

Constraint Satisfaction:

Scaffolding

Mick Herke Director & General Manager Aluma Systems

> Frank Engli, P.Eng. Turnaround Manager Shell Canada Limited

Workface Planning Conference 2011 Calgary, Alberta September 20, 2011



Client Perspective

- Scaffold is the foundation for successful execution for others work
 - 1. Safety
 - 2. Quality
 - 3. Cost
 - 4. Schedule



Interchangeable depending on Client



Safety

- Ensuring safety of scaffold provider
- Ensuring safety of scaffold user



Quality

- Scaffold integrity
 - QC and tagging
 - on going QC
 - Built for purpose
 - Multi use



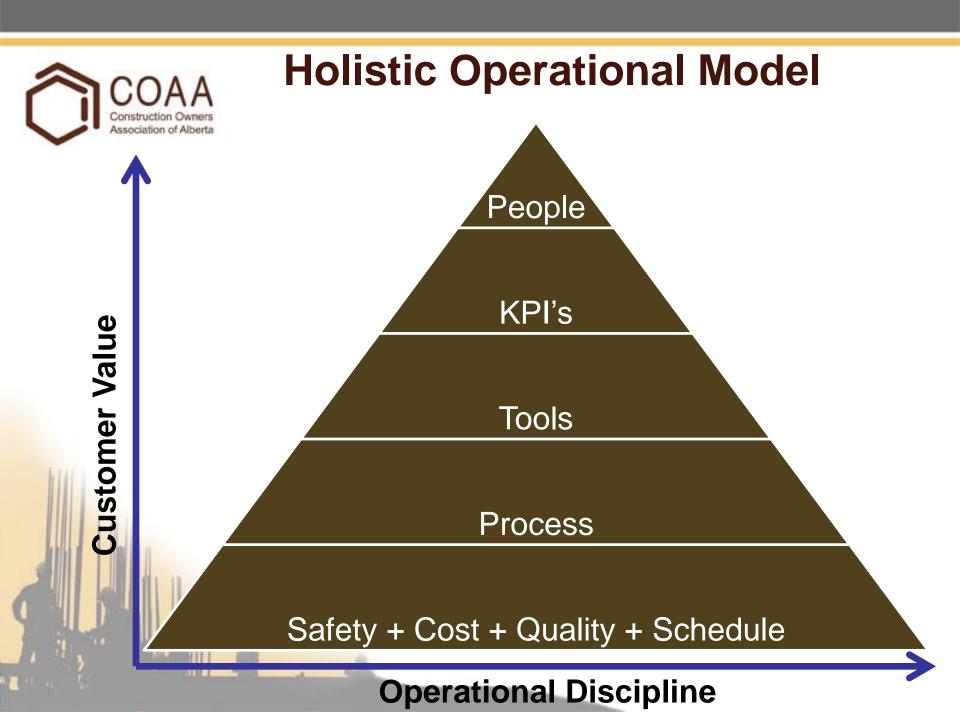
Cost

- Alternatives to scaffolding
 - Rope Assess, man lifts, steps/ladders
 - Horses, portable shields
- Build it once
 - Fit for total scope, avoid rework
 - Clarify demands



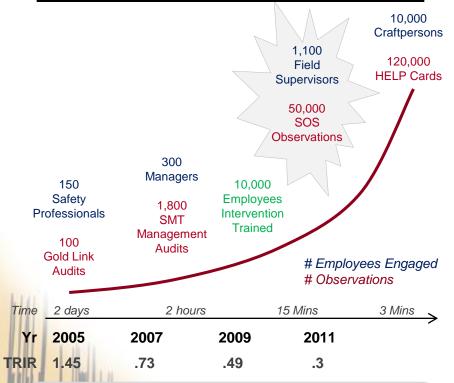
Schedule

- Preplanning (WFP)
- aligning with other parties
 - Priority, schedule and scope
 - Clear deliverables
 - Installation, Tear down



Safety Observation System (SOS)

Building an Observation / Intervention-based Safety Culture



SOS is part of Aluma's evolution to ...

- Engage entire workforce in Site Safety
- Drive proactive Risk Management
- Collect data for focused Safety improvement
- Reduce Incidents through Observation / Intervention
- **Objectively Measure our Safety Culture**

SOS Program 5-Step Overview / Advantages

- Setup & Train Site Team on SOS 1.
- 2. Conduct Observations using standard 7-Area Form

	Image: State	
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- Enter Observation data in SOS database 3.
- 4. **Review Reports / Trends**



& Conditions

Supervisor Comparisons

5. Develop Action Plans addressing At-Risk Trends

Advantages

- Proactive Identification of At-Risk Behaviors
- At-Risk Trend Analysis (At Site, Brand-wide, Over Time)
- Assists in developing focused safety improvements
- Formalizes managing 'bottom of the Incident Pyramid'
- Measuring Intervention and Supervisor accountability

