

A Successful Strategy for Zero Accidents in Design and Construction





100 Bishopsgate



Strata

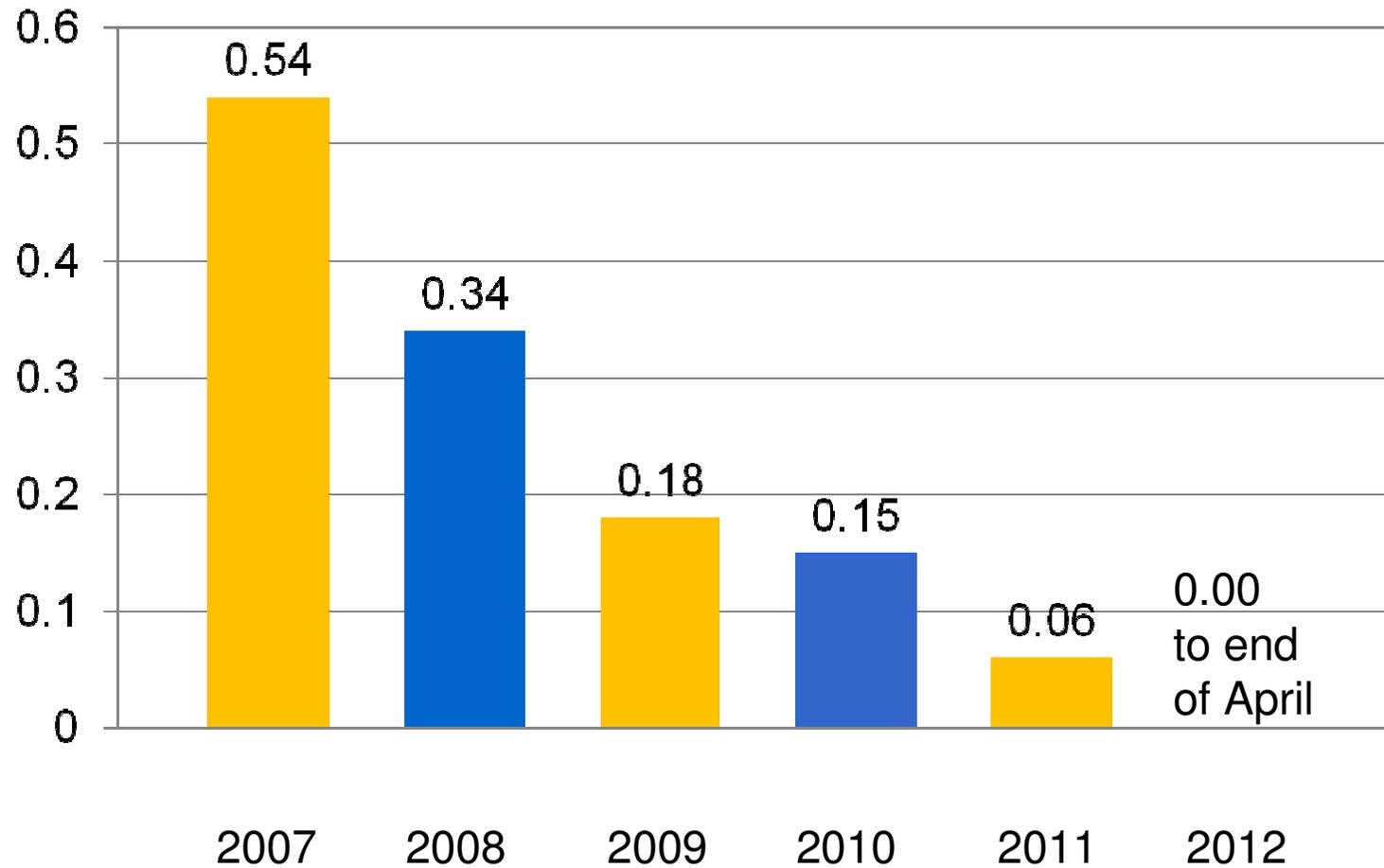
Pinnacle

Peterborough Hospital



Glasgow Southern General Hospital

Accident Frequency Rate



A Successful Strategy for Zero Accidents in Design and Construction

SET UP, FADE & SHAKE-UP

Set up

Risk Assessment Program

