- $510 million for DOS capital investment and IBWC construction.

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Economic Stimulus (cont.)

Other Provisions:

- Delayed 3% withholding mandate until 2012.
- Bonus Depreciation.
- 5-year carry back of net operating losses.
- Extension on enhanced small business expensing.

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Other Key Infrastructure Priorities

- Timely reauthorization of SAFETEA LU.
- FAA Reauthorization – priorities include funding and expansion of QBS to cover projects funded through Passenger Facility Charges (PFCs).
- Water Infrastructure – priorities include funding and expansion of QBS to cover projects funded through the State Revolving Fund (SRF) programs under the Clean Water Act and Safe Drinking Water Act.
- Funding for clean up of DOE nuclear weapons sites.
- Authorization of dam (Rehabilitation and Repair – HR 1770 & S 732) and levee programs.
- Promoting domestic energy production, energy efficiency, addressing of climate change.

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Tax, Regulatory, Legal Issues

- The Qualified Personal Service Corporations Clarification Act, to preserve cash accounting option for A/E firms.
- Broad-based tax reform – increases to personal rates and capitol gains, what does it mean for the industry?
- The Good Samaritan Protection for Construction, Architectural, and Engineering Volunteers Act.
- Levee liability – working with the Corps of Engineers and FEMA to address liability concerns.
- Wetlands reform.
- Health care reform and the impact to the A/E industry.
- Contracting out challenges.

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2009 Appropriations (Direct and Grants)

- $73B for Military Construction and Veterans Affairs (2/3)
- $59.6B for Transportation Projects; $41.8B Highways, $10.1B Transit, $6.3B Aviation, and $1.6B Rail
- $2.3B Available for Agriculture Facilities, Cleanup, and Utilities
- $4.5B Available for NASA Facilities
- $6.5B for DOE Nuclear Site Cleanup
- $5.4B for USACE Civil Work
- $1.1B for BuRec Projects
- $1.5B for GSA Federal Buildings Work
- $3.3B for EPA Water, Air, and Cleanup Projects
- $1.1B for Foreign Buildings and Security
- $2.5B for Public Housing Capital Fund
- $1.75B for Interior Agencies Projects, Surveys, and Investigations
- $5.4B for School Improvement Funding (Can be Used for Facilities)
- $1B for Justice Facilities/Prisons and HHS/NIST/Other Research Facilities

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2010 Budget Outlines

- Growth with Continued Investment in Education, Healthcare Reform, and Energy Independence as part of Economic Recovery
- Not Detailed, but Heavily Focused on Staffs, Programs, and Benefits
- Potential Growth in:
  - Energy Demonstrations, Infrastructure, and Distribution
  - Education Facilities
  - Research Facilities
  - NASA Facilities
- Specific Funding for:
  - Healthcare Facilities
  - Clean/Drinking Water State Revolving Funds and Rural Development
  - Water Resources (Floods, Navigation, Aquatic Ecosystems)
  - Public Lands (Parks, Forests, Recreation Areas)
  - Transportation (Highways, Transit, Multimodal, High Speed Rail)
  - Public Housing and Community Development
  - Military Facilities, Housing, and Base Consolidations/Closures
  - Clean ups (Superfund, Brown fields, Nuclear)
  - Greenhouse Gas Emissions Reductions
  - Manufacturing Facilities Revitalization

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Challenges

- Potential union-backed effort to restrict the ability of public agencies to partner with engineering firms and other contractors.
- Repeal of the 3% withholding mandate.
- Stopping potential tax increases while protecting favorable tax provisions, such as the new 9% A/E tax deduction.
- Potential new regulatory burdens.
- Passage of any meaningful tort reform, such as ACEC's Good Samaritan or Unreasonable Liability Mitigation legislation.
- Health care reform and the impact to business: Increasing costs? Additional liability?
- Protecting QBS.

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40th Annual Meeting

International Business Strategies

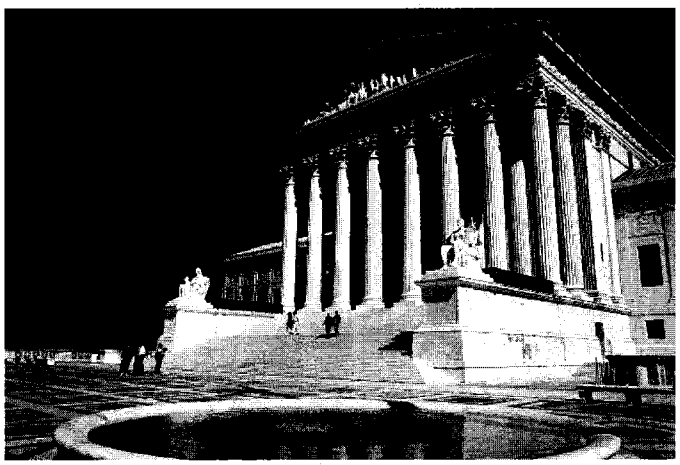
Alex Sy, P.Eng.

Charles L. Head, P.E., P.G., L.S.P.

Randy A. Knott, P.E.

Robert S. Johnston, P.E.

Friday, April 17, 2009
10:45AM - 11:30AM



International Business

ASFE Spring Meeting
April 17, 2009
Washington DC

International Business

Moderator

Alex Sy, Ph.D., P.Eng.
Klohn Crippen Berger Ltd.

Panel

Charlie Head, P.E., PG.
Sanborn, Head & Associates, Inc.

Randy Knott, P.E.
MACTEC Engineering and Consulting, Inc.

Rory Johnston, P.E.
Malcolm Pirnie, Inc.

Why should firms consider international work?

- Much bigger engineering and environmental market
- Interesting and challenging work environment
- Geographical business diversity
- Staff retention
- Profit

What additional risks are associated with international work?

- Unstable political climate and economy
- Visa and immigration laws
- Local laws, customs and business practice
- Uncertainties on project logistics
- Medical and health coverage
- Language barrier
- Personnel safety
- Currency exchange
- Quality control of local support and subs
- Account receivables and foreign taxes
- Insurance coverage restrictions and exclusions

What international services are needed from North American firms?

- Technical expertise
- Large project experience
- Project quality assurance for North American based clients
- Projects for North American governments
- Requirements or mandate of international financial institutions or development agencies

Panel Presentations

1. **International projects for US domestic private clients**
2. **International projects for US government and international financial institutions**
3. **International projects for overseas clients**

"International projects" =
projects located outside North America or US territories and managed by staff out of North American offices

Panel Presentation 1

International Projects for US Domestic Private Clients

Charlie Head, P.E., P.G.
President
Sanborn, Head & Associates, Inc. (SHA)

SHA Experience

- **14 Years:** Personally 80+ international trips
- **16 Foreign Countries/ 4 Continents:** 10% to 20% of SHA's annual revenues
- **Focus of Services:** Industrial M&A and Facility Divestiture

How We Started

- **Opportunity:** Underserved clients
  - Poor communications
  - Limited understanding of client culture
  - Variable quality work – often not good
  - Low trust
- **Additional Value Added:** Take care of many hassles for client representatives
- **Our First Assignment:** Jump in and see if you can swim

Operating in the "Gray Zone"

- **Not a Risk Free Proposition:** Often no "bright line" or clear operating parameters
- **Like Driving 60 mph in a 55 mph Zone**

The First Gray Zone: Permanent Establishments

- **Avoiding "Permanent Establishment" Status***
- **Recommend Legal Assistance**
- **A Related Story From France**

*SHA is a Permanent Establishment in the UK (Certified Branch Office)

The Second Gray Zone: Visas and Work Permits

- **Most Visas/ Work Permits Do Not Contemplate Short In-Country Project Durations**
- **Best Strategy:** Client assistance
- **Several Additional Strategies:**
  - Foreign citizens on staff
  - "Teaming"
  - Subcontracting
  - Limiting scope of services

The Third Gray Zone: Health and Safety

- **Safety Standards Can be Lax:** Be prepared
- **Medical care may not be readily available**

The Fourth Gray Zone: Holding on to Your Money

- **Significant Legal, Financial, and Administrative Burden**
- **Currency Risk**
- **Higher Percentage of Senior Staff Time**
- **Personal Time Investment**

The Fifth Gray Zone: Eat, Drink, and Be Happy

- **Cultural Sensitivities:** Can be significant
- **Diminished Project Efficiency**

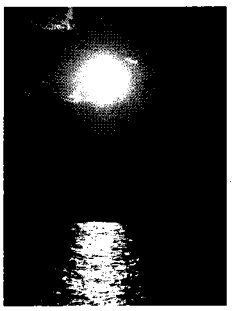
But...can be a pretty good time

But... We Have Found That Business Rewards are Great

- **Credibility / New Business Development**
- **Travel With Clients & Access to the "C-Level"**
- **Recruiting**
- **Financial**
- **Global Diversification ("The World is Flat")**

As Are The Personal Rewards

- **Professional Growth:** Many broadening and career enhancing experiences
- **Worldwide Network / Friendships**



Panel Presentation 2

International Projects for US Government and International Financial Institutions

Randy Knott, P.E., F. ASCE
Vice President/ Senior Principal
MACTEC Engineering and Consulting, Inc.

Clients

- U.S. Federal Government

- U.S. State Governments

- International Financial Institutions

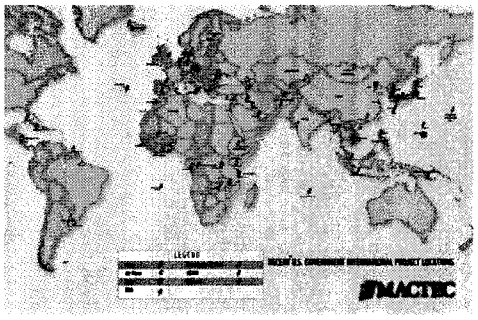
U.S. Government Agencies

- U.S. Department of Defense
  - USAF
  - USN
  - USA/USACE
  - DLA
- U.S. Department of State
- U.S. Department of Commerce
  - USTDA
- U.S. Agency for International Development
- Millennium Challenge Corporation
- U.S. State Governments

International Financial Institutions

- World Bank Group
- Asian Development Bank
- African Development Bank
- Equator Principal Banks

MACTEC's Worldwide Projects for US Governments



Services

- Architect – Engineer Planning/Design
- Construction Inspection/Fabrication Inspection
- Geotechnical Engineering
- Pavement Engineering
- Feasibility Studies
- Environmental Services
- Value Engineering Studies
- Facility Condition Assessments

General Issues

- Trust/ Relationships
- Language
- Logistics
- Etiquette
- Health and Safety
- Insurance
- Taxes
- Legal
- Money/ Cost
- Technical Knowledge

Additional U.S. Federal Government Issues

- Insurance
- Security
- Special Training
- Contingency Plans

Project Example: DoD – Afghanistan

- Started – 2006
- Kabul Project Office/Residence

- Management – Atlanta, GA
- Staff: Kabul – 42
  Atlanta – 20
- Present Kabul Staff: 12 – U.S. Citizens
  30 – Local Nationals
- Present Workload: 11 – Projects
  $18m fees
  Total fees - $25m

Project Example: DoD – Afghanistan

- Risks
  - Security
  - Availability of Local Skills
  - Client Rotation
- Challenges
  - Language/Translations
  - IT/Intranet
  - Money ⇨ Local Purchases
  - Developing skills of Local Nationals to U.S. Standards

Project Example: DoD – Afghanistan

- Lessons learned
  - Hire locals earlier
  - Provide education on culture
  - U.S. In-Country Employees – Instructions/Mentors/Teachers

- Strategy
  - High local to American employee ratio (3 to 4:1)
  - Lead local person – Hire locally/good technical translation
  - Reach back to U.S. – Project Management/Technical Issues

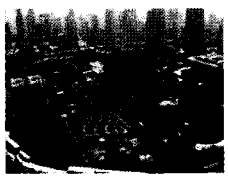
Project Example: CALTRANS - China

- Started – 2005
- Shanghai Project Office
- Management – San Diego, CA

- Staff: Shanghai – 50
  San Diego – 15
- Steel Fabrication Shop QA Services

Project Example: CALTRANS - China

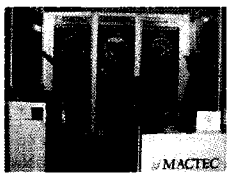
- Risks
  - Logistics
  - Communication
  - Local support /skills



- Challenges
  - Effective communication
  - Training local workers
  - Paying local support

Project Example: CALTRANS - China

- Lessons Learned
  - Train earlier and more often
  - Improve communication
  - Understanding of local needs



- Strategy
  - Employ local technical/management deputy
  - Engage with local partner firms
  - Don't compromise your own standards

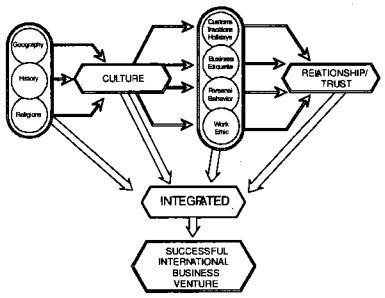
What is the Risk?

Relative Risk		International Client Sector	
L-M	_____	U.S. Federal Government:	DoD
			DOS
M	_____		Other : USAID
			USTDA
M	_____	U.S. State Governments	
M-H	_____	International Financial Institutions	
L-H	_____	U.S. Multi-National Companies	
M-VH	_____	Foreign Companies	
H-VH	_____	Foreign Governments	

Conclusions

- Constant frustration
- Patience with a capital "P"
- Be flexible
- Changing schedules/priorities
- What is the cost?
- Excitement
- Adventure
- Fun
- Full-filling

International Business Development



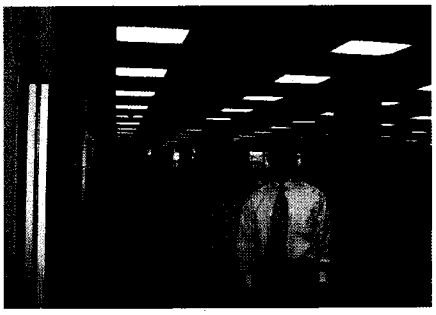
Panel Presentation 3

International Projects for Overseas Clients

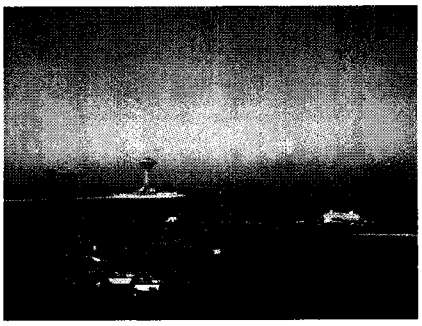
Rory Johnston, P.E.
Vice President
Malcolm Pirnie, Inc.

WHY? What is your Strategy?

Select A Good Partner

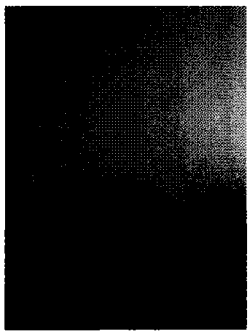


Contract - Do You Need One?



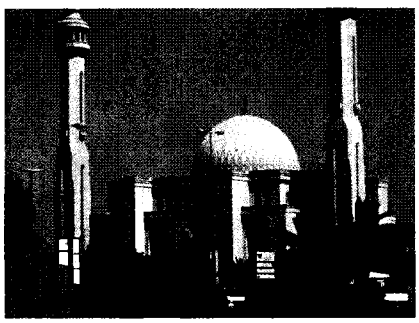
Contracts - You are on My Drillhole!

Preparing the Scope of Work??



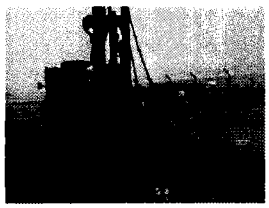
Work Week (Thursday and Friday Off)

Cultural Differences



Health and Safety Issues

Subcontracting - Vet Your Subs!!!

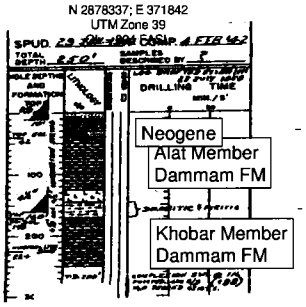


Different Geology

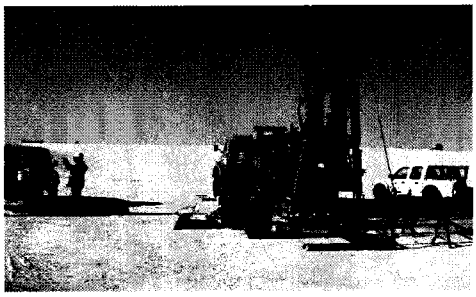
ABQQGOSP 2 Well

N 2878337; E 371842

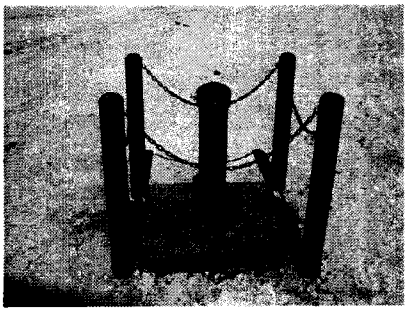
UTM Zone 39



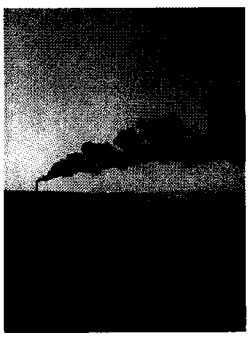
Hollow Stem Auger - A Novelty



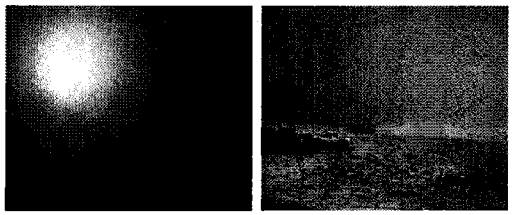
Different Standards.....



Environmental Field Conditions – Do a Site Visit



Environmental Field Conditions

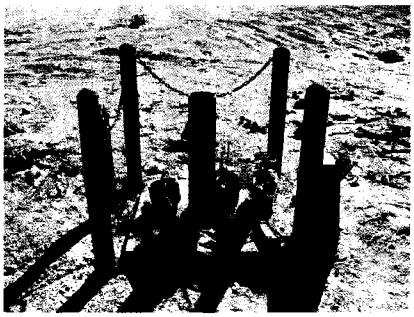


Execution Challenges

Execution Challenges

- Sample Chain of Custody
  - Sample preservatives typically used in foreign countries not often allowed in Saudi Arabia (i.e., methanol)
  - Proper preservation and transportation required
  - Customs and shipping
- Training of Drilling and Field Staff
  - International team utilized to train drilling team how to properly perform environmental drilling and sampling to avoid cross contamination

Laboratories Are Not Created Equal



Finally - things are going well
EXPECT THE UNEXPECTED

- On-Going Dumping of Oil Outside of Pond Perimeter

Lessons Learned

- Do the Why? What is the Strategy..
- Pick a Great Partner - Health, Safety and Security
- Never Underestimate Cultural Differences - Be Respectful
- Pick the A Team
- Don't Expect Contracts
- Negotiation is Key
- Vet the Subs Carefully - COD
- Different Standards - Labs Not the Same
- Production is Never What You Estimated - EXPECT THE UNEXPECTED
- Try to Make Some Money

Have Fun!!!!

International Business – Q & A

Alex Sy, Ph.D., P.Eng.
Klohn Crippen Berger Ltd.

Charlie Head, P.E., PG.
Sanborn, Head & Associates, Inc.

Randy Knott, P.E.
MACTEC Engineering and Consulting, Inc.

Rory Johnston, P.E.
Malcolm Pirnie, Inc.

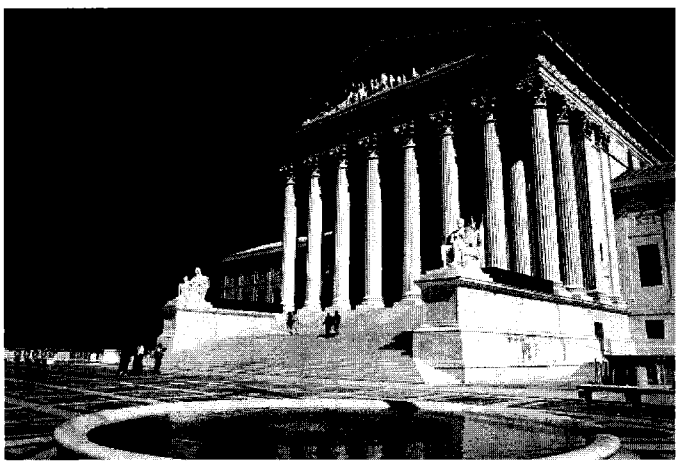
ASFE

THE BEST PEOPLE ON EARTH

40th Annual Meeting

Legal Affairs Committee Luncheon

Friday, April 17, 2009
11:30AM - 12:45PM



Deposition Do's and Don'ts

Staying out of trouble when you least can afford to make a mistake

skellengerbender

- Lawsuits are supposed to be a search for the truth, arrived at through the adversarial process.
  - Discovery
    1. document production
    2. depositions

skellengerbender

- Deposition testimony IS evidence.
- It can – and will be – admitted as evidence in trial.
- And that's why you should care.

skellengerbender

- "Uses" for deposition testimony:
  - at trial
  - for settlement purposes
  - for dispositive motions

skellengerbender

- Are you a fact witness or an expert witness?
  - fact witness – 5 senses
  - expert witness – opinions

skellengerbender

- Preparing for your deposition
  - your job is *not* to win the lawsuit
  - communicate effectively with your lawyer
  - review materials requested by your lawyer

skellengerbender

- How to approach being questioned:

  - tell the truth

  - listen *and listen hard!*

  - be brief:
    "yes" ... "no" ... "I don't know" ... "I don't remember"

skellengerbender

- How to approach being questioned (con't):

  - the "pause"

  - the "conversational trap"

  - *"silence is golden; words are made of lead ... and in the alchemy of love* (and litigation!) *some things are better left unsaid ..."*

skellengerbender

- How to approach being questioned (con't):

  - leave your ego at the door – don't be afraid to say "I don't know"

  - don't guess!

skellengerbender

- The questioner's tactics:
  - the screamer
  - the gentleperson
  - the drone
  - the looker
  - the incompetent (but beware of Columbo!)

skellengerbender

- Deposition pitfalls:
  - being verbose
  - being helpful
  - being bored

skellengerbender

- Deposition pitfalls:
  - being held hostage
  - being angry
  - being arrogant

skellengerbender

- Expert witnesses

  - must adhere to caselaw standard
    1. reliable facts
    2. reliable principles and methods
    3. principles/methods correctly applied to facts

skellengerbender

- Expert witness credibility:

  - limit to area of expertise only

  - be objective – not an advocate

  - intellectual honesty

skellengerbender

ASFE

THE BEST PEOPLE ON EARTH

40th Annual Meeting

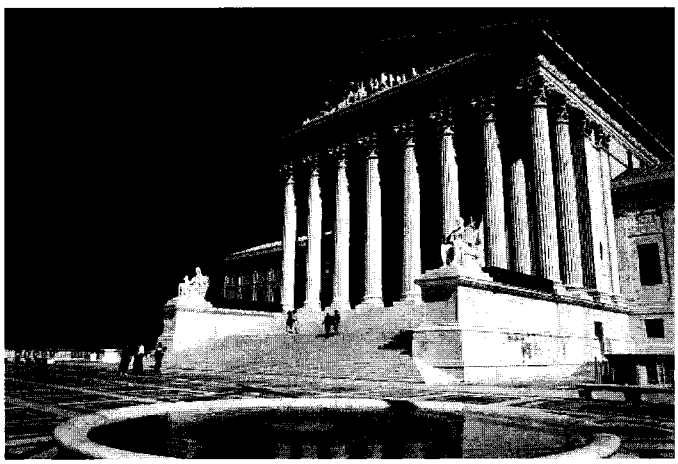
Management Metrics

David R. Gaboury, P.E.

Susan Quiroga

Tadeusz Lewis, P.E.

