The Expanding Role of the Construction Safety Professional

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Quality Safety Times

Why are we here?

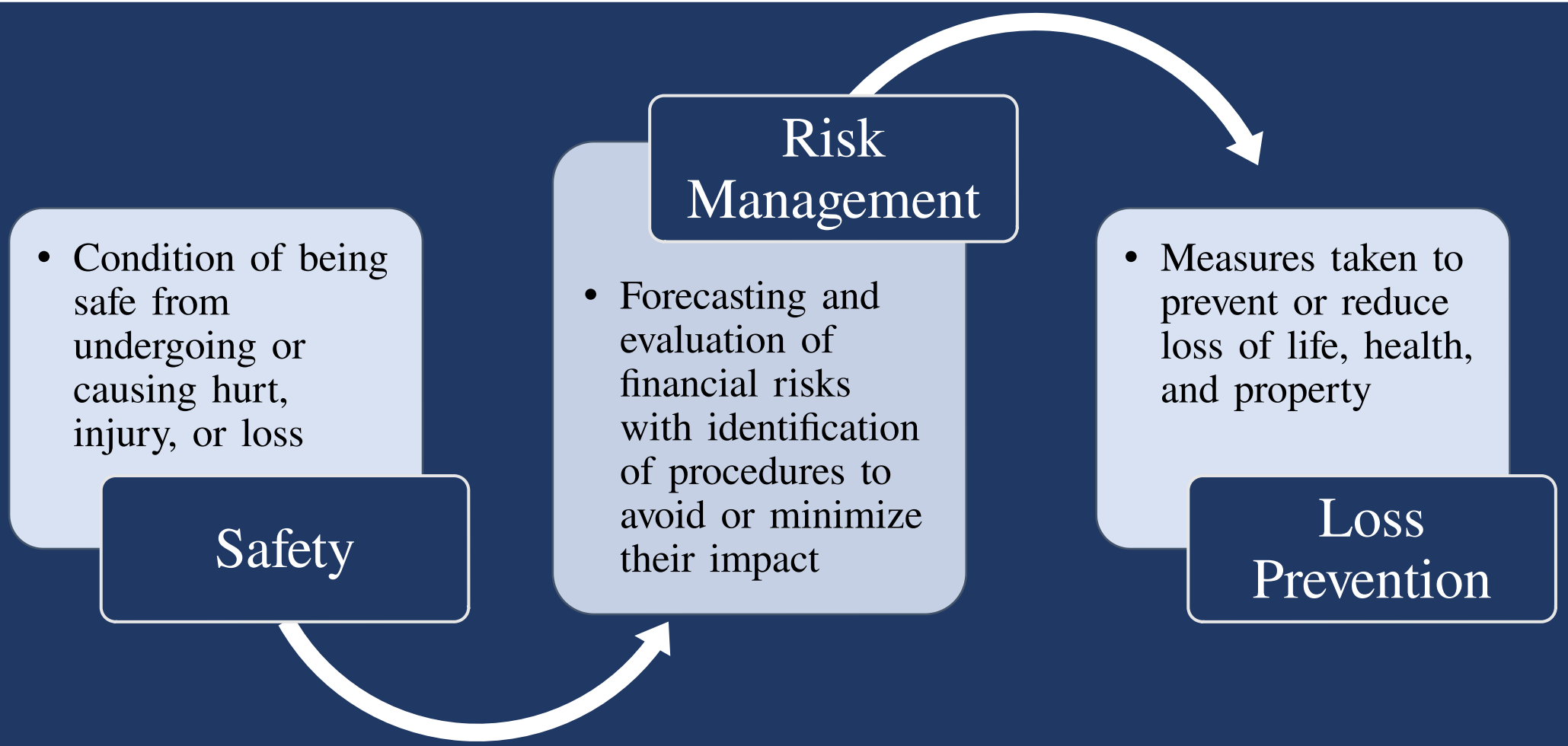
1. Challenge some historical thoughts on roles of the “Safety Director” & where we might want to concentrate more of our efforts
2. Safety Professionals are in the position to positively influence this increasing financial loss in our firms.
3. Research has identified a direct relationship between Re-work and craft worker injuries.
4. The financial impact of re-work ranges from 4% - 30% of project costs.
5. Quality programs should be built on the safety model.

