



# Business Drivers - and the role of Entrepreneurship

Session VII

November 2022

Alan Mumby

## Entrepreneurship

- Innovation is often associated with entrepreneurship.
- Entrepreneurship is the dynamics of launching and running a new business.
- Very often associated with the production of a new product or service.
- The Entrepreneur is involved from the 'fuzzy front end' and right through to the marketed product.

## The Fuzzy Front End?

The slightly confused 'getting started' period of a product or service development process, possibly formulating concepts of the product -

- Invest yes or no ?

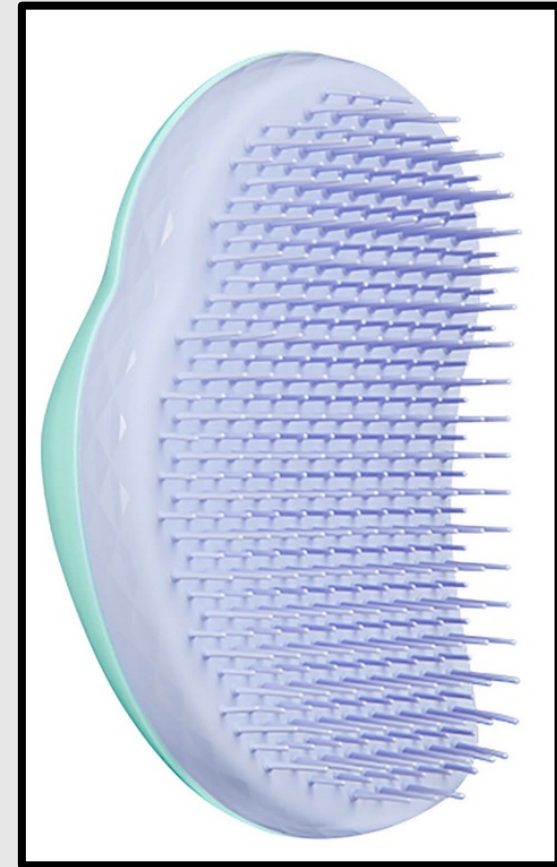
## Entrepreneurship

An entrepreneur is an individual who creates a new business, bearing most of the risks and enjoying most of the rewards.

The entrepreneur is commonly seen as an innovator, a source of new ideas, products, services, and business/or procedures.



Shaun Pulfrey



The Tangle Teezer



“In 2020 our turnover was just short of £30million, growing by around 8% .....

...which was pretty good as we coped with the pandemic,” he explained.

<https://www.dailyrecord.co.uk/news/uk-world-news/tangle-teezer-owner-made-30m-24388355>

- **Entrepreneur** - behaving like an entrepreneur while still working as an employee within a company or organisation.
- **Intrapreneurship** is seen as a management practice that integrates risk-taking with an innovative approach.

Gifford Pinchot III (Harvard & John Hopkins universities)

Intrapreneuring:

*[it's the reason]* ..why you don't have to leave the corporation to become an entrepreneur

“Dreamers who do *[things]*.”

.....those who take hands-on responsibility for creating innovation of any kind within an organisation.

The intrapreneur may be the creator or inventor but is always the dreamer who figures out how to turn an idea into a profitable reality.

Business Driver ...or the Entrepreneur

The Owner of a Welsh Scaffolding Company



David Millership, Swansea

“.....the thing is David I assumed that... ”

“What do you mean - You Assumed ?!?!”

“Let’s not assume anything, it always ends up costing me money....”.