Friday, April 17, 2009
1:00PM - 2:00PM



ASFE BUSINESS PRACTICE COMMITTEE

ANNUAL FINANCIAL PERFORMANCE SURVEY

Note: Please use data from your most recent fiscal year-end

ITEM:	Median RESPONSE: 2006-07	Median RESPONSE: 2007-08	UNITS:
1) **Total Staff** (worldwide): **Technical:**			#
Non-technical:			#
2) **Fee Income** from professional services performed by your firm's staff (exclude all income from subcontractors, subconsultants, and expense reimbursements, including any markup fees)			$
3) **Pre-Distribution Profit (PDP)** expressed as a % of Fee Income (PDP = Profit before bonuses, profit-sharing, taxes)	11.0%	12.9%	%
4) **Pre-Distribution Overhead (P-DOH)**, expressed as a % of direct labor (P-DOH = Total Overhead Cost less bonus and profit-sharing distributions ÷ Total Direct Labor Charged to Projects)	168.4%	169.5%	%
5) **Net Multiplier** (Fee Income ÷ Total Direct Labor Charged to Projects)	3.03	3.12	#
6) **Utilization Ratio**, expressed as a % (Direct Labor Payroll ÷ Total Payroll)	61.7%	61.2%	%
7) **Marketing Costs**, expressed as a % of Fee Income (include business development, advertising, and proposal labor and expenses)	3.9%	3.3%	%
8) **Discretionary Profit Distribution**, expressed as a % of Fee Income (include bonuses and profit-sharing and/or SEP, 401k, or other type of tax-deferred contribution)	5.1%	5.4%	%
9) **Vacation, Holiday, Sick Leave**, expressed as a % of Total Payroll	8.3%	8.6%	%
10) **Group Insurance**, expressed as a % of Total Payroll	7.4%	8.4%	%
11) **Cost of Space**, expressed as a % of Total Payroll	8.5%	8.7%	%
12) **Average Collection Period**, in days			
a) **Work in Progress** (unbilled accounts receivable) [value of unbilled accounts receivable ÷ (total revenue ÷ 365)]	16	17	days
b) **Billed Accounts Receivable** [value of billed accounts receivable ÷ (total revenue ÷ 365)]	74	71	days
13) **Fee Backlog**, in weeks [Value of Contracted Fee Backlog ÷ (Fees Billed ÷ 52)]	21	20	weeks

Please return complete survey through Survey Monkey ***no later than April 30, 2009***

ABC COMPANY
EXPLANATIONS AND COMPUTATION OF INTERNAL RATIOS

					Computed Ratio
Full Time Equivalent Employees (FTE)					
Total Standard Hours			104,000	=	50.0
Year's Standard Hours			2,080		
This statistic represents total full time equivalent employees.					
Billable Hours per FTE					
Billable Hours / Full Time Equivalent Staff			1,374		
68,700 / 50				=	26.4
# of weeks in reporting period			52		
This represents chargeable hours worked per equivalent staff per week.					
Salary Revenue Hourly Billing Rate					
Salary Revenue			4,809,034	=	$ 70.00
Billable Hours			68,700		
This statistic represents rate per hour recognized for Salary Revenue.					
Multiplier on Direct Salary					
Salary Revenue			4,809,034	=	3.00
Direct Salary Cost			1,603,011		
Measures utilization of chargeable staff and discloses $ of revenue per $ of direct labor.					
Multiplier of Total Salary Cost					
Salary Revenue			4,809,034	=	2.05
Total Salary Cost	1,603,011 +	748,589	2,351,600		
Measures utilization of total staff and $ of revenue per $ of total labor.					
Direct Salary Cost of Total Salary Cost					
Direct Salary Cost			1,603,011	=	68.2%
Total Salary Cost	1,603,011 +	748,589 =	2,351,600		
Measures utilization of all staff.					
Average Weekly Salary Cost per FTE					
Total Salary Cost / FTE			47,050		
(1,603,011 + 748,589) divided by 50 =				=	$ 905
# of weeks in reporting period			52		
This statistic reflects average salary cost of all employees.					
Indirect Non-Salary Cost as % of Salary Revenue					
Indirect Non-Salary Costs			1,797,453	=	37.4%
Salary Revenue			4,809,034		
Measures non-salary overhead costs as a % of salary revenue					
Total Revenue per FTE					
Total Revenue			6,379,034	=	$ 127,581
FTE			50		
Discloses Total Revenue generated by staff					
Total Revenue per FTE					
Total Revenue			4,951,762	=	$ 99,035
FTE			50		
Discloses Net Revenue generated by staff					

Introduction

- Presenters
  - Ted Lewis, P.E., GeoConcepts Engineering
  - Susan Quiroga, CFO, Schnabel Engineering
  - David Gaboury, P.E., Terracon
- Key Metrics
  - Managing projects
  - Managing the overall firm

Introduction of Firm

- GeoConcepts Engineering, Inc. has been in business for 10 years.
- Currently have about 50 employees with one office.
- Provide traditional geotechnical engineering services, along with geosciences and environmental services.
- Accounting package used for first 3 years was QuickBooks Pro which was purchased for $70. Currently we use DelTek.
- Financial philosophy is very conservative, and debt adverse.
- Major shift from private sector to public sector clients in 2007 to 2008.

Project Metrics

- Vast majority of design/environmental projects are lump sum. Profit is based on comparison of revenue generated by loaded billing rates vs. what was actually billed.
- Weekly project reports provide time charged and expenses incurred to PMs.
- Write offs on projects reviewed by Operations Manager.
- For construction projects, we conduct budget analysis
  - Each service or task is set up as a phase
  - Each billing cycle, the phases are calculated with regard to original budget, units used to date, budget balance, and billed to date
- Profitability based on comparison of loaded billing rates vs. what was actually billed.

Schnabel Engineering, Inc.

- 3 Wholly owned subsidiaries
- 363 Employees and 19 Offices
- $62.5M Revenues
- Use Deltek Vision for Accounting and Project Management as well as CRM (Client Relationship Management)
- Note: No in-house drilling or other contracting

Schnabel Engineering

Project Management Metrics

- Effective Multiplier (total project revenue divided by total labor cost)
- Billed and Unbilled Write-offs
- Automated Vision Reports In Email each Tuesday:
  - Project Financial Report
  - Accounts Receivable Reports

Schnabel Engineering

Project Management Metrics Cont.

- Project Metrics are shared with the Project Manager, Department Leader, and Branch Manager.
- Some Branch Leaders use this information when considering annual raises.
- Individual Project Management Metrics are not widely "publicized".

Schnabel Engineering

Terracon

- Annual Revenues: $335 million
- 100 Offices in 34 States
- Services:
  - Geotechnical
  - Environmental
  - Construction Materials
  - Facilities
- Oracle Financials with Microsoft Net User Interface
- Corporate Support Staff:
  - Accounting: 37
  - Information Technology: 42

Terracon

Terracon
Project Portal

Signed Contract
Project Manager
Service Line
Authorized Project Reviewer

Project Number	Project Name	SL	Client	Report Due	SC	Bill Type	PM	APR	Total Est Fee	% Fee	Total Booked
02095007	Project A	GEO	Client A		Y	UP	DKN		$90,790.25	22%	$21,487.32
02085359	Project B	GEO	Client B	06/15/2009	N	UP	DKN		$36,376.50	76%	$21,732.16
02085339	Project C	GEO	Client C		Y	UP	DKN		$90,790.00	59%	$44,676.60
02085294	Project D	GEO	Client D	12/01/2008	Y	UP	DKN		$59,344.00	90%	$47,611.60
14095008	Project E	GEO	Client E		Y	UP	SBP		$5,513.00	2%	$125.23
01095015	Project F	GEO	Client F		Y	UP	MGE		$13,662.60	100%	$14,912.99
C6095605	Project G	GEO	Client G		N	UP	SBP		$100,000.00	20%	$19,691.01
									$396,476.35		$170,236.91

Total Billed	Billed through	WIP Unbilled	Payments	A/R	Last Active	Project Profitability	Reports
$7,768.25	02/14/2009	$12,292.64	$7,768.25		03/14/2009	($1,426.43)	
$20,722.00	02/14/2009	$6,972.01	$20,722.00		03/14/2009	$5,961.85	
$50,152.75	02/14/2009	$3,836.21	$50,152.75		03/14/2009	$3,312.36	
$53,690.00	12/13/2008		$53,665.00	$25.00	12/06/2008	$6,078.40	
		$125.23			02/21/2009		
$13,662.60	02/14/2009	$65.61		$13,662.60	02/28/2009	($1,184.78)	
		$19,691.01			03/14/2009		
$145,995.60		$42,982.71	$132,308.00	$13,687.60		$18,741.40	

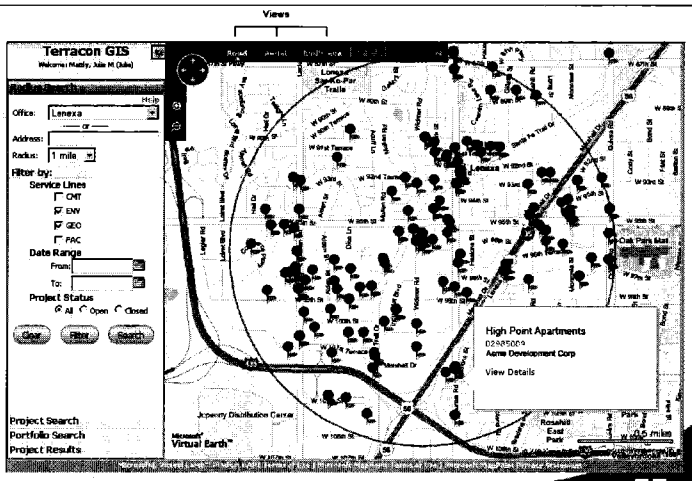
Terracon

Terracon
Project Portal
Drill Down / Related Applications

- Project Details
- Client Details
- Booked and Billed Fees
- Project Reports / Documents
- Collections Portlet
- GIS Application

Terracon

Terracon
GIS Application



Terracon

Overall Firm Metrics

- Billable hours each week
  - >1,200 billable hours/week means we will be profitable
  - Total hours worked each week for all staff
- Firm profitability on a monthly basis
  - Accrual and cash based
- Cash Flow on a monthly basis
  - Cash collected
  - Check book balance
- Itemized monthly expenses
  - Direct subcontractors excluded
  - Compared to expense budget developed at start of year
- Backlog (signed contracts with no value included for proposals)
  - Started reviewing backlog in late 2008
  - No historical backlog data to compare this information

Overall Firm Metrics

- Before Calculation of Metrics:
  - Schnabel prepares operating results by Office, Subsidiary, and Total Firm.
  - Schnabel does not prepare operating results by Service Area.
    - Employees and projects are classified by Service Area.
    - Revenue tracked by Service Area and Effective Multipliers are calculated.
  - Office results are not shared among offices; Management believes this is not conducive to working together and promotes unhealthy competition.

Schnabel Engineering

Overall Firm Metrics Cont.

- Total & Net Revenue compared to forecast.
- Percent Net Revenue Profit by Office, Subsidiary, and Total Firm.
- Utilization/Billable Hours Per Week by Office, Subsidiary, and Total Firm.
- Effective Multiplier by Office, Subsidiary, and Total Firm.
- Hourly Billing Rate by Office, Subsidiary, and Total Firm.

Schnabel Engineering

Overall Firm Metrics Cont.

- Other metrics calculated:
  - Full Time Equivalent Staff (FTEs)
  - Multiplier on Total Salary
  - Direct to Total Salary
  - Avg. Weekly Salary per Employee
  - Indirect Non-Salary Exp/Net Revenue
  - Indirect Non-Salary Exp per Employee
  - Total Revenue per FTE
  - Net Revenue per FTE

Schnabel Engineering

Terracon Office Level Metrics

- By Period and Year-to-Date for Each Office (About 100)
  - Revenues (Labor and Total)
  - **Cost Chargeability**
  - **"Profitability" of Projects**
  - **Work-in-Progress and Accounts Receivable**
  - Variable Indirect Expenses
  - Number of Employees and Hours Worked
- Office Managers not Provided Office P&L's
- P&L's by Geographic Division (15) and for Company

Terracon

Questions

- Managing Projects
- Managing Overall Firm
- Calculation of Metrics
- ASFE Financial Survey
- Other

ASFE

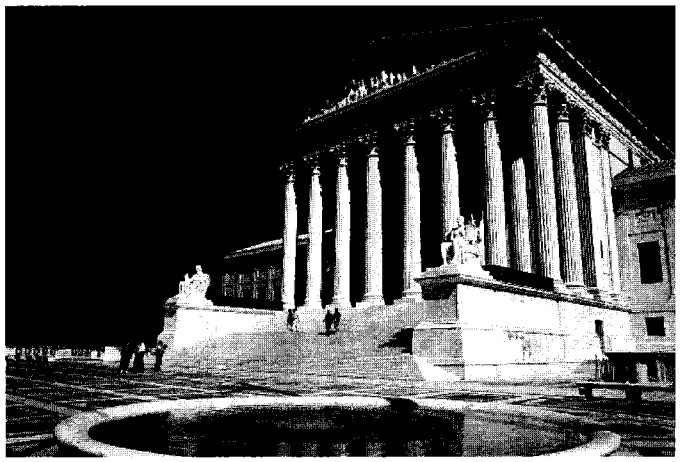
THE BEST PEOPLE ON EARTH

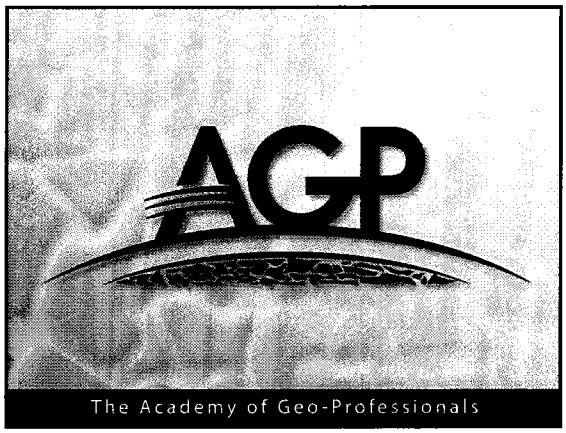
40th Annual Meeting

The Academy of Geo-Professionals

Stephen D. Thorne, P.E.

Friday, April 17, 2009
2:15PM - 2:30PM





WHOSE IDEA WAS THIS?

ORIGINALLY OUTGROWTH OF ASCE POLICY 465

ASCE ESTABLISHED NEW ORGANIZATION:
CIVIL ENGINEERING CERTIFICATION, INC. (CEC)
IN 2004

GEO-INSTITUTE TASK FORCE 2005-2007

THE ACADEMY OF GEOPROFESSIONALS

WHY AN ACADEMY?

TO PROVIDE VOLUNTARY POST-LICENSURE, BOARD CERTIFICATION FOR GEOPROFESSIONALS

THE ACADEMY OF GEOPROFESSIONALS

WHY BOARD CERTIFICATON?

TO IMPROVE THE PRACTICE, ELEVATE THE STANDARDS, AND ADVANCE THE PROFESSION

RESULT

FORMATION OF ACADEMY – OCT. 2008

INITIALLY ONLY FOR GEOTECHNICAL ENGINEERS

DIPLOMATE OF GEOTECHNICAL ENGINEERING (D.GE)

INITIAL CLASS OF 50 INDUCTEES – MAR. 2007

AGP Founding Board of Trustees

1ST ROW L TO R: ARLAN RIPPE, MICHAEL MCMILLEN, JOHN ANDERSON, JEAN-LOUIS BRIAUD
2ND ROW L TO R: ROBERT HOLTZ, BOB THOMPSON, STEVE THORNE

GOALS/BENEFITS

LEADERSHIP DEVELOPMENT

IDENTIFY THOSE WITH SPECIALIZED KNOWLEDGE FOR THE BENEFIT OF THE PUBLIC

ADVOCATION OF LIFELONG LEARNING

PROMOTING THE PROFESSION

REQUIREMENTS

BACHELOR'S +30

PE + 8 YEARS

ACTIVE IN PROFESSIONAL PRACTICE

APPLICATION AND ORAL INTERVIEW

FEES

APPLICATION +1ST YEAR DUES: $300

BIENNIAL RENEWAL: $300

DIPLOMATES FROM ASFE

ASFE PAST PRESIDENTS

LARRY ROTH
DICK REYNOLDS
BOB THOMPSON
JOE CIBOR

DIPLOMATES FROM ASFE

CTL/THOMPSON
- Bob Thompson
- Ron McOmber

D'APPOLONIA
- James Withiam

DIGOIA, GRAY AND ASSOCIATES
- Richard Gray

FUGRO CONSULTANTS
- Robert Patton
- Gregory Stieben

GANNETT FLEMING
- Arthur Hoffman

GOLDER ASSOCIATES
- William Brumund
- Thomas Krzewinski

GZA GEOENVIRONMENTAL
- Walter Jaworski

HALEY & ALDRICH
- Steven Kraemer

DIPLOMATES FROM ASFE

JACOBS ASSOCIATES
- Frank Pita

KLIENFELDER
- Edward Rinne
- Arlan Rippe
- Ron Smith

MELICK-TULLY & ASSOCIATES
- Steve Thorne

STS/AECOM
- Douglas Hermann

SYNCHRO PILE
- Philip King

TERRACON
- Craig Denny

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ASFE

THE BEST PEOPLE ON EARTH

40th Annual Meeting

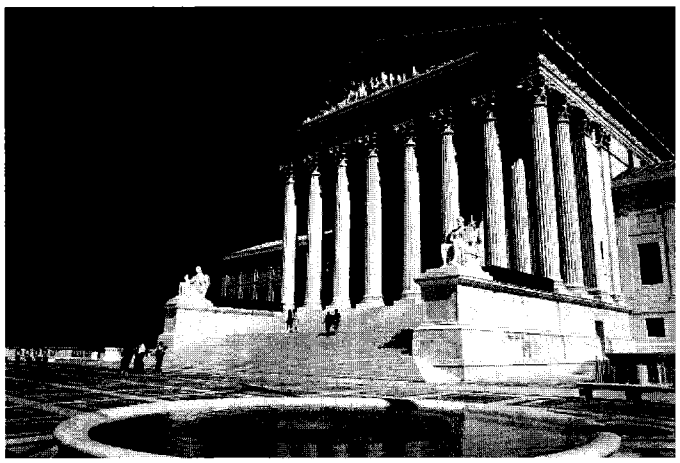
The Preferred Future

Joni L. Powell

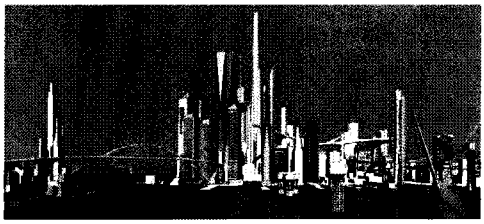
Randy Neuhaus

Kord Wissmann

Friday, April 17, 2009
2:45PM - 3:15PM



PREFERRED FUTURE



ASFE Emerging Issues and Trends Committee

Joni Powell Randy Neuhaus Kord Wissmann

EIT COMMITTEE MISSION

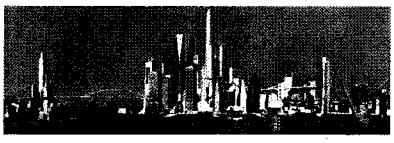
"To identify, clarify, prioritize, and communicate emerging issues that affect Member Firms"

EMERGING ISSUES IDENTIFED BY EIT THREE YEARS AGO

- Infrastructure
- Demographics
- Energy
- Technology
- Client expectations
- Climate change

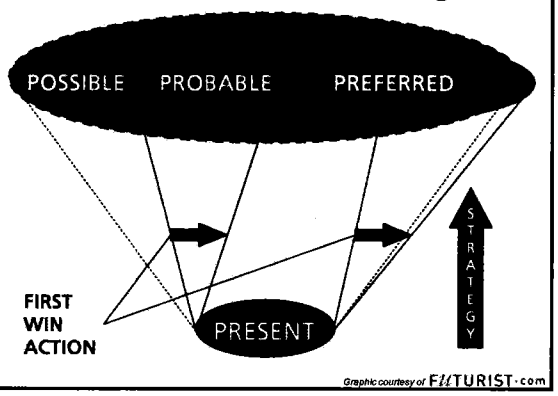
2008 THINK TANK

Glenn Hiemstra (Futurist.com)



Forecast again - with a twist …what is our *preferred future*?

Preferred Future Planning



THE FUTURE IS NOT SOMETHING THAT JUST HAPPENS TO US

Photo courtesy of futurist.com

The future is something we do.

Photo courtesy of futurist.com

THE HISTORY OF THE HOUSE (AVERAGE HOME SIZES)

1950 Average New Home

980 square feet for 3.4 people

1960's

Photos courtesy of futurist.com

1970's

1980's

Photos courtesy of futurist.com

1990's

2000's

Photos courtesy of futurist.com

TODAY: 5000 – 8000 SF HOMES FOR 2.6 PEOPLE

Photos courtesy of futurist.com

THE HISTORY OF THE CAR

1973 Honda Civic

1,500 pounds

2008 Honda Civic

2,806 pounds

Photos courtesy of futurist.com

THE HISTORY OF THE CAR

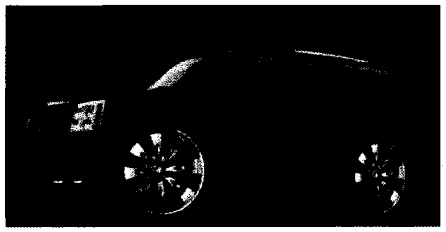
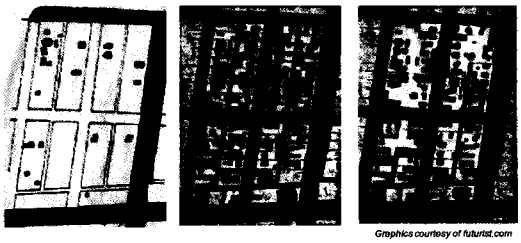


Photo courtesy of futurist.com

LOS ANGELES SUBDIVISION

LA 1950 Beanfields | 2007 74 homes | 2017



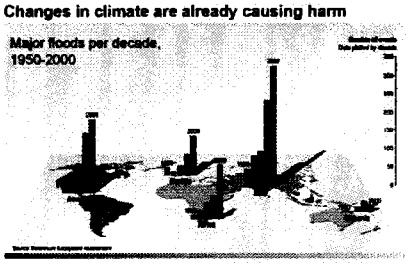
Graphics courtesy of futurist.com

2037 | 2047 | LA 2067

Graphics courtesy of futurist.com

MAJOR FLOODS PER DECADE

Changes in climate are already causing harm



There's a consistent 50-year upward trend in every region except Oceania.

Graphic courtesy of futurist.com

CLOSER TO HOME

Photo courtesy of futurist.com

IMPLICATIONS ON DESIGN?

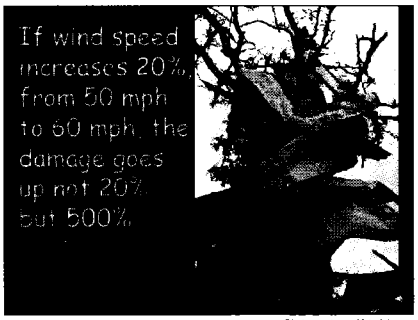
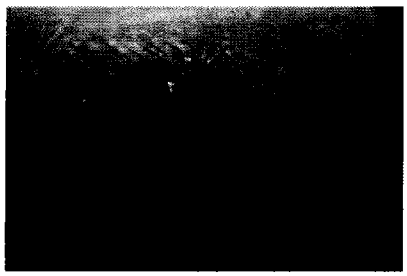


Photo courtesy of futurist.com

IF THAT'S THE FUTURE, WHAT IS THE PREFERRED FUTURE?

Photo courtesy of futurist.com

DOES IT LOOK LIKE THIS?

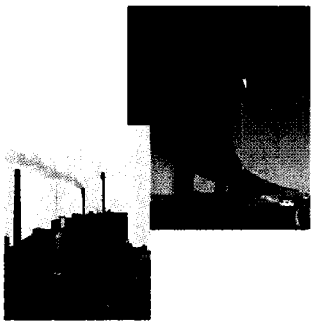


Masdar, Abu Dabai: 50,000, Solar, Desalination, Elevated light rail, Mollor Sky Cars, Pedestrian

Photo courtesy of futurist.com

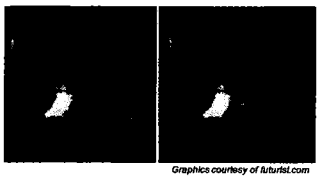
DRIVERS THAT WE IDENTIFIED IN BOTH 2006 AND 2008

1. Infrastructure
2. Demographics
3. Energy
4. Technology
5. Climate change



HOW WE SEE IT: CLIMATE CHANGE - FUTURE

- Goal of carbon neutrality
- LEED point replacement
- Changes in "loads"



Graphics courtesy of futurist.com

CLIMATE CHANGE – PREFERRED FUTURE

- Participate in debate / legislation
- Leadership in carbon counting
- Systems

HOW WE SEE IT: DEMOGRAPHICS - FUTURE

- Increased urbanization
- More transit
- Water infrastructure

DEMOGRAPHICS – PREFERRED FUTURE

- Welcome diverse work force (seniors)
- Communications tools to get long-distance "face to face" time
- Form cross-continent alliances

HOW WE SEE IT: INFRASTRUCTURE - FUTURE

- New power plants & transmission lines
- New pipelines / mass transit
- Water = new oil
- "Smart" materials

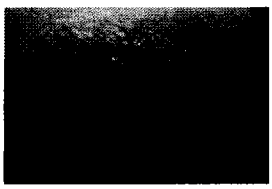


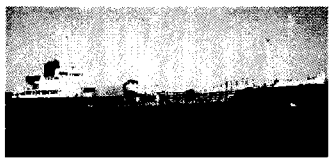
Photo courtesy of futurist.com

INFRASTRUCTURE – PREFERRED FUTURE

- Actively stump for new infrastructure
- Influence clients to consider effect on society
- Water conservation
- Mass transit over motorways

HOW WE SEE IT: ENERGY - FUTURE

- Increased short term demand for oil
- Increased demand for raw materials
- Cash = King



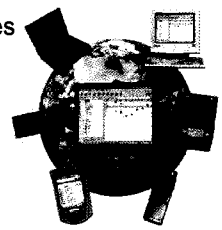
ENERGY - PREFERRED FUTURE

- Support clean / renewable energy
- Local energy = less need for more grid
- Renewable / reusable materials

Photo courtesy of futurist.com

HOW WE SEE IT: TECHNOLOGY - FUTURE

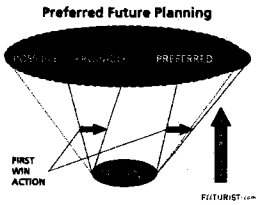
- Advanced construction materials
- Better communications devices
- Electronic deliverables



TECHNOLOGY – PREFERRED FUTURE

- Embrace communications technology
- New clients (contractors) more IT savvy because they get more benefit
- Non destructive instrumentation and electronic data collection

THE END IS NEAR



Small changes made today make the most difference in achieving your preferred tomorrow

Graphic courtesy of futurist.com

ASFE

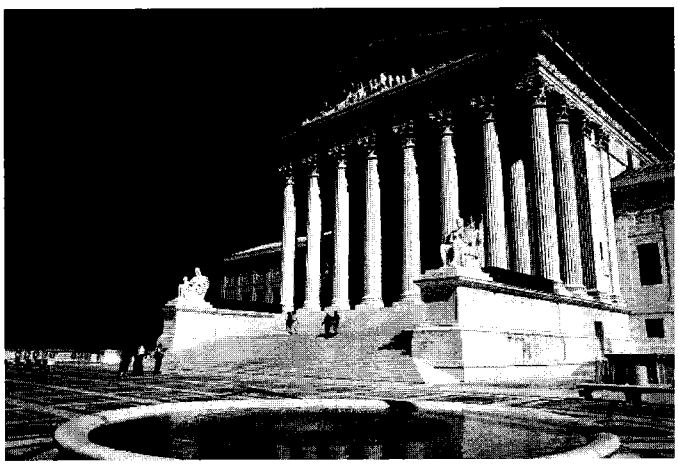
THE BEST PEOPLE ON EARTH

40th Annual Meeting

BIM/Engineering Technology Applied to Construction

Robert Bank, P.E.
John E. Gudgel
Jim Summers

Saturday, April 18, 2009
8:30AM -10:00AM



McGraw-Hill Construction

Building Information Modeling (BIM)

Introduction, Market Research and Relevance to Foundation Engineers

John Gudgel
McGraw-Hill Construction
ASFE National Conference
April 18, 2009

ASFE
McGraw-Hill CONSTRUCTION

Agenda

- **John Gudgel – McGraw-Hill Construction**
  - Introduction to BIM
  - McGraw-Hill Research and Media Perspective on BIM
  - Relevance of BIM to AEC Industry & ASFE Members
- **Jim Summers – Burt Hill**
  - A/E Firm Perspective
- **Bob Bank – U.S. Army Corps of Engineers**
  - Owner Perspective
- **Question & Answers**

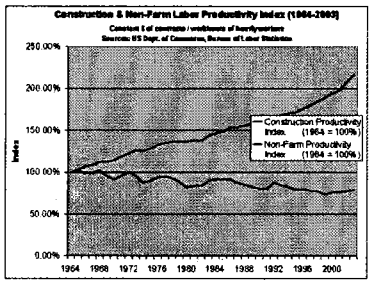
McGraw-Hill CONSTRUCTION

Speaker – John Gudgel

- **Education:**
  - BS in Geological Engineering – Colorado School of Mines
  - MS in Telecommunications – University of Colorado
  - MS in eCommerce (May 2009) – George Mason University
- **17+ years in Telecommunications**
  - Project Manager & Manager of Deployment Strategy
- **6+ years McGraw-Hill Construction**
  - Director of Alliances
  - Publisher and thought leader on construction technology topics including BIM and Interoperability

McGraw-Hill CONSTRUCTION

Construction Industry Productivity



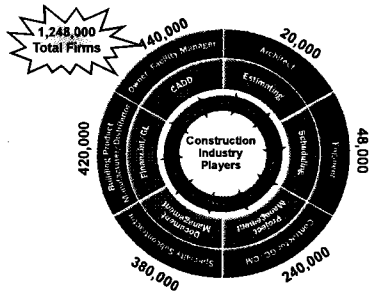
Need for innovation and better use of technology!