“Cut first, fix it later.” *- Chat GPT on the modern worker*

Who is in the Room?

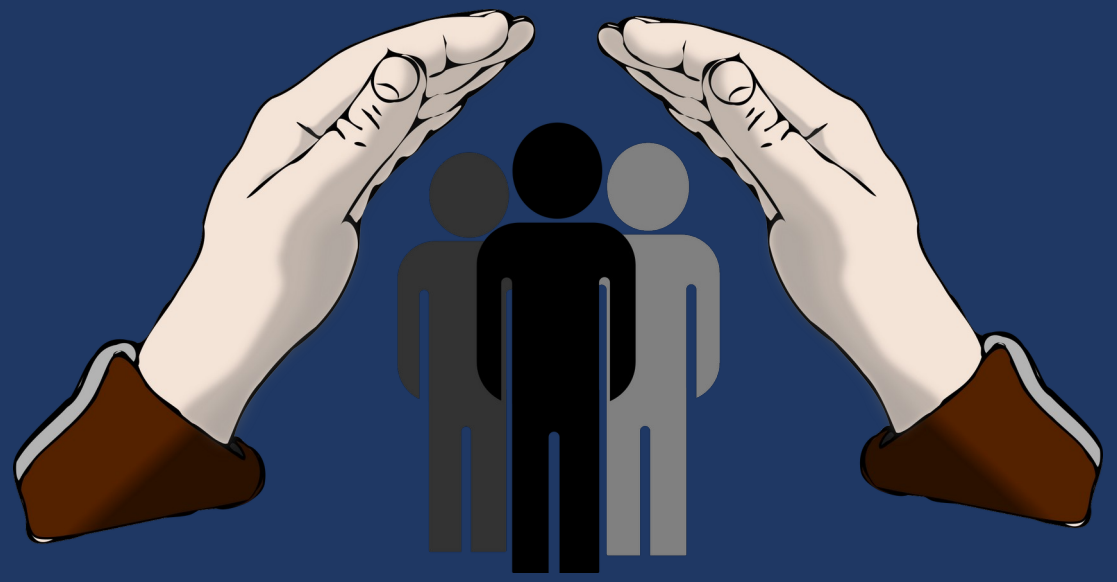
a. Project Owners / Owner Representatives
b. General Contractors
c. Subcontractors
d. Insurance Representatives
e. Others (regulators, non-profits, etc.)

Definitions



Loss Prevention

- Employee Safety
- Fleet Management
- Public Protection
- Building Protection
- Contents
- Wrongful Dismissal, Harassment, etc.
- Business Interruption
- Inland Marine
- Quality Control *Today’s emphasis



All Lines Insurance

Protects from financial losses caused by:

- **Workplace Injuries**
- **Lawsuits**
- **Natural Disasters**

Commercial Lines Insurance

- Professional Liability
- General Liability
- Product Liability
- Auto/Fleet
- Workers' Compensation
- Property,
- Data Breach
- Business Interruption.

Cost of Employee Injuries

COST WORK SHEET OF INJURIES

Incident / Injury Cost Tracking Worksheet

Contractor:
Job Site:
Injured Person:
Site Super:
Type of Incident (Near Hit, First Aid, Recordable, Lost Time):
Description of Incident:

Date:
Time:
Direct Supervisor:

Supervisor's billing Rate: $

Supervisor's Time	Hours	Cost
Time at incident event		
Transport and/or time at medical facility with employee(s)		
Related paperwork/reports/incident review		
Repair/re-order of equipment		
Re-schedule of work		
Replacement employee(s), hiring, training		
Other (Describe):		

Injured Employee's billing rate:

Employee(s) Time			Hours	Cost
Time away from productive work (medical appointments, paperwork)				
Additional training				
% Reduction for Light Duty	1.00	Days		$ -

Average billing rate for crew $

Crew Time			Hours	Cost
Time around incident event hrs.		Employees		$ -
Investigation time (witness, paperwork): Total hours of all.				
Training about incident hrs.		Employees		$ -

Property/Equipment Damage or Loss

Equipment Repair/Replacement/Rental	Cost
List items:	

Others invovled in investigation/down time (I.e. project engioneer, project super, safety/claims, clerical)

Identify if Direct or Subcontractor staff	Rate	Hours	Cost
List people:			

Total Indirect Cost	
Medical Expenses (Deductibles & other $ NOT paid by insurance)	
Total Direct and Indirect	#VALUE!
Profit Margin on Job Enter %	
Total Extra work required to recover this loss	#VALUE!

