

# EFFC - European Federation of Foundation Contractors

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## Health & Safety in the Special Foundation Industry

Seminar

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# What Health & Safety Looks Like...in the special foundations industry

Health, Safety are among the **EFFC core values** and as a federation representing various European countries, our goal is to develop a **strong HS culture**, shared with all our members, employees, partners, clients and subcontractors.

**The EFFC works to promote and share health & safety practices** for specialist foundation contractors across Europe. Thanks to the contribution of our members , the EFFC has developed this Health & Safety Seminar initiative with the objective to present our Health & Safety good practices, our major risks and to contribute to improve safety culture in our industry.

All members, stakeholders, clients are invited to attend this seminar as an opportunity to openly discuss our approach to health & safety and to progress together.

## 1. Introduction

- The EFFC: what we do, who we are.
- The national federation: how they contribute to the EFFC
- Mission and objective of the H&S working group

## 2. The real world: our “Reality Check”

- A video with the “good side” and the “bad side” of the business in terms of safety practices.

## 3. Common H&S rules and requirements in our industry

- HSE policy
- HSE Manual & safe work procedures
- Risk management process

## 4. Our major risks

- Working platforms
- Lifting operations
- People-Plant Interactions
- Chemical risks
- Work at height

## 5. Safety Culture

- We will focus on safety culture by exploring behavior and its interaction with the Human & Organizational Factors.
- Ruled safety VS Managed Safety
- Group/teams dynamics
- Organizational silence

## 6. Conclusion and Q/A session

# 1. Introduction

## The EFFC: what we do, who we are

The European Federation of Foundation Contractors represents **16 European National Federations** across Europe.

Our 370 specialist foundation contractors contribute to the construction of some of Europe's most iconic buildings which can be seen here.

### **Mission Statement**

*"Our mission is to promote the common interest of Members in achieving the highest professional standing of special foundations work across Europe."*

### **Objectives**

- Improve standards of workmanship, technical competence, safety and innovation
- Create and maintain an effective network amongst the Members of the Federation and with its Stakeholders
- Express the point of view of its Members with the European Commission, authorities, professional institutions and other Federations and third parties

<https://www.effc.org/>



# Members

**Austria**  
VOEBU, 44

**Belgium**  
ABEF, 12

**Czech Rep.**  
ADSZS, 16

**Denmark**  
3

**France**  
SOFFONS, 28

**Germany**  
HDB, 41

**Hungary**  
AVS, 4

**Italy**  
AIF, 44

**Netherlands**  
NVAF, 77

**Poland**  
PZWFS, 23

**Portugal**  
5

**Romania,**  
5

**Spain**  
AETESS, 5

**Sweden**  
SAFE, 40

**Switzerland**  
Infra, 31

**UK**  
FPS, 22

**16 Federations**  
**350 Contractors**



# Working Groups

## Technical

### EFFC/DFI Concrete Task Group

The Group was formed to address the issues that contractors experience on site with modern concrete mixes.

### EFFC/DFI Support Fluids Task Group

The Support Fluid Task Group was established to investigate the preparation, characteristics and testing of support fluids.

## HS

### EFFC HSWG

Safety Culture  
Plant & Equipment Safety  
Rig Operators Training  
Incident reporting and safety alerts

## Contracts

The Contracts Working Group looks at the commercial issues that are commonly experienced across Europe.

## Sustainability

### EFFC/DFI Carbon Calculator Task Group Working Group

This group developed a standardised tool called the Foundation CO2 Calculator which calculates the carbon footprint of deep foundation and ground improvement works. The Task Group was set up to build and promote the calculator.

# Working Groups

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# Purpose of the EFFC H&S Working Group



The EFFC's Safety Working Group exchanges and disseminates information and guidance to improve health and safety during the execution of foundation and geotechnical works

Improve  
**Safety  
Culture**

**Plant &  
Equipment  
Safety**

Rig  
Operators  
**Training**

**High  
Potential  
Events  
sharing**

Safety  
**Alerts**

Good  
**Practices**



# Purpose of the EFFC H&S Working Group

1. Share good HSE practices
2. Improve visibility among members and stakeholders:  
**contribution to change safety culture in our industry**
3. Promote the “human” approach

## 2. The real world: Our “reality check”

### **3. Common H&S rules and requirements in our industry**

# HSE policy

A health, safety & environmental policy sets out your **general approach to health and safety**. It explains how the employer, will manage health and safety in your business. **It should clearly say who does what, when and how.**

**"A statement of intent"** to be shared with all employees



Example of HSE Policy

# HSE Manual & Safe Work Procedures

## Typical content of a HSE Manual

- 1. INTRODUCTION**
  - 1.1 COMPANY PROFILE
  - 1.2 POLICY AND STRATEGIC OBJECTIVES OF THE HSE MANUAL
  - 1.3 LEGAL AND OTHER REQUIREMENTS
- 2. ORGANIZATION, RESOURCES AND DOCUMENTATION**
  - 2.1 ORGANIZATION AND RESPONSIBILITIES
  - 2.2 TRAINING AND COMMUNICATION
  - 2.3 HSEMS DOCUMENTATION
  - 2.4 SUB CONTRACTORS' MANAGEMENT
- 3. RISK MANAGEMENT PROGRAM**
  - 3.1 RISK ASSESSMENT
  - 3.2 JOB SAFETY ANALYSIS
- 4. PLANNING**
  - 4.1 SAFE WORKING PRACTICES



***Everything you need to know to work safely!!!!***

# Safety Co-ordination on site

Safety co-ordination on site is the responsibility of the client under the EU Mobile Site Safety Directive (92/57/EEC - *Temporary or Mobile Construction Sites*). This applies to both the design and the execution phase.

- **Design phase:** the H&S co-ordination is carried out by the Client or by a third party engaged by him
- **Execution phase:** the H&S co-ordination is often assigned to the main contractor.

