



# Risk Management With A Twist

Simon Hunter & John Mackenzie

# Learning Objectives

By the end of the session, the participants will gain a greater understanding of:

- The pitfalls faced by clients
- What can happen when things go wrong
- The approach to risk management
- Governance
- The benefits of a holistic approach by reviewing the preventative and mitigations measures as a whole

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A Twist

# The Presenters



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# Doing It Wrong

Fire



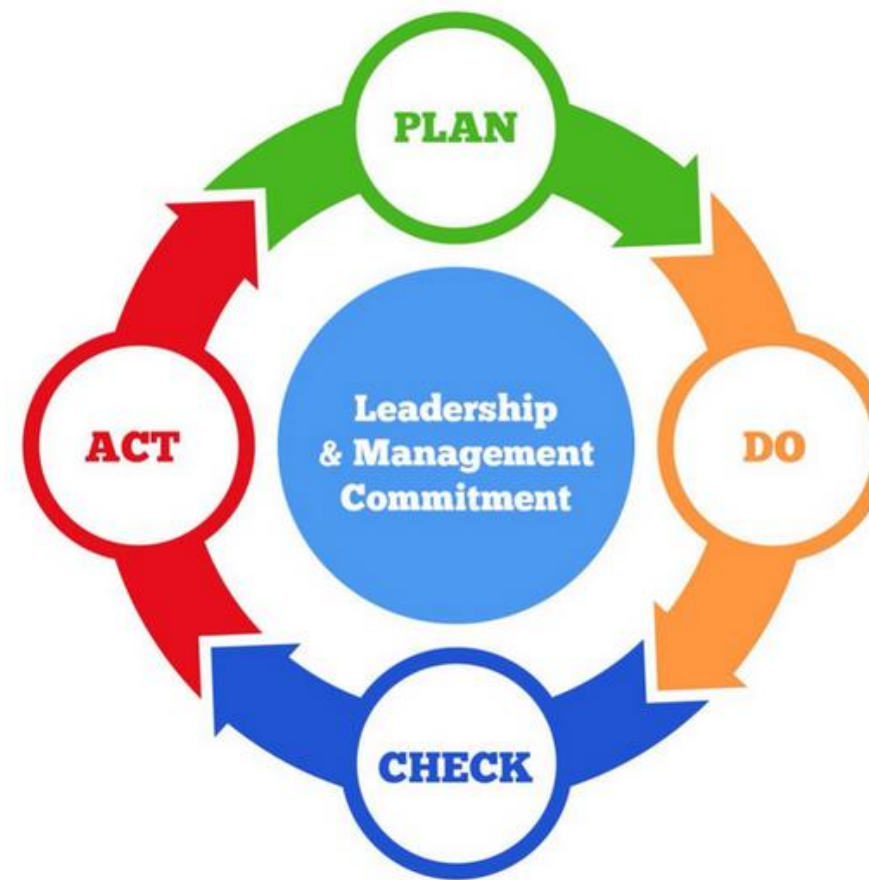
Flood



Major Roof Fall



All this with a Certified Safety Management System



Arc Flash



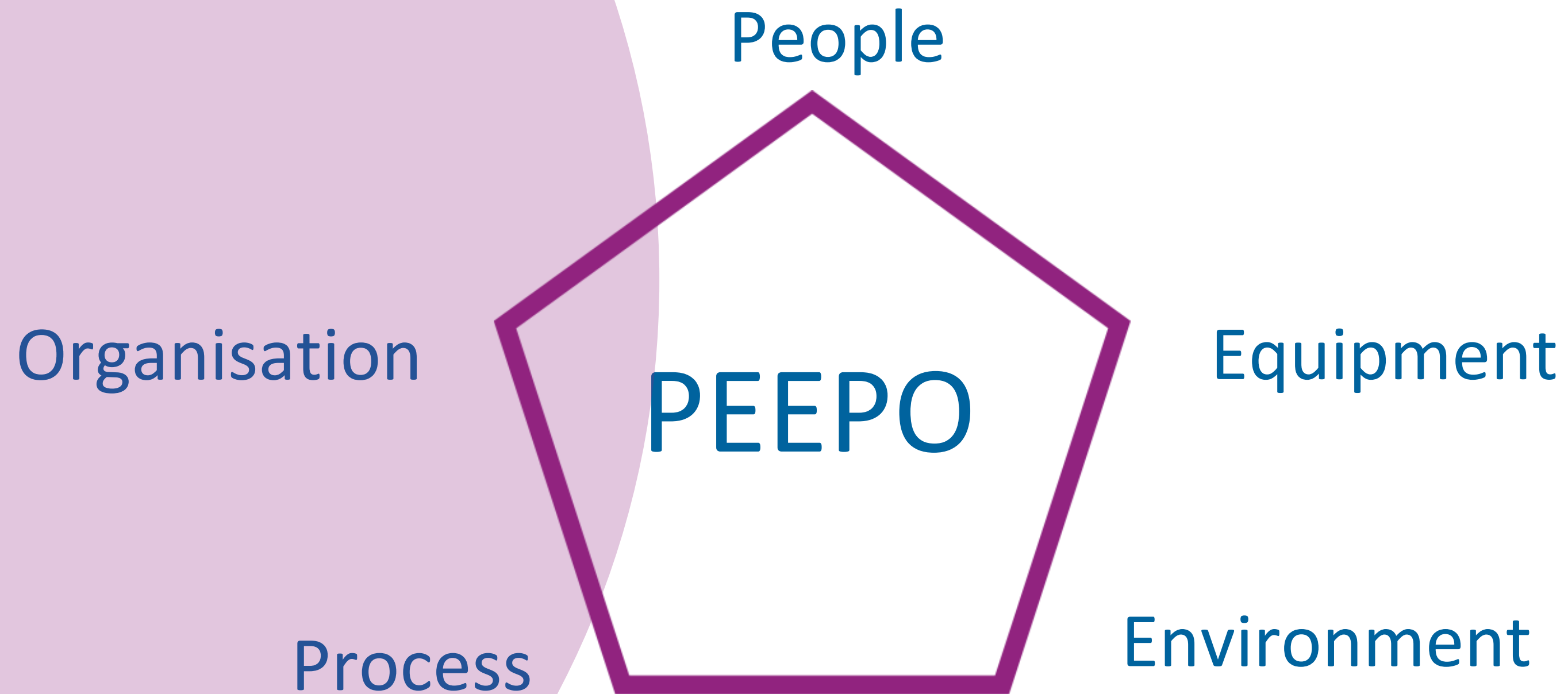
# An Approach to Risk Management

Major Hazards	Fatal Hazards	Personal Injury Risks
Fire	Falls From Height	Slips & Trips
Explosion	Electrocution	Manual Handling
Irrespirable Atmosphere	Confined Space	Knife Cuts
Structural Failure	Lifting Operations	Musculoskeletal

Major Hazard – Kills more than one, stops the business

Fatal Hazard – Kills one, stops a business unit

# An Approach to Risk Management





# An Approach to Risk Management

## Fire – As an Example

Ln 0	Threat	Barrier	Hazard	Barrier	Outcome
Ln 1	This Causes		This		Causes This
Ln 2	Uncontrolled Hot Works		Ignites Poly Panels Major Fire		Loss of Factory
Ln 3	Uncontrolled Hot Works	Hot Works Process	Ignites Poly Panels Major Fire	Sprinklers	Loss of Factory
Ln 4	Preventative Barriers			Mitigation Barriers	

# Job Done? Governance

# Governance

## Auditing

- Checks to a set standard
- Passive
- Delayed feedback
- Ownership for auditor

Vs

## Safety Performance Indicators

- Confirms adequacy of Standard
- Active
- Immediate- Effectiveness and adequacy
- Ownership of process and outcomes proportionate to risk profile

# Governance – In the 'C Suite'

Risk – MH Fire						
KPI	Purpose	Owner	Data Source	Tolerance	Output	Percentage contribution to KPI
Monitoring of hot works permits. 20% of hot work permits shall be subject to SLT audits	Hot works are one of main sources of fire ignition and should be conducted in a very controlled way in line with insurance guidelines	Site Director	From SLT Audits. The number and contributors should be defined by the Site Director	Zero	100% of audits completed	25%

# Governance – In the ‘C Suite’

Major Hazards		