The above costs do NOT include office staff (processing reports, filing claims, return to work moniting

The above costs are NOT typically covered by Insurance such as medical bills, time loss payments etc.

Rev: 01/2025

Profit Margin %				
Loss Value	3%	5%	10%	15%
$ 50,000	$ 1,666,667	$ 1,000,000	$ 500,000	$ 333,333
$ 250,000	$ 8,333,333	$ 5,000,000	$ 2,500,000	$ 1,666,667
$ 500,000	$ 16,666,667	$ 10,000,000	$ 5,000,000	$ 3,333,333
$ 1,000,000	$ 33,333,333	$ 20,000,000	$ 10,000,000	$ 6,666,667

To determine extra work required to recapture loss identify your total loss and divide by your profit margin

Travis – any stats for average costs per claim – comparing worker injury & rework

Worker injury claims data

Construction defect claims data

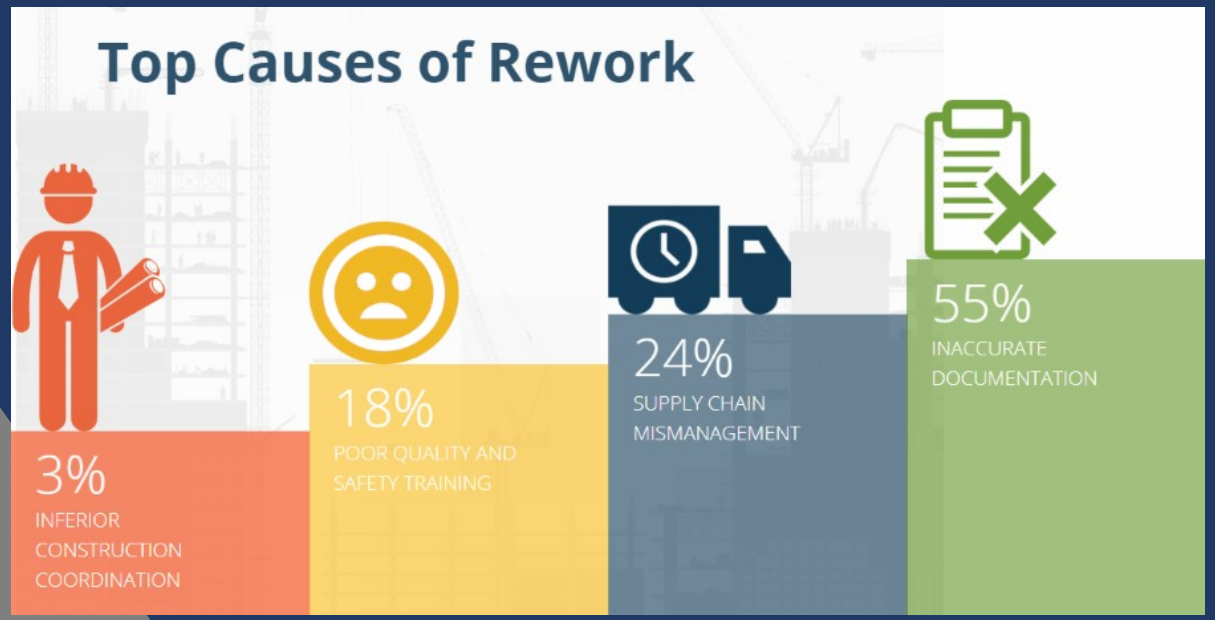
Academic Research

Recent Studies show up to 30% of Construction Costs are directly related to Rework.

* UK Construction Task Force

Rework is estimated to represent between 2% and 20% of total costs, averaging 12%.