The health and safety co-ordinator should deliver a safe design and ensure a safe and healthy working conditions during construction on site.

**Clients, main contractors and foundation specialists must join forces to ensure a safe working environment.**



# Safe Work Procedures

They cover all the **major risks** at the construction site

## SAFE WORKING PROCEDURES

- Lifting Operations
- Excavation Safety
- Working at Height
- Hot Work
- Working on or near water
- Vehicle Safety
- Manual Handling
- Noise and Hearing Conservation
- Heavy Plant and Equipment
- Electrical Safety
- Site Security
- Hand Tools and Equipment

# Risk management process

## What is risk?

“The likelihood that a hazard if left uncontrolled could result in or contribute to loss (injury, damage to equipment etc.)”



## The facts:

- 90% of the accidents are caused by **human behaviour** (personal or collective)
- **Humans are complex creatures** and subjects to influence from a broad a variety of factors
- Assessing the safety risks in our workplace is a tough challenge: **it isn't all black and white**)



## Assessment or Perception?

When is the best time to address risk?

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### AT THE PLANNING STAGE

rather than out in the field.....

The risk is defined as:

**Risk = Likelihood X Severity**

## Assessment or Perception?

While careful planning and assessment is indeed vital, we need to extend our thinking to **understanding behaviour**



# Assessment or Perception?

**RISK is also about perception**

How risk is assessed will depend upon:

- each person's perspective and
- experience.



# Assessment or Perception?

Do you see the risk?



# Assessment or Perception?

Perhaps this is safer.....



# Risk, Benefits and Rewards

The most effective risk management programmes are the ones where **everyone truly knows the risks within their area of work, shares the same perceptions of these risks** and understand what needs to be done to monitor, manage and mitigate them.

# Risk Management

Tools at your disposal:

- Risk assessment
- Job safety Analysis
- Open communication!!!!

# Risk Management



## Risk Assessment

An objective evaluation of the risk associated with various activities in which assumptions and uncertainties are clearly considered and presented. Part of the difficulty of risk management is that measurement of both **probability of occurrence (Likelihood)** and **consequences (Severity)** - can be very difficult to measure.

			SEVERITY (S)				
			1	2	3	4	5
			MINOR	SIGNIFICANT	MAJOR	SEVERE	CATASTROPHIC
LIKELIHOOD (L)	1	VERY UNLIKELY (Could happen in the Piling industry)	L1	L 2	L3	L4	L5
	2	UNLIKELY (Has occurred at least once in the Company)	L2	L4	M 6	M 8	M10
	3	LIKELY (Has occurred several times in the Company)	L3	M 6	M9	H12	H15
	4	VERY LIKELY (Has occurred several times a year in the Company)	L4	M 8	H12	H16	H20
	5	CERTAIN (Has occurred several times a year at one location)	L5	M 10	H15	H20	H25
To Evaluate the Risk: Likelihood (L) x Severity (S) = Risk. Defined as HIGH (11-25), MEDIUM ( 6-10 ) or LOW ( 1-5 )							
RISK RATING							
L = LIKELIHOOD		S = SEVERITY					
1	Very Unlikely	1	Minor	First Aid Case (Slight Injury), Slight Damage, Slight Environmental Effect, Slight Impact (reputation).			
2	Unlikely	2	Significant	Significant injury (Medical Treatment), Significant Equipment damage <5,000 Dhs., Significant Environmental Effect, Significant Impact (reputation).			
3	Likely	3	Major	Major Injury (LTI), Major Equipment Damage between 5,000 and 25,000 Dhs., Major Environmental Effect, Major Impact (Reputation).			
4	Very Likely	4	Severe	Permanent Disability, Single Fatality, Severe loss of equipment between 25,000 and 100,000 Dhs., Severe Environmental Effect, National Impact (reputation).			
5	Certain	5	Catastrophic	Multiple Fatalities, Complete loss of equipment ≥ 100,000 Dhs, Catastrophic Environmental Effect, International Impact (reputation).			

# Risk Management



## Job safety Analysis

**Job Safety Analysis (JSA)** is a qualitative method of assessing risks associated with a particular job. Job Safety Analysis is developed by the site supervisor along with the involved personnel directly on site before commencement of a high risk or routine activity.

- 1) Identify the steps to complete the job**
- 2) Identify the hazards associated with each step**
- 3) Identify how the hazards will be eliminated or controlled**

JSA's are required for:

- Critical tasks
- Non-routine tasks
- Permit To Work tasks
- Routine tasks (periodically)

### Job Safety Analysis Worksheet

Title of Operation:		SOP/SWP No:	
Position/Title: <i>(Person who does job)</i>		Building:	
Department:		Section:	
BASIC STEPS	POTENTIAL HAZARDS	PROCEDURE TO BE FOLLOWED (DOs)	SAFETY PRECAUTIONS <i>(if procedure does not fully control risks)</i> (DON'Ts)
Prepared by:		Date:	
Approved by:		Date:	
H&S Rep/Committee Reviewed:		Date:	
Next Review Date < 5 yrs:			

