

Moving from Risk Management to Risk Elimination

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Regional SHE Manager

Total Facility Solutions

*Prevention through Design Workshop
March 11 of 2020, Tempe, AZ*

NIOSH Award #1 R13OH011707-01-00

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PtD in Practice - stories and solutions

- Threats Designed by Professionals
- Accepted “Killing Conditions”
- Focus on Efficiency not Safety
- The Power of Additional Provisions

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TIMES UNION

ALBANY TIMES-UNION OBITUARY

Hanson, John J. Sr., 82, of Castleton, NY
"...passed away suddenly Friday, October 7, 2011"

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Williamstown, MA – *A construction accident at the Sterling and Francine Clark Art Institute left a New York man dead, after he was run over by a piece of construction equipment.*



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Williamstown, MA – A construction accident at the Sterling and Francine Clark Art Institute left a New York man dead, after he was run over by a piece of construction equipment.



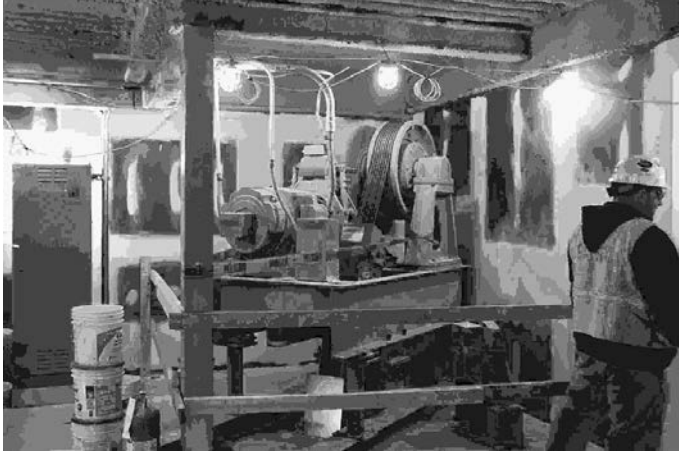
Designing for Failure



- Designed by professionals
- Owner risk – *that they paid for...*
- Lifetime Threats – If it was dangerous during construction



Designing for Failure



Designing for Failure



Designing for Failure – listen for *“that’s not what we do here...”*

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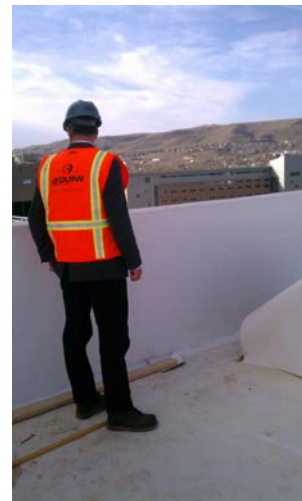


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Avoiding the “must trust” Options *Design in the Prevention*

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Our Professional Barriers Educating Future Designers

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“Armed Hazards” David Macollum

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“Armed Hazards” David Macollum



Only 3-4% of skylights in the US will support the weight of a person...” Nigel Ellis

Listen for “but we have always done it this way”



PTD - driven by litigation

\$1.5 Million Award in Table Saw Injury Lawsuit

WORKER – FINGER AMPUTATIONS BY TABLE SAW	COST
Direct Cost to Business Region	\$504,846.00
Total Profit for Project	\$3,309.00
Cost of one SawStop® Table Saw	\$1,779.00
Additional Sales Needed to Recover Injury Cost	\$16.8 Million



ADPROV – Contractor must utilize the SawStop® table saw or similar technology.”

The Power of Additional Contract Provisions

- All Powered Industrial Trucks (rough terrain) must be designed to allow operator unobstructed vision to the left and the right.
- In the event the contractor must work on a roof or similar exposure they are required to guard all existing skylights to prevent falls.
- If skylights are installed or replaced they must be designed to support a persons weight.

Prevention in Practice



An electrician cut his arm on a metal stud while relocating a fire phone on the 2nd floor near the elevators. The employee received stitches.

Incident Summary:
An apprentice electrician sustained serious lacerations to the back of his middle and ring fingers when his hand struck metal stud track during a school renovation project. The laceration resulted in damage to tendons which has required surgery to repair.