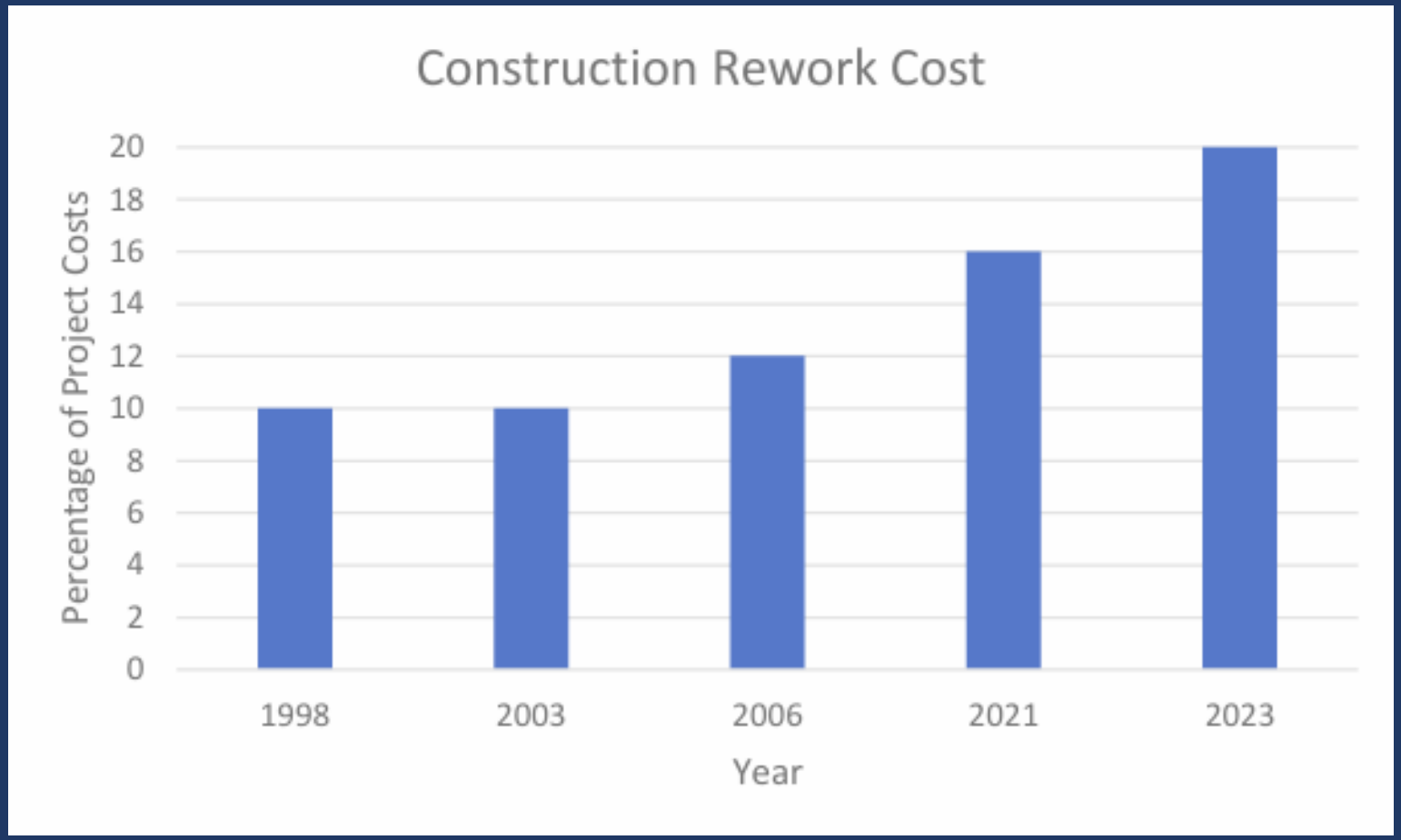
* Construction Industry Institute (CII)



- US Construction Volume is $2 trillion

- Construction Rework is a $200 billion opportunity for our industry

Cost of Re-work



Expanding Role for Safety in Construction

ASSE article “Quality Management In Construction; An Expanding Role For SH&E Professionals”

Peer-Reviewed

Quality Management in Construction

An Expanding Role for SH&E Professionals

By Sathy Rajendran, Brian Clarke and Richard Andrews

The role of construction safety professionals has significantly expanded over the past decade. The industry employs thousands of safety professionals, most of whom work for contractors (general or subcontractors).