4

McGraw Hill CONSTRUCTION

What is BIM? – More Than Buildings!

- → Technology utilized in other industries to improve productivity
- → Can be used on any construction project – Not just buildings!
- → Involves players and processes throughout the facility's lifecycle!



BIM will have major impact on construction processes!

5

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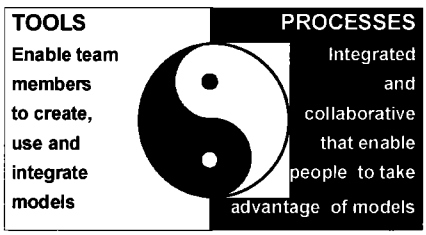
BIM Is More Than Tools

BIM is a blend of Tools and Processes



From individual silos of information to collaborative models

6

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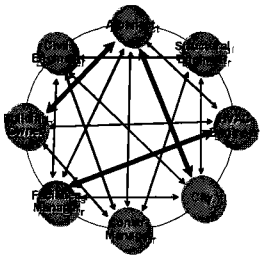
Design/Construction Processes – Before BIM

Before BIM:
- Players work in silos, use different software, and do not share data.

Problems:
- Poor coordination and version control costing time and money
- All information is "dumb", stays locked up in "silos" in the original softwares that created it
- Process is linear, not collaborative
- Value does not persist for lifecycle



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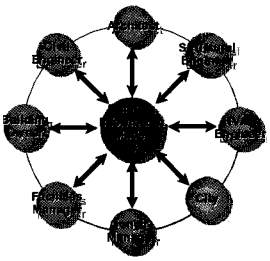
Design/Construction Processes with BIM

With BIM:
- Players use BIM models, share information, and collaborate throughout building process.

Benefits:
- Improved coordination saving time and money
- Information is "intelligent" and can be easily shared
- Process is collaborative, not linear
- Value persists for use throughout the project lifecycle



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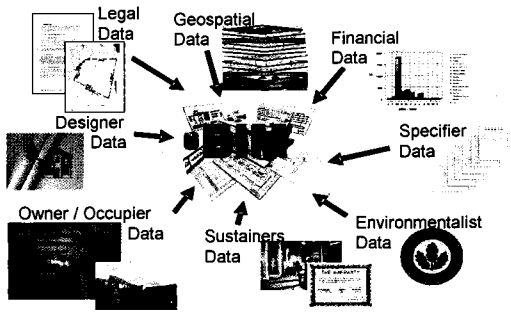
What is BIM? – Database of Information



Database of physical and functional characteristics

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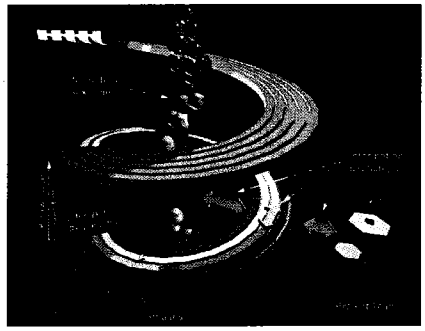
BIM: The DNA of a Facility



10

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What is BIM? - Modeling

- **Users can render multiple views of the data**
  - Text
  - 2D drawings
  - 3D images
  - Data tables
- **Can be used for analysis & simulations**
- **Serves as a shared knowledge resource for all players**
  - Reliable basis for decisions during the full life-cycle

11

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What Can You Do With BIM Tools?
3-D Study Images - Visualization

Users can visualize what structure might look like at various stages of project. Valuable tool for:

- Presentations to owners
- During construction process – detect potential issues

12

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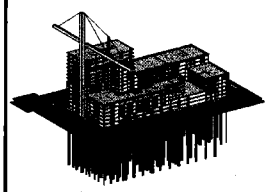
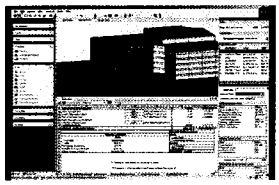
What Can You Do With BIM Tools?
4D & 5D Simulations

Scheduling Simulations (4D)



Cost Estimations (5D)



Users can simulate scheduling and do cost estimations

- Assess progress vs. schedule
- Determine adherence to budget

13

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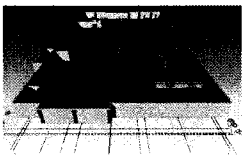
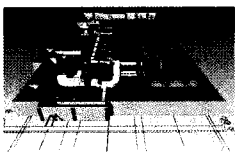
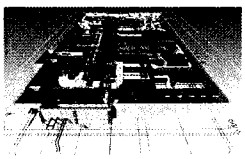
What Can You Do With BIM Tools?
System Design & Modeling

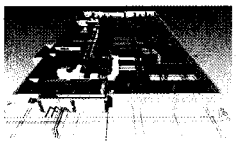
Structural



Ductwork







Fire Sprinkler/ Electrical

Plumbing

14

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What Can You Do With BIM Tools?
Clash Detection

15

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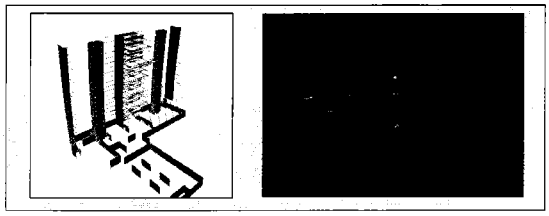
What Can You Do With BIM Tools?
Building Performance Analysis



Performance under various simulated conditions:

- Energy consumption – environmental conditions
- Structural simulations – geotechnical conditions

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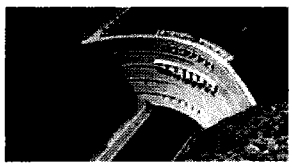
What Can You Do With BIM Tools?
Foundation, Geological & Civil Engineers

- → **Chengdu Hydroelectric Investigation and Design Institute (CHIDI)**
- → **Designing the world's largest double-arched dam as a part of a $2 billion hydropower project**
- → **Used BIM to simulate various dam orientations across various terrains**
- → **Improving the precision of excavation planning**



Cheng Du Dam Project, China

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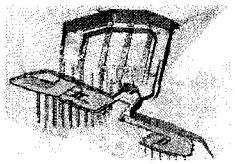
What Can You Do With BIM Tools?
Foundation, Geological & Civil Engineers

Model Foundation



Model Drilled Piers

Groundwater Regime Model

- → **GC - Hathaway Dinwiddie**
- → **Location: San Francisco**
- → **Mitigated 100% of the costs and schedule impacts from the Ground Water Regime (initial impacts were over $5M and an 8 week delay)**

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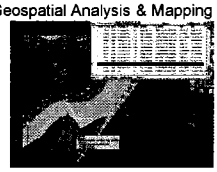
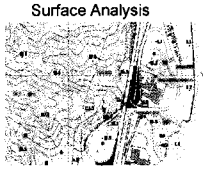
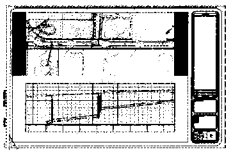
What Can You Do With BIM Tools?
Foundation, Geological & Civil Engineers

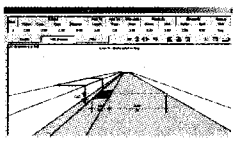
Geospatial Analysis & Mapping



Surface Analysis







Hydraflow & Storm water Analysis & Simulation

19

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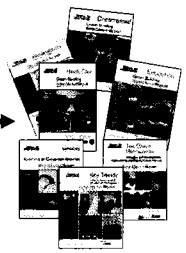
McGraw-Hill Construction Market Research

Research



construction.com

20

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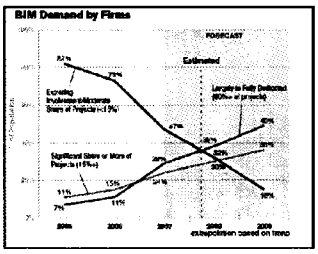
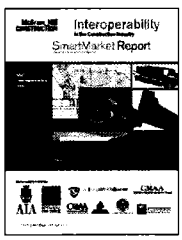
SmartMarket Report on Interoperability

- 2007 study on lack of interoperability in construction
- NIST Study - $15B+ annual impact - Our study $37B+ impact
- BIM "tipping point" in AEC/O in 2008





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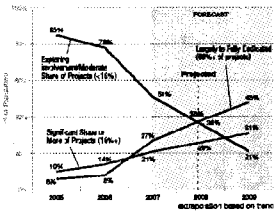
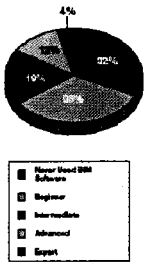
BIM Adoption and Engineers





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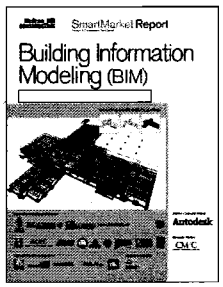
SmartMarket Report on BIM

Released December 4, 2008

23 Sponsors:

- ***Corporate (7):***
  - Autodesk (Premier Corporate Partner)
  - CMiC (Corporate Partner)
  - Barton Malow
  - HOK
  - Mortenson Construction
  - Skanska
  - Walbridge
- ***Associations (15):***
  - AGC, ACEC, AIA, AISC, ASCE, ASPE, CURT, COAA, CSI, DBIA, ICC, MCAA, SMPS, buildingSMART Alliance, and Charles Pankow Foundation
- ***Government:***
  - U.S. Army Corps of Engineers



Free download on
www.analyticsstore.construction.com

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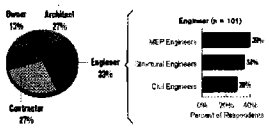
Survey Process

→40 minute phone interviews (Summer 2008)

→302 BIM users

- 39 Owners
- 80 Contractors
- 82 Architects
- 101 Engineers



→9 Focus Tracks:

Filters
- Type of company
- Size of company
- Project types
- Role at company
- BIM Sophistication
- BIM Project % 'ge

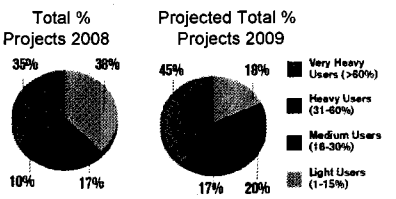
24

McGraw Hill CONSTRUCTION

Adoption:
Percent of Current & Future Projects Involving BIM

→ **35% of respondents indicated that their companies are currently very heavy users of BIM (>60% projects)**
- Grow to 45% in 2009

→ **Takeaway: Usage of BIM is growing rapidly in U.S.**
- **Companies that lag in adoption may find themselves at a competitive disadvantage**



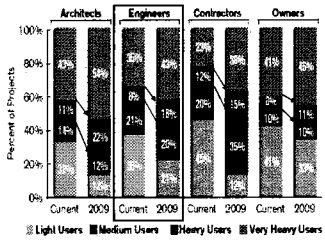
25

McGraw Hill CONSTRUCTION

Adoption:
BIM Usage by Profession

→ **BIM usage is growing among all professions**
- Architects have highest level of usage
- Engineers: Very Heavy + Heavy = 43% in 2008
  - **Grow to nearly 60% in 2009**

→ **Takeaway: Future professional success will likely require becoming knowledgeable in BIM.**



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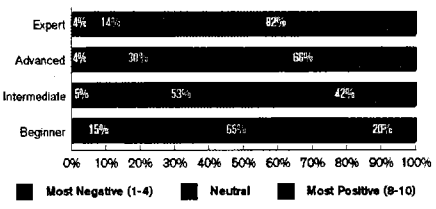
McGraw Hill CONSTRUCTION

Adoption:
BIM Perception by Experience Level

→ **The more users become "experts" in BIM, the more they like it.**

→ **Takeaway: Developing expertise is key to adoption of BIM**



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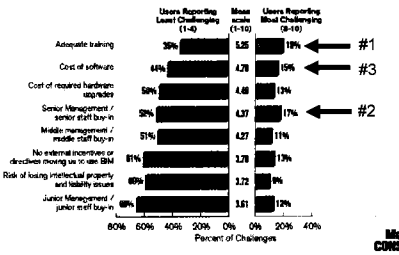
McGraw Hill CONSTRUCTION

Adoption:
Challenges to BIM Adoption

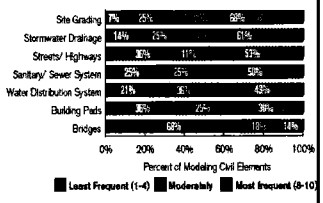
- Adequate training, senior management buy-in, and the cost of the software are seen as the top three challenges facing BIM adoption.
- Takeaway: Training of personnel and education of senior management of BIM benefits are keys to future BIM adoption.



McGraw Hill CONSTRUCTION

Implementation and Usage of BIM:
Use of BIM by Civil Engineers - Modeling

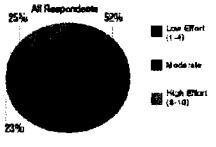
- → Civil engineers are modeling a variety of elements in BIM especially site grading and storm water drainage
- → Takeaway: Civil Engineers are engaged in BIM and usage will increase as more civil engineering modeling elements become available



McGraw Hill CONSTRUCTION

Value of BIM:
Measuring ROI on BIM Projects

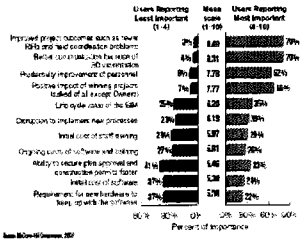
- → Less than 50% of users make a moderate of higher effort to measure ROI on BIM projects
- → Takeaway: Development and utilization of BIM metrics may be a key in selling the value of BIM to owners and other industry professionals



McGraw Hill CONSTRUCTION

Value of BIM:
Importance of Aspects for Measuring ROI

- → Companies that do measure BIM project ROI see the biggest benefits from
  - Improved project outcomes such as fewer RFI and field coordination problems
  - Better communications due to 3D visualization
  - Positive impact of BIM in winning projects
- → Takeaway: BIM is helping companies reduce costs and increase revenue

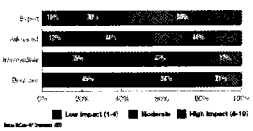


McGraw Hill CONSTRUCTION

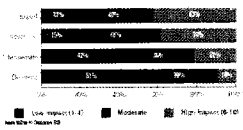
Impact of BIM Usage:
On Internal and External Processes by BIM Experience Level

- → BIM is having a major impact on both internal and external processes
  - This impact becomes more intense as users become more familiar with BIM
- → Takeaway: Companies need to understand that BIM is not only a new technology but also a new way of conducting business, impacting both internal and external processes.

Internal Processes



External Processes



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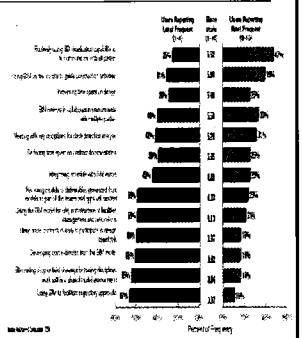
Impact of BIM Usage:
Frequency of Participation in BIM-Related Activities

- ➢ Respondents most often use BIM as a 3D visual aid to assist with communications with everyone on the project
- ➢ They also frequently use BIM it on the job site to help guide construction activities more frequently than for other activities.
- ➢ Takeaway: BIM is being used in a variety of ways including as a key communications device both on and off the job site



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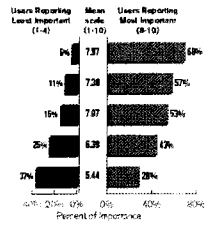
Education, Training, Certification:

Importance of BIM Training Needs

- Across all experience levels and company sizes, training on the BIM basics is seen as the most important training need.
- Takeaway: Throughout the entire survey it becomes apparent that training is the key to the further implementation and usage of BIM starting with basic skills and eventual development of higher levels of expertise and subsequent enthusiasm for BIM



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Key Takeaways

- Adoption of BIM software is on the increase
- The more users have expertise in BIM, the more they perceive the positive results
- Training, senior management buy-in, and cost of software are the primary challenges for BIM adoption
  - Training is a key for further BIM adoption
- Currently few companies are measuring the ROI of BIM usage
  - Appears to be a need to develop better metrics for measuring BIM ROI
- BIM is having a major impact on how project teams communicate both internally and externally.
  - Companies need to understand this impact and be prepared to modify the way they do business
- Across all experience levels and company sizes, training on the BIM basics is seen as the most important training need

McGraw Hill CONSTRUCTION

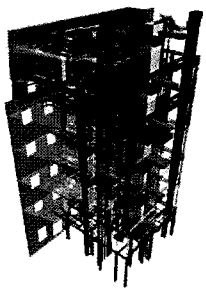
Summary: Competitive Advantages of BIM

- Increase speed of project delivery (time saved)
- Improve team coordination (fewer errors)
- Decrease costs (money saved)
- Produce greater productivity
- Provide higher-quality work
- Introduce new revenue and business opportunities

McGraw Hill CONSTRUCTION

What Does BIM Mean for the AEC/O Industry?

- BIM will be the prevailing design and construction delivery process ... 8-10 yrs
- BIM capability will be a competitive advantage until it's ubiquitous ... then standard operating procedures
- Everyone's business will change!



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What Does BIM Mean for ASFE Members?

→ **Will 2009 Be The "Year of the Engineer"?**

- 2007 Interoperability Study indicated that BIM should have reached a tipping point with Engineers in late-2008
- 2008 BIM Study indicates that BIM usage is surging among architects and contractors

→ **McGraw-Hill Construction "BIM2" Study May 2009**

- ASFE is sponsor and ASFE members will be invited to respond
- Focus on adoption and business benefits of BIM

→ **Recommendations:**

- Learn about BIM and how it can benefit you firm
- Appoint a "BIM Czar" – Internal expert to lead transition
- If doing BIM now – develop metrics and determine ROI

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McGraw-Hill CONSTRUCTION

Building Information Modeling (BIM) Introduction, Market Research and Relevance to Foundation Engineers

Images: Dunham Engineering, University Mechanical

John Gudgel
Director, Industry Alliance
McGraw-Hill Construction
john_gudgel@mcgraw-hill.com

ASFE

McGraw-Hill CONSTRUCTION

INFORMATION MODELING @ BURT, HILL

BURT, HILL

Agenda

- Premise
- "...**form** ever **follows function**."
- BIMai, BIMe, BIMfm, PIM, SIM
- Information **M**odeling for GEOPROFESSIONALS?
- Lessons Learned
- GIM ?

BURT, HILL

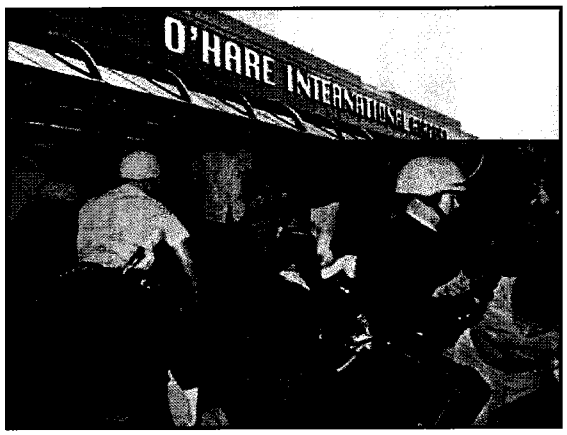
"Change"

We embrace "change" either through Opportunity...

Or, it's forced on us in crisis

ASFE was formed in crisis... "... Professional liability claims were at an all-time high..."

...Chicago's airport Dec, 1968



Cornerstones of Change

1. **People**... Owners need to change first, then others
   - **Fundamental shift in mentality**
     ...think about the entire project, not just your sprint
2. **Process**... is broken
   - **Integrated Project Delivery (IPD)...**
     ...emerging 'Project Delivery Method' that enables necessary process changes & leverages technology advances
3. **Technology**... We need to share information
   - **Information Modeling & Management Applications**
     ...Design, Analysis, Documentation, and Interoperabi

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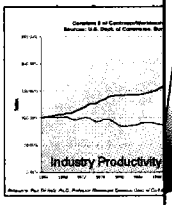
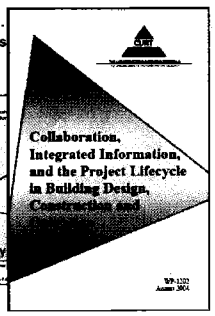
Premise

Prompted C.U.R.T Report

- **NIST Study – 2002...**
  - **$ Billions in was**
  - **Declining Productivity**





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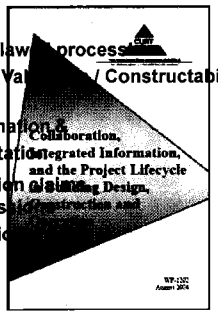
Owners Call for Change

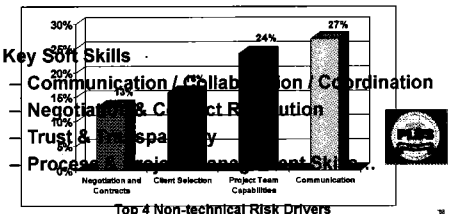
C.U.R.T.

- Root cause... 'flaw[illegible] process'
- Lack of Design Va[illegible] / Constructability Analysis
- Lack of Coordination &
- Poor Documentation
- Field problems
- Post-construction claims
- Errors and omis[illegible]
- Post-constructi[illegible]



Digging Deeper...

- **Post-Construction Claims**
  - 70% of all construction claims... → Designers
    - 80% of those claims... Soft Skills / Wetware
- **Key Soft Skills**
  - Communication / Collab[illegible]on / Coordination
  - Negotiation & C[illegible]ct R[illegible]ution
  - Trust & [illegible]spa[illegible]y
  - Proce[illegible]



Top 4 Non-technical Risk Drivers

AEC's Actions...

- **AIA**
  - Integrated Practice...
  - Integrated Project Delivery...
  - New AIA Contracts → **IPD A295 Transitional Family**
- **AGC**
  - BIM Forum...
  - Consensus Docs
- **McGraw Hill**
  - Smart Market Reports
  - Manufactured Products Objects
  - Championing Change
- **buildingSMART**
  - IFCs
  - NBIMS
  - Championing Change

IPD C295 SPE Family / Full IPD

Burt Hill's Actions

- **People**
  - Culture of Opportunistic & Practice Driven Change…
  - **BIM Team – Committed (tenacious) Practitioners**
  - Practitioners Training Practitioners
    - Project Success Architects
  - Legal Department… very supportive
- **Process**
  - Lean Philosophy guides process changes
  - IPD Process Mapping – Necessary Complexity
  - Incremental IPD approach –
    - Corning w/ Gilbane
    - Sharon w/ Tocci
- **Technology**
  - Interoperability…AECOO Test Bed…
    - Pushing interoperability btw existing applications
  - Practice Technology Group formation
  - **Looking for opportunities, Architecture, Interiors, Planning, Site, MEP, etc.**

Imagine… Innovate… Implement !

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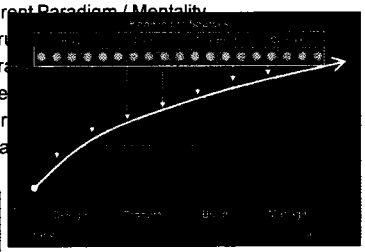
Traditional v. Desired Process

- Softening the saw tooth requires
  - Differ
    - Tr
    - Tr
    - Te
  - Differ
  - Digita



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"…technology ever follows form ever follows function."

practice.

- **Burt Hill's Path to Change**
  - Practice… Business value is the driver
  - Lean Design… is the philosophy
  - Fear & Motivation… Key to change strategy
- **People… Dealing w/ Inevitable Resistance**
  - Momentum / Familiarity…
  - Economy
  - Culture
- **Process**
  - Greater integration… earlier in process
  - Increased & improved decision making
  - Enhanced collaboration & information sharing
- **Technology…**
  - Facilitate sharing… interoperability
  - Improved Accuracy… intelligent modeling
  - Improved coordination… virtual reality (visual & digital)

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BIMai, BIMe, PIM, SIM...