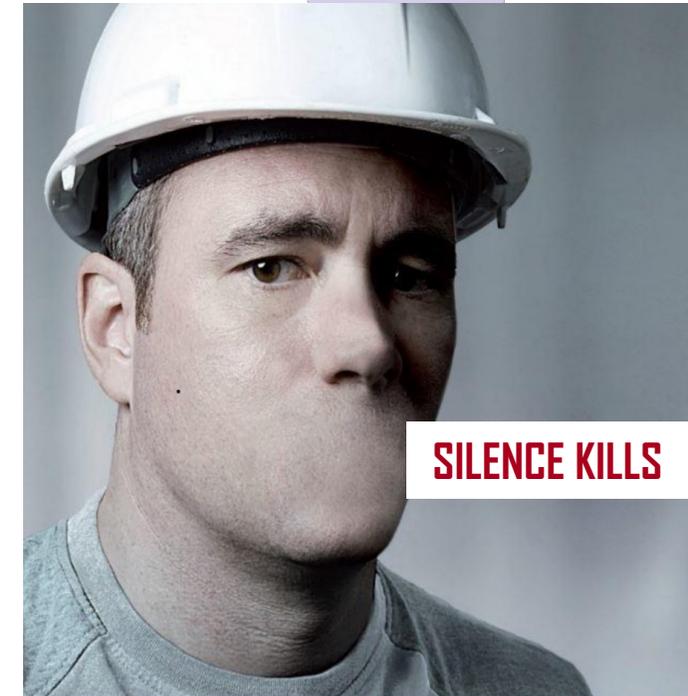


# Risk Management

- ✓ Open communication

Most people think **they will speak up** when something negative happens at work, but **few actually do**

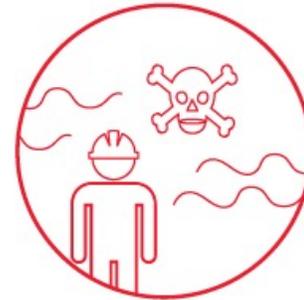
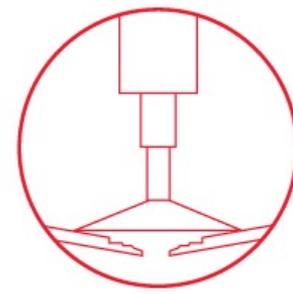
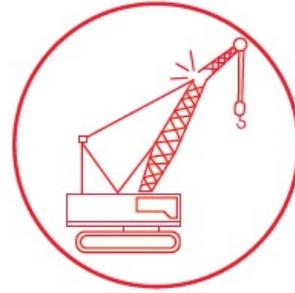
*Giving voice to concerns saves lives!!*



# 4. Major Risk Management

## Our major risks

- Working platforms
- Lifting operations
- People-Plant Interactions
- Chemical risks
- Work at height



We will present the above risks by showing good and dangerous practices.

# Major Risk Management

## Our major risks

- Work at height



Most common fatal falls from height in our industry:

- Falls from access ladders or scaffolds
- Falls from elevating platforms
- Falls into excavations

# Major Risk Management

## Our major risks

- Work at height



# Major Risk Management

## Our major risks

- Work at height

### How to prevent:

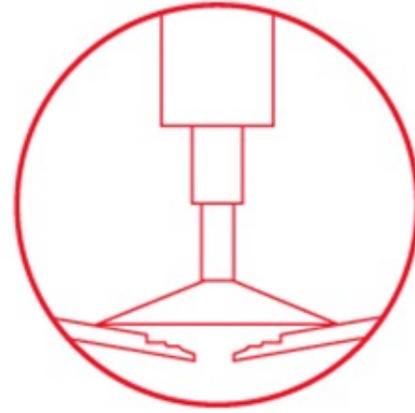
- Ensure you have a safe means of access/egress
- Check if the platform you are standing on is stable and secured
- Ensure there is always a supervisor to assist you
- Ensure you have all necessary fall protection and wear it correctly



# Major Risk Management

## Our major risks

- Working platforms



# Major Risk Management

## Our major risks

- Working platforms

### How to prevent:

- Working Platforms must be designed, properly constructed, regularly inspected and maintained for the plant which will use them.
- Ensure the commitment of the main contractor/client in delivering a safe working platform (Working Platform Certificate)
- Establish exclusion zones around revolving equipment.
- Ensure equipment operators are competent and trained.
- Always have a signaller guiding vehicles and moving equipment on site.
- Protect and backfill any shaft, open hole, trench or excavation.



# Major Risk Management

## Our major risks

- Lifting operations



# Major Risk Management

## Our major risks

- Lifting operations



# Major Risk Management

## Our major risks

- Lifting operations

### How to prevent:

- Institute procedures for inspecting lifting equipment.
- Establish restricted areas and post warning signs
- “Stop Work Authority” if there is any doubt about safety.



# Major Risk Management

## Our major risks

- People-Plant Interface



## What is a “struck by” accident?

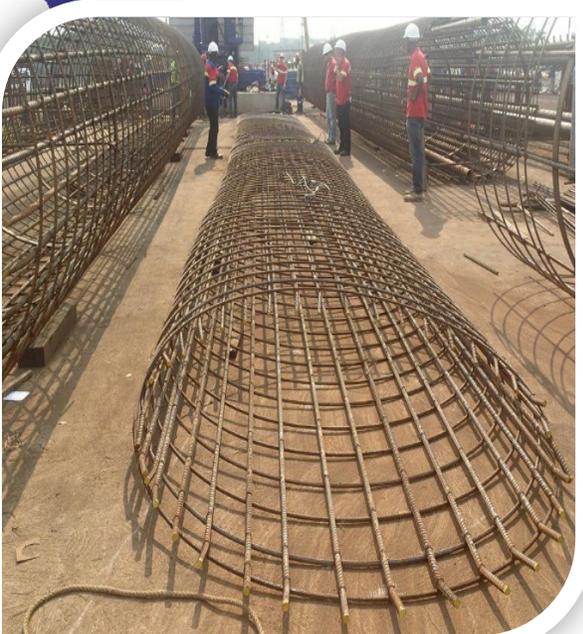
“Struck-by hazards exist any time a worker could be struck by plant, equipment or by its moving parts”

Struck-by accidents is another leading cause of construction-related deaths. Approximately 75% of struck-by fatalities involve heavy equipment such as trucks or cranes.