Behaviour Program

Audit Program

Drug and Alcohol Program

Inspection Program

Fall Protection Equipment

Method Statement Program

Personal Protective Equipment

Thorough Examinations

Tool box talks

Safety in Design

Safety Management Plan

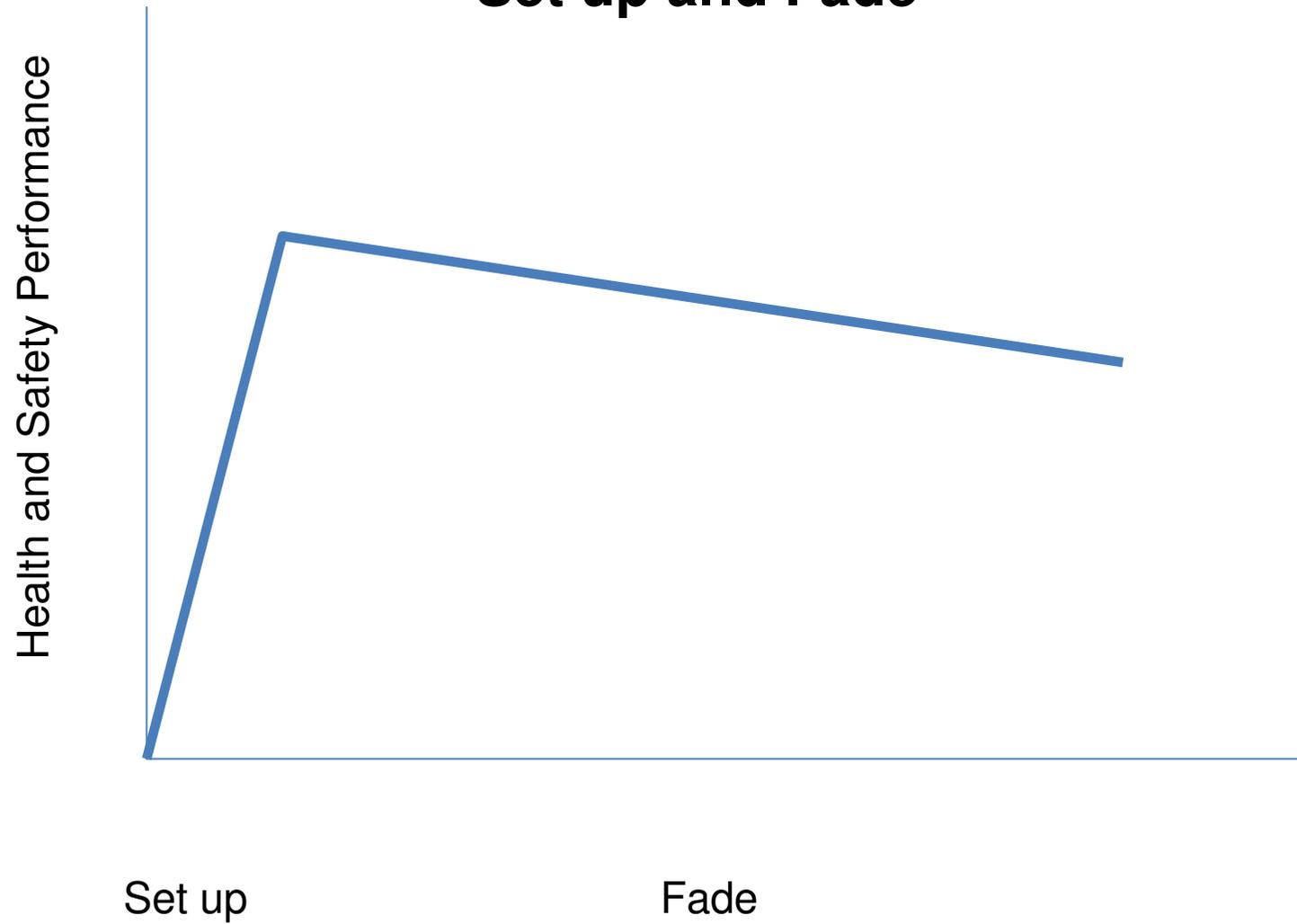


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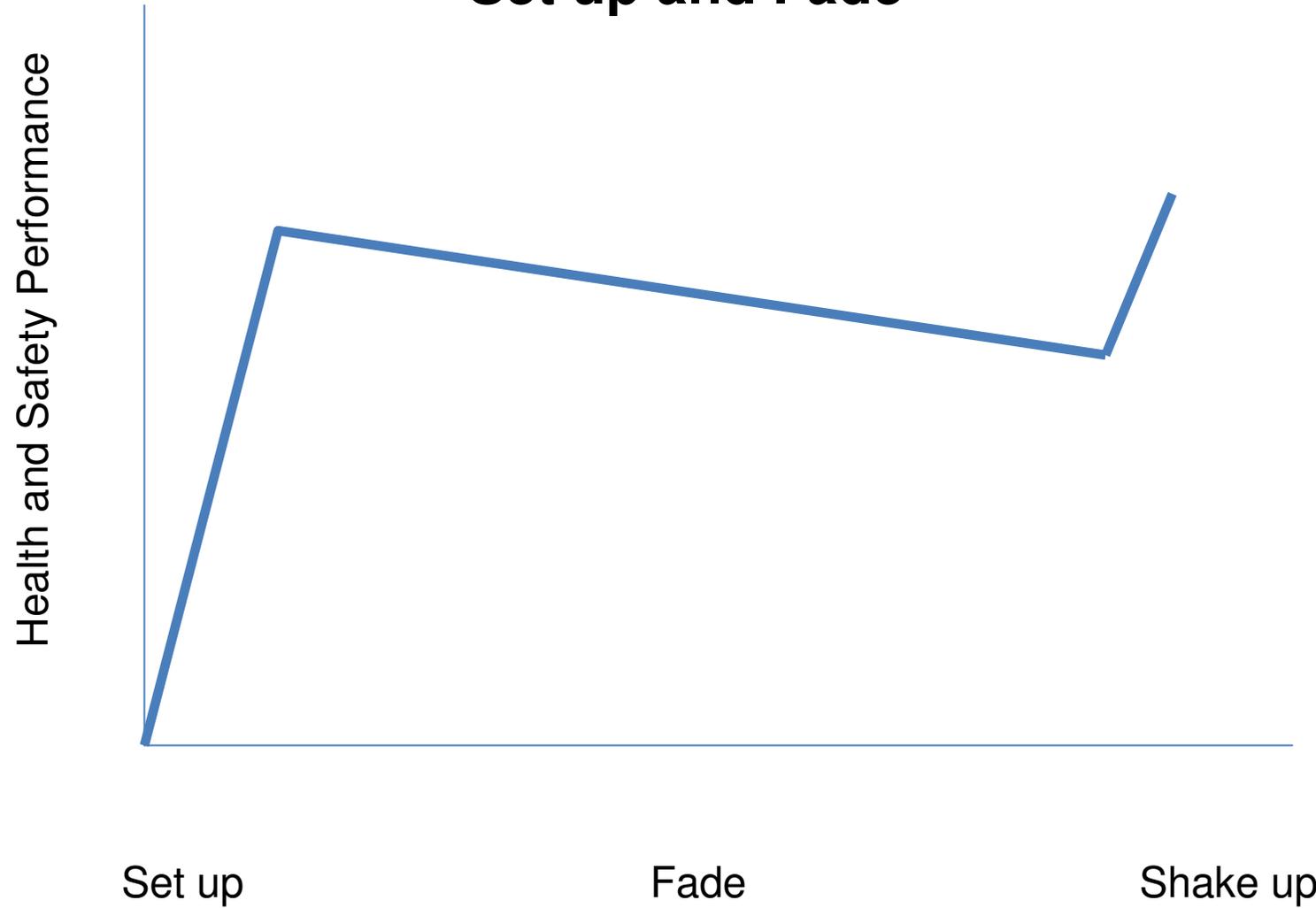