Prior to the 1980s, only a few progressive owners held employees and construction contractors who worked in their facilities to a higher level of safety performance than OSHA standards. Then came a real push for safety performance excellence as insurance carriers demanded that contractors provide their own full-time safety field supervision. In

The traditional approach to construction safety has been to 1) develop and implement company safety programs; 2) work with regulatory agencies to develop and implement safety rules and regulation; 3) encourage professional de-

IN BRIEF

- **This article examines the feasibility of integrating safety and quality management, the parallels between safety and quality management responsibilities, and the interrelationship between construction safety and quality.**
- **It also explores the role of safety professionals in field construction quality management and reviews what a construc-**

Program	Quality	Safety
Employee orientation	✓	✓
Employee manual	✓	✓
Checklists	✓	✓
Insurance	✓	✓
Incident rates	✓	✓
Incident reviews	✓	✓
Training – Superintendents	✓	✓
Training – Foremen	✓	✓
Training – Trades/Crafts	×	✓

Notes:

LOSS Control/claims Management

After the Fact – Defect Claim / Accident

Change checklists to inspection processes

Incident Rates - ???

Incident Reviews - ???

People correct on the job – great for the job; how do we share it

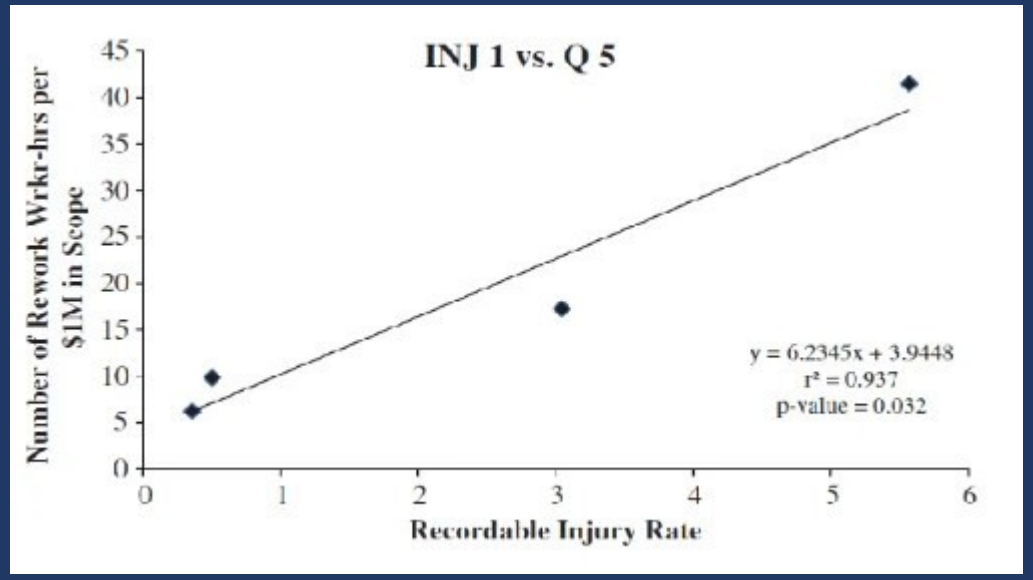
Near miss – near hit – how do we share

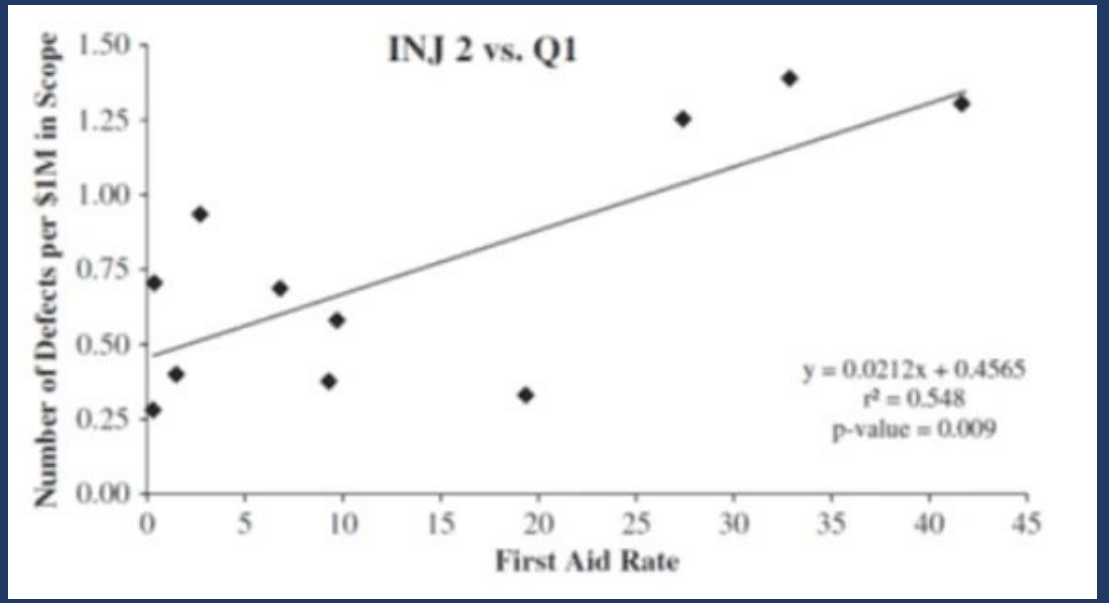
Claims review meetings / incident review meetings

(somewhere – construction defect claims - discovery)

Consulting experts for mediation / trial

Parallels between Safety and Quality





Evolution of Safety - a guide for Quality

G.E.W. llc
Incident Indirect Cost Sheet

Contractor
Job Site: _____ Date: _____
Injured Employee(s): _____ Time: _____
Foreman's Name: _____ General Foreman: _____