- **Information** Modeling
- **Information** Management
- Each effort progresses at a different rate due to:
  - Business drivers, urgency, prioritization, mobilization
  - Impact on process & product
  - Technology maturity, complexity, disruption to workflow

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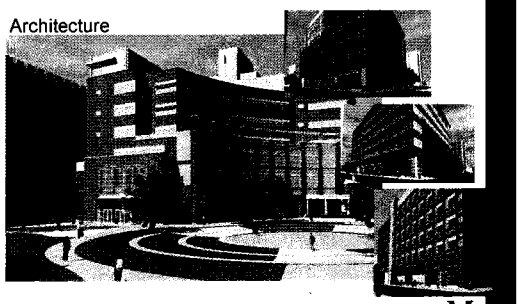
BIMa

- Architecture



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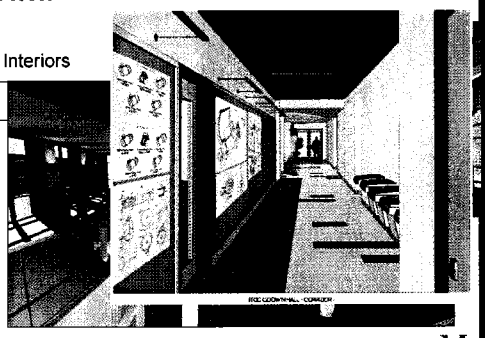
BIMi

- Interiors



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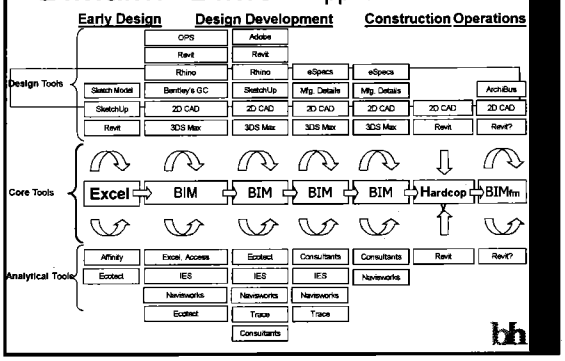
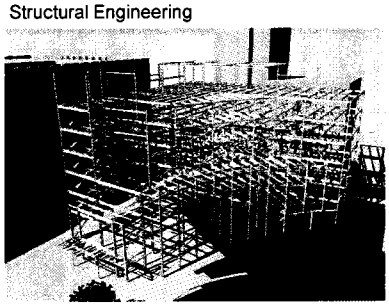
BIMai... BIMe... Applications



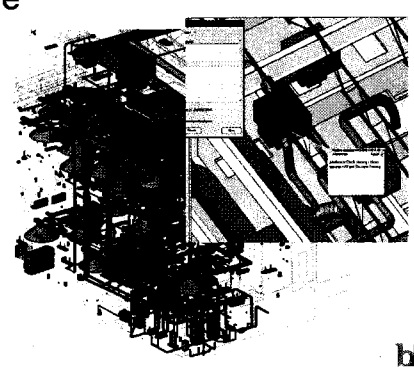
BIMe

- Structural Engineering

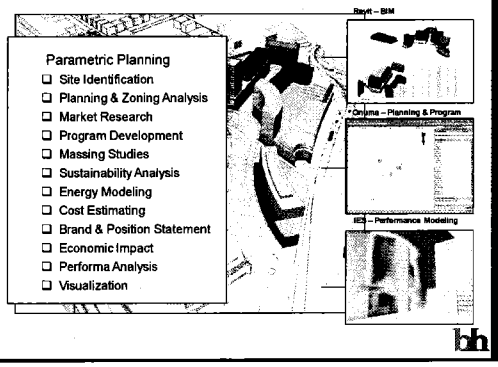


BIMe

- MEP

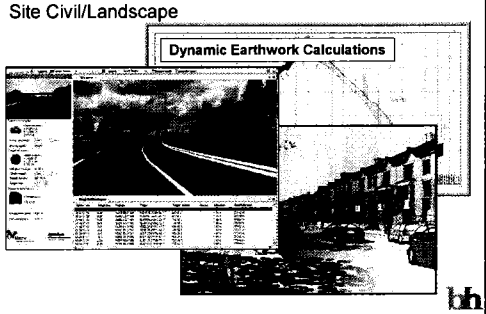


PIM

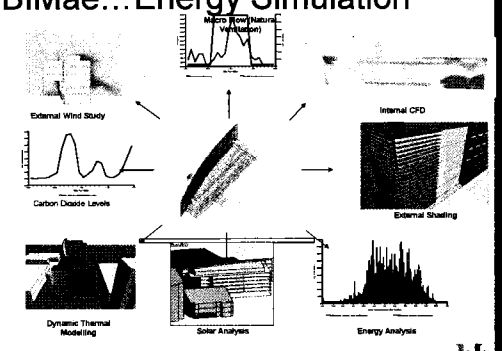


SIM

- Site Civil/Landscape



BIMae…Energy Simulation



Information Modeling for Geoprofessional

- Easy modeling of site objects
- 3D Visualization
- Survey data management
- Digital terrain modeling & analysis
- Earthworks balancing
- Quantity calculations
- Runoff calculation and drainage design
- Water/sewer layout, profiling, design
- Street design: intersections, cul-de-sacs, roundabouts
- Data for machine control, stakeout, inspection, estimating

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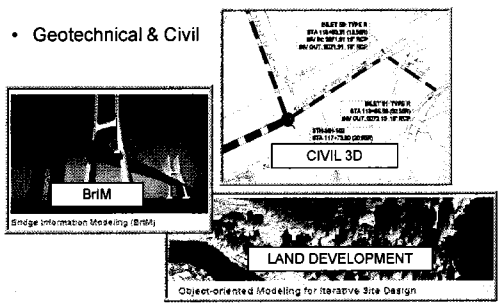
GIM

- Geotechnical & Civil



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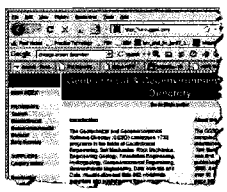
GIM

- 1732 Applications
  - Geotechnical Eng.
  - Soil Mechanics
  - Rock Mechanics
  - Engineering Geology
  - Foundation Eng.
  - Hydrology
  - Geoenvironmental Eng.



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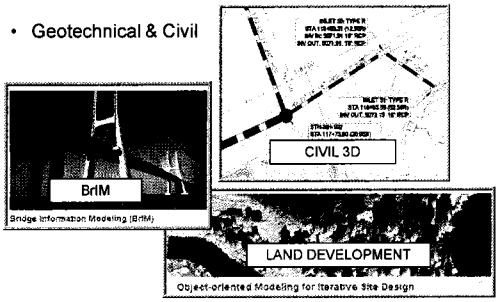
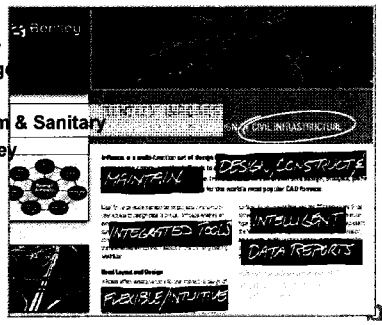
GIM

- Geotechnical & Civil



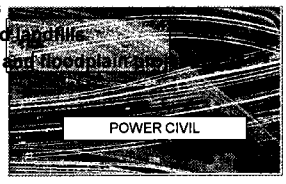
Bentley Civil Infrastructure

- InRoads
  - Bridg
  - Site
  - Storm & Sanitary
  - Survey

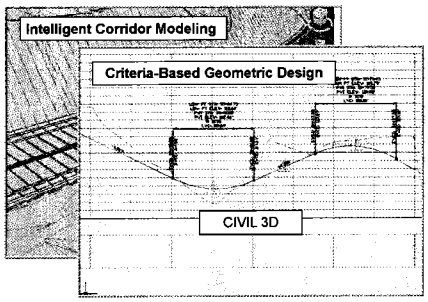


Bentley LAND DEVELOPMENT

- **Commercial building, plant, and manufacturing sites**
- **Airports and rail terminals**
- **Subdivisions, urban complexes, parks, campuses, and golf courses**
- **Dams, mines, and landfills**
- **Drainage, utility, and floodplain work**



Autodesk Civil 3D



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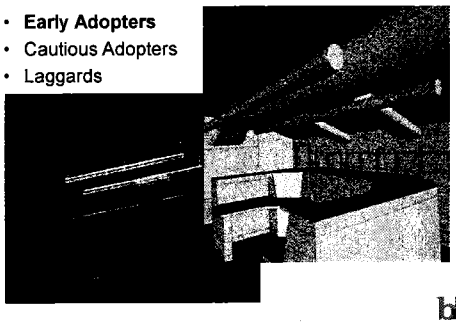
Lesson's Learned

- **Early Adopters**
- Cautious Adopters
- Laggards



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1st Things 1st

- Change - anchored in business objectives & priorities
- Leadership must champion change
- Leadership must commit

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Evaluation of *Technology* Pilots

Does technology have potential?

- Can it contribute to our key business goals?
- Will it save time?
- Will it expand/improve our client services?
- Will it eliminate steps / improve our process?
- Is learning curve proportionate to value?
- Is it interoperable with other technologies?

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Early Piloting of Parametric Modeling

- Thomas Jefferson University, Philadelphia
- Carnegie Tower, Providence
- Noisette Riverfront Park, Charleston

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Walk before you run

"Building Blocks"

- **BIMai** 1.0 – One discipline, One Tool, Many benefits
- **BIMai** 2.0 – Multiple disc., exchange data, change process
- **BIMai** 3.0 – Across project lifecycle, new delivery process

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Evaluation of *Project* Pilots

- If successful, then..
  - Leadership needs to ; Champion
  - Leadership; Commitment
  - Establish & Direct Implementation team
  - Define goals & deadline

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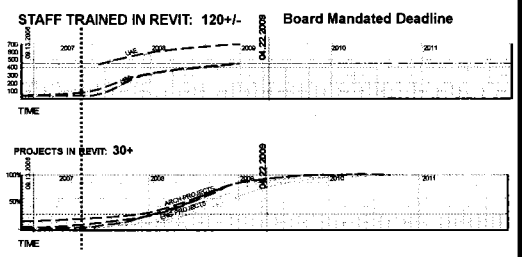
Establish "Implementation Team"

- Knowledgeable & Committed Practitioners
- Dedicated Team Leadership
- Leadership Support

bh

Metrics and Communication



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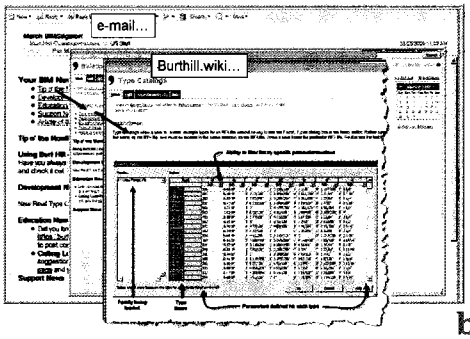
BIM Implementation Update – Level 1

- 30+ projects in progress
- 15-20 Revit practice supporters
- 300+ Helpdesk Revit Tickets Closed
- 6 Practitioner/educators (trainers)
- 300+ Revit families (content) developed
- Defined outsourced content creator - LII
- Healthcare & Interiors content groups
- 300 BIM/Practice pages in Wiki
- 2 local BIM Managers Dubai & Central Region
- Lotus notes 'Project Database'
- BH Rolodex BIM tracking
- Training Database in progress
- Content Database & Browser in progress
- BH Revit GUI in development

bh

Bimstigator



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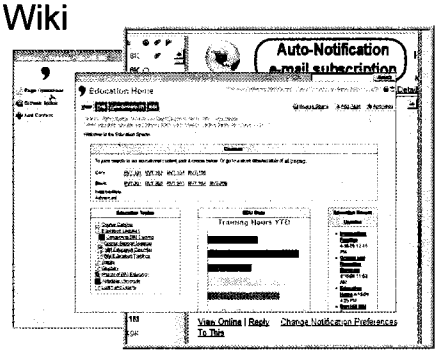
Wiki



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GIM?

Thank you

US Army Corps of Engineers

Building Information Modeling (BIM) in the U.S. Army Corps of Engineers

Robert A. (Bob) Bank, P.E.
Chief, Civil Works Branch
Engineering and Construction
Headquarters, U.S. Army Corps of Engineers

Building Strong!

US Army Corps of Engineers

Why BIM?

- BIM Supports USACE Strategic Organizational Goals
  - Regionalization
  - Capable workforce
  - Systems approach
- BIM Effectively Supports MILCON Transformation
  - BIM benefits in design and construction
    - Army Standard Designs in continuous build program
  - Goal to accrue O&M benefits
- Clearly the future of the industry

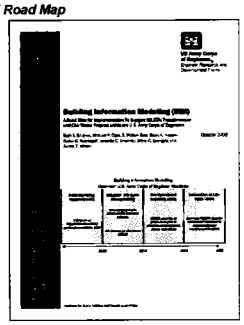
Building Strong!

US Army Corps of Engineers

Shared USACE Vision

USACE BIM Road Map

- Communicates intentions to industry
- Phased approach
- Enumerates goals, objectives and metrics in adopting BIM
- Provide advice and lessons-learned in BIM adoption
- Anticipate technology, but plan to adjust to technology and industry risk
- Living Document - Revise plan as technology matures
- Update to focus on CW



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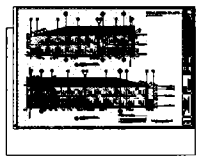
BIM Update

- BIM Contract Language initially issued in FY08 MT Model RFP
  - Approach developed in concert with industry partners
  - Language continues to evolve

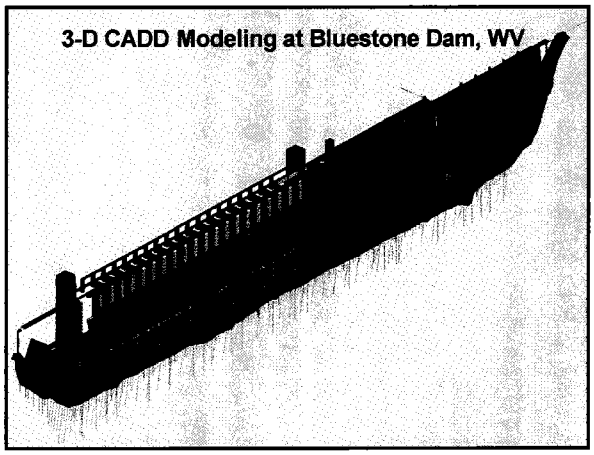
- Moving into BIM in Civil Works



Army Reserve Center BIM, Mason & Hanger Group

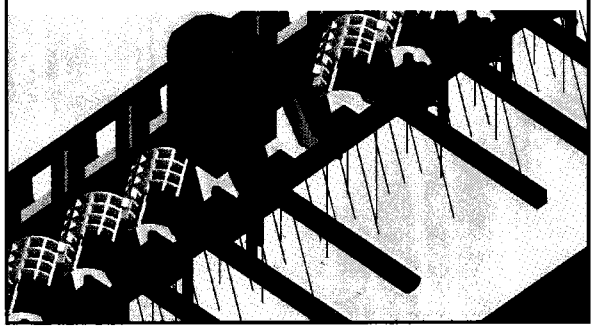
Building Strong!

3-D CADD Modeling at Bluestone Dam, WV



US Army Corps of Engineers

3-D CADD Modeling at Bluestone Dam



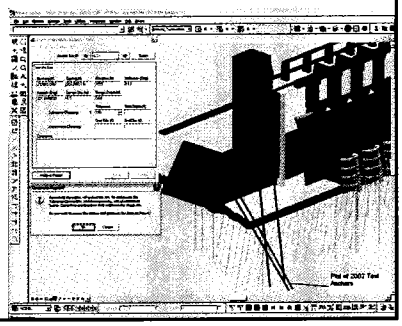
US Army Corps of Engineers

Bluestone Dam

A software interface program Anchor Borehole Analysis Tool was written to analyze the output data from each anchor boring survey.

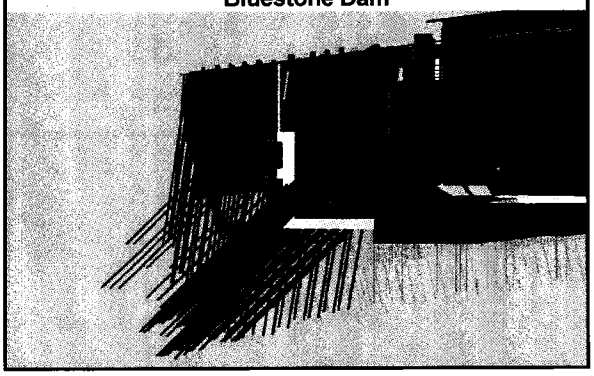
The program interfaces with Excel and the 3-D Model to provide:

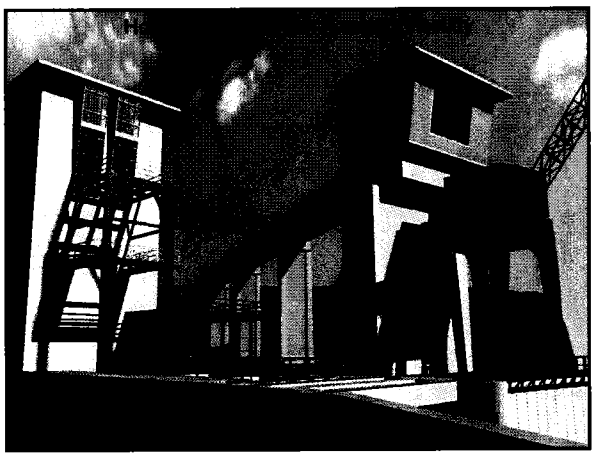
- An Excel sheet that identifies whether the boring meets the specified drill tolerance
- A plot of the boring into the 3-D CADD Model which identifies clearances to interior and foundation features, including adjacent anchors



US Army Corps of Engineers

Bluestone Dam

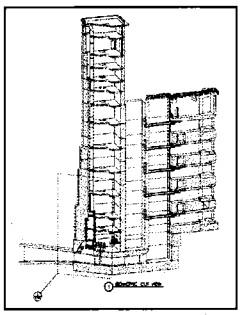




US Army Corps of Engineers

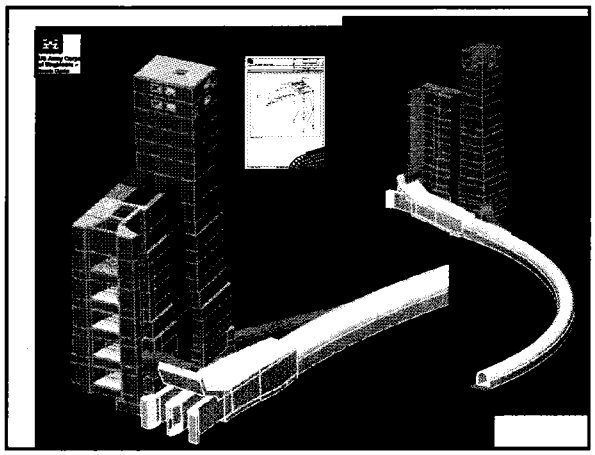
Howard Hanson Dam

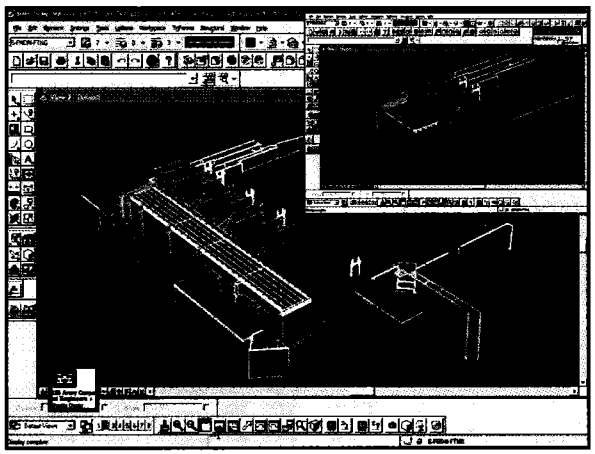
- Very complex geometry
  - Pedestrian bridge
    - Comes in on an angle
    - Has a slope
  - Horn modeled as elliptical curve
  - Traction Water Conduit modeled as "OGEE" Parabolic Curve
  - Existing Flood Control Tunnel modeled as Helical Horseshoe
- Provides strong incentive to use BIM in Civil Works



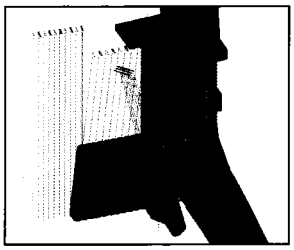
Building Strong!

10





st Avoidance



Grout Curtain Drilling Studies

US Army Corps of Engineers

BIM Platform Issues

- USACE Committed to Platform Neutral Approach
  - Focus is on the data
- Full interoperability remains an industry challenge.
  - USACE Supports NBIMS
  - Co-sponsored information exchange demo July 08
  - USACE lead on COBIE

Building Strong!

14

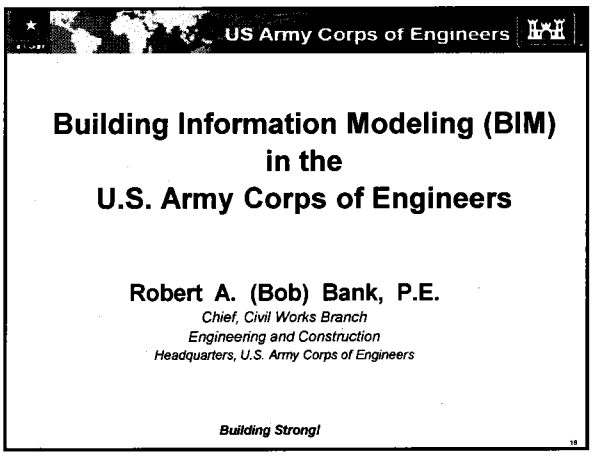
US Army Corps of Engineers

We Need Your Help

- Designers and Contractors
  - Urge software vendors to work towards interoperability
  - Develop robust BIM capabilities so you can support USACE projects – and the industry
- Software Vendors
  - Adopt standards and support interoperability and data exchange

Building Strong!

15


US Army Corps of Engineers
Building Information Modeling (BIM)
in the
U.S. Army Corps of Engineers
Robert A. (Bob) Bank, P.E.
Chief, Civil Works Branch
Engineering and Construction
Headquarters, U.S. Army Corps of Engineers
Building Strong!

ASFE

THE BEST PEOPLE ON EARTH

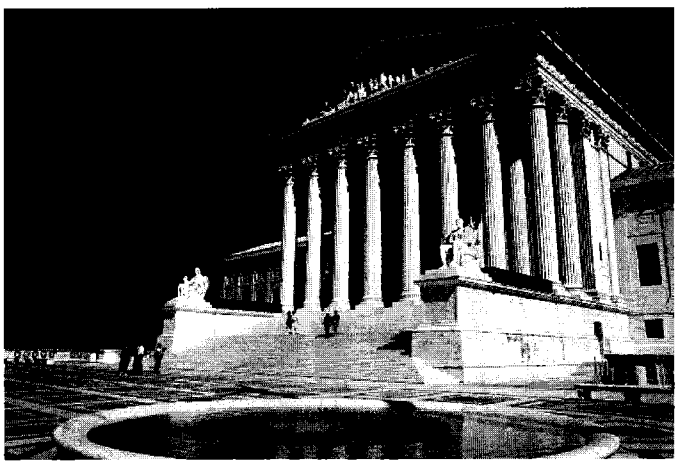
40th Annual Meeting

Tale of Three Cities

Samuel D. Palmer, P.E.

Richard E. Van Horn

Saturday, April 18, 2009
10:15AM -11:00AM



A Tale of Three Cities

ASFE Accreditation and Certification Task Force

-Sam Palmer, P.E., P.Eng.
-Rick Van Horn, P.E.

ASFE
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ASFE Member Alert !

MISSION

Part of the mission of your ASFE Task Force has been to find ways of **enhancing** the CoMET Operations for our member firms.

In general, we have been focusing on the **IBC Chapter 17 - Special Inspections**

MISSION (cont.)

In particular, we are trying to reduce:

- the numerous (and somewhat redundant) certifications for our special inspectors
- the multiple (and expensive) accreditations for our CoMET firms

Our Motto:

One Test,
One Accreditation,
Accepted Everywhere

Why?

- **Better use of our limited time and resources**
- **Improve quality of service**
- **Reduce costs**
- **Eliminate redundancy**

P.S.

...and it would counteract the ego-gratifying, money sucking efforts of various groups...

(Author not disclosed... **J.B.**)

IMAGINE

As a Professional Engineer, can you imagine the headaches and costs of having to take the PE exam (certification) every time you wanted to practice in a different area of expertise within your discipline or in a different state?

Well, this is exactly what is happening to our CoMET inspectors!

IMAGINE AGAIN

As a Consulting Engineering Firm, imagine again the headaches and costs of having to qualify (accreditate) your firm for every market you want to work in?

Well, this is exactly what is happening to our CoMET Firms!

Quick Tutorial

Standards for Special Inspection and Accreditation

- **International Organization Standardization (ISO)** has written two international standards that affect CoMET programs worldwide:

  ISO 17020 - General criteria for the operation of various types of bodies performing inspection services

  ISO 17025 - General requirements for the competency of testing and calibration laboratories

Standards (Cont.)

- **American National Standards Institute (ANSI)** has also adopted both of these **ISO** standards for use by CoMET programs in the United States

- **American Society Testing and Materials (ASTM)** now references the two **ISO Standards 17020/17025** in **ASTM E329** - Standard Specification for Agencies Engaged in Construction Inspection and/or Testing in Section 2.3 – Referenced Documents

Standards (cont.)

- **International Building Code (IBC)**
  National code that establishes special inspection programs

  - **Special Inspections Definition**

    Observation of certain structural elements for compliance to approved plans by a "certified" special inspector. This special inspector is typically approved by the Building Official

  - **Structural Elements**

    grading, foundations, deep foundations, concrete, reinforcement steel, pre-stressed concrete, welding, bolting, masonry, engraved applied

Standards (Cont.)

No guidelines are provided in the **IBC** to the Building Official for accreditation and certification approvals other than the agency shall be an established and recognized agency regularly engaged in testing and inspection.

This language leaves ***a lot of latitude*** for the Building Official's interpretation of the requirements the special inspection and testing agency shall meet.

...Thus starts our Tale of Three Cities

Approach

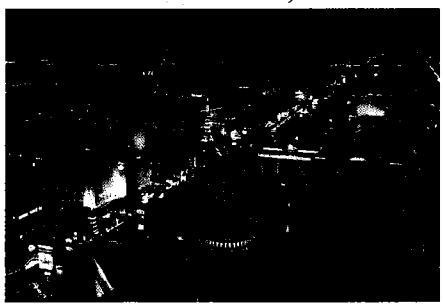
The Tale of Three Cities was conceived to:

Compare the special inspections programs of three different cities:

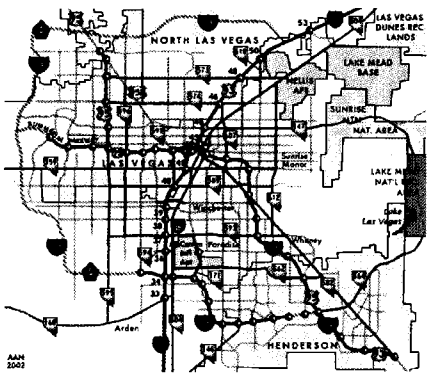
- Las Vegas, NV
- Houston, TX
- Washington, DC Area

Contrast the differences in efficiency and costs for these programs due to duplication of programs

LAS VEGAS, NV



Jurisdictional Boundaries for Las Vegas, NV



Certification Hard Costs in Las Vegas, NV

- **Clark County (Technical Guideline 17)**
- ICC – Special Inspection for: Grading, Reinforced Concrete, Post Tensioned Concrete, Masonry, Sprayed Applied Fireproofing, Structural Steel and Bolting, Bldg (wood)
- AWS – Certified Welding Inspector
- ACI – Field Grade I and Laboratory Grade I and II
- NICET – Level II and III Geotechnical
- ASNT – Level II in approved disciplines
- Allows Graduate Engineers and P.E.s to perform special inspections without certifications and minimal experience.
- Required ICC certifications for Graduate Engineers and P.E.s to perform special inspections

Certification Hard Costs in Southern Nevada (cont.)