"The EDGE™ keeps injuries down and my crews working. Injuries cost money and this is the safest drywall stud I've ever handled."
-Nick Latino, Owner of Drywall Specialties, Inc. (New Orleans, LA)
"The rolled edge combined with milder steel makes The EDGE™ safer and easier to work with than any other product we've tried."
-John Punis, Vice President of Prince Carpentry, Inc. (Manhasset, NY)



Prevention in Practice

From Telling to Understanding



Prevention in Practice

From Telling to Understanding



ADPROV – Exterior scaffolding will exceed the highest point of any roofline or final parapet/peak height by one level.

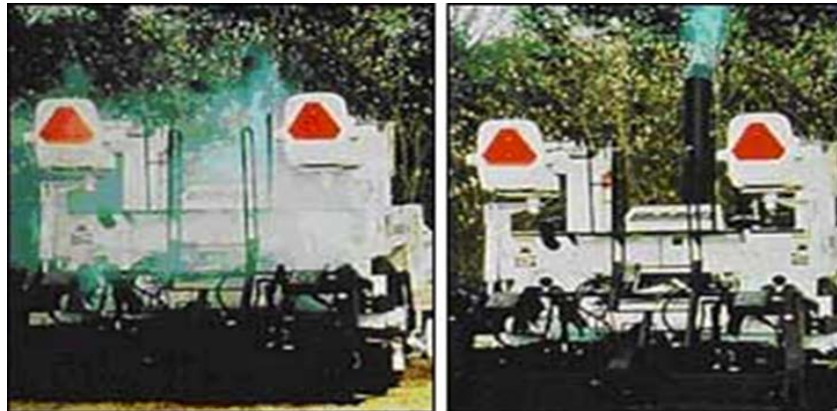
Eric Black



Engineering in Prevention

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We must answer...what's in this for me?



This marks 416% increase since a 2009 survey.

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Prevention through Material Design – modular receptacles

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Prevention through Material Design

– modular receptacles

General Contractor

- Safer installations
- Mistake-proof wiring
- Value-add to the owner
- Timelines are met
- Coordination with prefab

Electrical Contractor

- » Labor productivity
- » Ergonomic installs
- » Reduced repetitive motion injuries and fewer screwdriver slips
- » Change outs in a fraction of the time
- » Ring out circuits prior to trim

P&S PlugTail Cost Comparison to Conventional Wiring Device					
Conventional Device		\$362	P&S PlugTail Device		PT5362
Labor Rate/hr	90		Labor Rate/hr *	90	
Devices/hr	7		Devices/hr **	21	
Device Cost	2.50		Device Cost ***	4.00	
# of Devices to be installed	4000		# of Devices to be installed	4000	
Labor only:			Labor only:		
Labor Rate/Device	\$12.86		Labor Rate/Device	\$4.29	
Labor Only Total Cost	\$51,428.57		Labor Only Total Cost	\$17,142.86	
			Labor Cost Savings with PlugTail	\$34,285.71	
Device only:			Device Only Total Cost	\$16,000.00	
Device Only Total Cost	\$10,000.00		Device Cost Savings with PlugTail	\$-6,000.00	
Device & Labor			Labor & Item Cost per Device	\$8.29	
Labor & Item Cost per Device	\$15.36		Labor and Item Cost per Device	\$8.29	
Total \$	\$61,428.57		Total \$	\$33,142.86	
Total Hours	571,428.57		Total Hours	190.5	
			Total Cost Savings with PlugTail	\$28,285.71	
			Total Time Savings with PlugTail	381.0	

Modular Receptacles (Legrand)

Recalculate Reset Print



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Our Next Steps

- ✓ We need to publically recognize design failures in the US – our line in the sand
- ✓ Focus on the next generation of designers
- ✓ Drive PtD incentives including insurers
- ✓ Listen for “...but the guys need the work”
- ✓ We must answer to industry...what’s in this for me and highlight the firms that found out



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Thanks!

<https://ptd.engineering.asu.edu/>

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