Type of Incident (Near Hit, First Aid, Recordable, Lost Time): _____
Description of Incident: _____

Supervisor's Billing Rate: $ 0.00

Supervisor's Time	Hours	Cost
Time at incident event	0.00	$ -
Transport and/or time at medical facility with employee(s)	0.00	$ -
Related paperwork/reports/incident review	0.00	$ -
Repair/re-order of equipment	0.00	$ -
Re-schedule of work	0.00	$ -
Replacement employee(s), hiring, training	0.00	$ -
Other (Describe):	0.00	$ -
Subtotal	0.00	$ -

Injured Employee's Billing Rate. $ 0.00

Employee(s) Time				Hours	Cost
Time away from productive work (medical appointments, paperwork)				0.00	$ -
Additional training				0.00	$ -
% Reduction for Light Duty	0%	Days	0.00	0.00	$ -
			Subtotal	0.00	$ -

Average Billing Rate for Crew: $ 0.00

Crew Time				Hours	Cost
Time around incident event hrs.	0.00	Employees	0.00	0.00	$ -
Investigation time (witness, paperwork): Total hours of all.					
Training about incident hrs.	0.00	Employees	0.00	0.00	$ -
			Subtotal	0.00	$ -

Property/Equipment Damage or Loss

Equipment Repair/Replacement/Rental		Cost
List items:		$ -

Others invovled in investigation/down time (I.e. project engioneer, project super, safety/claims, clerical)

		Rate	Hours	Cost
List person:		0.00	0.00	$ -
		0.00	0.00	$ -
		0.00	0.00	$ -
		0.00	0.00	$ -
	Total Indirect Cost		$	-

The above costs do NOT include office staff (processing reports, filing claims, return to work moniting
The above costs are NOT typically covered by Insurance

Rev: 08/05

2003 Gary E Bird Horizon Award

Donna Bird

Jack Gibson

How To Measure Re-work

Quality Safety Times

Rework - Cost Sheet (Detailed)

Contractor: _____ **Incident/Injury Involved?** _____

Job Site: _____ **Date:** _____

Scope of Work: _____ **Time:** _____

Tradepartner: _____ **Crew Lead** _____

Reason(s) for rework (Example: Materials, Workmanship, Specs Non-Compliance, Incident, etc.)