- ICC Special Inspector Certification: ~$2,500
- ACI Field I, Strength Tests, Lab 1: ~$6,000
- NAQTC (agg, asphalt, samp and dens): ~$3,000
- AWS: ~$2,500
- NICET and ASNT: ~$900
- CEU for renewing Outside Training to Maintain Certification: ~$2,100

Total Certification Hard Costs: ~$17,000/year

Accreditation Hard Costs in Las Vegas

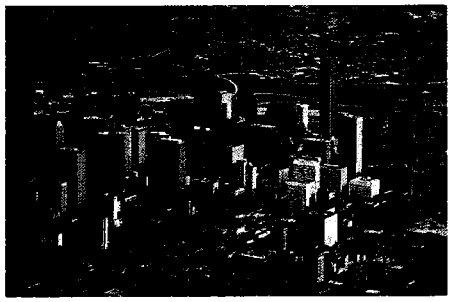
- Accreditations
  - Clark County - AASHTO (R18 compliant) and In-house Approval
  - City of Las Vegas - IAS Accreditation (IAS is ISO 17020 compliant)
  - Other Agencies (NDOT/PW) - AASHTO
- Fees –Med size lab (2008 Fees)
  - AASHTO (incl. CCRL) ~$15,000
  - Clark County In House Renewal ~$1,700
  - IAS Renewal ~$11,000
- **Total Accreditation Fee Hard Costs: ~$27,700/year**

Total Hard Costs of Doing Business in Southern Nevada

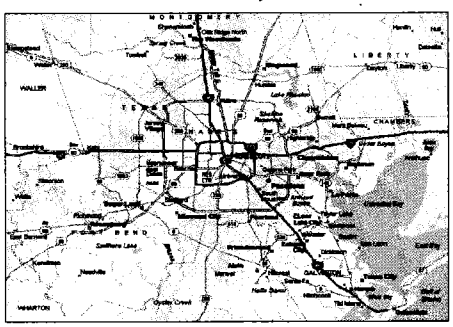
- Total Hard Cost for Accreditation and Certifications for a medium size office: ~$45,000/year
- Soft costs are probably 2.5 times hard costs: ~$110,000/year

~ $155,000 per year for a medium size office

Houston, TX



Jurisdictional Boundaries of Houston, TX



Certification Hard Costs for Houston

- NICET (CMT: Soils, Concrete, Asphalt)
- TxDOT Asphalt
- ACI – Field Grade I, Strength Testing
- AWS
- ASNT
- Hard costs similar to Las Vegas except for ICC requirements

- **Total Certification Hard Costs: ~ $9,000/year**

Accreditation Hard Costs in Houston

- Accreditations
  - A2LA in CMT/Geotechnical (A2LA is ISO 17025 compliant)
- Fees –Med size lab
  - A2LA (incl. CMT/Geotechnical) – Similar to AMRL (incl. CCRL): ~$8,000 to $9,000/year
  - Cost to maintain accreditation: ~$15,000 to $18,000/year

- **Total Accreditation Hard Costs: ~ $23,000 to $27,000/year**

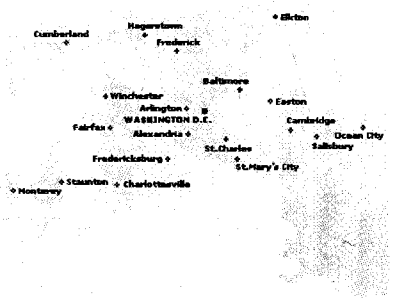
Total Hard Costs of Doing Business in Houston

- Total Hard Cost for Accreditation and Certifications for a medium size office: ~$31,000
- Soft costs probably 2x the hard costs: ~$62,000

~ $93,000 per year for a medium size office

WASHINGTON, DC Area

Jurisdictional Boundaries for Washington, DC Area



Certification Hard Costs for Washington D.C. Area

- Assume WACEL accredited CoMET firm with 22 field/laboratory technicians with an average of three WACEL certifications per person.
- **Certifications: ~ $6,000/year**

Accreditation Hard Costs for Washington D.C. Area

- Accreditations:
  - Required to meet ASTM E329 or equivalent and WACEL accreditation
    - ASTM E329 Costs ~$5,000 to $7,000/year
    - WACEL Costs ~$5,000/year
- Total Hard Costs for Accreditation:
  ~ $10,000 - $12,000/year

Total Hard Costs of Doing Business in Washington DC Area

- Total Hard Cost for Accreditation and Certifications for a medium size CoMET firm:
  ~ $16,000 to $18,000/year
- Soft costs probably 2x the costs: ~$34,000/year

~ $51,000/year for a medium size office

Economics Lesson

Impact to field/laboratory hourly billing rate:

		% of Rate	Billing Rate
Las Vegas:	~$3.85/hour	~6	($65/hr)
Houston:	~$2.30/hour	~5	($45/hr)
Washington DC area:	~$1.26/hour	~3	($40/hr)

"This is costing us a fortune!"

Lessons Learned

- Interact with your Building Official
- Need for Regional Organization
- Redundancy (Hard Costs)
- Profitability (Soft Costs)

HELP!

What can you do to help achieve:

<u>One Test, One Accreditation, Accepted Everywhere</u>

- Join the ASFE CoMET/Task Force
- Start up a regional organization
- Get/Stay involved with your local agencies

ASFE Task Force Motto

ASFE Accreditation and Certification Task Force

- Woody Vogt, P.E. Chair
- Sam Palmer, P.E. Vice-Chair
- Rick Van Horn, P.E.
- Mark Grande, P.E.
- Jeffery Cannon, P.E.
- Leo Titus, P.E.

Thanks!

Any Questions?

ASFE

THE BEST PEOPLE ON EARTH

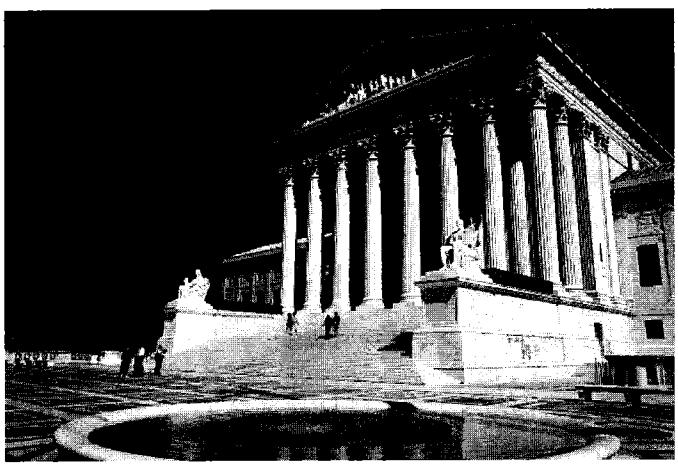
40th Annual Meeting

Getting Paid in Tough Economic Times

Randy Martin, P.E.

Ji Shin, Esq.

Saturday, April 18, 2009
11:00AM -11:30AM



S&ME

Getting Paid in Tough Economic Times

ASFE Annual Meeting
Washington D.C.
April 18, 2009

Mantra:

"Show me the money!!!"

(-Rod Tidwell from "Jerry Maguire")

S&ME

Payment Terms in Your Contracts

Update and revise payment terms in your standard contracts to include or address:

- Payment within 30 days of submission of invoice.
- **Client waives right to dispute or object to whole or portion of invoice if not made within 14 days of receipt.**
- Objections required to be made in writing, and undisputed portion still due within 30 days –
  - Don't allow Client to hold up payment of a $20,000 invoice over $100 in secretarial fees.

S&ME

Payment Terms in Your Contracts

- Charge interest/service fees for late payment –
  - 18% annually is standard (1.5% per month) or maximum allowed by law.
- Right to recover interest, attorney's fees and expenses if needed to pursue collections action.
  - Law may require award of attorney's fees as reciprocal obligation (if you lose your action) even if it's not written that way, so check with local counsel.
- **Right to suspend or terminate services if Client is behind on payment or in the event of anticipatory breach by Client.**
  - Material breach by Client that excuses performance by Consultant.

S&ME

Payment Terms in Your Contracts

- No waiver provision - Your continuing to work when Client is behind on payments does not constitute complete waiver of Client's obligation to make timely payments.
  - Strengthens your right to terminate or suspend work for nonpayment.
- **Contractual right to ask for assurance regarding project financing, etc.**
  - Helps set up anticipatory breach cause for termination or suspension.

S&ME

Payment Terms in Your Contracts

- Right to withhold delivery of any work product or require COD if Client is behind on payment:
  - Ex.: "The Consultant reserves the right, upon 5 days written notice, to stop work or withhold its Instruments of Service where payment has not been received from Client within 60 days of Consultant's submitted invoice."
  - Make sure this doesn't conflict with any deliverable obligations in the technical portion of your contract.

S&ME

Payment Terms in Your Contracts

- Get retainer.
- For small fee projects, require COD or full payment upfront.
- **Which state law governs your contract?**
  - State law favorable to Consultants?
  - Are there Prompt Payment Acts in your jurisdiction?
  - Absent language in contract, case or state law that allows you to stop work for nonpayment to avoid liability if later decided that you did not have right to suspend or terminate service?

S&ME

Payment Terms in Client Forms

Negotiate favorable payment terms in Client – generated contracts.

- **Avoid paid-WHEN-paid clauses:**
  - "Consultant will be paid 30 days after Client receives payment from Owner."
  - Most jurisdictions consider to be a timing provision and enforceable, BUT…
  - "Pay-When-Paid" clauses become "Pay-IF-Paid" if Owner never pays your Client.
  - If Client has a history of "slow" pay to you after receiving payment from Owner, request notification from Owner when payment is made to your Client.

S&ME

Payment Terms in Client Forms

- **Avoid pay-IF-paid clauses:**
  - "Consultant will be paid within 15 days after Client receives payment from Owner. Receipt of payment from the Owner is a condition precedent to the Client's obligation to make payment to Consultant."
  - Risk of absolute nonpayment.
  - Majority rule: Enforceable. Unenforceable in NC, NY, CA.
    - Clients will use pay-if-paid payment clause when it's not enforceable, to rely on it as to when to trigger their payment obligation to you. Why incur expense to litigate the validity of clause? Negotiate the term out or modify to include absolute payment obligation by Client.
  - Which state law governs the contract?
    - Enforceable if contract terms governed by different state law?

S&ME

Payment Terms in Client Forms

- Avoid Retentions/Retainage.
- Avoid terms that waive your right to file liens or stop payment/notice requests; or require you to indemnify Client for liens from your subcontractors or to keep the site free and clear of any and all liens.
  - While such waiver may not be enforceable in your state, why incur expense to litigate this issue?
  - Which state law governs your contract?

S&ME

Payment Terms in Client Forms

- **Avoid terms that require Consultant to continue to work in the event of dispute**
  - Modify to make exceptions to disputes involving payment to Consultant
- Don't give up ownership of documents or delivery of documents until paid in full or payments are current.
- **Avoid terms that allow Client to withhold payment/partial payment due to defective/faulty/unsatisfactory services "in sole opinion of Client or Owner."**

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Payment Terms in Client Forms

- Negotiate payment terms to include rights discussed in "Payment Terms in Your Contracts."

S&ME

Think "Outside the Box" for Routine Lump Sum Work (COD or Full Payment Upfront)

The 4 fees of many companies:

- Your ideal fee – Profit maximizing, when the stars align.
- Your great fee – Very profitable, when the stars are out.
- Your good fee – Solid profitability during a solid economy and the stars are mixed with clouds.
- Your "gotta have it" fee – It's dark and raining and I need this project to survive.

S&ME

Think "Outside the Box" for Routine Lump Sum Work (COD or Full Payment Upfront)

- Offer reduced fee for full payment upfront.
  - In the proposal show the ideal fee, but offer a reduced one (great or good) for payment upfront – Economy driven.
- Offer reduced fee for COD.
- Offer reduced fee for "prompt" payment for historically "slow" paying clients.

S&ME

Think "Outside the Box" for Routine Lump Sum Work (COD or Full Payment Upfront)

- Do the math, based on your company's line of credit:
  - For a $15,000 to $20,000 invoice, how much does it cost your Company for Client to pay you at 120 days instead of 30 days?
- Reduce your COD or upfront payment by ½ of that.

S&ME

Client Selection/Screening

- Historically, when economy is in recession, number of claims increases.

- **Do your due diligence (financial condition check) on your current, repeat and new clients!**
  - Dunn and Bradstreet Search or other credit reporting agency
  - UCC searches and filings.
  - Local Better Business Bureaus.
  - For "out of town" clients, contact an ASFE firm from their area.

S&ME

Client Selection/Screening

- **Do your due diligence (financial condition check) on your current, repeat and new clients! (continued)**
  - Contractors' State License Board
  - District Attorney's Consumer Division
  - Attorney General's Consumer Fraud Section
  - Complaints and judgments in local superior courts
    - Cut deal with your Attorney, ask them to run searches for you.

S&ME

Client Selection/Screening

- Client's prior performance/experience on similar project.
- Ask how they selected <u>you</u>.
- Client's history of filing claims.
  - Lawsuits filed by or against Client in local superior courts.
  - Ask them if they have sued Consultants in the past. Be cautions if they say "All the time."
  - Cut deal with your Attorney, ask them to run search for you.

S&ME

Client Selection/Screening

Know who your Client is:

- **Legal name of entity.**
  - Secretary of State office search
- Also important to preserve your lien rights.
  - Is your Client the owner of the property?
- Inquire about corporate or organizational structure.
- Ask for professional and financial references.

S&ME

Client Selection/Screening - Limited Liability Companies (LLCs)

- Protections/limited liability afforded to corporations with tax benefits afforded to partnerships.
- Members, affiliates, parents are <u>not</u> liable for debts of its LLC.
  - Very difficult to pierce corporate veil.
- LLC serving as GC/Quasi-Developer Role.

S&ME

Client Selection/Screening - Limited Liability Companies (LLCs)

- Usually created for specific project or purpose which means no assets other than revenue from the project or the project's financing.
- Payment usually dependent on the project succeeding.
  - Are you willing to take the "risk" with them?
- Get guaranty from parent company or other affiliated entity of LLC.
- Get personal guaranty from its members.
  - But are the members/individuals good for the debt?

S&ME

Client Selection/Screening

Due Diligence In Project Financing:

- Verify construction loan or adequate funds to complete project – Seek confirmation from Lender
- **Project funding vs. project budget** - very different meanings.
- **Special Funding**
  - Is payment conditioned upon specific project funding? Then nonexistence of fund defeats your right of recovery.
- **Terms of Construction loan** – Optional or Obligatory? (CA)
  - Important for priority of liens
  - Deed of trust of Lender has priority over all mechanics' liens if recorded prior to commencement of work.

S&ME

Client Selection/Screening

- **Terms of Construction Loan (continued):**
  - If Lender is obligated to make advances (progress payment) then deed of trust of Lender has priority.
  - If payment by Lender is to be made only when certain conditions are met, then considered "optional advances" and your lien may have priority over the deed of trust.
- **"Permanent Loan"** (CA) - If loan's sole or primary purpose is for financing site improvement and Lender has no control over the funds then your lien may have priority over the Lender's deed of trust.
- **Other mortgages or deeds of trust on project** - Check County Recorder's Office of project site or use title search co.
- **Asset/judgment searches of Client** – Check County Recorder's Office, Dunn and Bradstreet Report, etc.

S&ME

Client Selection/Screening

- Beware of hovering bank - Look for certification and the right to take over payment. Avoid documents and/or language Owners pass on to you – these often change terms, representations and liabilities.

Client objections to your inquiries:

- If a Client objects to you wanting to know more about them before entering into a contract, do you really want to work with them?

S&ME

Preserve Your Lien Rights

- Mechanic's Lien is a security interest in the work of improvement.
- Lien laws are strictly enforced!
  - Strict requirements and deadlines that must be followed.
- **Lenders and Owners will defend mechanic's liens claims by showing -**
  - Priority of Lender's deed of trust over mechanic's liens.
  - Procedural defects with lien.
  - Incomplete or defective work of lien claimant.

S&ME

Preserve Your Lien Rights

- **Know the lien requirements for the state of where the project site is located.**
- Lien laws vary by state.
  - Ex. In Georgia, conditional waivers become final and binding in 60 days, unless statutory affidavit of non-payment is filed in court before 60-day period lapses.
- **Serve preliminary notice for every project** - This is just RESERVING YOUR RIGHT, a Preliminary Notice is not a Lien, it's a reservation of the right to file a lien if you have not been paid.

S&ME

Preserve Your Lien Rights

- Private or public project?
  - CA - Usually no lien rights against public property, but may be able to lien private leasehold interest.
  - CA - Stop notice for public and private projects (attaches to funds of Owner or construction loan proceeds)
- **Design Professional's Lien available in your state?**
  - CA: Provides lien rights when no construction of the planned work of improvement has commenced
- **Set up internal procedures such as a checklist** for each project of all requirements to be completed to protect your right to lien and perfect your lien (file foreclosure action against lien) if necessary
  - Accounting is a good place to task this.

S&ME

Preserve Your Lien Rights

For example, project lien checklist should include (depending on lien laws of the project site):

- List of Owner, Lender, General Contractor
- When to serve preliminary notice
- Parties that need to be served with preliminary notice.
- Start date and last date of your service.
- When you need to record lien.
- Parties that need to be served with the lien.
- When you need to perfect your lien
  - File foreclosure against your mechanic's lien.
- Etc.

S&ME

Preserve Your Lien Rights

If your lien rights have expired offer to perform additional services (even at reduced or no fees) to "reactivate" your lien rights.

- Get this authorization through the same mechanism as stated in the contract.
- Timing issue with lien laws and could be a "risky" maneuver – Check with your Attorney first.

S&ME

Preserve Your Lien Rights

- Educate the Client - Remember, this is usually a constitutional or legislated right, cannot be abrogated by contract.
- Don't rely on state law and contract away your right to file a lien. Why incur expense to litigate the validity of the contract provision that you signed agreeing to waive your lien rights?
  - Compromise - Agree to waive your lien right WHEN the Client makes corresponding progress payments in timely manner, up to a certain date; or use conditional and unconditional lien releases for payment.

S&ME

During The Course Of Performance

- If Client is behind on payment, find out why (and document).
  - Ex: Send confirming letter that late payment not due to performance issue or disputing invoices, but Lender has not released funds for next phase, or Client waiting for payment from Owner.
  - Seek legal advice on wording of letter.
  - Will aid in your defense to allegations made later by your Client that nonpayment due to defective services.
- Watch that AR log, if it's getting over 90 days it's a red flag, and Client has issues.

S&ME

During The Course Of Performance

- Get written executed change orders (or at very least send letter memorializing/confirming verbal authorization from Client).
- Use the interest your contract specifies (1.5% per month) for negotiations.
  - Ex – offer to "waive" the interest accrued if client can make payment **today**.
  - The thought of paying $300 interest is a great motivator for paying a $20,000 invoice.

S&ME

During the Course of Performance

Avoid "The check is in the mail".

- When possible, offer to drop by their office to pick up payment.

Send Statements.

- If you invoice on 4 week intervals, send statements 2 weeks later as a "reminder". Great tool to avoid the "I lost or misplaced your invoice" comment.

S&ME

During the Course of Performance

- Walk in large invoice in person to Client. Offer to review it with them.
  - You can learn a lot and head off problems.

S&ME

Miscellaneous Thoughts

- Become "Buddies" with Client's Accounts Payable Team.
  - Have your admin/payables person take Client's admin/payables person to lunch or send a "thank you" gift/note for timely payments or helping to resolve payment issues.
  - Review contract for "no gifting" provision.
  - Cannot do "gifts" or "lunches" for any public works contract but a hand written personal thank you can be just as effective.
  - Remember that your Client's project manager worries about the project and your Client's payables person worries about paying people they owe money to.
- Offer discounts if Client pays invoice within 30 days.

S&ME

Miscellaneous Thoughts

- **If large portion of your fees is for your Subcontractor, have Subcontractor contract directly with Client** to reduce exposure of not being able to recover large sum of your hard costs if payment becomes an issue later on.
  - **Pass through the same payment terms to your Subcontractor that you have with your Client.**

S&ME

Miscellaneous Thoughts

- Ask the Client tough questions regardless of what answers you might get:
  - What can we do to ease the payment process?
  - Are we sending our invoices to the correct person?
  - Is the Owner paying you?
  - Would it be best if we contracted directly with the owner?
  - Can you help me understand why we haven't been paid?
    - Why not?
    - If you don't get an answer, is there someone else I should be talking to?

S&ME

Miscellaneous Thoughts

- Ask the Client tough questions regardless of what answers you might get: (continued)
  - Would putting a lien on the property create significant hardship on you as our client? (Ask, don't threaten.)
- Be courteous, but direct when attempting collections
- You performed the service, as requested, expect to get paid.
- Tactfully, remember you have the "upper hand".

S&ME

Miscellaneous Thoughts

- Be aggressively diligent. (Take a cue from Glenn Close in "Fatal Attraction" and "don't be ignored!")
  - Request "receipt confirmation" for all correspondence.
  - Show up and sit in their lobby.
  - If weekly reminders don't get responses, go daily.
  - Try "one last time" with a certified letter.
- Know when to solicit legal or professional collections help.

S&ME

Miscellaneous Thoughts

- After 120 days outstanding AR, it is said the value of money will have negated your profit margin - not the way to run a railroad.
- You don't do this because you "love working with people" (although you may, at that), you do it to GET PAID!

"SHOW ME THE MONEY!!!"

S&ME

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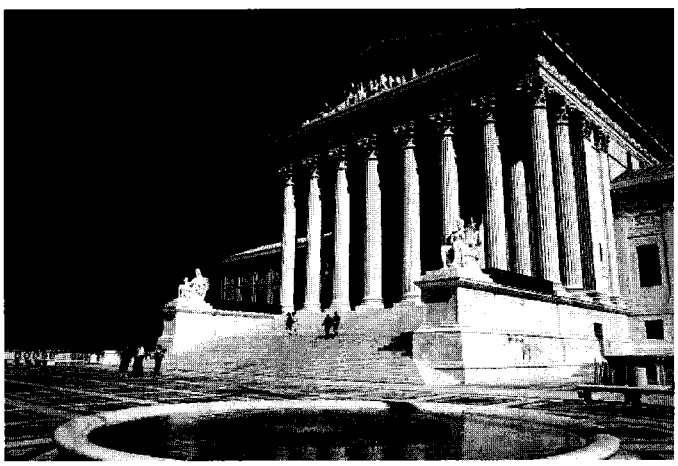
40th Annual Meeting

Lessons: The Endless Journey

Gerald J. Salontai, P.E.

Saturday, April 18, 2009
12:45PM - 1:45PM



THE KLEINFELDER GROUP, INC. is a $350 million, employee-owned professional services firm providing planning, engineering, science, construction oversight and program management services in the natural and built environment. Headquartered in San Diego, CA, Kleinfelder has over 2,000 employees located in 23 states. Services are provided to global clients within the private and public sector, with a particular emphasis in the transportation, water, and energy markets.

Gerald J. Salontai has served as President and CEO of The Kleinfelder Group, Inc. since 1998. Mr. Salontai oversees the overall leadership and management of the firm. In this capacity, he leads strategic planning efforts and is responsible for executing the firm's strategic and annual business plans, and implementing policies set by the Board.

Mr. Salontai received his Bachelor of Science degree in civil engineering from Cal Poly Pomona, Pomona, California in 1977. He continued his education, earning a Master of Science degree in civil engineering from Long Beach State University, Long Beach, California in 1981. He has also completed the Executive Management Curriculum at the University of California, Berkeley, Berkeley, California.

Mr. Salontai is a licensed civil engineer in California, Arizona, Utah, Nevada and Colorado, and a licensed geotechnical engineer in California.

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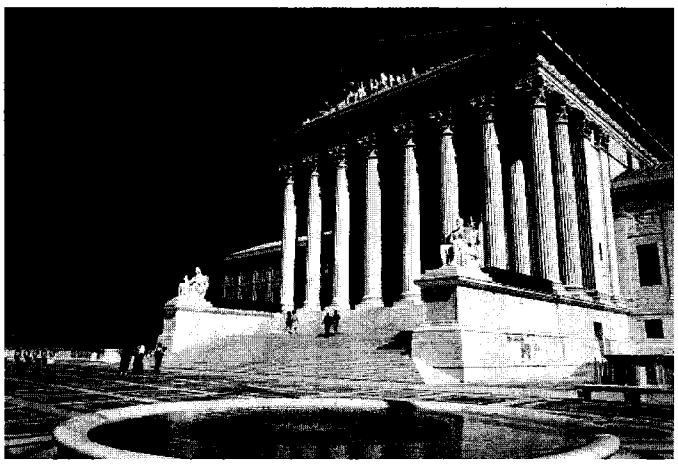
THE BEST PEOPLE ON EARTH

40th Annual Meeting

Membership Enhancements

Saturday, April 18, 2009
1:45PM - 2:30PM



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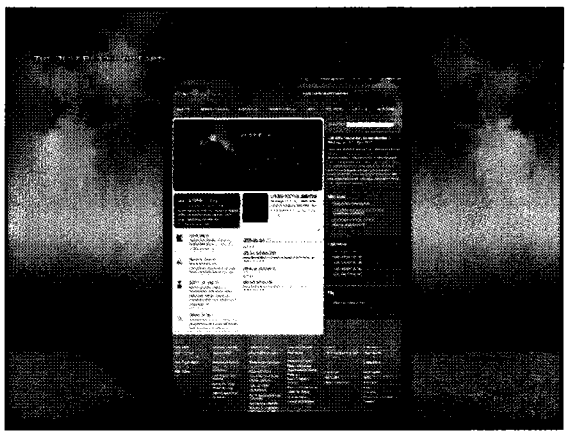
Membership Enhancements

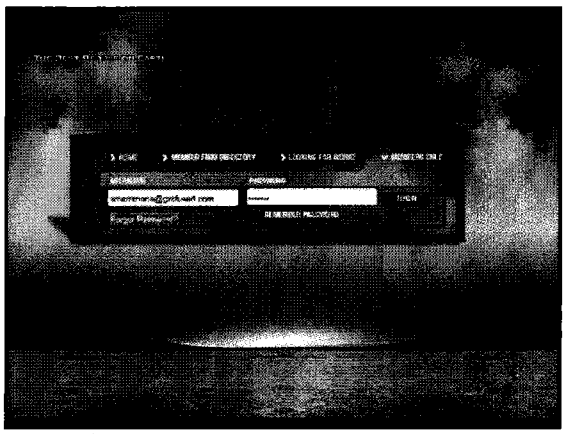
ASFE Website & SharePoint Site

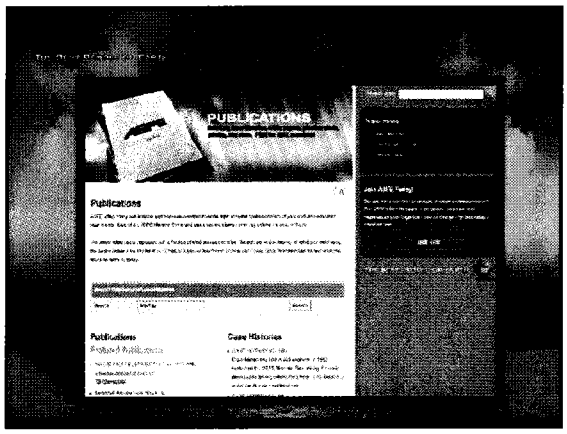
Steve Mammone

Preliminary PEER Review
Client & Staff Questionnaires

Dick Reynolds P.E.