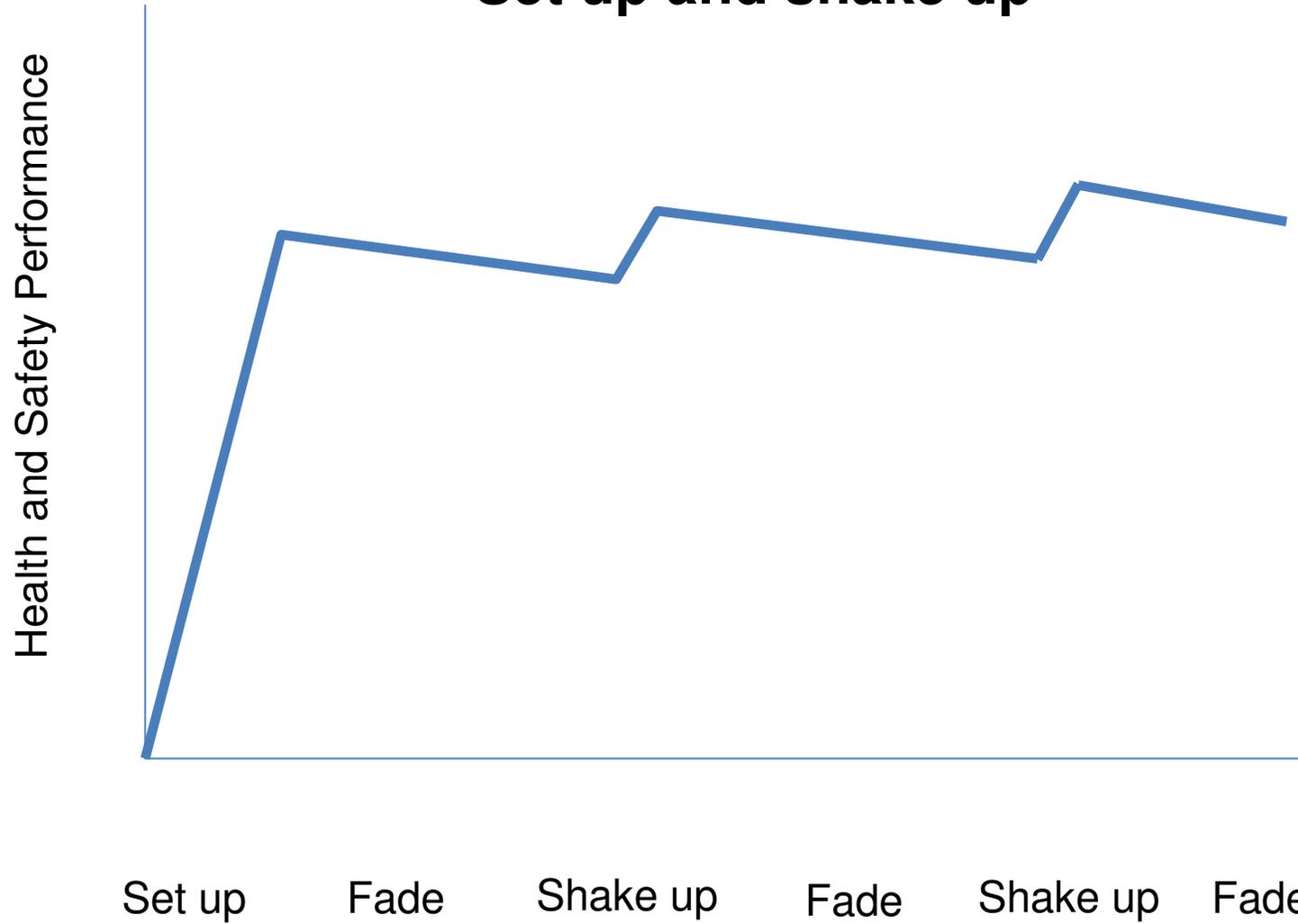
Set up and Fade



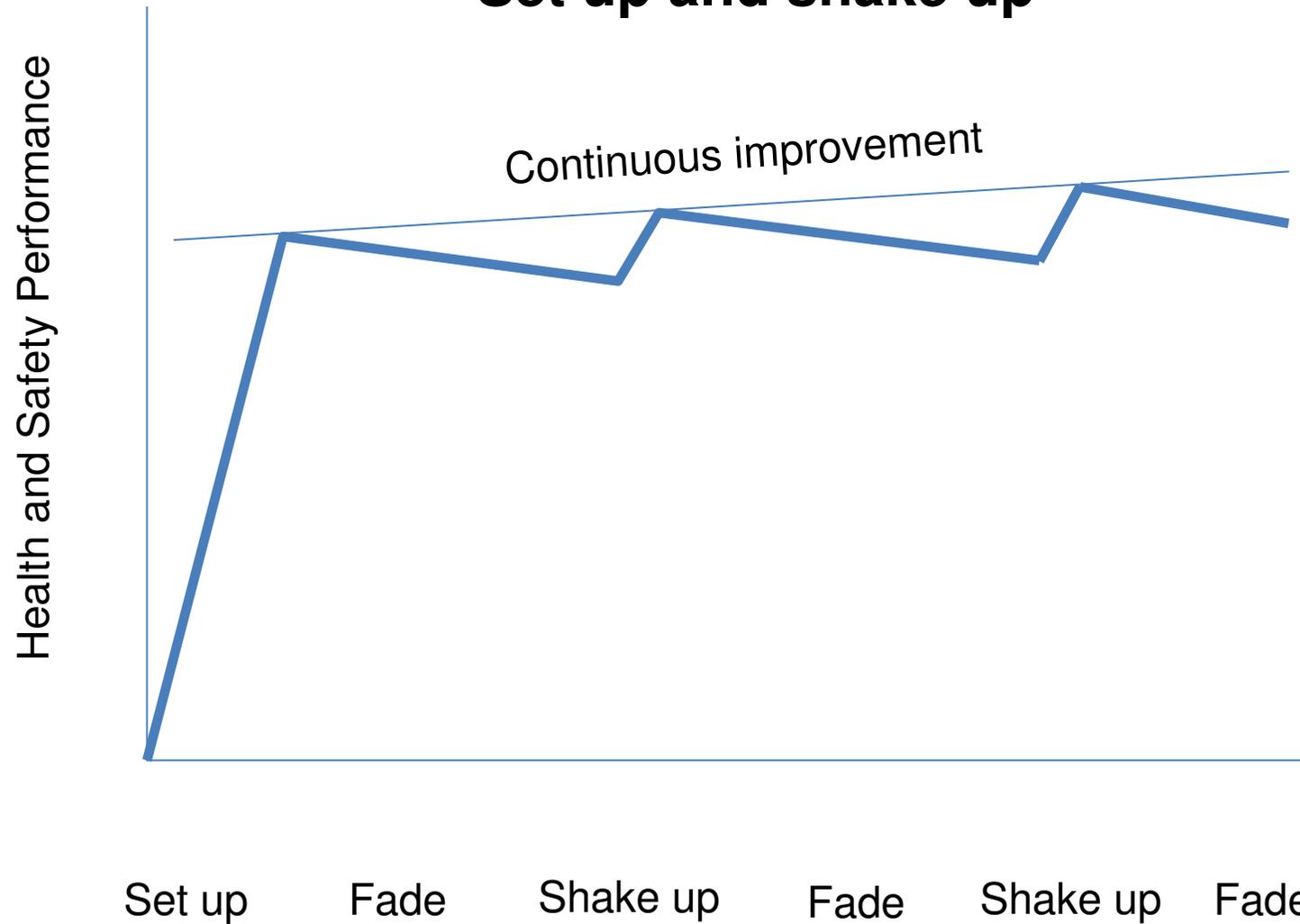
Set up and Fade

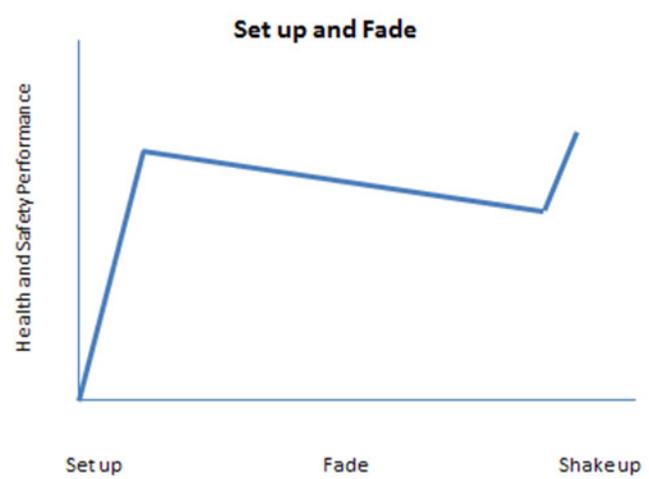


Set up and shake up



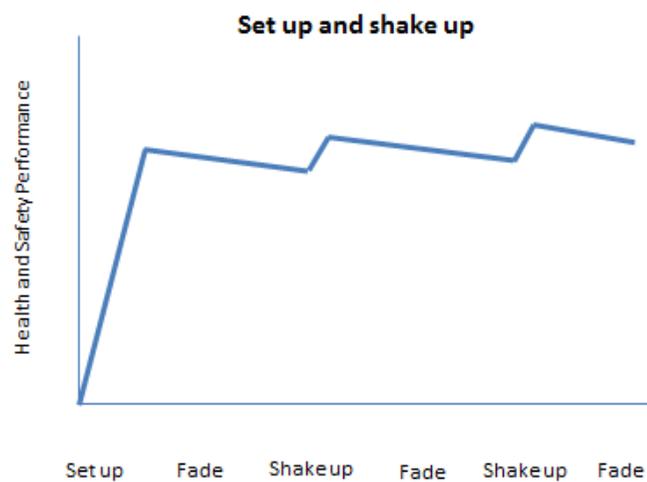
Set up and shake up





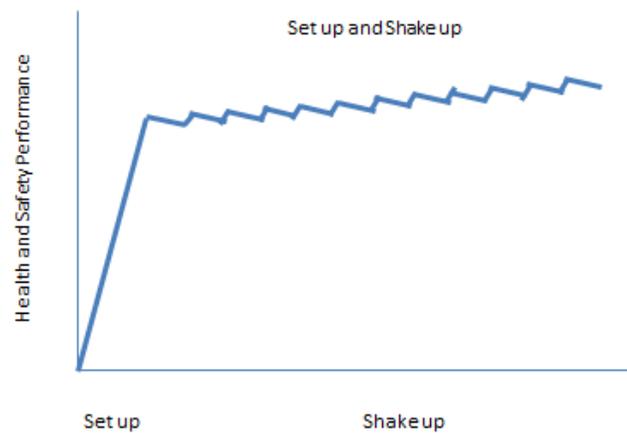
One shake-up per year

One cylinder dumper truck



Two shake-ups per
year

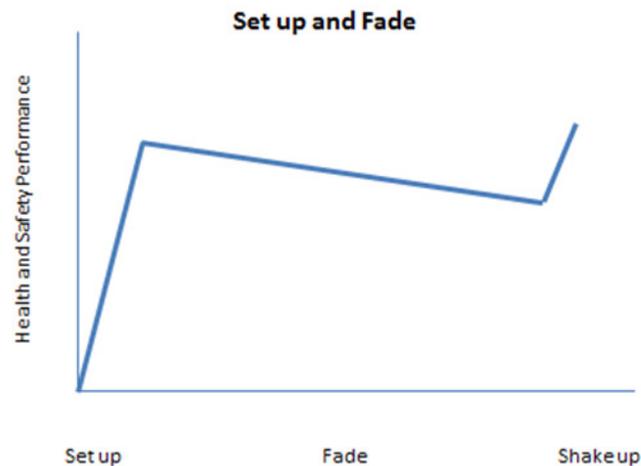
Two cylinder car



Twelve shake-ups
per year

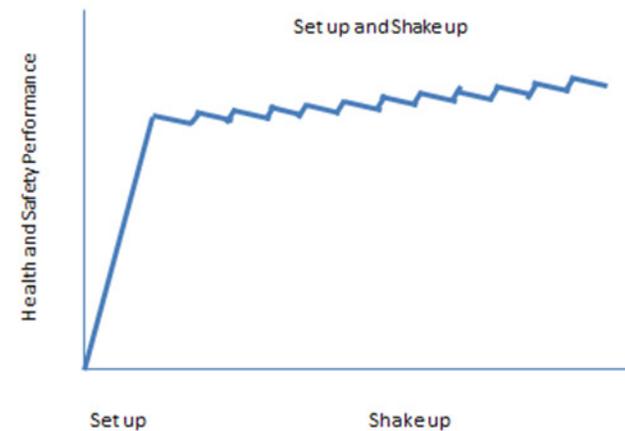
Twelve cylinder car

For Zero Accidents



X

Good set up,
Poor Safety Leadership



✓

Good set up,
Good Safety Leadership

SHAKE-UP & SAFETY CULTURE

The Safety Culture Ladder

Prof Patrick Hudson

Generative

The safety culture is how we do things around here. Business culture = safety culture.