# Major Risk Management

## Our major risks

- People-Plant Interface



# Major Risk Management

## Our major risks

- People-Plant Interface



### How to prevent:

- Establish restricted zones around equipment.
- Institute "Stop Work Authority" if there is any doubt about safety.
- Ensure equipment operators are competent and trained.
- Have a signaller guiding vehicles and moving equipment on site.
- Provide guards on all rotating parts



# Major Risk Management

## Our major risks

- Chemical risks
  - Crystalline silica dust
  - Cement and bentonite



# Major Risk Management

## Our major risks

- Chemical risks

### How to prevent:

- Using control equipment, (e.g. total enclosure, partial enclosure ventilation, extraction systems)
- Controlling procedures, e.g. ways of working, supervision and training to reduce exposure
- Behaviour and Personal Protective Equipment

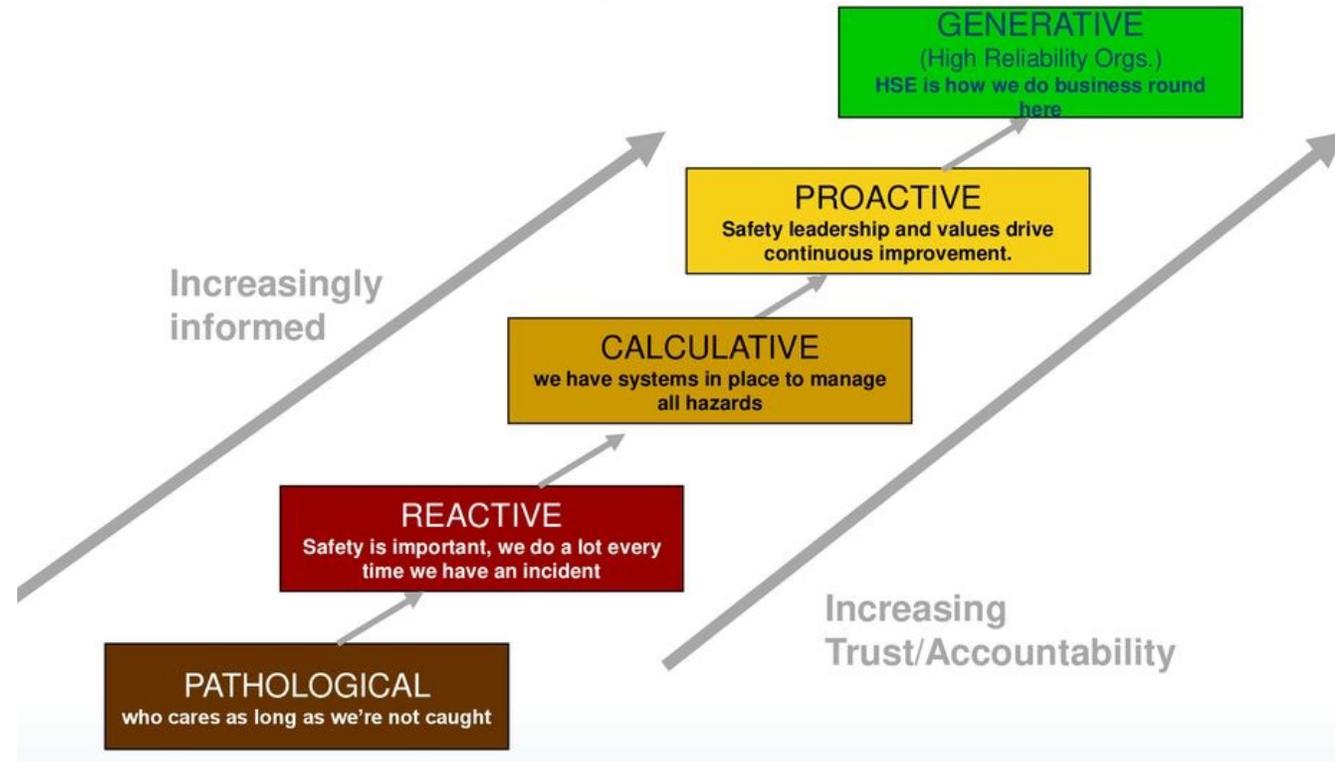


# 5. Safety Culture

- We will focus on **safety culture** by exploring behavior and its interaction with the Human & Organizational Factors
- Ruled Safety VS Managed Safety
- Organizational silence
- Non-Technical Skills

# WHAT IS A CULTURE?

*“The shared values, and beliefs which characterize a given social group, and are passed down from generation to generation”*



# SAFETY CULTURE

- Be honest about failure: an opportunity to improve
- Mutual trust
- Proactive behaviors
- Safely is **“the way we do business”**

# “Be honest about failure”

Openness, transparency are key in safety!!!

Do we report all accidents and incidents?

Do we speak up facing a dangerous situation?

Do we ask question when something is not clear?