Description of Incident: _____

Direct Costs to Conduct Rework $ _____

Tear out / Removal of Finished Work	**Cost**
Crew Time (see billing rate below)	$ -
Tools / Equipment Used	
Consumables Used	
Safety Protocols (i.e. training (silica, respiratory protection)	
New Installation Material Costs	
Replacement employee(s), hiring, training	
Additional GCs/GRs	
LD's	
Secondary Mobilization Fees	
Other (Describe):	
Other (Describe):	

Indirect Costs to Conduct Rework $ _____

Tear out / Removal of Finished Work	**Cost**
Lost Crew Time (see billing rate below)	
Schedule Delays	
Investigation Time (Determining fix, Cause, Responsible Party)	
Insurance Claim Management (if applicable)	
Other (Describe):	
Other (Describe):	

Direct Costs to Conduct Rework $ _____

Replacement / Repair	**Cost**
Crew Time (see billing rate below)	$ -
Tools / Equipment Used	
Consumables Used	

Quality Safety Times

PROFIT MARGIN CALCULATIONS

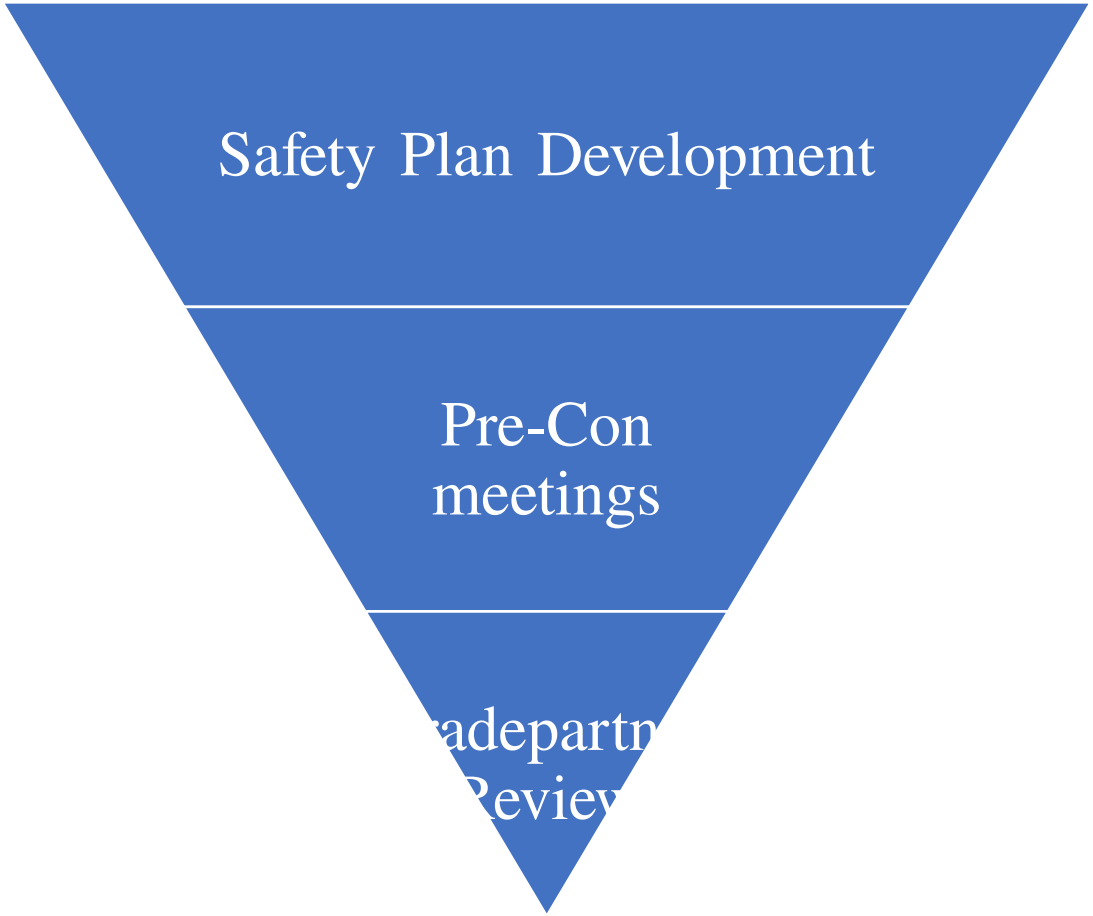
	Profit Margin %					
Loss Value	3%	1%	5%	7%	10%	15%
$ 10,000	$ 333,333	$ 1,000,000	$ 200,000	$ 142,857	$ 100,000	$ 66,667
$ 19,150	$ 638,333	$ 1,915,000	$ 383,000	$ 273,571	$ 191,500	$ 127,667
$ 50,000	$ 1,666,667	$ 5,000,000	$ 1,000,000	$ 714,286	$ 500,000	$ 333,333
$ 100,000	$ 3,333,333	$ 10,000,000	$ 2,000,000	$ 1,428,571	$ 1,000,000	$ 666,667
$ 150,000	$ 5,000,000	$ 15,000,000	$ 3,000,000	$ 2,142,857	$ 1,500,000	$ 1,000,000
$ 200,000	$ 6,666,667	$ 20,000,000	$ 4,000,000	$ 2,857,143	$ 2,000,000	$ 1,333,333
$ 300,000	$ 10,000,000	$ 30,000,000	$ 6,000,000	$ 4,285,714	$ 3,000,000	$ 2,000,000
$ 400,000	$ 13,333,333	$ 40,000,000	$ 8,000,000	$ 5,714,286	$ 4,000,000	$ 2,666,667
$ 526,317	$ 17,543,900	$ 52,631,700	$ 10,526,340	$ 7,518,814	$ 5,263,170	$ 3,508,780
$ 750,000	$ 25,000,000	$ 75,000,000	$ 15,000,000	$ 10,714,286	$ 7,500,000	$ 5,000,000