Proactive

Safety leadership and values drive continuous Improvement across organisation. Comment and criticism encouraged. Organisational infrastructure can cope.

Bureaucratic

We have systems in place to manage all hazards. Lessons learned enable local improvements.

Reactive

Safety is important, we do a lot every time we have an accident

Pathological

Who cares as long as we're not caught. Conceal problems if possible. If caught, blame individuals and move on.

Definition of culture

Prof Ed Schein

- Artefacts
- Espoused Values
- Shared Tacit Assumptions

Artefacts

The impression that you get

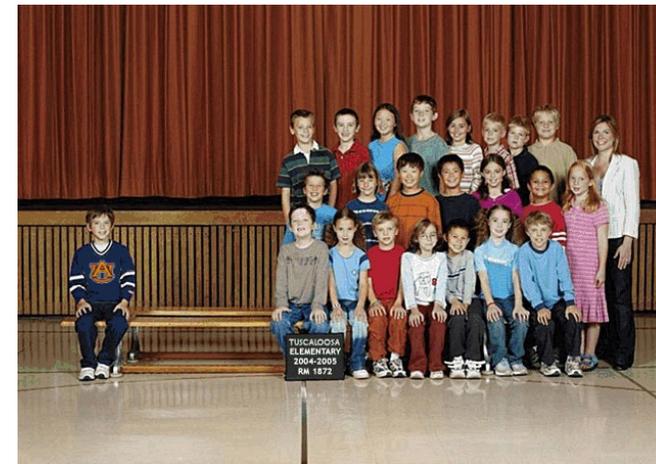


Espoused Values

Official information



Shared Tacit Assumptions The way things are done around here (mostly)