Need to defeat the **ORGANIZATIONAL SILENCE**

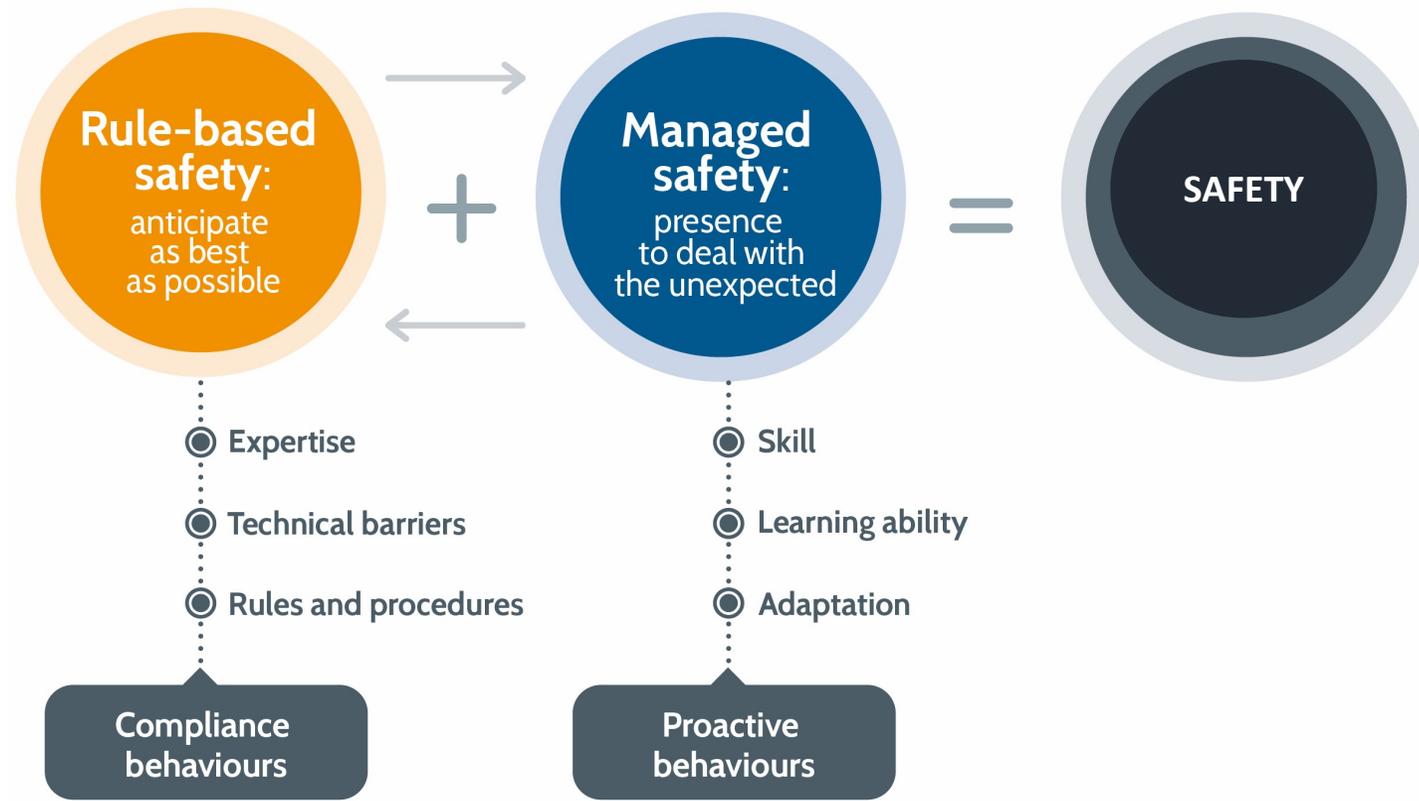
*“Organizational silence is a situation where important information is available somewhere in the field and stays there without being taken into account in strategic decisions.”*

Most people think **they will speak up** when something negative happens at work, but **few actually do**



Promote the "Human " approach

## Ruled safety / managed safety



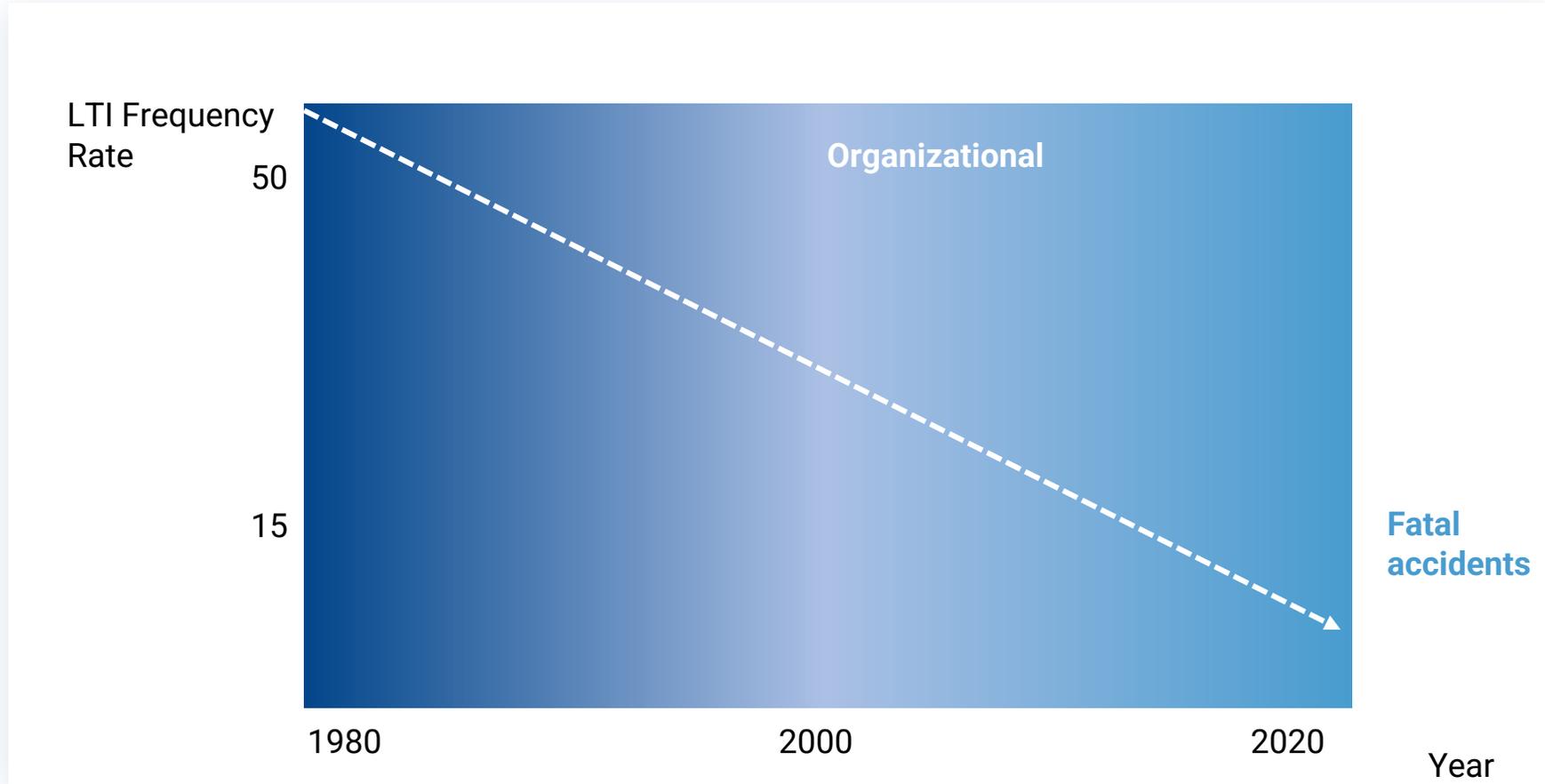
Source: ICSI (Institute for an Industrial Safety Culture)