Total Cost Savings

Wrench Time Improvements

Boiler Founding Sys: Reduces one shift in I&D

Open center Boiler: Saves 25% on T&M

Metal Toe-board: 60% on T&M

Floating Boiler Deck: Saves 75% on labor & 85% on material

Boiler Bracket: Eliminates entire scaffold lane

Clamp on Leg: Reduces 4 peices & 50% on labor

Guardrail Base: Increases safety & productivity

Heavy Leg: Capacity increase 66%, 50% reduction in material

Plank Infill: Eliminate wires and saves 50% on Labor

Generator Deck: Reduces cycle time by two days

Aerogel Insulation: 70% on labor & 30% on material

Indirect Overhead Cost-Savings

Multi-craft: Reduces 45% of OH

SIMS: Overall 5% + increase in project productivity

BrandNet: Most advanced Scaffold Management, Estimating, Scheduling & Forecasting

Profield & P6: Superior resource allocation and cost tracking

New Carts/Scaffold Mobile Yards: Reduces labor hours by bringing material closer to units

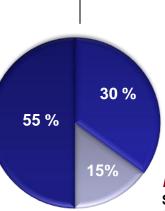
Non-Wrench Time Improvements

Schedule Of Discounts: Prepaid or Net 10 Terms..1% to 1.5% Saving

Client Overhead /Craft Reductions- Multi-craft:

- Over 7.5% Savings!
- Reduces 200 Plus Permits Per Year Per Craft over 1% savings

Contractor Execution Premiums / Productivity Reduces craft support personnel, maximize craft ... 10% Savings!



Execution Excellence - Product Quality Management System

Quality Improvement Reporting

Documented problems, solutions and corrective actions allowing multi-user input to continuously control and improve quality

Field Assembly & Maintenance Manuals

A series of instructions to assemble, service, and repair rental equipment in a consistent manner. Point-of-use continual inspections assure compliant materials.

6-Sigma Quality Improvement

Quality Manual / ISO

Vendor Qualification Program

Rigorous evaluation process to ensure delivery of high quality products

Vendor Audits

Periodic auditing to ensure compliance to established manufacturing guidelines

Product Testing

Recorded Execution Excellence -Product Quality Management System In-house testing of components and assemblies using industry best practices for load testing assures maximum safety and productivity



Lot Tracking

Traceability Stamps on every piece of equipment for tracking to implement corrective / preventive measures when needed

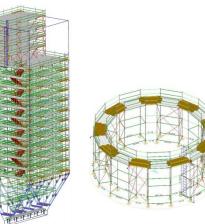
A Commitment to Excellence



BrandNet - Scheduling

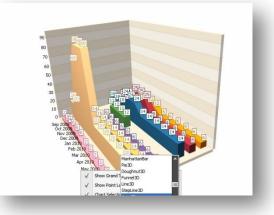
Scaffold Industry's most Advanced Software

Scaffold Design – Estimation - Planning & Forecasting - Project Management



1. Scaffold Design

- Supports all types of scaffold
- Designs with simple parameter inputs
- Accommodates any configuration
- Easy to design/change...deck levels, guardrails, ladders, toe-boards, cages at various heights
- Accommodates towers, straight runs, inside /outside circular, birdcage, redcross etc designs
 - 3D design capabilities



2. Estimation

- Detailed Material and Labor costing estimates at project and scaffold Level
- Labor rate packages estimates with varying crew mixes
- Detailed reports



BrandNet - Scheduling

PLACE Task Scheduler X reject Scaffold Teer 2) ISSIT: Cardoox #2 Resource their Cardual C					
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S 03 . Vent gas scrubber and ducting Project Schedule M15/2010	7/2/2010				0%
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Upper furnace shutdown Interior & Exterior		Lebour 5 🕒			-

3. Planning & Forecasting

- Material Forecasting on component quantities, weight or total time for duration of project and for each time interval
 - Labor Forecasting on man-power requirements for the duration of project and for each time interval
 - Gantt charts, task tree table, forecasting charts
 - Ability to integrate forecasting data to customer project management software

	ID	Scaffold No De	escription	Oty	Material	Scaffold Type	Dimensions		Status	Total Weight:	16,511.58 b	
>	10001	5001 Te	est Scaffold 1		2 SureLock	Straight Run	40ft (L) 6.99f	t (W) 38ft	New	Avg MnPerPc:	30.00	11
	10002	S002 Te	est Scaffold 2		1 SureLock	Stage/Platform	40ft (l.) 20ft (W) 12ft (H)	New	10000000000		
										Total Scaf. Time:	431.00 hrs	
										Total Man-hours:	420.00 hrs	
										Buyout Total:	\$22,376.35	
										Labor Total:	\$25,410.00	17
										Rental Rate Total:	\$21.55	
										Rent Total:	\$1,939.50	1
										Misc Costs Total:	\$2,000.00	
										Scaffold Revenue:	\$29,349,50	
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4. Project Management

- Comprehensive schedule and plan for scaffold erection and dismantling
- Ability to break down entire project into smaller projects
- Detail and summary reports on all project level.... BOM, Count Sheet, Labor Timesheet, Bottom-line, Scope of Work.
- Accountability & comparisons with actuals vs estimates