Shared Tacit Assumptions

The way things are done around here
(mostly)



Creating a Safety Culture

V Company Values

B Behavioural Programs

- Conscious
- Non-conscious

K Company and Individual Knowledge

S Documented Management Systems

Company Values



Small companies
may reflect the values
of the boss

Larger companies should publish their
values

- Consider the personality of the company



B Behaviour Programs

- Conscious behaviour
 - Codes of conduct
 - Rules
 - Procedures
 - Training

B Behaviour Programs

- Non - Conscious behaviour
 - Hold Points
 - Procedures to break up work flow

K Company and Individual Knowledge

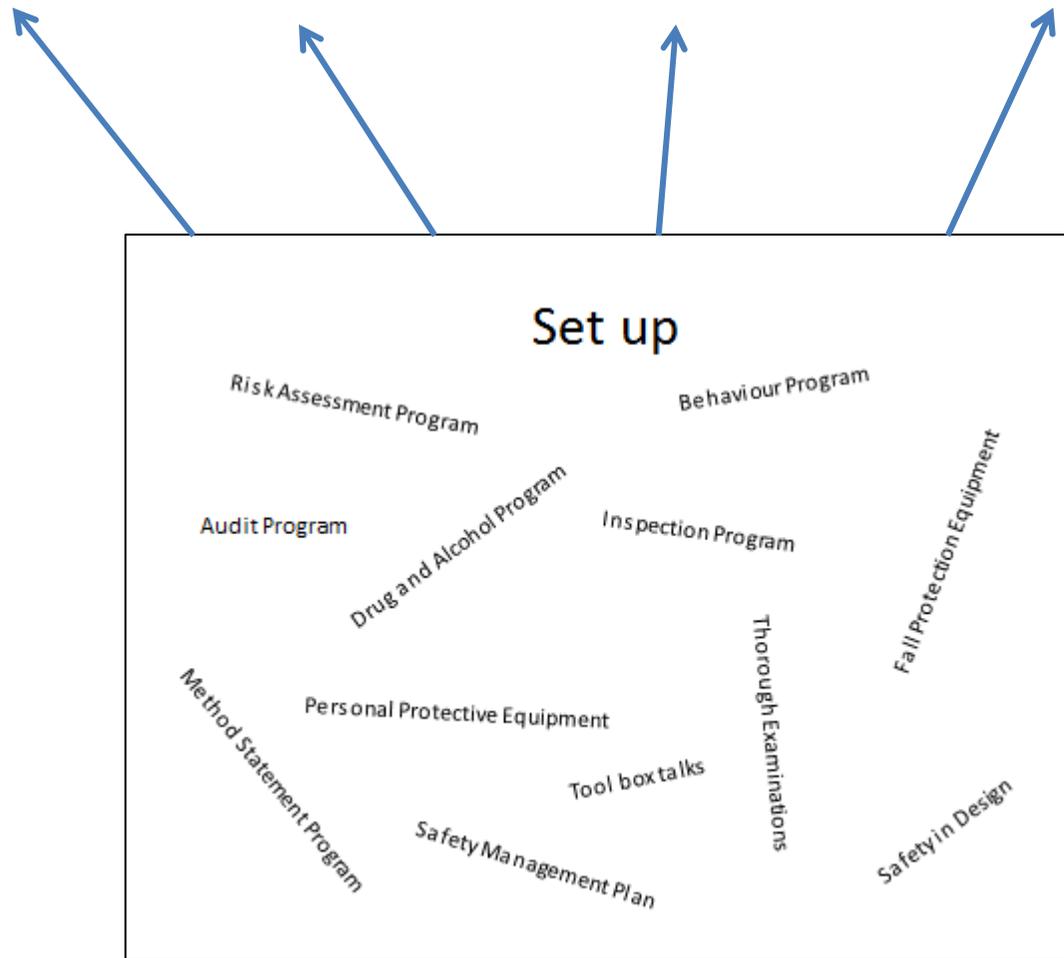
- Health and Safety Advisors
- Appointed persons
- Training for individuals and teams
- Subscription to, for example, IHS
- Manuals
- Reference to individuals with expertise

S Documented Management Systems

Standards

- OHSAS 18001
- HSG 65
- Leading Health and Safety at Work
- CDM 2007 Reg 4 and Appendix 4

Values Behaviours Knowledge Documented Systems



Values

+

Behaviours

+

Knowledge

+

Systems

Safety

Leadership -

Engagement

by Directors

and Senior

Managers

Shake up!

Culture

=

Artefacts

The impression that you get

+

Espoused Values

Official information

+

Shared tacit
assumptions

Real life

Engagement with -

- Employees
- Clients
- Designers
- Subcontractors
- Sub-sub-contractors
- Press
- HSE/Enforcing authority
- Industry

The Safety Culture Ladder

Creating the right **shared tacit assumptions**

Prof Patrick Hudson

Generative

The safety culture is how we do things around here. Business culture = safety culture.

Proactive

Safety leadership and values drive continuous Improvement across organisation. Comment and criticism encouraged. Organisational infrastructure can cope.

Bureaucratic

We have systems in place to manage all hazards. Lessons learned enable local improvements.