Promote the "Human " approach

## The safety culture challenge

What if **major and fatal accidents** are still occurring?



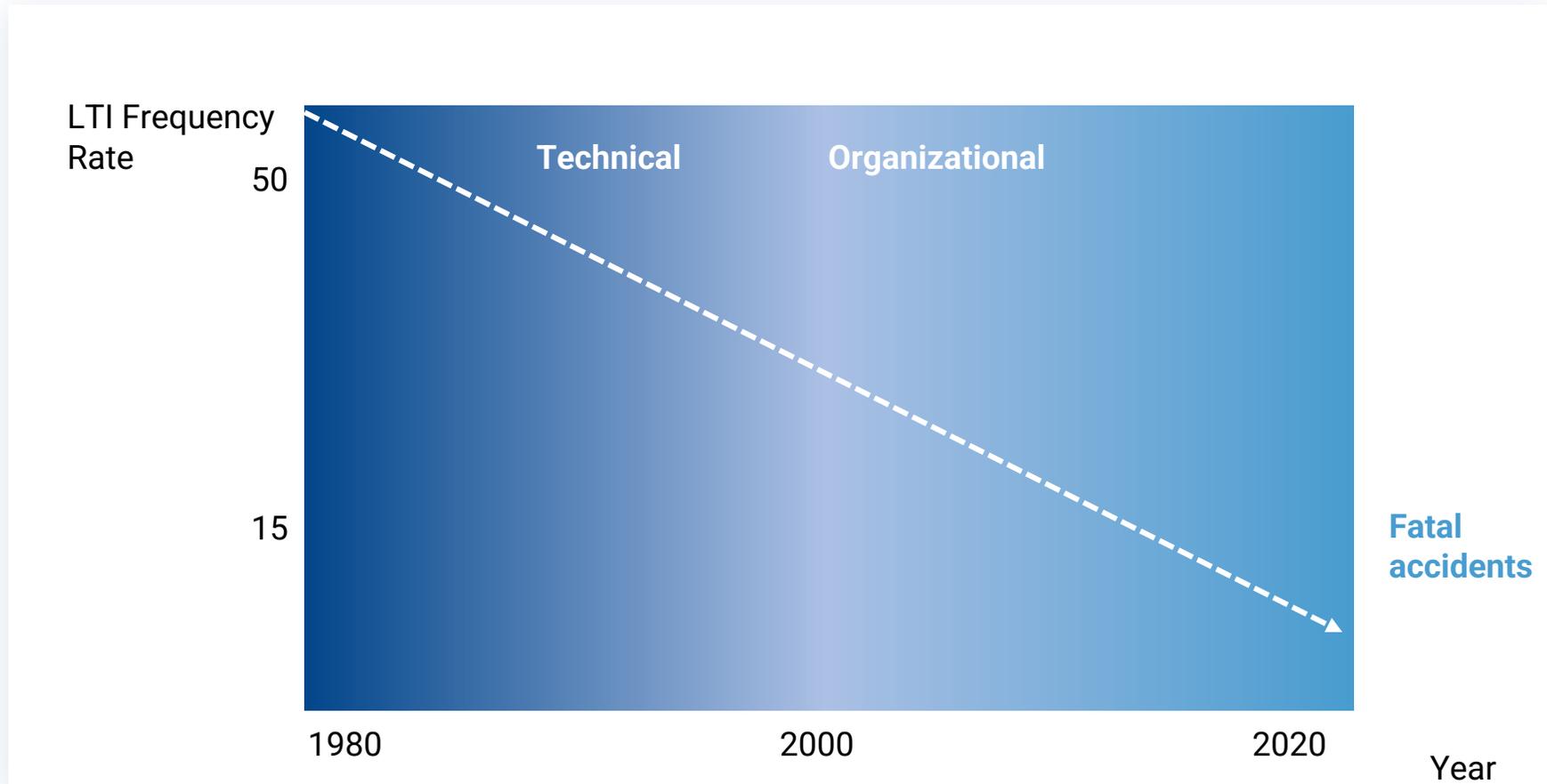
LTI Frequency Rate: N. or accident with lost time \*1M/Man Hours Worked