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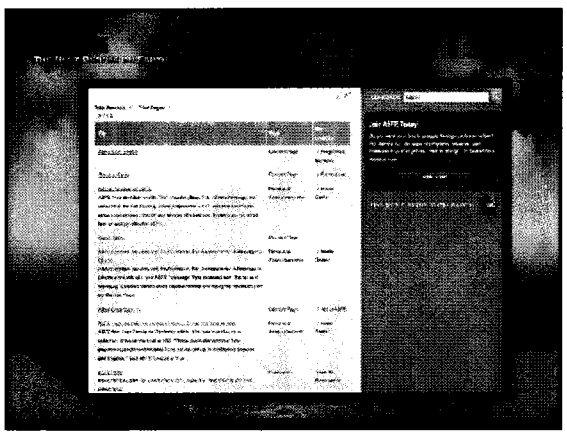
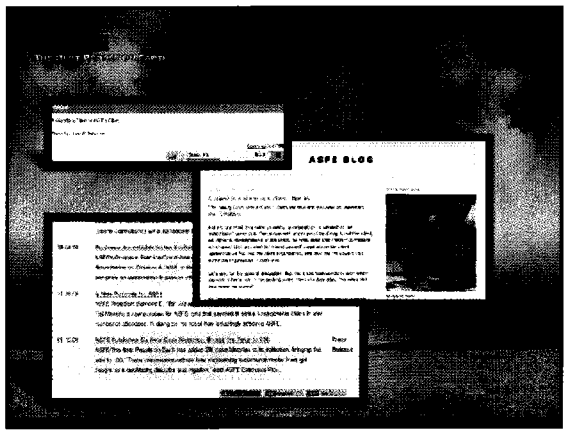
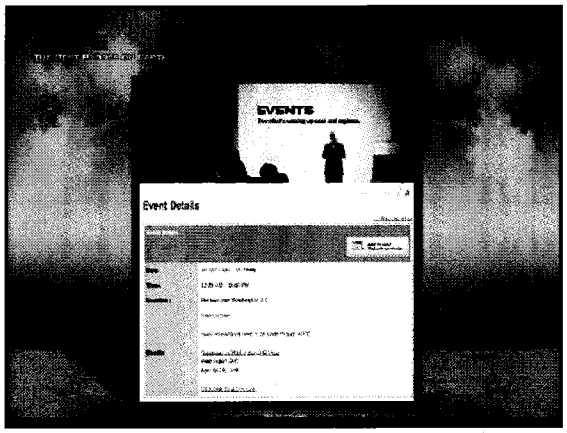
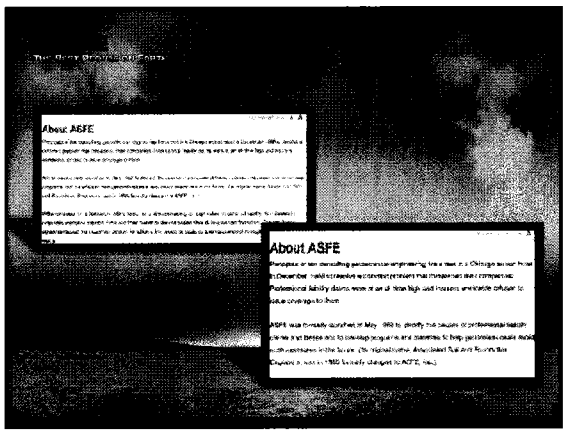
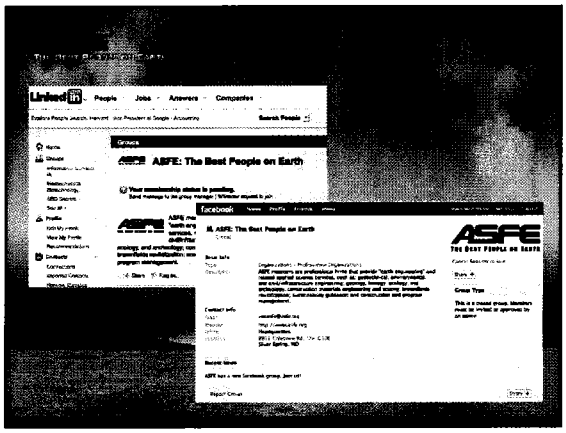
Publications
Publications
Case Histories




ASFE BLOG


EVENTS
Event Details


About ASFE
About ASFE


ASFE: The Best People on Earth
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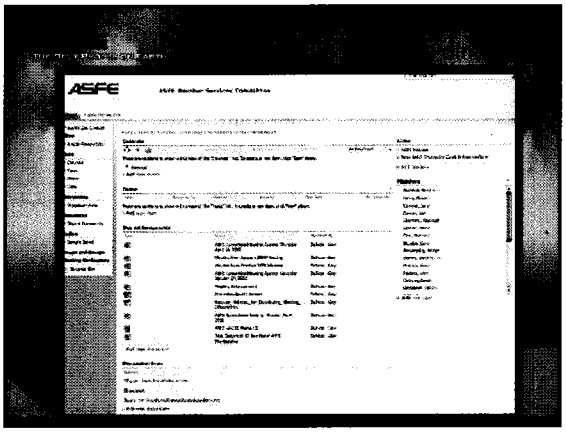
THE BEST PEOPLE ON EARTH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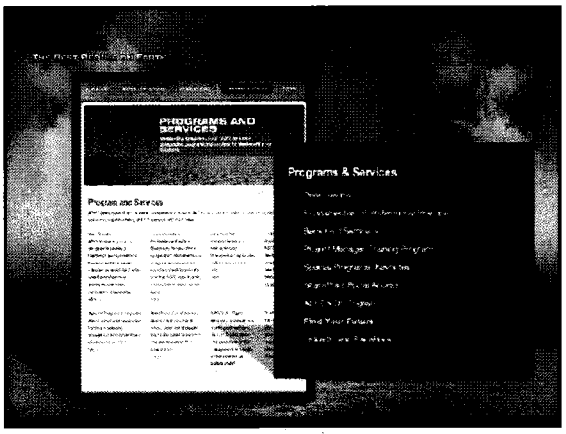
PROGRAMS AND SERVICES
Programs & Services
Programs and Services
Find Your Future

Preliminary Peer Review

- Background Information
- Facilitated PPR
- On-Your-Own PPR

What's a PPR?

- A PPR is **not** a:
  - Comprehensive Peer Review

A Comprehensive ***Peer Review*** evaluates all eight core management components (CMCs)

- business management,
- facilities and technical resources,
- human resources management,
- professional development,
- project management,
- financial management,
- marketing practices, and
- electronic-resources management.

What's a PPR?

- A PPR is **not** a:
  - Comprehensive Peer Review
  - Peer Review Lite

Some firms have found that "Peer Review Lite" is a valuable tool for focusing on a single issue...

- business management,
- facilities and technical resources,
- **human resources management,**
- professional development,
- project management,
- financial management,
- marketing practices, and
- electronic-resources management.

What's a PPR?

Analogy:

- Preliminary Geotechnical Investigation

Steps in a PPR vs. a Typical Comprehensive Peer Review

1. **Get feedback from employees,**
2. **Get feedback from clients,**
3. Review policies and reports,
4. On-site interviews,
5. Review facilities and operations,
6. Synthesize information,
7. Exit conference with CEO and staff, and
8. **Written report.**

Steps in a PPR vs. a Typical Comprehensive Peer Review

1. **Get feedback from employees,**
2. **Get feedback from clients,**
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5. Review facilities and operations,
6. Synthesize information,
7. Exit conference with CEO and staff, and
8. **Written report.**

Why do a PPR?

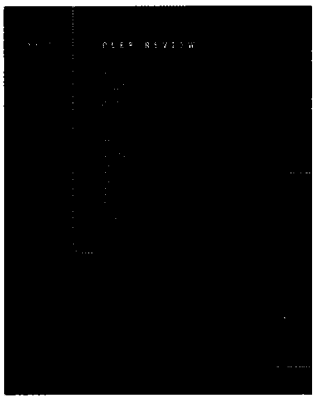
- Are there undiscussable issues?
- Are there results from operational changes?

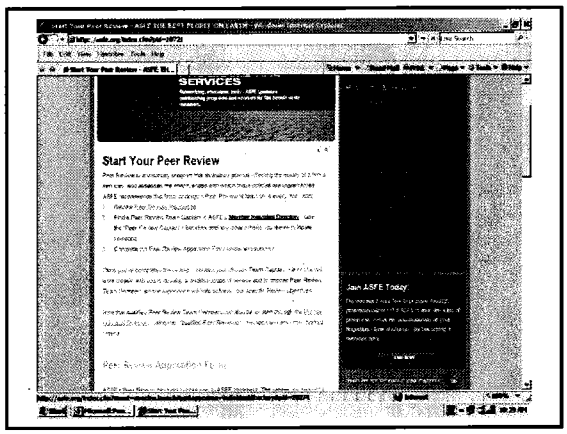
Types of PPRs

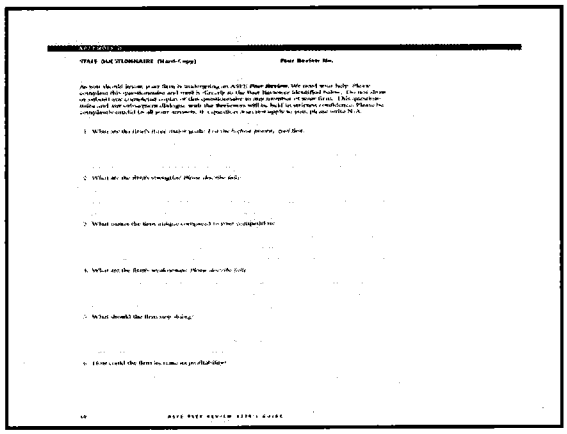
- Facilitated review
- On-your-own review

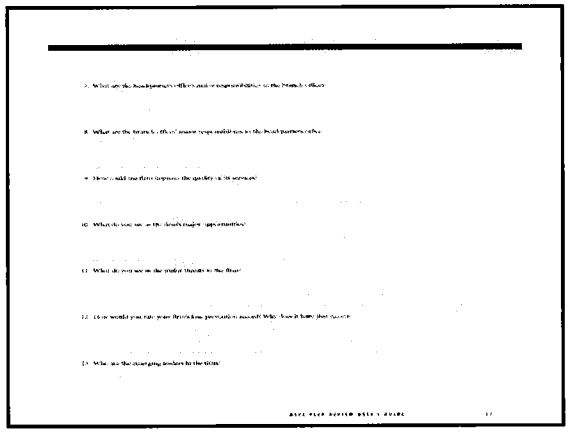
A Facilitated PPR

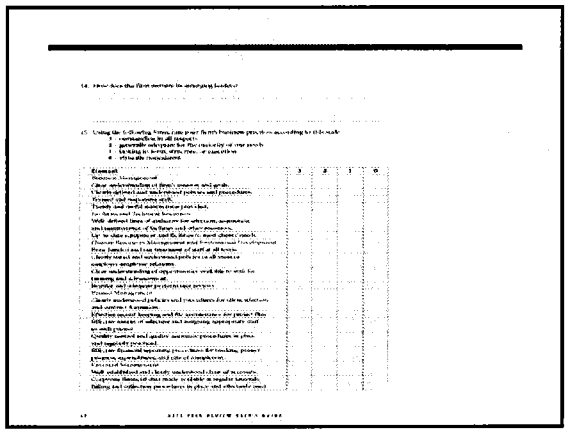
1. Read "Users Guide" pages 1-3
2. Distribute Staff and Client Questionnaires
3. Team Captain receives and compiles data

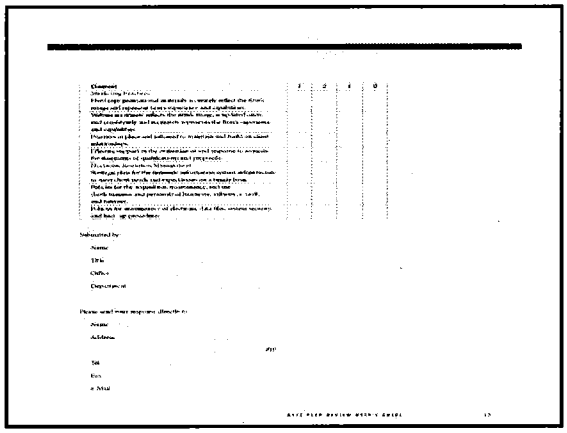


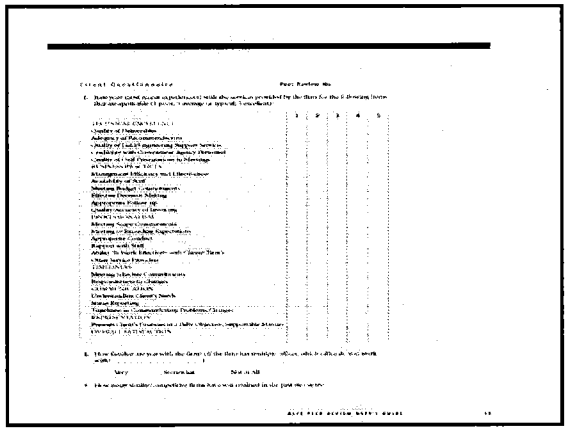

SERVICES
Start Your Peer Review
Join ASFE Today











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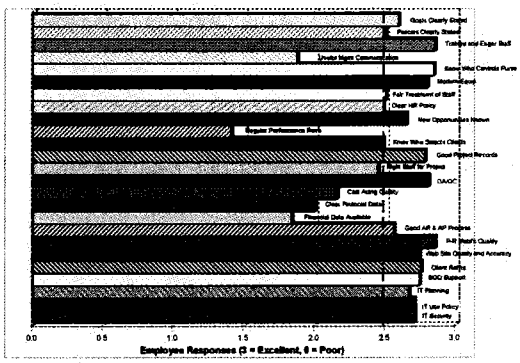
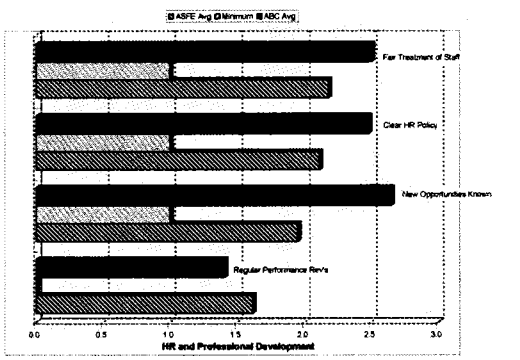
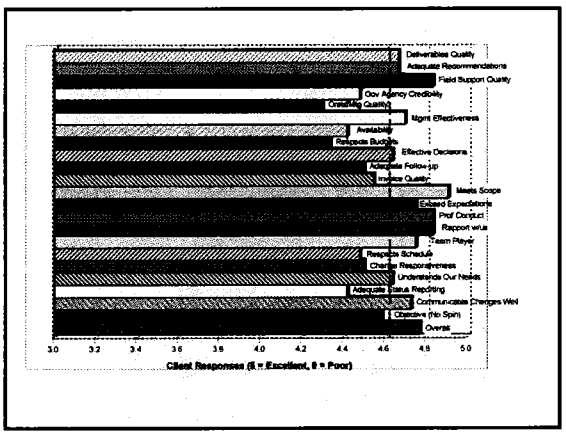
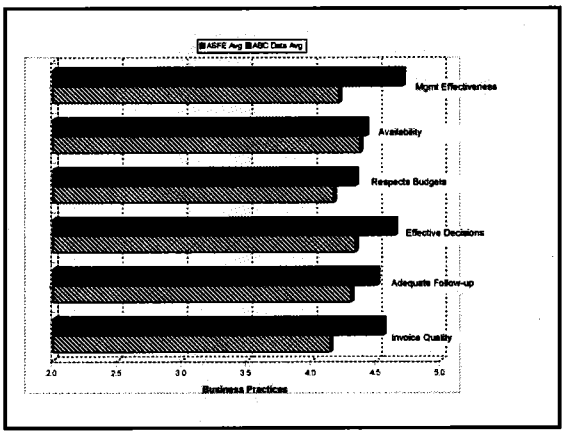
A Facilitated PPR Report

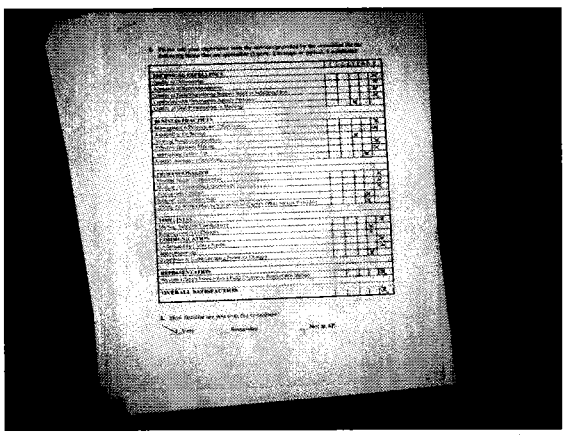
- Summary plots of your firm's data
- Your firm compared with ASFE averages
- Raw data from clients






Deliverables Quality
Adequate Recommendations
Field Support Quality
Gov Agency Credibility
Credibility Quality
Mgmt Effectiveness
Availability
Respects Budgets
Effective Decisions
Adequate Follow-up
Invoice Quality
Meets Scope
Exceed Expectations
Prof Conduct
Rapport w/us
Team Player
Respects Schedule
Charge Responsiveness
Understands Our Needs
Adequate Status Reporting
Communicates Changes Well
Cooperative (No Spin)
Overall
3.0 3.2 3.4 3.6 3.8 4.0 4.2 4.4 4.6 4.8 5.0
Client Responses (5 = Excellent, 0 = Poor)


ASFE Avg
BASC Data Avg
Mgmt Effectiveness
Availability
Respects Budgets
Effective Decisions
Adequate Follow-up
Invoice Quality
2.0 2.5 3.0 3.5 4.0 4.5 5.0
Business Practices



A Facilitated PPR

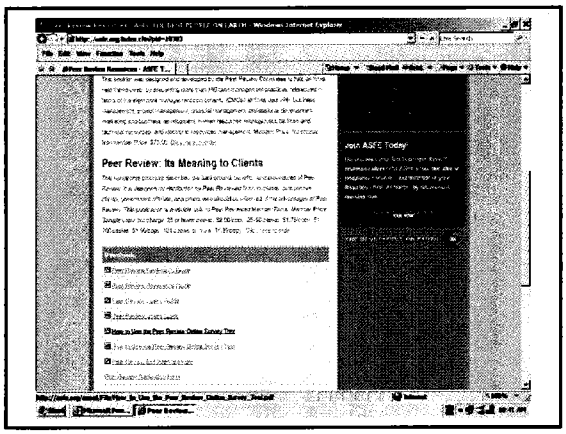
- Schedule: 1 month
- Fee: One-day per diem (for objective questions)

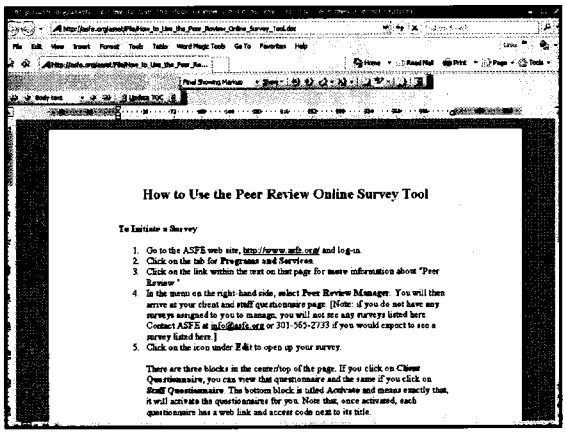
A Facilitated PPR Follow-up

- Firm decides changes needed
- Firm decides CPR needed
- Firm goes to Senior Mentor
- Discuss with staff and file

An On-Your-Own PPR

1.
2.
3.





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Facilitated vs. O-Y-O PPR

Facilitated:
- Anonymity
- Comparison with ASFE data

On-your-own:
- Total control
- Flexibility and cost

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Questions?

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Thank You!

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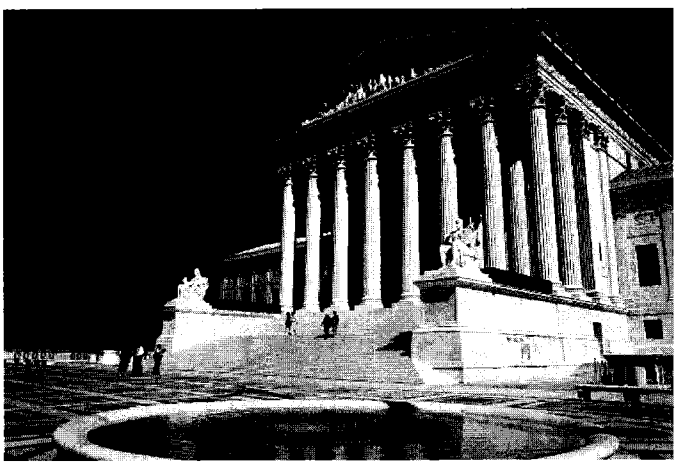
40th Annual Meeting

Identifying, Promoting, and Executing Local Volunteer Projects

Barry K. Thacker, P.E.

Saturday, April 18, 2009
2:30PM - 3:30PM



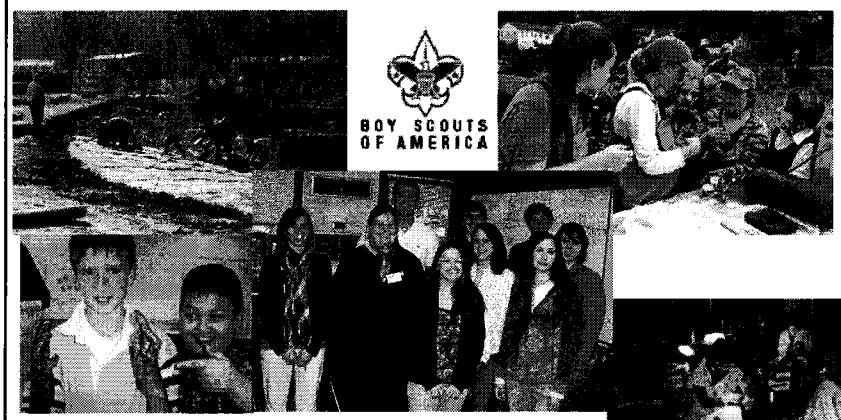
Barry Thacker, P.E.
Geo/Environmental Associates, Inc.

Barry Thacker, P.E., is president of Geo/Environmental Associates, Inc., a consulting engineering firm in Knoxville, Tennessee. He is also founder of the Coal Creek Watershed Foundation, Inc., a non-profit watershed restoration group. Mr. Thacker holds bachelor of science and master of engineering degrees in civil engineering from the University of Louisville. He has published over 50 articles on engineering, watershed restoration, and regulatory compliance topics and is a registered professional engineer in 12 states. He was named Tennessee Water Conservationist of the Year by the Tennessee Wildlife Federation in 2000 and Outstanding Tennessean of the Year 2003 by Governor Phil Bredesen. In 2002, he was the first recipient of ASFE's Founders' Award and in 2003 he received the Hoover Medal from an international consortium of engineering societies for his civic and humanitarian achievements.

Identifying, Promoting and Executing Local Volunteer Projects

By: Barry Thacker, P.E.

COAL CREEK WATERSHED FOUNDATION, INC.



BOY SCOUTS OF AMERICA

TROUT UNLIMITED

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ASCE
American Society of Civil Engineers

THE AMERICAN CHESTNUT FOUNDATION

Appalachian Regional Reforestation Initiative

OPERATION SPRINGBOARD, the plan for restoring the American chestnut on mined land in Appalachia Prepared by the Forestry Reclamation Approach (FRA)

Identifying, Promoting and Executing Local Volunteer Projects

By: Barry Thacker, P.E.

COAL CREEK WATERSHED FOUNDATION, INC.

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ASCE American Society of Civil Engineers

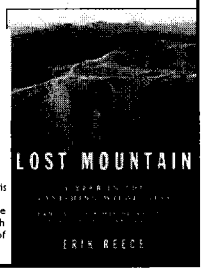
At my day job: Clients getting hammered in the press

WHITESCREEK JOURNAL

We're after the wrong Guy!

So what if I told you that we could stop more people from being killed each year in the United States of America if we quit trying to stop this guy from doing business....

And concentrated on stopping this guy from doing business... This nice looking gentleman is Daniel Rolling, and he is the CEO of National Coal Corporation. Dan and his company distribute nasty little bits of coal ash that can go in your lungs and the lungs of your children and never come back out. More importantly, the nasty little bits of coal ash kill about 30,000 people a year... Osama can only dream of such an accomplishment.