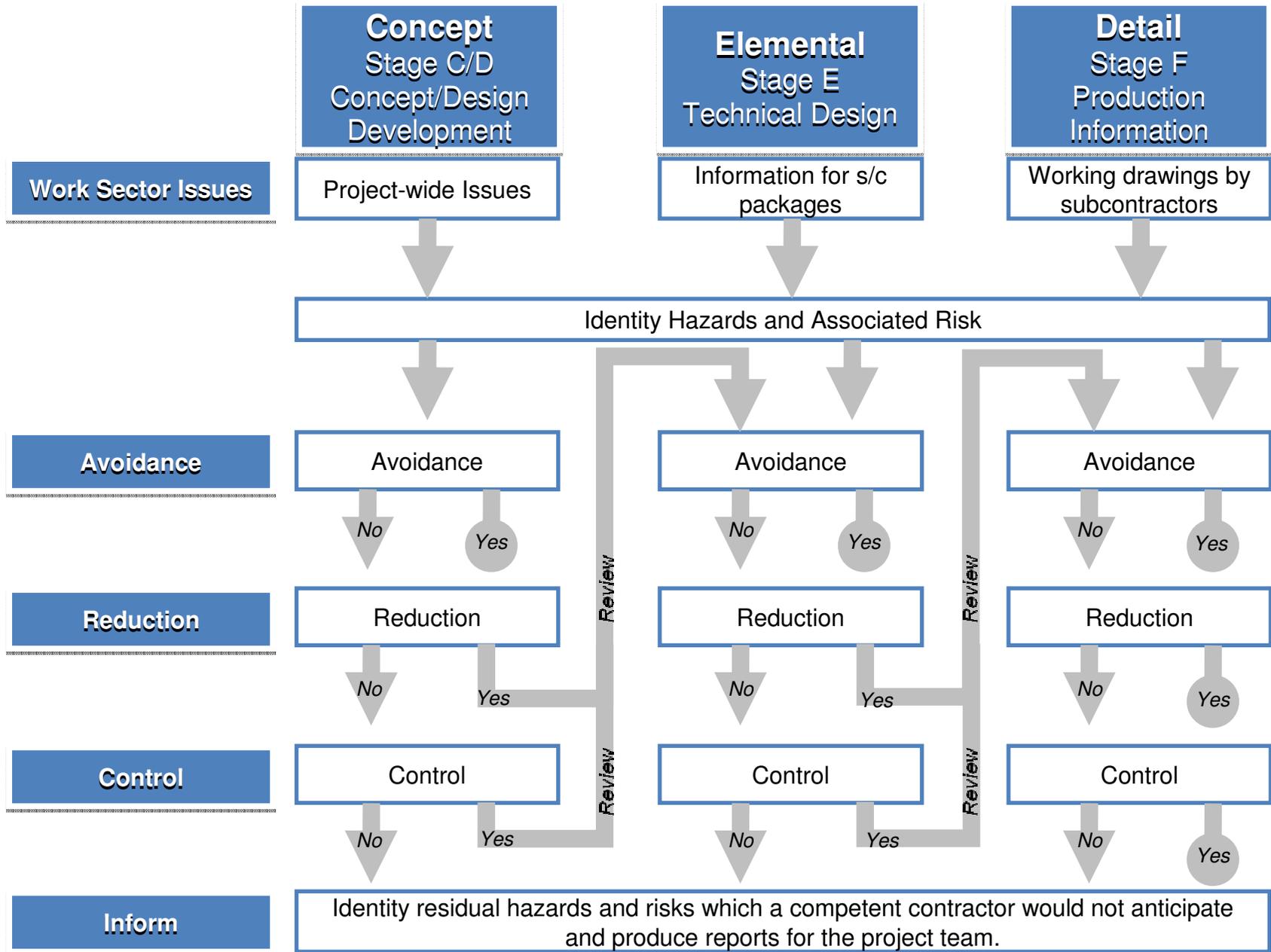
Reactive

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Pathological

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SAFETY IN DESIGN



Checklist for Safety in Design

CDM 2007 Construction Work Sector
Guidance for Designers, third edition

CIRIA 662

EXTRACT FROM ELEMENT REPORT SHOWING HAZARD REDUCTION PROCESS

Document Reference	UK/
Revision	
CDM Design Review	

Design Stage	Element
Group	D – Building Elements and Building Services
Work Section	6 – Cleaning of Buildings

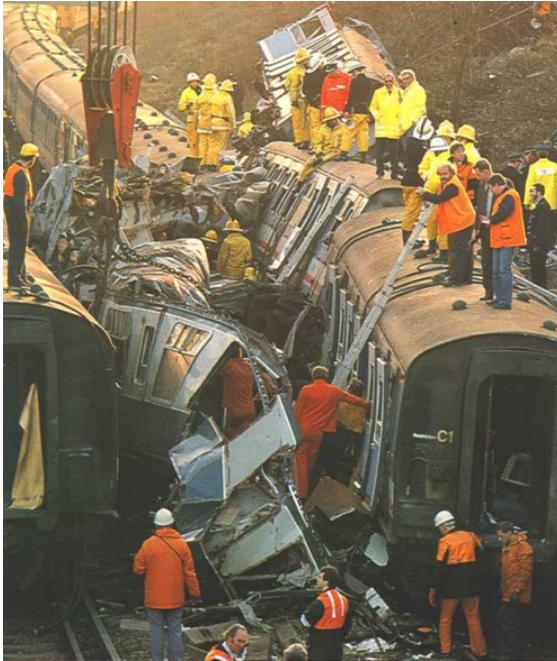
Identify Specific Hazard	Current Position			Consider Further?			N or S*
	Avoidance	Reduction	Control	Avoidance	Reduction	Control	
<p>Cleaning Strategy</p>	<p>Cleaning from tilt and turn windows. (Post issue note: There are no tilt and turn windows.)</p> <p>Cleaning with water fed poles from road level.</p>	<p>Cleaning via MEWP on road.</p> <p>Cleaning from balcony level.</p>	<p>Cleaning from suspended access equipment.</p>	<p>6th floor glazing, both externally and internally, can be cleaned by hand from floor level.</p> <p>3rd floor and below, north external elevation glazing to be cleaned externally using poles.</p> <p>Windows at west side of south elevation west stair core to be cleaned from inside the building. Note: internal cill heights to be checked.</p> <p>South elevation up to first floor to be cleaned using poles (Note: Arup to</p>	<p>4th and 5th floor north elevation windows to be cleaned internally and externally, from inside the building. Note, cill levels are lower than 950mm. Therefore eyebolts or possibly cable type barriers are required.</p> <p>North Elevation, basement, 1st, 2nd and 3rd floor internal cleaning to be from inside the building. Note that cill levels are lower than 950mm. Therefore eyebolts or</p>	<p>Possible access problem highlighted regarding grille at level B1 west side of north elevation. Currently the grille is designed to be non-load-bearing.</p> <p>Rooflight on south terrace to be accessed using work restraint cable line.</p>	

CORPORATE SAFETY CULTURE & THE UK COURTS



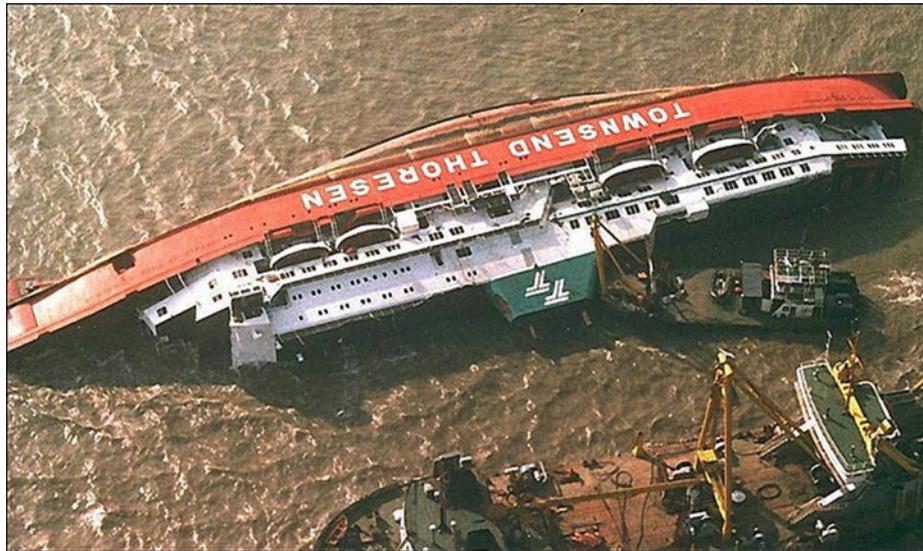
Buncefield is a stark reminder of the potential result of a poor attitude towards safety.