Promote the "Human " approach

## The safety culture challenge

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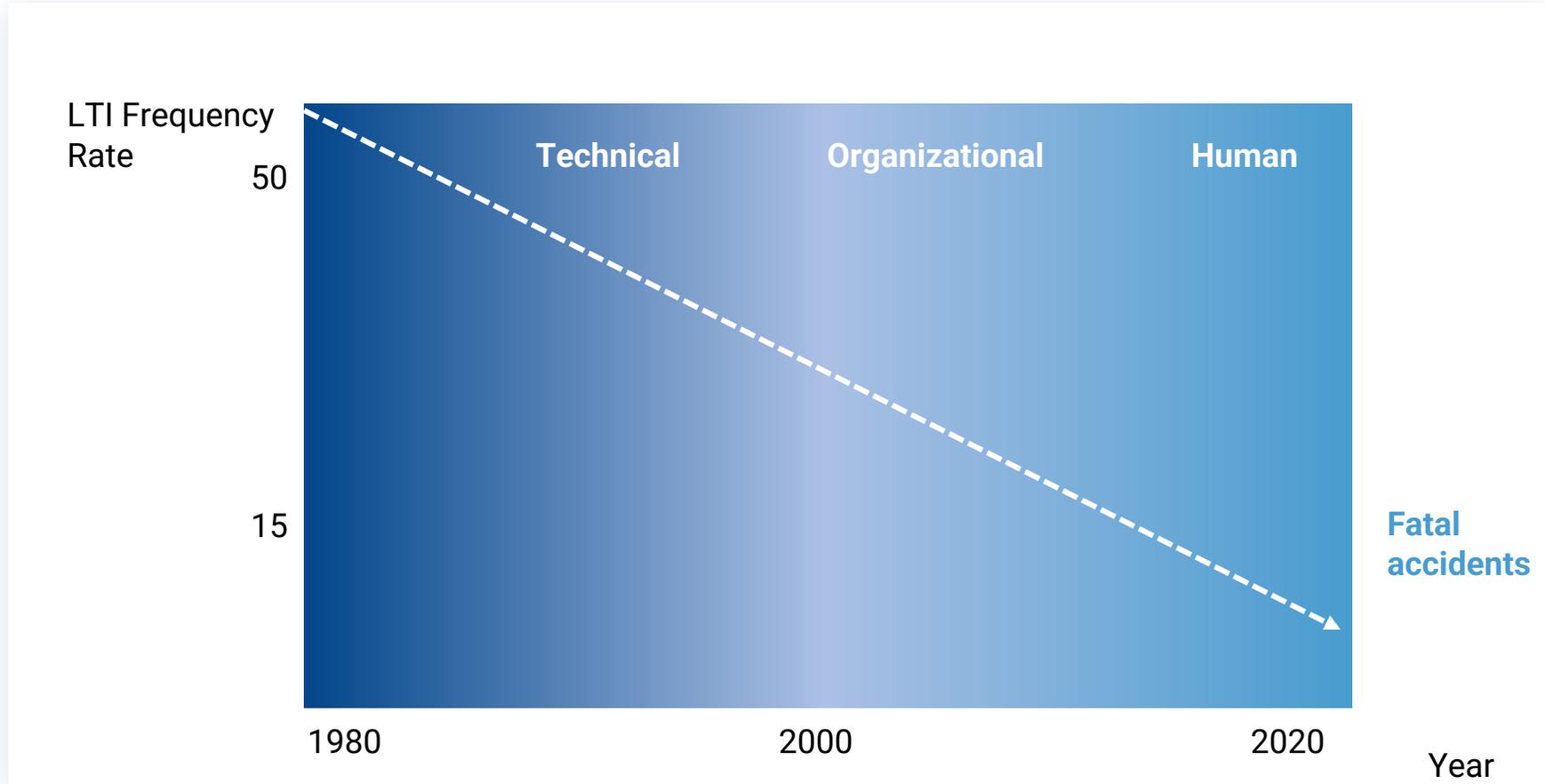
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Promote the "Human " approach

## The safety culture challenge

What if **major and fatal accidents** are still occurring?



Fatal accidents

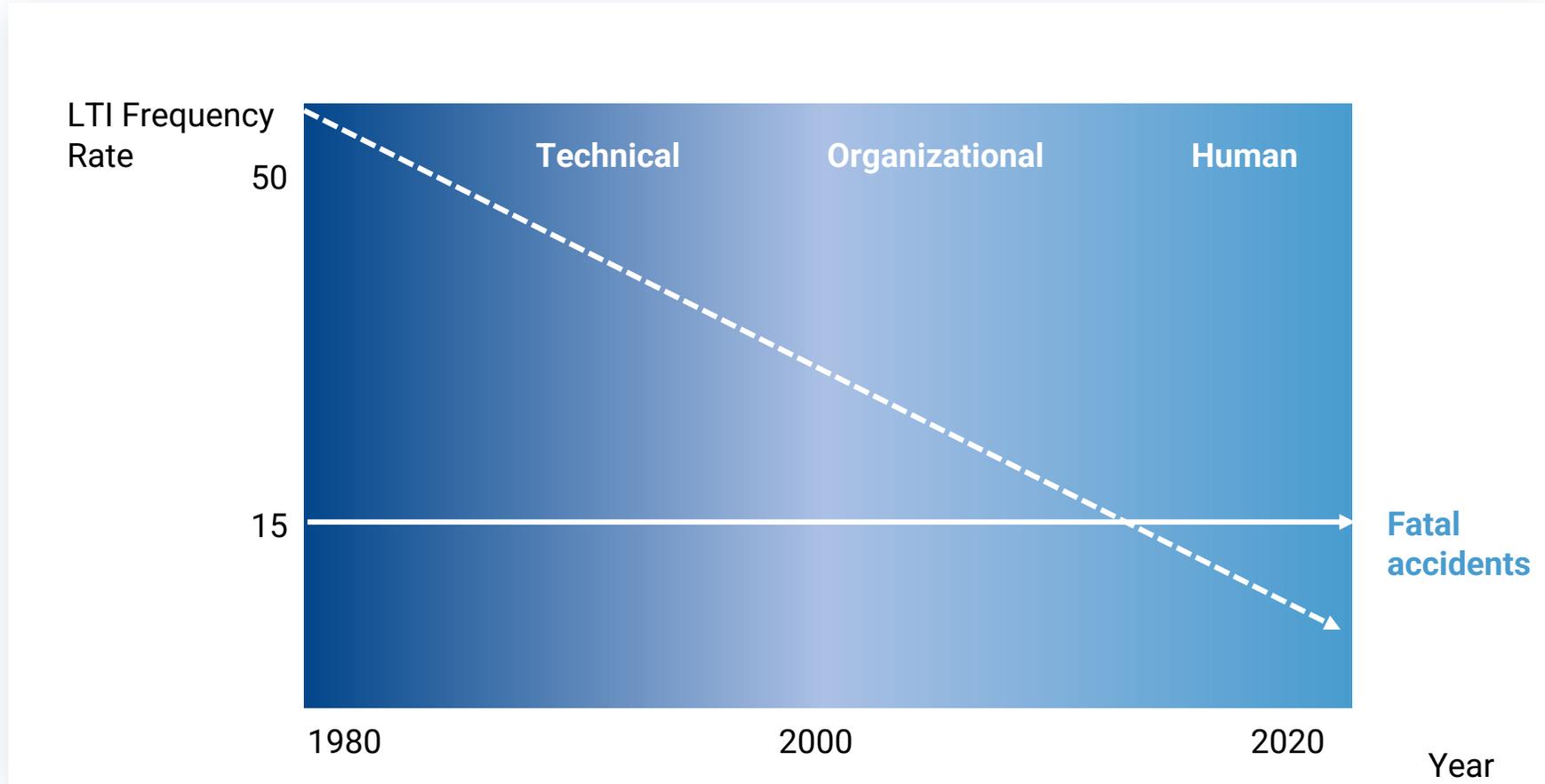
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Promote the "Human " approach