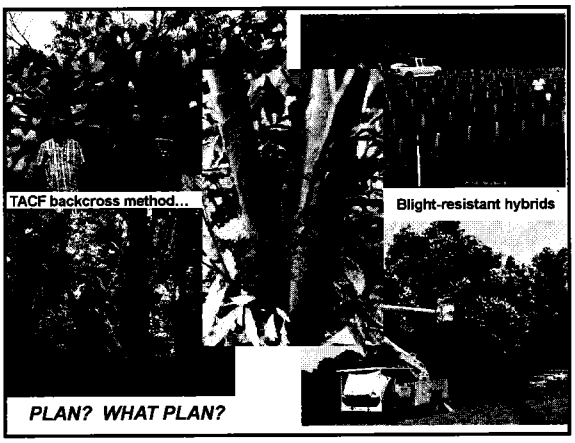


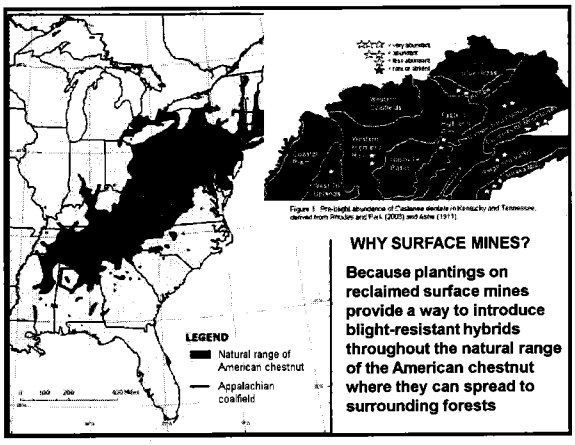
THE AMERICAN CHESTNUT FOUNDATION

Appalachian Regional Reforestation Initiative

PLAN? WHAT PLAN?

OPERATION SPRINGBOARD, the plan for restoring the American chestnut on mined land in Appalachia prepared by the Forestry Reclamation Approach (FRA)



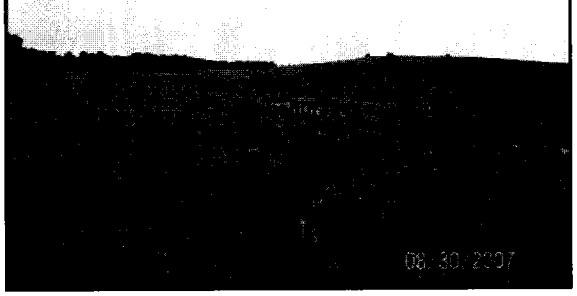


WHY SURFACE MINES?

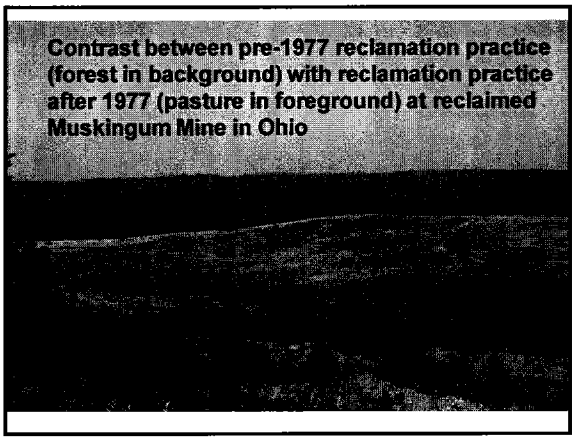
Because plantings on reclaimed surface mines provide a way to introduce blight-resistant hybrids throughout the natural range of the American chestnut where they can spread to surrounding forests

So what's the problem?

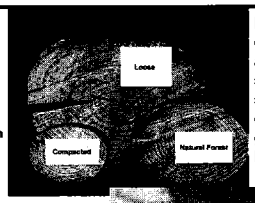
Since 1977, most surface mine land has been reclaimed with grass. Why?



Contrast between pre-1977 reclamation practice (forest in background) with reclamation practice after 1977 (pasture in foreground) at reclaimed Muskingum Mine in Ohio



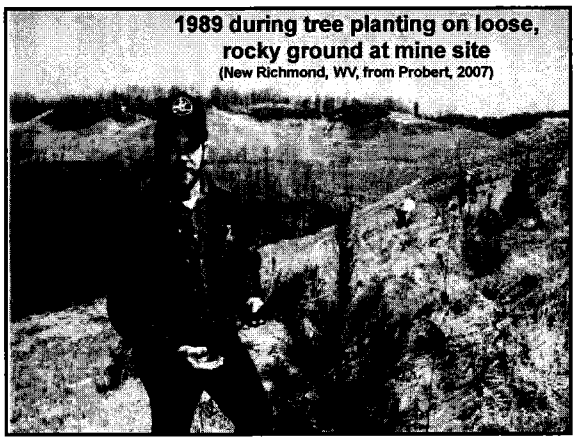
Appalachian Regional Reforestation Initiative



In 2004, OSM, researchers, coal companies, and state agencies, acknowledged the slower tree growth on mine sites reclaimed with compacted soil and the rapid growth of trees planted on loose, rocky mine spoil.

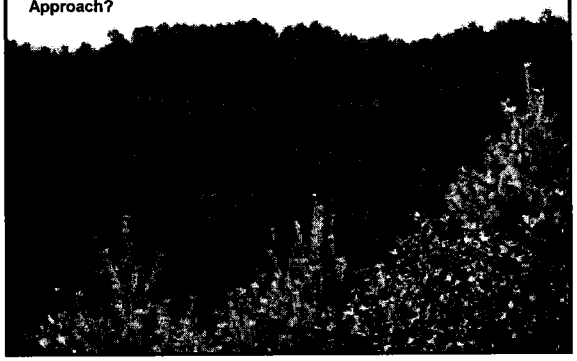
Site preparation as forest land differs from that of grassland because it requires a loose, rocky ground surface (Forestry Reclamation Approach - FRA) and not compacted soil

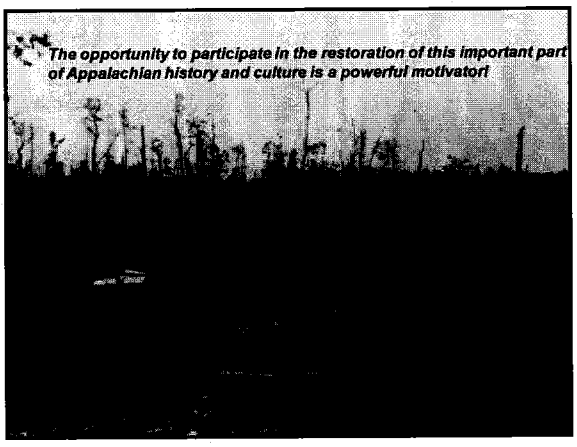
1989 during tree planting on loose, rocky ground at mine site
(New Richmond, WV, from Probert, 2007)



What role does the chestnut play in promoting wide-spread use of the Forestry Reclamation Approach?

Same view in 2006
(New Richmond, WV, from Probert, 2007)





The opportunity to participate in the restoration of this important part of Appalachian history and culture is a powerful motivator!

Field trip with journalist Fred Brown to educate him about Operation Springboard

TECO's White Oak surface mine reclaimed by the FRA method in 2004 (left) and NCC's Zeb Mountain surface mine being prepared by the FRA method (below)

Plant pure American chestnuts now to gain experience for the day when blight-resistant hybrids are available

Fred sold the idea of a feature article to the weekend Knoxville News Sentinel editor to announce our first public planting scheduled for March 14th

knoxnews
Knoxville News Sentinel

Branching out

Demonstration site to educate public about chestnut trees

By Morgan Simmons
Tuesday, February 26, 2008

The American Chestnut Foundation has a new partner in its effort to restore the mighty chestnut as king of the forest.

On Saturday, Ijams Nature Center unveiled a demonstration site to educate the public about American chestnuts, a species that once comprised 20 percent of the Appalachian forests from Maine to Georgia.

Ijams Nature Center, a 265-acre nature preserve in South Knoxville, also will be the site of a small chestnut orchard as researchers work toward developing a Tennessee strain that won't succumb to the lethal fungus that destroyed the species in the first half of the 20th century.

In addition, land managers in Tennessee and Kentucky are working with the American Chestnut Foundation to plant thousands of saplings on reclaimed surface mining sites.

KNS weekend editor cancelled the feature article because the KNS daily editor published an article mentioning the planting of chestnuts on mine sites and editors never like being scooped, even by an editor from the same newspaper

knoxnews
Knoxville News Sentinel

Save the mountaintops

By Leslie Snow
Friday, February 29, 2008

Two area women are working to make sure Tennessee doesn't suffer the same fate as our neighboring states where mountaintops have been leveled and streams have been polluted by mining. Patricia Hudson and Dawn Coppock, co-founders of the Lindquist Environmental Appalachian Fellowship, or LEAF, turned the death of a friend into a kind of working memorial.

When Kathy Lindquist, an active member of Knoxville's Church of the Savior, United Church of Christ, passed away in 2005, the women turned Lindquist's passion for nature into an environmental action group. LEAF, according to its Web site (tnleaf.org) is a "Christian fellowship of Tennesseans whose faith leads them to take action for Tennessee's environment." More recently, their cause has taken them to Nashville to champion the Tennessee Scenic Vistas Protection Act sponsored by state Sen. Raymond Finney, R-Maryville, and Rep. Mike McDonald, D-Portland.

NOTE: Passage of this legislation would end the Operation Springboard initiative, not to mention coal mining in Tennessee... so now what do we do?...

knoxnews
Knoxville News Sentinel

Do we even need coal now that we have electricity?

Barry Thacker, Citizen's Voice
Saturday, March 8, 2008

The Tennessee Legislature is considering the Tennessee Scenic Vistas Protection Act. Although its intent is to outlaw surface mining on mountain ridges, the language of the act may have more widespread impact.

Deep-mined coal must typically be cleaned in a processing plant to remove impurities before that coal is burned in a power plant to meet the requirements of the Clean Air Act.

Two-thirds of the coal mined in the United States is by surface mining, and most surface-mined coal cannot be mined economically by underground mining methods.

What happens if all states pass legislation similar to the Tennessee Scenic Vistas Protection Act? No coal mining means that 64 percent of folks in Tennessee will have no electricity.

I suggest that environmentally conscious ratepayers who recognize that coal mining is essential for generating electricity should get involved with returning mined land to productive use. An example is Operation Springboard, the plan for restoring the American chestnut to mined land in the Appalachian Mountains. The first major planting of American chestnuts on mined land in Tennessee will be on Friday, March 14, at the Zeb Mountain surface mine of National Coal Corp.

To participate in the restoration effort and learn why we still need coal now that we have electricity, contact Carol Moore at elmoore@geoe.com or visit www.coalcreekaml.com for details.

Barry Thacker is a professional engineer, president of Geo/Environmental Associates Inc. and founder of the nonprofit Coal Creek Watershed Foundation Inc., in Knoxville. His e-mail address is barryt@geoe.com.

knoxnews

Operation Springboard

What: Planting of American chestnut seeds at abandoned mine sites

When: Friday

Where: National Coal Co. Zeb Mountain site in Campbell County

Volunteers: Meet 8:30 a.m. in the gravel parking lot in front of The Comfort Inn at 3705 Tennessee Baker Highway, Pioneer, Tenn.

Directions: Interstate 75 North to Exit 141, turn left onto state Highway 63 (Tennessee Baker Highway), go about 3.2 miles to Comfort Inn on left.

Dress: Wear boots, long pants and a warm jacket; bring work gloves and rain gear if available.

Barry Thacker, founder of the Coal Creek Watershed Foundation of Knoxville, plants the first American chestnut on a reclaimed mine site in Campbell County. The site was once mined by Tampa Electric Co., which has its headquarters in Kentucky. The land was part of a new planting method in which the soil was not packed down by heavy bulldozers after the mining operation was completed. Trees have sprouted and it is thought that this new type of planting will also allow the American chestnut to come back to its natural range.

Restoring forests at mines takes root

New initiative calls for trees, not grass, at reclamation sites

By Fred Brown (Contact)
Monday, March 10, 2008

A new day could be dawning across Appalachia in the mine land reclamation front if an experiment on the top of Zeb Mountain in Campbell County and other coal mine sites proves successful.

Vic Davis, a forester with the U.S. Office of Surface Mining in Knoxville, and environmentalist and conservation groups are pushing a new OSM reclamation directive.

That ruling, handed down March 2, requires certain reclamation sites to be planted with trees instead of grasses in hopes that this will return destroyed mountaintops and abandoned mine lands to successional hardwood forests.

Anti-mining bloggers went nuts: *Planting chestnuts you know are going to die on piles of rubble is a symbolic publicity stunt on the part of the strip mine industry …**lipstick on a pig.***

knoxnews
Knoxville News Sentinel

No more tree planters needed

News Sentinel staff
Tuesday, March 11, 2008

Anti-mining bloggers are organizing a demonstration to disrupt the planting event…

Offers of help by volunteers to plant American chestnut trees on Zeb Mountain in Campbell County on Friday have exceeded what the Federal Office of Surface Mining and Coal Creek Watershed Foundation officials need and can handle.

The two agencies have asked that others wanting to help should first contact Carol Moore at the watershed foundation at 865-584-0344 or by e-mail at clmoore@geoe.com.

OSM and the watershed foundation are leading an effort to seed not just American chestnuts but to create a new kind of planting method on mountains stripped bare in coal mine production.

Vic Davis, an OSM forester who has been a leader in Appalachian Regional Reforestation Initiative, says planting chestnut trees and other hardwoods on loose spoil will eventually return a hardwood successional forest.

Oaks and hickory will also be planted in the Friday effort, he said.

ARRI was established in early 2004 in hopes of changing mine reclamation methods in the Appalachian coal fields, where once the American chestnut flourished. The tree was wiped out in the 1940s by a fungal blight, thought to have come from Asia.

News Sentinel's three most emailed and most commented articles (HOT!)

knoxnews
Knoxville News Sentinel

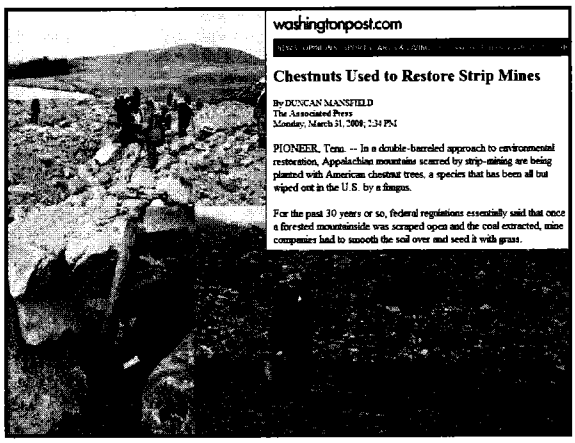
Project aims to hone planting method for chestnuts on mine site

By Fred Brown
Saturday, March 15, 2008

HUNTSVILLE, Tenn. - Daniel A. Roling, CEO of National Coal Corp., led a diverse group of volunteers Friday in a day of planting American chestnut seeds on an active coal mine site in Campbell County.

More than 60 volunteers braved rain and cold winds to help plant 500 of the brown, thickish seeds in mounds of sandstone rock spoil from National Coal's mining operations on Zeb Mountain.

Volunteers included retired Knoxville heart surgeon Hiroshi Toyohara; Earl Bandy, field office director of the U.S. Office of Surface Mining in Knoxville; Charles Kite, senior vice president and chief counsel of National Coal Corp.; state Rep. William Baird, R-Jacksboro; retirees and University of Tennessee students.


washingtonpost.com
Chestnuts Used to Restore Strip Mines
By DUNCAN MANSFIELD
The Associated Press
Monday, March 31, 2008; 2:34 PM
PIONEER, Tenn. -- In a double-barreled approach to environmental restoration, Appalachian mountains scarred by strip-mining are being planted with American chestnut trees, a species that has been all but wiped out in the U.S. by a fungus.
For the past 30 years or so, federal regulations essentially said that once a forested mountainside was scraped open and the coal extracted, mine companies had to smooth the soil over and seed it with grass.


Heartland Series episode on the return of the American chestnut

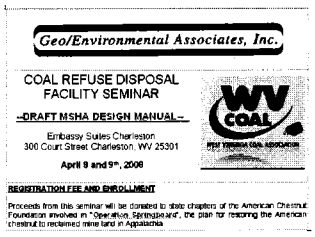

WBIR COM
"That sweet taste of an American chestnut"

Responses from emails/links I sent to engineers who used to work for Ezra Don Slone before he retired:

Don hired me as a summer intern in college and then hired me as a greenhorn engineer after I graduated. He hasn't changed much. Please send me his phone number.

I watched the video last night. To be 84 years old, he looks in great health. I'm glad to hear he is still alive and kicking.

Why is it that he doesn't look any older and we do?

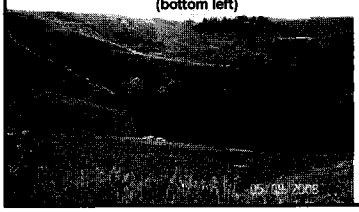


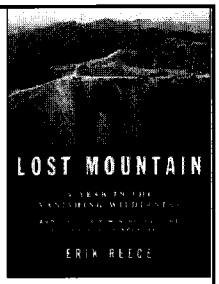
... Raised $10,000 for state chapters of TACF...

Restoring the American Chestnut to Kentucky's Lost Mountain

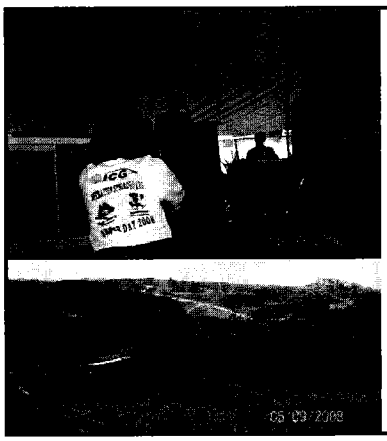
2008 Operation Springboard Event at ICG's Tip Top Mine near Hazard

Then (top right) and now (bottom left)

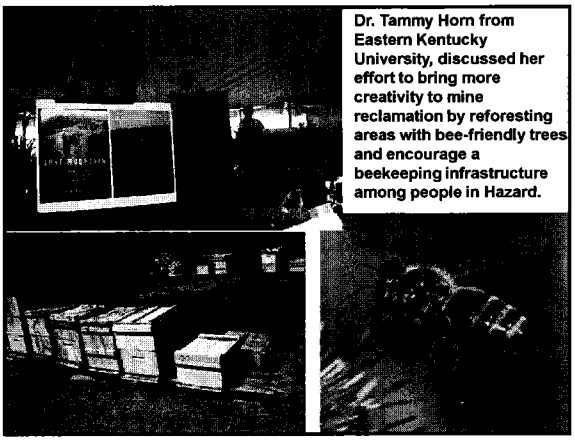




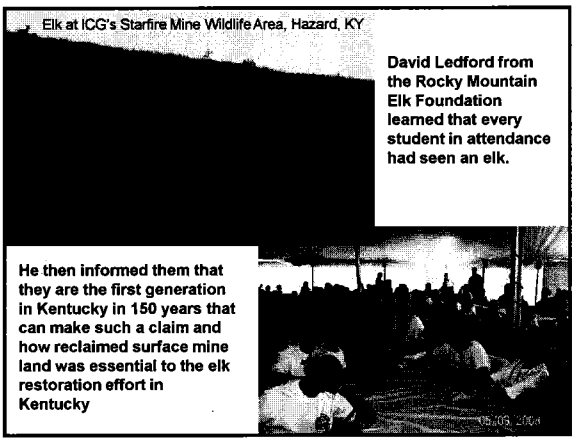
Despite the productive use of reclaimed mine land around Hazard, the book "Lost Mountain" focuses on how one site looked during mining. Operation Springboard 2008 gave visitors a chance to see that site now.



Kentucky's Lt. Governor Dan Mongiardo, M.D., whose grandfather emigrated from Italy to Kentucky in 1910 to work in U.S. Steel's Benham Mine in Harlan County, discussed his vision for adventure tourism on reclaimed mine land in Kentucky.

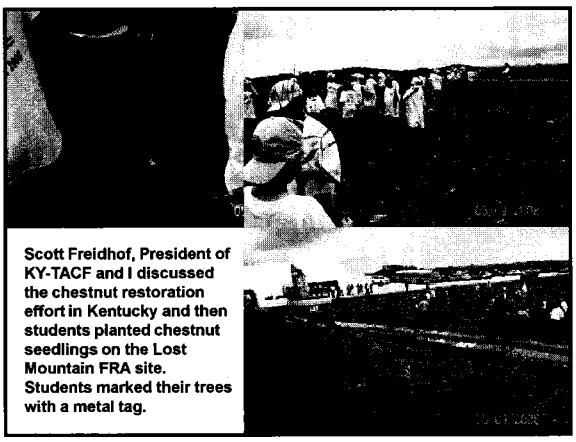


Dr. Tammy Horn from Eastern Kentucky University, discussed her effort to bring more creativity to mine reclamation by reforesting areas with bee-friendly trees and encourage a beekeeping infrastructure among people in Hazard.

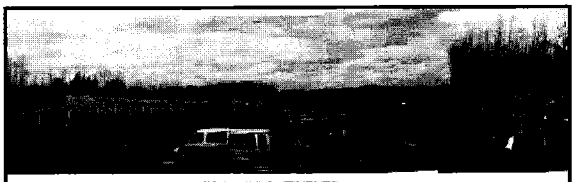


David Ledford from the Rocky Mountain Elk Foundation learned that every student in attendance had seen an elk.

He then informed them that they are the first generation in Kentucky in 150 years that can make such a claim and how reclaimed surface mine land was essential to the elk restoration effort in Kentucky



Scott Freidhof, President of KY-TACF and I discussed the chestnut restoration effort in Kentucky and then students planted chestnut seedlings on the Lost Mountain FRA site. Students marked their trees with a metal tag.



Ohio 2008 Operation Springboard Event:

1,000 blight-resistant hybrid American chestnut seedlings were planted at a site reclaimed by the Forestry Reclamation Approach

Lessons-Learned in Tennessee :

Chestnut seedlings did great.

The nuts that were planted at the Zeb Mountain FRA site on March 14th had about a 35% survival rate. Some planters forgot to stack rocks around the base of the tree tubes and the ground settled away from the tubes as shown in photo at left. Other planters get an "A" as shown in photo at right.

OSM is funding a study by UT where additional chestnut seeds were planted using more consistent planting methods.

To expand the OSM/TACF study, students at East TN schools are setting up indoor American chestnut nurseries, including the project… "engineering a better chestnut pot".

… I stepped right into that one and immediately got emails from former hippies:

Wow, I remember the rush I got when a marijuana seed popped. I can't wait to roll my own with a chestnut seed!

So THAT's how one does chestnut pot (I bet that staple gets hot)

Students are scheduled to plant their chestnut seedlings and test their engineered, biodegradable pots at mine sites prepared by the Forestry Reclamation Approach in May 2009….

WHERE DO WE GO FROM HERE TN-TACF?

We need to get the next generation motivated about the chestnut restoration effort because they will have to finish the work we start.

Setting up indoor chestnut nurseries is a fun and easy way to do it…. Grow your own.

Chestnut nursery

Coal Creek Watershed Foundation's Barry Thacker helps Briceville Elementary School fifth graders outfit biodegradable seedling pots for American chestnut trees. The wheat is taking part in its experiment to see which is better: Chestnuts grown in seedlings in a nursery environment or planted in the ground. See page 14 for the story on Briceville Elementary's participation.

knoxnews

Legislators kill bill to stop mountaintop removal coal mining

By Tom Humphrey
April 2, 2008

NASHVILLE - A state House subcommittee today killed legislation that would have imposed new restrictions on coal mining in East Tennessee.

Environmentalists argued that the bill was needed to stop "mountain top removal" mining, which causes pollution and eyesore landscapes. The president of Knoxville-based National Coal Co., on the other hand, said passage of the bill would prompt the company to drop plans for a $30 million expansion of Tennessee operations and invest instead in another state, perhaps Alabama.

Those voting no were Reps. William Baird, R-Jacksboro; George Fraley, D-Winchester; Joe McCord, R-Maryville; Frank Niceley, R-Strawberry Plains; and John Tidwell, D-New Johnsonville.

BLOUNT TODAY

LEAF environmental group honors Finney

By Lance Coleman
Wednesday, July 23, 2008

Sen. Ray Finney accepts the Genesis Award from the LEAF environmental group

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TVA power rates to surge

Fuel costs, lack of rain blamed for increases that are to start Oct. 1

By Larisa Grass
Thursday, August 7, 2008

TVA's "skyrocketing" costs for coal and natural gas coupled with continued drought conditions mean customers will feel the pain in their electric bills starting this fall.

The exact increase will be announced later this month, but it is expected to be the largest since TVA launched its fuel-cost adjustment program in 2008. The program allows the federal power producer and utilities in its distribution network to

knoxnews

Overbey squeaks past Finney

By Robert Wilson
Friday, August 8, 2008

MARYVILLE - By the tightest of margins, state Rep. Doug Overbey of Maryville unseated fellow Republican and state Sen. Raymond Finney on Thursday night, apparently ending Finney's legislative tenure after one term.

In Overbey's House district, Dr. Robert Ramsey, chairman of the Blount County Commission, was elected to fill that vacancy

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FINAL THOUGHT AND TAKE-HOME ASSIGNMENT

Email from a client's chief of regulatory affairs:

I spoke again with the folks at OSU today about the project .... they also were impressed with the Hoover Medal award article that I had sent them and the background about you and Geo/Environmental.

Hoover Medal

To recognize great, unselfish, non-technical services by engineers to humanity.

Established in 1929, this medal commemorates the civic and humanitarian achievements of engineers. It is conferred upon an engineer whose professional achievements and personal endeavors have advanced the well-being of humankind.

See what a potential client will find when you are "Googled"...

Character Counts!

TECO's White Oak Surface Mine reclaimed by the
Forestry Reclamation Approach after 3 years of growth

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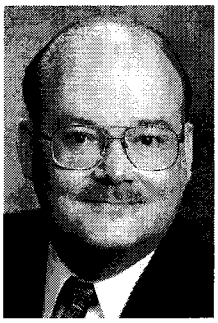
Knoxville News Sentinel

Do we even need coal now that we have electricity?



Barry Thacker, Citizen's Voice
Saturday, March 8, 2008

The Tennessee Legislature is considering the Tennessee Scenic Vistas Protection Act. Although its intent is to outlaw surface mining on mountain ridges, the language of the act may have more widespread impact.