Gordon MacDonald, chair of the COMAH Competent Authority Strategic Management Group,



A concern for safety which is sincerely held and repeatedly expressed but which is not put into practice is as much protection from danger as no concern at all.

Sir Anthony Hidden
Clapham Train Crash



From top to bottom the body corporate was infected
by the disease of sloppiness.

Mr Justice Sheen
1987 The Zeebrugge Ferry disaster

How the courts describe safety culture - summary

- Poor attitude
- Concern for safety not put into practice
- The disease of sloppiness

A SCHEME FOR SAFETY LEADERS

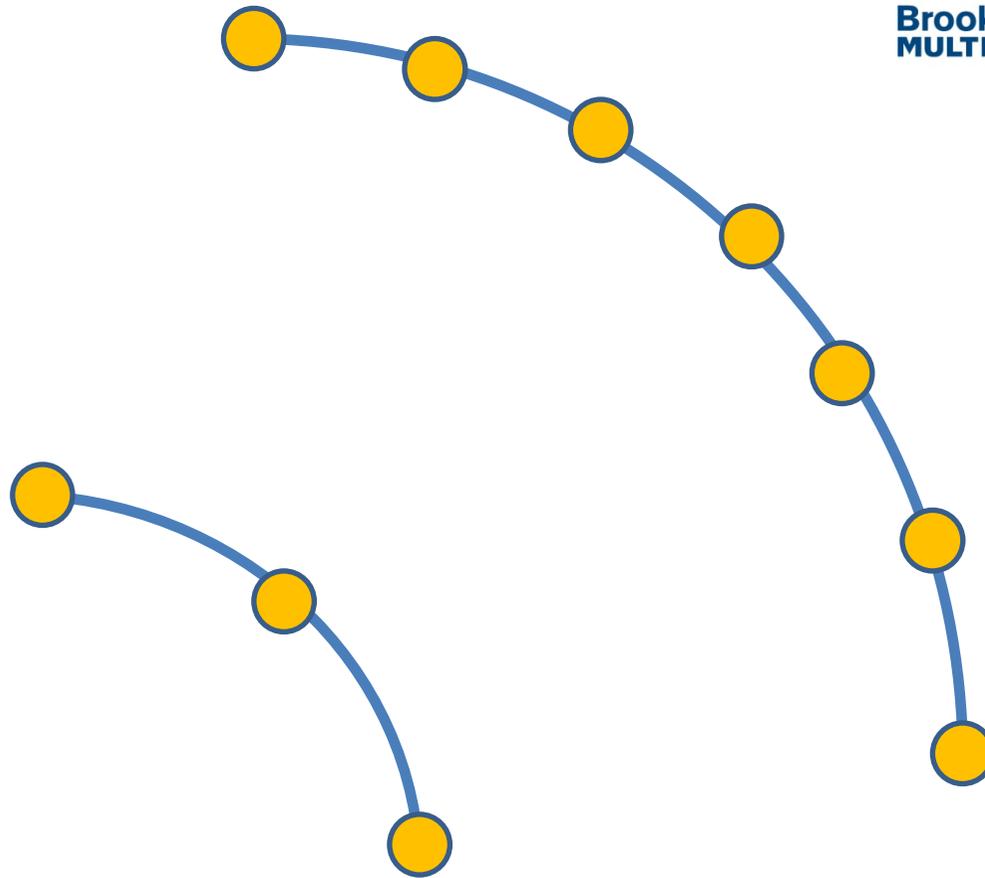
Safety Leadership for Directors and Senior Managers – a definition

Non routine engagement with managers and other stakeholders to -

- Reinforce published values, behaviours, knowledge and systems
- Enquire about the effectiveness of management arrangements and stimulate thought for improvement

Making Waves

Leader



Safety Leadership Actions using VBKS

Action by Safety Leader Reference - V B K S	Reaction by Individuals or Team	Wider Health and Safety Outcome
Espousing or explain values, beliefs, knowledge, systems	Instil importance of values, beliefs, knowledge, systems	Influence future performance levels
Set a good example	Adopt demonstrated standard / reinforce values and beliefs	Consolidate or improve performance level
Offer praise or encouragement	Build confidence	Consolidate or improve performance level
Identify potential improvement	Empower (team or individual) to bring about improvement	Bring about improved performance

Safety Leadership Actions using VBKS

Action by Safety Leader Reference - V B K S	Reaction by Individuals or Team	Wider Health and Safety Outcome
Criticism or disciplinary action	Point out need to improve	Prevent lapse in future performance
Identify problem and authorise corrective action	Empower (team or individual) to solve problem	Solve problem
Give (or contribute to) direction or approval	As direction or approval	Set standard for future performance level
Review, check, become informed, get trained	A Impresses others B Become informed Essential for leadership	A Others will follow B Ready to engage

Safety Leadership Record Form – Planning / Chairing Meetings

Safety Leadership Scheme - Sample Record

Leadership Opportunity Prompts Activity / Suggested H&S Concepts	Sample record of leadership actions	Action Type	Points & Date
Planning work activity Risk assessments Activity analysis Competence and training Emergency planning Safety in design Introducing new managers Major accident prevention Setting goals			
Speeches / chairing meetings Policy statements Company values Protection vs production Cost of accidents Human factors			

Action by Safety Leader	Intended reaction by team or individuals	Intended health and safety outcomes
A Espousing values, beliefs, rules, policies	Instill importance of values, beliefs, rules and policies	Influence future performance levels
B Set a good example (max 2 points per quarter)	Adopt demonstrated standard / reinforce values & beliefs	Consolidate or improve performance level
C Offer praise or encouragement	Build confidence	Consolidate or improve performance level
D Identify potential improvement	Empower (team or individual) to bring about improvement	Bring about improved performance
E Criticism or disciplinary action	Point out need to improve	Prevent lapse in future performance
F Identify problem & authorise corrective action	Empower (team or individual) to solve problem	Solve problem
G Give (or contribute to) direction or approval	As direction or approval	Set standard for future performance level
H Review / check / become informed / get trained	Depends on (future) action A - G by SL	Depends on (future) action A - G by SL

