

# **Constraint Satisfaction:**

# Scaffolding

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### **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



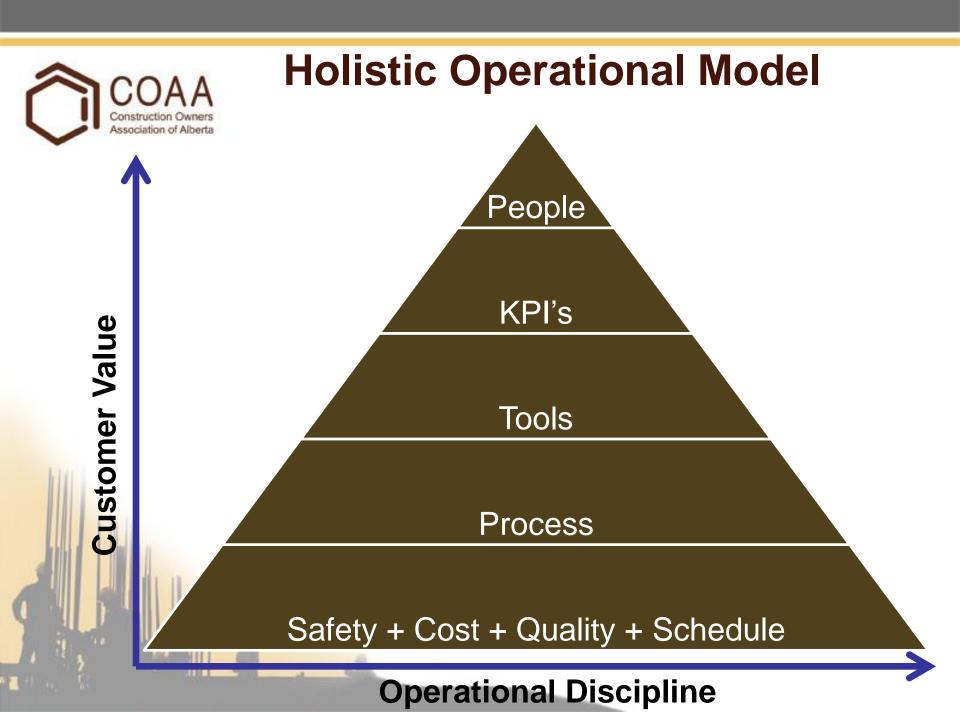
### Cost

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



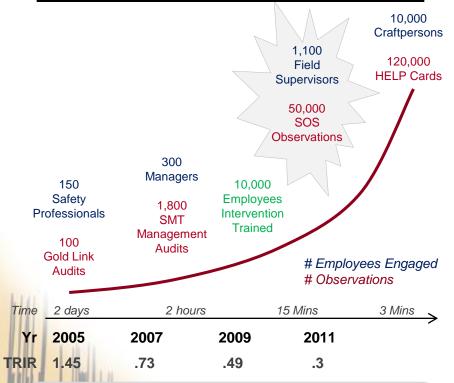
### Schedule

- 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 ...

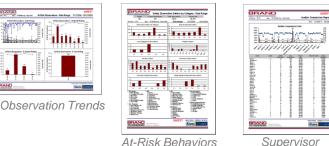
- Engage entire workforce in Site Safety
- Drive proactive Risk Management
- Collect data for focused Safety improvement
- Reduce Incidents through Observation / Intervention
- **Objectively Measure our Safety Culture**

### **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

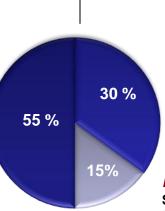
#### Non-Wrench Time Improvements

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

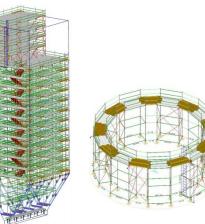
### A Commitment to Excellence



# **BrandNet - Scheduling**

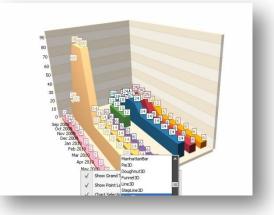
Scaffold Industry's most Advanced Software

#### 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**

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#### 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
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										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