Specifically, coal mined by the underground mining method results in impurities - i.e., shale, clay, sand, etc. - being extracted with the coal.

Deep-mined coal must typically be cleaned in a processing plant to remove impurities before that coal is burned in a power plant to meet the requirements of the Clean Air Act.

Two-thirds of the coal mined in the United States is by surface mining, and most surface-mined coal cannot be mined economically by underground mining methods.

In many cases, surface mining allows coal to be removed selectively so it does not have to be cleaned in a coal-processing plant, but much more overburden rock fill must be removed to access coal seams than by deep mining. The proposed legislation would ban placement of fill within 100 feet of streams, which mining opponents want defined as having a drainage area of 14 acres or more.

If this legislation is passed, it could essentially ban all coal mining because impurities removed from deep-mined coal require more than 14 acres for disposal, and even small surface mines disturb more than 14 acres.

In Tennessee, 64 percent of our electricity is generated by burning coal. The Tennessee Valley Authority tried to eliminate the need for burning coal in the 1970s with its plan to build replacement nuclear reactors, but public concerns about safety and high costs forced the plan to be abandoned.

That failed effort put TVA billions of dollars in debt with little benefit, as evidenced by the fact that more coal is burned today to generate electricity than in the 1970s.

What happens if all states pass legislation similar to the Tennessee Scenic Vistas Protection Act? No coal mining means that 64 percent of folks in Tennessee will have no electricity.

I suggest that environmentally conscious ratepayers who recognize that coal mining is essential for generating electricity should get involved with returning mined land to productive use. An example is Operation Springboard, the plan for restoring the American chestnut to mined land in the Appalachian Mountains.

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Barry Thacker is a professional engineer, president of Geo/Environmental Associates Inc. and founder of the nonprofit Coal Creek Watershed Foundation Inc., in Knoxville. His e-mail address is barryt@geoe.com.

Welcome to HOMETOWNCLINTON.COM
The online edition of the Courier News, Clinton, Tennessee

Bringing Back the Redwoods of the East

By Johanne Jean-Jacques
March 9, 2008

They called them the redwoods of the east.

American chestnuts grew up to 100 feet and lived up to 600 years. They made up about 25 percent of the eastern North American forests.

"It was the number one cash crop for people in Appalachia," said Barry Thacker, a volunteer with the Coal Creek Watershed Foundation in Knoxville.

Thacker said people used the trees to build homes and even the railroad.

"They grew straight and made great lumber," he said.

But a blight in the early 1900s destroyed the tress about the same time as the Great Depression hit, according to Thacker.

An American chestnut seedling being planted on reclaimed mine land prepared by the Forestry Reclamation Approach along with early succession species and other hardwoods

By 1950, the trees had nearly disappeared from the North American forest.

Thacker said there is now an initiative to restore the trees and CCWF wants to support that effort, particularly in the Coal Creek region, which includes Lake City.

Thacker said the Appalachian Regional Reforestation Initiative and the American Chestnut Foundation have teamed up to restore the chestnut on reclaimed mine land in the Appalachian Mountains. The initiative is called Operation Springboard.

"Everybody wants to see the chestnut restored," he said. "It was an important part of the American forest in the early 1900s."

According to the CCWF website, the Appalachian coalfields are at the center of the chestnut's native range and scientists believe the "root rot disease which kills chestnuts might be less aggressive in well-drained mine soils."

CCWF and a group of volunteers will help plant pure American chestnut seeds on reclaimed mine land on Zeb Mountain Friday, March 14.

Zeb Mountain is near the Elk Valley community, a 30-minute drive from Lake City.

The planting effort is an opportunity for CCWF to learn more about Operation Springboard.

Next year, CCWF will plant American chestnut seeds on the former site of Fort Anderson on Militia Hill as part of Operation Springboard.

Thacker said he joined TACF because of his interest in the initiative.

"We want to restore Militia Hill and open it to the public," he said.

Mined area at Zeb Mountain planting site, previously covered with compacted soil according to traditional reclamation procedures, is being prepared with the Forestry Reclamation Approach method. The FRA method involves planting American chestnut seeds in loose, rocky soil.

CCWF learned that the Tennessee Militia cut down tress on Militia Hill in 1892 to build the fort. Thacker said the militia probably cut down a lot of chestnuts.

The historic fort is on Vowell Mountain in Lake City. The Camp family donated a portion of the former site of Militia Hill to CCWF. The remainder of the site was acquired with assistance and cooperation of a Militia Hill neighbor, the Coal Creek Company, Lake City Mayor Buck Wilson and Anderson County Mayor Rex Lynch according to Carol Moore, a CCWF volunteer.

Site restoration at Militia Hill is not ready to begin, said Moore. Meanwhile, CCWF plans to learn more about how to plant the trees.

TACF researchers have been working for 25 years to produce a blight-resistant strain of the American chestnut trees. The hybrid is 6 percent Chinese chestnut and 94 percent American chestnut. The pure American chestnut is vulnerable to blight.

Although pure American chestnut seeds will be planted at Zeb Mountain, most of the trees are not expected to survive. Thacker said ARRI and TACF are hoping some will survive in order to learn planting techniques and site requirements.

That information will be used to plant the hybrids once they are ready for mass distribution in the next seven to 10 years.

Thacker said there are seven backcross orchards in the state that are producing the seeds for the hybrids. Pure American chestnut mother trees are used in the backcross program.

"These pure chestnut tress have some resistance to the blight because they are still alive," said Thacker. "Therefore, we hope the seeds we plant at Zeb Mountain have some blight resistance and live for many years to produce flowers and nuts so they can be included in the backcross program to create the blight-resistant hybrids."

Thacker said the reclaimed mine sites offer an opportunity to plant chestnut seeds using the Forestry Reclamation Approach.

Thacker said the FRA method involves planting on loose, rocky ground instead of compacted soil.

"ARRI is looking for ways to convince landowners and mine operators to reclaim mine land using the Forestry Reclamation Approach rather than covering mine sites with compacted soil to grow grass," said Thacker.

He said grass takes up all the water.

Thacker said planting chestnuts on mine land, using the FRA method, is a "great way to get landowners and mine operators interested because of the historical significance of the American chestnut."

This will help the foundation as well as others participating in Operation Springboard gain valuable experience as to the best ways to do the planting in a natural setting, according to Thacker.

Thacker said National Coal Corporation staff also will plant pines and hardwood seedlings at the Zeb Mountain site.

"The experience we gain now will be used when American chestnut hybrids are ready for planting in seven to 10 years," said Thacker.

To volunteer at Zeb Mountain, call Moore at 584-0344 for reservations. A school bus will leave at 8 a.m. Friday, March 14, from the Lake City Library parking lot on Highway 25.

Moore said the bus will leave Elk Valley at 1:30 p.m. to return to Lake City.

Volunteers should wear planting clothes, work boots, and gloves and bring a lunch. They should also bring shovels and/or hoes.

Moore said National Coal Corporation staff will conduct a safety-training program and require participants to sign a consent form before proceeding to the plant site.

To learn more about Operation Springboard, go to www.coalcreekaml.com.

knoxnews
Knoxville News Sentinel

Restoring forests at mines takes root

New initiative calls for trees, not grass, at reclamation sites

By Fred Brown
Monday, March 10, 2008

A new day could be dawning across Appalachia in the mine land reclamation front if an experiment on the top of Zeb Mountain in Campbell County and other coal mine sites proves successful.

Vic Davis, a forester with the U.S. Office of Surface Mining in Knoxville, and environmentalist and conservation groups are pushing a new OSM reclamation directive.

That ruling, handed down March 2, requires certain reclamation sites to be planted with trees instead of grasses in hopes that this will return destroyed mountaintops and abandoned mine lands to successional hardwood forests.

On Friday, groups led by the Coal Creek Watershed Foundation of Knoxville, OSM, the American Chestnut Foundation and concerned environmentalists will gather on the apex of Zeb Mountain to plant nuts from the American chestnut in what Davis and OSM are calling Operation Springboard.

Barry Thacker, founder of the Coal Creek Watershed Foundation of Knoxville, plants the first American chestnut on a reclaimed mine site in Campbell County. The site was once mined by Tampa Electric Co., which has its headquarters in Kentucky. The land was part of a new planting method in which the soil was not packed down by heavy bulldozers after the mining operation was completed. Trees have sprouted and it is thought that this new type of planting will also allow the American chestnut to come back to its natural range.

This is just the first step in the process of trying to turn ruined mountaintops into lush, hardwood forests once again, says Davis. Planting trees, he said, is far better than planting grass, which has been past mine land reclamation practice since 1977, with the creation of the Surface Mining Control and Reclamation Act.

The groups and volunteers will be planting the American chestnut, which had a range throughout the coal fields prior to 1940 when a fungal chestnut blight virtually made the tree extinct.

The idea, says Davis, is to encourage mine owners not to compact the soil but to leave it as is after mining operations have been completed. He insists that piling up rocks, mostly

shale and sandstone, and putting in loose topsoil only works in the favor of tree seed planting.

Compacted soil, he said, is great for grasses but terrible for trees. The idea of just stacking up piles of rocks and tossing in tree seeds is that they will thrive in the less-compacted environment.

The Coal Creek Watershed Foundation has joined the Appalachian Regional Reforestation Initiative and the American Chestnut Foundation in restoring forests on coal mine sites and thousands of acres of abandoned mine lands in the eastern United States.

ARRI was established in 2004 with a coalition of groups, concerned citizens, coal industry representatives and governmental officials to change the method of reclaiming mine lands.

"It is difficult to change 30 years of experience," said Davis, who has been on the forefront of trying to change minds and hearts of coal owners, as well as government officials, who have been of a single mind - planting grasslands.

Davis and Barry Thacker, founder of the CCWF, said that if mine soil is left loose and not compacted, as is now the practice, trees will grow abundantly.

Operation Springboard

What: Planting of American chestnut seeds at abandoned mine sites

When: Friday

Where: National Coal Co., Zeb Mountain site in Campbell County

Volunteers: Meet 8:30 a.m. in the gravel parking lot in front of the Comfort Inn at 3355 Howard Baker Highway, Pioneer, Tenn.

Directions: Interstate 75 North to Exit 141; turn left onto state Highway 63 (Howard Baker Highway); go about 0.2 miles to Comfort Inn on left.

Dress: Wear boots, long pants and a warm jacket; bring work gloves and rain gear if available.

Davis said that by planting grass, reclaimed lands will become grasslands, which is all right for pasture and some wildlife habitat, but if the object is to return stripped mountaintops to their original beauty, tree seeds must be sown in arable soil.

"If you want trees to grow, don't plant grass," he said, adding that over time, grasses leach most of the nutrients from the soil, leaving trees stunted.

Not everyone is convinced that trees will hold the stripped mountains together.

"If it works, it is wonderful," says Ann League, vice president of Save Our Cumberland Mountains, an environmental group that has long opposed strip mining in East Tennessee. "We are a little apprehensive whether or not this will work."

She noted that there have been several landslides in watersheds not far from Rugby, Tenn., on reclaimed mine lands.

"Any improvement is good, but we are a little leery of terracing the land and putting loose soil on top of compacted soil. It sounds dicey," she said. "And if the hardwoods do come back, it will take several years for them to stabilize the soil. In the meantime, we have massive rainfalls in those areas. I have seen it rain 2 inches in 25 minutes in some areas where mine lands have been reclaimed."

League also said SOCM is wary that this proposed reclamation idea could be used to re-mine in some lands.

"We don't want this to be used as an excuse to re-mine other areas and to do even more radical strip mining," she said. "Zeb Mountain still has (mining) violations that are four years old under appeal. Strip mining is the real culprit."

The problem, she said, is that it is virtually impossible to contain every drop of water that falls on strip mine land, which she says in reality is mountaintop removal.

knoxnews
Knoxville News Sentinel

Project aims to hone planting method for chestnuts on mine site

By Fred Brown
Saturday, March 15, 2008

Daniel Roling, CEO of National Coal Corp., was one of more than 60 volunteers who showed up for Friday's planting, deemed "Operation Springboard"

HUNTSVILLE, Tenn. - Daniel A. Roling, CEO of National Coal Corp., led a diverse group of volunteers Friday in a day of planting American chestnut seeds on an active coal mine site in Campbell County.

More than 60 volunteers braved rain and cold winds to help plant 500 of the brown, thickish seeds in mounds of sandstone rock spoil from National Coal's mining operations on Zeb Mountain.

Volunteers included retired Knoxville heart surgeon Hiroshi Toyohara; Earl Bandy, field office director of the U.S. Office of Surface Mining in Knoxville; Charles Kite, senior vice president and chief counsel of National Coal Corp.; state Rep. William Baird, R-Jacksboro; retirees and University of Tennessee students.

Foresters said it is doubtful any of the American chestnut seeds will survive, because they will likely succumb to the Chinese chestnut blight, a wind-blown fungus that arrived in the U.S. in the early half of the 20th century.

But tree scientists, biologists and foresters are trying to discover the best methods of planting the American chestnut for the day when an American hybrid becomes impervious to the chestnut blight.

Labeled "Operation Springboard" by the Appalachian Regional Reforestation Initiative and the American Chestnut Foundation, Friday's venture was part of a demonstration project among those two entities, the Office of Surface Mining, UT and the state of Tennessee.

The seeds were planted in measured plots using 10 different methods, employing various soil combinations and other criteria that will allow scientists to understand the best planting methods for the future.

National Coal's site was picked because the company agreed to cooperate in the reforestation project. The project uses the Forestry Reclamation Approach, which

encourages the planting of tree seeds and seedlings in loose soil that has not been compacted by heavy equipment.

Roling said his company was eager to learn the results of this project in hopes that other mine companies across the coal fields will begin to rethink their approach to reclamation, which has largely consisted of the planting of grasses for the past 31 years since the Surface Mine Control and Reclamation Act of 1977.

Jennifer Franklin, associate professor of forestry at the University of Tennessee, is conducting a research project with the American chestnut on Zeb Mountain

Later, National Coal will come in behind the scientists and foresters to plant the same area in hardwoods and evergreen trees, which will start the rebuilding process of a successional forest.

Friday's planting is part of the effort by the Office of Surface Mining and other government agencies to return flattened mountains to forest lands interspersed with grasslands.

National Coal is mining Zeb Mountain using a technique called "cross-ridge mining," in which the top of the mountain is removed but the spoil must stay on the summit in roughly the original contours. Environmental groups have objected to the technique, which they consider a version of mountaintop removal. In mountaintop removal, mining companies dump the spoil into the valleys, leaving man-made plateaus.

About five acres were planted Friday in the National Coal test site.

"We are very excited about the reintroduction of the American chestnut," Roling said. "We just hope it is successful.

"This is an important first step and I hope it works."

He said the forestry reclamation idea just makes senses since it isn't hard to understand that seeds won't grow on compacted soil.

"Mother Nature never compacted soil, so it is only logical."

Roling said using Zeb Mountain as a test plot was UT's proposal, "and we're just open to the idea."

He said he did not think the reforestation plan would be more costly than what coal mine operations are doing now in reclaiming stripped mine lands.

Hill Craddock, a biology professor at UT-Chattanooga and a chestnut breeder for the American Chestnut Foundation, said he expects the organization to release an America-type hybrid chestnut that will be blight resistant soon.

Jay Emison, 19, a civil-engineering student at the University of Tennessee, plants American chestnut seeds Friday on Zeb Mountain.

Already, he said, some of those hybrids are being planted in Cherokee National Forest.

Once a blight-resistant seed is found, then members of Appalachian Regional Reforestation Initiative and the American Chestnut Foundation hope that the now-devastated mine lands, first by the blight and then by strip mining, can one day be returned to lush forests.

washingtonpost.com

Chestnuts Used to Restore Strip Mines

By DUNCAN MANSFIELD
The Associated Press
Monday, March 31, 2008; 2:34 PM

One of more than 200 American chestnut seeds planted for the first time as part of coal mine reclamation in Tennessee

PIONEER, Tenn. -- In a double-barreled approach to environmental restoration, Appalachian mountains scarred by strip-mining are being planted with American chestnut trees, a species that has been all but wiped out in the U.S. by a fungus.

For the past 30 years or so, federal regulations essentially said that once a forested mountainside was scraped open and the coal extracted, mine companies had to smooth the soil over and seed it with grass.

But recently, federal regulators have begun promoting the planting of chestnuts and other hardwoods to improve drainage, reduce erosion and return the landscape to a more natural state.

The project has the added advantage of helping to bring the American chestnut back from the brink of extinction.

American chestnuts "were a critical part of the forest and they are gone now, for all intents and purpose," said John Johnson, a former leader in the militant environmentalist group Earth First! and now an employee and student in the University of Tennessee forestry program. "So this in a way is like double research -- like, how to bring chestnuts back and how to reclaim these sites."

Earlier this month, 60 volunteers in a public-private partnership clambered over a coalfield on Zeb Mountain, 50 miles north of Knoxville, and planted chestnut seeds. The same thing will be done in the coming weeks in Ohio, West Virginia, Kentucky, Maryland and Virginia.

The Zeb Mountain planting was so popular, volunteers had to be turned away. Students, retirees, mining regulators, mine operators, researchers and conservationists participated. They left muddy, wet and enthusiastic after planting more than 200 germinated nuts over a two-acre plot of rocks, boulders and sandstone.

"I was just so excited to be part of it," said Jeff Gateley, a senior in civil engineering at the University of Tennessee. "I just thoroughly enjoyed it, just being a part of something that could help reclamation in the future."

In pioneer days, American chestnuts towered 100 feet over the American landscape, providing timber, oil for tanning hides and food for people and wildlife. But a still-lingering blight wiped out 3.5 billion chestnuts from Maine to Mississippi during the first half of the 20th century.

With any luck, the seeds on Zeb Mountain will be 3- to 5-foot saplings next year. But the trees are still susceptible to blight, and Barry Thacker, an environmental engineer and organizer of the Zeb

Volunteers begin layout for planting of American chestnut seeds at the Zeb Mountain coal mine near Pioneer, Tennessee

Mountain planting, said they will probably live for only 10 or 15 years. But by then, scientists hope to have developed a blight-resistant hybrid.

Marshal Case, president and chief executive of the Vermont-based American Chestnut Foundation, a partner in the venture, said he has long dreamed of seeing chestnuts planted on reclaimed mine sites in Appalachia, for this was where America's great chestnut forests used to be.

"It just seemed like it would be a natural for us. We could do a lot of things, including healing the land," he said. The American chestnut "is a legacy of hope now. People are getting the idea that this tree has a tremendous future for the landscape in the Eastern forest."

Nearly 2.7 million acres of strip-mined land will need restoration in coming years, according to the Interior Department. Case said at least 300,000 acres could be suitable for chestnuts and other hardwoods.

The project got its start in 2004, when regulators and university researchers in Appalachia and the mid-Atlantic states formed a network to push for the planting of chestnuts. It joined forces with the American Chestnut Foundation, and the idea soon gained backing from the U.S. Office of Surface Mining and the U.S. Forest Service.

The Office of Surface Mining has given nearly $100,000 for chestnut research, and the American Chestnut Foundation is providing $1.8 million. It is supplying the seeds and operating a research nursery in Virginia.

Tree scientists know that American chestnuts actually grow better in loose, rubble-strewn soil than they do in compacted earth. But mine companies that took pride in their ability to turn coalfields into rolling meadows initially resisted the idea of leaving mountainsides ungroomed, even though the practice could save them money.

"They said, `Absolutely no. It is not the way we do things,'" Thacker said. "But, boy, you mention the idea of restoring the American chestnut and it is a whole different ballgame because of the history that is there and the desire, if you will, to return to our roots. Once they realized they could be part of restoring the American chestnut, they changed their minds."

Dan Roling, president and chief executive of Knoxville-based National Coal Corp., which owns the 2,000-acre Zeb Mountain mine, agreed: "Everything we have been seeing across the country in reforestation suggests this is the way to go."

THE DailyBeacon online
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Restoration of razed areas takes root in Appalachia

Jay McMahan -
Monday, April 14, 2008 issue

Staff Writer

A group of environmentalists are using chestnut trees to restore areas of Appalachia razed by strip mining.

"The idea is to change a barren area to forest land to benefit wildlife and water retention ... to develop the forest to what it was like before the blight," said Marshal Case, president of the American Chestnut Foundation.

The American chestnut population was decimated 100 years ago when a Chinese chestnut was brought to the United States. It carried a fungus which destroyed 3.5 to 4 billion trees from Maine to Georgia, said Barry Thacker, founder of the Coal Creek Watershed Foundation in Knoxville.

One in four trees in the Appalachian Mountains were American chestnuts before the infestation, Thacker said.

"By 1950 (the blight) essentially destroyed the most abundant tree in the forest," he said.

Since the 1970s, the ACF has been working on a hybrid tree that is 94 percent American and 6 percent Chinese to resist the infestation.

Case said researchers are close to completing the hybrid.

"That's why we are experimenting in these areas," he said.

Planting took place at Zeb Mountain in Campbell County in March.

This planting is just the initial stage in an effort to restore the chestnut tree, said John Johnson, senior in forestry and research assistant for the project.

"Basically (we are trying) to figure out how to plant chestnuts on mine sites," he said.

Johnson said strip mining makes it difficult to grow trees because it destroys organic manner and topsoil which aid in the growth.

"The sites are not ideal, but it is important to fix (the) destruction," he said.

Johnson said strip mining is a problem in the greater Appalachian area, causing the destruction of 500 square acres of land in Virginia, West Virginia, Kentucky and Georgia.

Ironically, strip mining may be a key component of the chestnut's revival. The U.S. government wants pure trees in the forest and will not allow planting of hybrids, Thacker said.

"The American Chestnut Foundation realized that strip-mined areas are ideal," he said.

Case said the ACF is working with the Appalachian Reforestation Regional Initiative to determine which coal companies meet the standards required to participate in the project.

"The purpose is to use blight-resistant trees and to work with (a) selection of coal companies," he said. "It puts our material into areas that were mined to restore the landscape."

The National Coal Corporation convinced the land owner of Zeb Mountain to restore the site as forest, Thacker said.

Case said support for the project was so strong that some volunteers had to be turned away.

"It is a very unique situation. People are coming together to correct damage done in the past," Case said.

Two plantings have taken place at Zeb Mountain already, including earlier this month with students from Elk Valley Elementary.

"We used different planting techniques, and forestry students will evaluate how well the planning worked so they can decide how to plant in the future," Thacker said.

He said this year only pure American chestnuts were planted to collect data, but the hybrids will be used in future projects. Thacker added that other hardwoods are being planted along with the chestnuts to simulate how a real forest would grow.

Case is optimistic about the future of the chestnut. He said restoring the American chestnut will be an important part of combating climate change because of its rapid rate of growth and large root systems which he said will combat in carbon requisition.

Thacker predicts that hybrid seeds should be available to the public in five to 10 years, but said it will take generations for the tree to return to pre-blight levels.

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The online edition of the Courier News, Clinton, Tennessee

Briceville students set up chestnut tree nursery

By Ken Leinart
February 22, 2009

Briceville fifth graders in Gladys Stooksbury's science class will find out if they have green thumbs.

After Thursday, most of the students had brown thumbs --- from planting American chestnuts.

Students made biodegradable planting pots Thursday as part of an American chestnut reclamation project and were able to plant a chestnut in what is hoped will be a viable way to grow seedlings.

If all goes well, the students will be able to plant chestnut tree seedlings at a reclaimed mine site --- probably the Zeb Mountain site --- in May as part of a field trip.

Lake City Middle School and Elk Valley Elementary School in Jacksboro already have set up indoor nurseries.

Coal Creek Watershed Foundation's Barry Thacker and Carol Moore helped the students set up seedling pots Thursday and Thacker also explained a brief history of the American chestnut tree.

Coal Creek Watershed Foundation's Barry Thacker helps Briceville Elementary School fifth graders make biodegradable seedling pots for American chestnut trees. The school is taking part in an experiment to see which is better: Chestnuts grown to seedlings in nursery environment or planted in the ground

The schools' nurseries are part of a study by the Office of Surface Mining (OSM) and the American Chestnut Foundation (TACF).

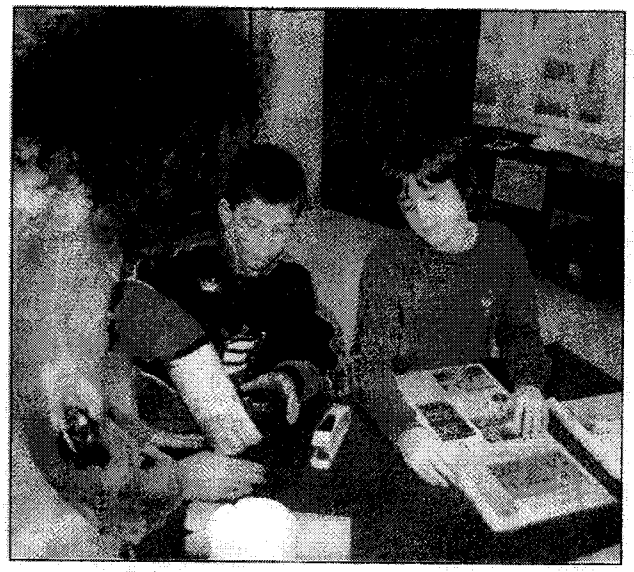
The study researches whether American chestnut seeds should be planted directly on mine sites prepared by the Forestry Reclamation Approach (FRA) or if they should be

grown in a nursery and then transplanted to FRA sites as bare-root seedlings. Students made their pots from paper.

"If a seedling can be grown in a biodegradable container, then the seedling can be transplanted without being removed from the container." Thacker said, "The theory is that transplant shock for seedlings grown in smaller biodegradable cylindrical containers will be comparable to seedlings grown in larger pots, but can be done at lower cost."

Thacker also provided a special mixture of potting soil for chestnuts and explained to the students the reason for the mix.

"American chestnuts prefer loose, rocky ground," Thacker said.



KEN LEINART

Coal Creek Watershed Foundation volunteer Carol Moore helps Briceville fifth graders Jacob Wilson (center) and Jeremy Hicks with their chestnut tree seedling pots. A potting mix was blended and put into biodegradable pots in stages --- an inch or two of soil at a time, which was patted firm before more soil was added. The pots can be placed in the ground without causing transplant shock to the plant's root system.

Coal Creek Watershed Foundation conducts these science class/nursery building events with the help of Greg Miller, owner of the Empire Chestnut Company, and Sam McInturff, Tennessee Chapter of the American Chestnut Foundation, who provided the nuts for seeding.

For more information on this and other Coal Creek Watershed Foundation projects, check out www.coalcreekaml.com.