Safety Leadership Record Form – Design Management

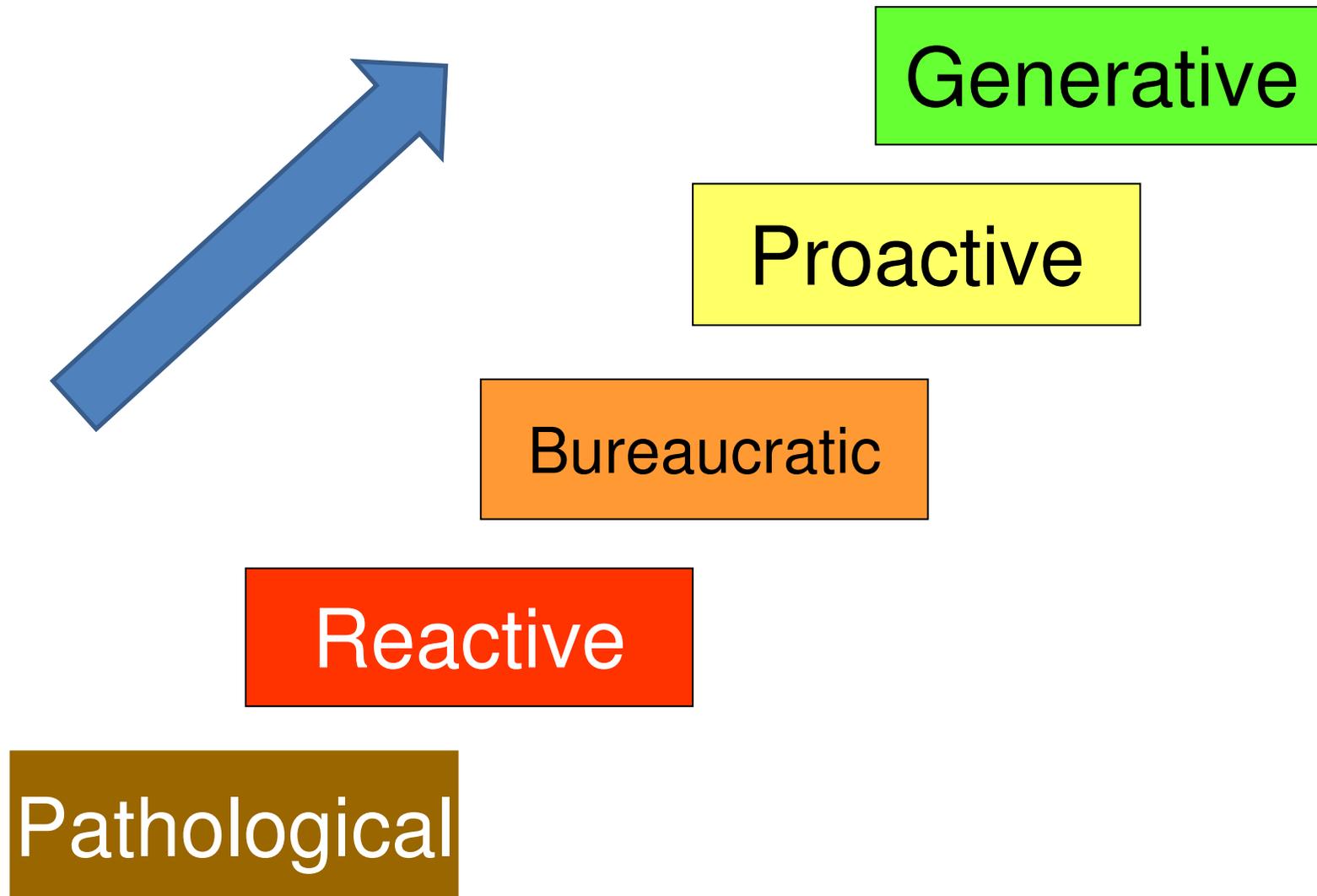


Safety Leadership Scheme - Sample Record

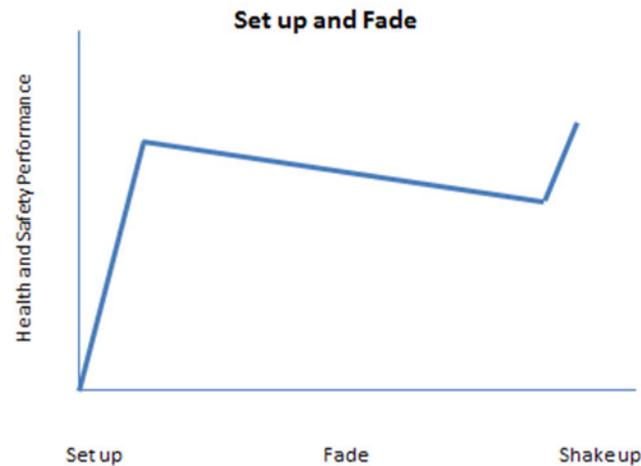
Leadership Opportunity Prompts Activity / Suggested H&S Concepts	Sample record of leadership actions	Action Type	Points & Date
Design Management			
Appointment of designers Competence and training Safety in design Risk assessments Principles of prevention Major accident prevention			
Reviewing design - workflow Safety in design Risk assessments Principles of prevention			

Action by Safety Leader	Intended reaction by team or individuals	Intended health and safety outcomes
A Espousing values, beliefs, rules, policies	Instill importance of values, beliefs, rules and policies	Influence future performance levels
B Set a good example (max 2 points per quarter)	Adopt demonstrated standard / reinforce values & beliefs	Consolidate or improve performance level
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Summary and Reflection



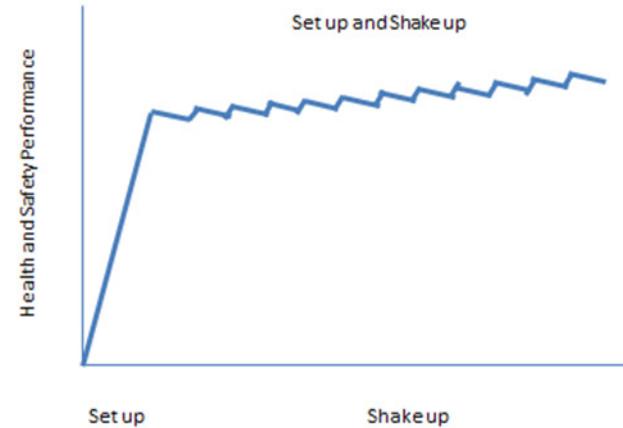
For Zero Accidents



X

Good set up +
Poor Safety Leadership.

Allowed to fade
Big shake up needed



✓

Good set up +
Good Safety Leadership.

Engagement using *vbks*
by Directors and Senior
Managers

**Brookfield
MULTIPLEX**
Built to outperform.



Bob Arnold
SHEQ Director
Bob.arnold@brookfieldmultiplex.com