## The safety culture challenge

What if **major and fatal accidents** are still occurring?



LTI Frequency Rate: N. or accident with lost time \*1M/Man Hours Worked



# Ruled safety / managed safety



# Ruled safety / managed safety

Ruled environment: the system is not adaptable



# Ruled safety / managed safety



# Ruled safety / managed safety



**Managed safety: adaptive and proactive behaviour**

# Ruled safety / managed safety



**Managed safety: adaptive and proactive behaviour**

# Look at SAFETY DIFFERENTLY....

## Focus on RULING SAFETY

- People are problem
- Tell them what to do
- Count absence of negatives



## Focus on MANAGING SAFELY

- People are solution
- Ask them what they need
- Count presence of positive capacities

# PEOPLE are the SOLUTION....

## Introducing Non-Technical Skills

### Interpersonal skills which include:

- communication skills;
- leadership skills;
- team-work skills (trust & collaboration);
- decision-making skills (pressure tolerance);
- and situation-awareness skills.

**They do not include the technical skills required to get the job done!**

### Train operatives to:

- **make the right decisions**
- **be leaders**
- **be aware of risks**



ESTEEM

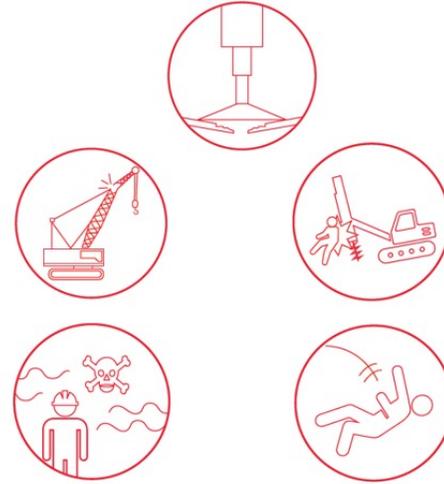
European Safety Training and Evaluation supporting European Mobility

<https://esteem.group.shef.ac.uk/>



# Take home message

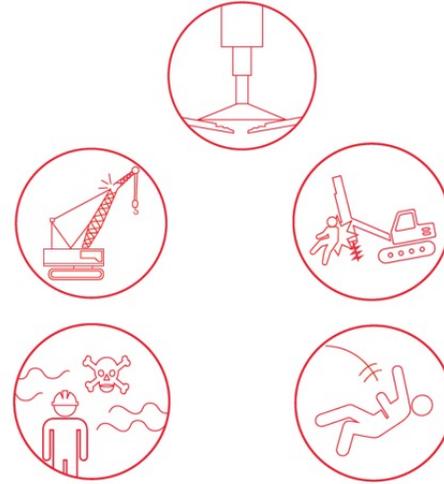
- Plan & prepare for safety: major risks



LEADERSHIP  
IS A CHOICE  
NOT A RANK

# Take home message

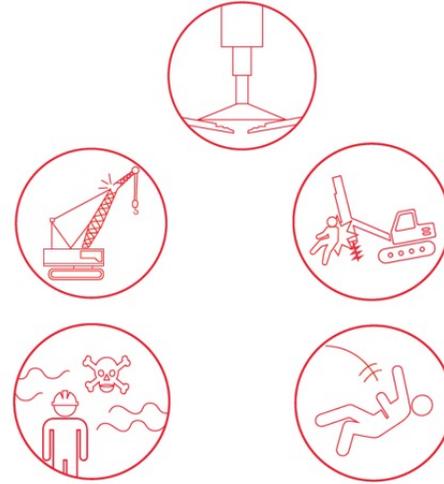
- Plan & prepare for safety: major risks
- Risk management: assess risk and share perception!



LEADERSHIP  
IS A CHOICE  
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# Take home message

- Plan & prepare for safety: major risks
- Risk management: assess risk and share perception!
- Safety Culture: promote the human approach: empowerment, transparency, leadership



LEADERSHIP  
IS A CHOICE  
NOT A RANK

**What did you learn?**

**QUIZ  
TIME!**



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