This spreadsheet represents the amount of extra work required to regain a loss based on profit margins
To change calculated loss, change profit margin % in row 9

What gets inspected gets inspected
What gets measured gets ***results***

A Contractor's Perspective

Safety Process –compared to QC



Program Components

Safety

Leadership Engagement
Contractual Requirements
Pre-Construction Meetings
Inspection Processes
Orientations
JHA/PTP/A3 processes
Task Specific Training (i.e. fall protection, confined space)
Weekly Safety Meetings/ Toolbox Talks
After Action Reviews/Lessons Learned
Drug and Alcohol Testing

Quality

Leadership Engagement
Contractual Requirements
Pre-Construction Meetings
Inspection Processes
Orientations
JHA/PTP/A3 processes
Task Specific Training (i.e. fire caulking, mock-up testing)
Weekly Quality Meetings/ Toolbox Talks
Lessons Learned

How do you communicate to & train craft workers on the job?

Weekly toolbox talks?

ReWork Example

Audience Participation

How many of you have a formal safety (Injury prevention) program?

Most important aspects (section) of your safety program (yell it out)?

How many of you have a formal quality control program?

Prevention

What are your most valuable tools to prevent safety incidents?

Quote from AIA – continuing training

Einstein – definition of insanity is doing the same thing over and over and expecting different results

Brian Clarke – Not having craft-level quality control meetings is like having a great safety program without crew safety meetings.

What are the most valuable tools to prevent re-work?

Educate yourself on your organization’s and the industry’s losses beyond just injuries

Insurance carriers want to reduce claim frequency and severity, leading to higher profits (contractor renewals with reasonable premium increases)

Workers compensation losses (generally) have minimal financial impact on employers.

#3 Reason for contractor default is lack of quality control (Re-work)

Construction defect claims often have high deductibles and policy limits.

Project Owners want to decrease overall project costs both directly and indirectly, leading to higher profits

Industry Concerns

-The cost of Rework is over $200B annually in the US

-State of the Market is making this problem worse, not better

- Record construction volume
- Skilled Labor shortage
- Loss of Knowledge - 20% of craft workers retiring in next 4 to 5 years
- Training our new craft workers and sharing of skills critical to safety and quality

"It's up to all of us here to Lead the Way"

- Wendy Cohen

What Can Safety Professionals Do?

- What are your Losses
- What are your Controls
- Share your gained knowledge
- Have your facts & Recommendations to improve

How Do We Get There

Invest in our People

Track Re-Work and align goals within the organization

Budget for craft training (safety and quality)

Update Pre-task planning forms to include “quality”

Require “Site specific QC plan” in the RFP

As part of contractor selection process include QC (every project)

Refocus (cross-train) Safety staff for Quality

Update your contract verbiage requiring weekly *Safety & Quality* crew meetings

Take-Aways

Think Beyond
Correlation in Re-work & Injuries
Parallels in Quality & Safety
Quality Gap
Add Value

Questions?

Come see us at our Booth

Rework examples available