Major Hazard	Status percentage	Explanation of shortfall and corrective action plan
Fire		
Irrespirable Atmosphere		
Structures		
Explosion		



# Job Done?

## The Twist

# Holistic Risk Management Solutions

John Mackenzie

# A Familiar Sight?





Vibration magnitude, $a_{HW}$ (m/s <sup>2</sup> )	Exposure time, $T$											Legend	
	5 min	15 min	30 min	1 h	1 h 30 min	2 h	3 h	4 h	5 h	6 h			
40	265	800											Above exposure limit value
30	150	450	900										Likely to be at or above limit value
25	105	315	625	1250									Above exposure action value
20	67	200	400	800	1200								Likely to be at or above action value
19	60	180	360	720	1100	1450							Below exposure action value
18	54	160	325	650	970	1300							
17	48	145	290	580	865	1150							
16	43	130	255	510	770	1000							
15	38	115	225	450	675	900	1350						
14	33	98	195	390	590	785	1200						
13	28	85	170	340	505	675	1000	1350					
12	24	72	145	290	430	575	865	1150	1450				
11	20	61	120	240	365	485	725	970	1200	1450			
10	17	50	100	200	300	400	600	800	1000	1200			
9	14	41	81	160	245	325	485	650	810	970			
8	11	32	64	130	190	255	385	510	640	770			
7	8	25	49	98	145	195	295	390	490	590			
6	6	18	36	72	110	145	215	290	360	430			
5.5	5	15	31	61	91	120	180	240	305	365			
5	4	13	26	52	77	100	150	200	250	300			
4.5	3	10	21	41	61	81	120	160	205	245			
4	3	8	16	32	48	64	95	130	160	190			
3.5	2	6	13	25	37	49	74	98	125	145			
3	2	5	9	18	27	36	54	72	90	110			
2.5	1	3	6	13	19	25	38	50	63	75			
2	1	2	4	8	12	16	24	32	40	48			
1.5	0	1	2	5	7	9	14	18	23	27			
1	0	1	1	2	3	4	6	8	10	12			

## Billington & Burrows –v- British Rail Engineering Limited(2002)

Control of Substances Hazardous to Health Regulation 7.(1) Every employer shall ensure that the exposure of his employees to substances is **either prevented or, where this is not reasonably practicable, adequately controlled.**

# The Twist

## The Twist

- Involve the lawyer up front
- Shortfalls identified

### Example

- Common law case regarding HAVs. Defendant uses 'common approach to control'

## Pros

- Affirm process aligned to law
- Legal privilege

### Example benefit

- Claim successful as employer had a 'generic defence' but had not understood their obligations under statute

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# Thank You

## Any Questions?

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