There were 70 fatal injuries to workers in construction in 2003/04

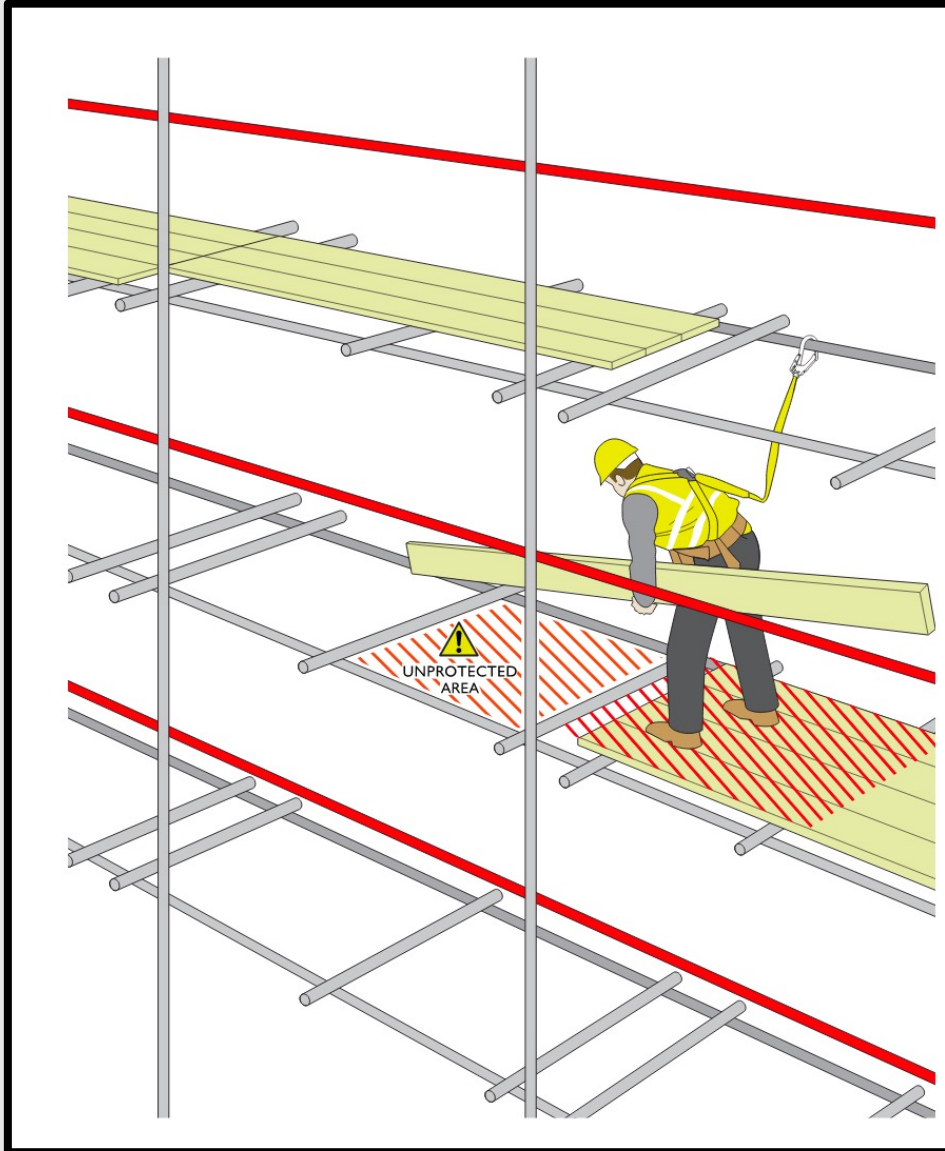
In 2003/04, 40% of all worker fatalities occurred in the construction industry.

The number of major injuries to employees fell slightly in 2003/04 to 4001 from 4031.

There were 1107 major injuries as a result of falling from a height in 2003/04, accounting for 28% of all major injuries to employees.

This remains the most common kind of accident.





## The problem

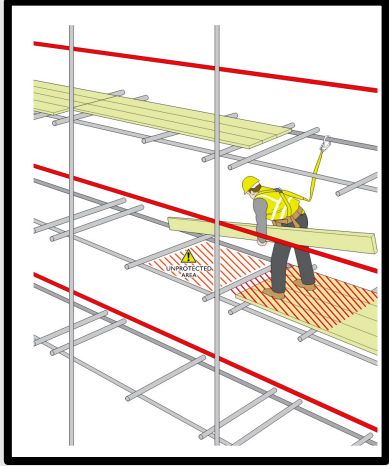
Clients concerns relating to engineers technicians etc) not being protected whilst working at heights.

As much to do with litigation as any possible safety concerns

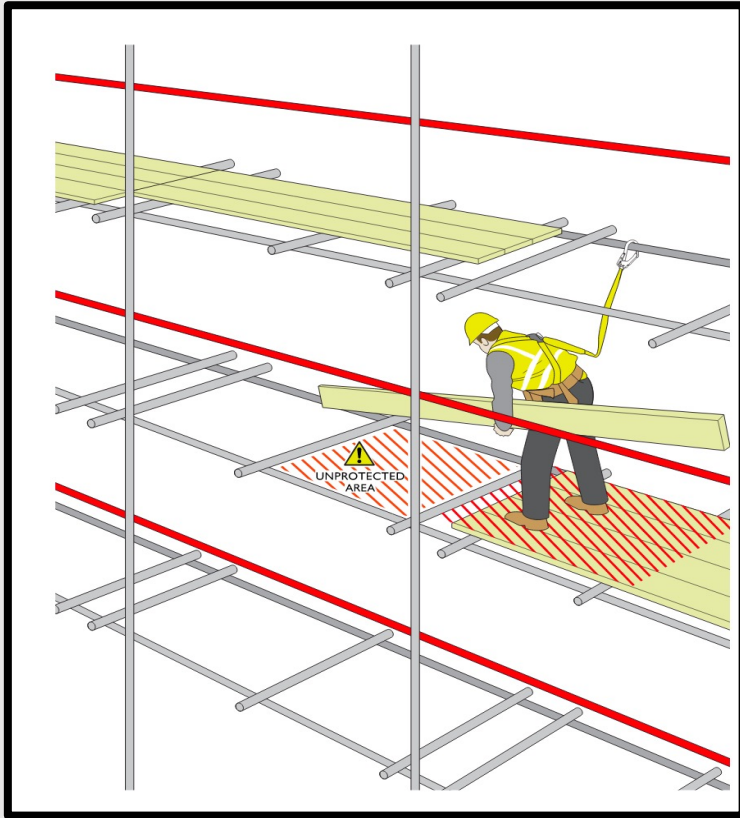
Companies afraid of being sued!

Problem  
or opportunity?

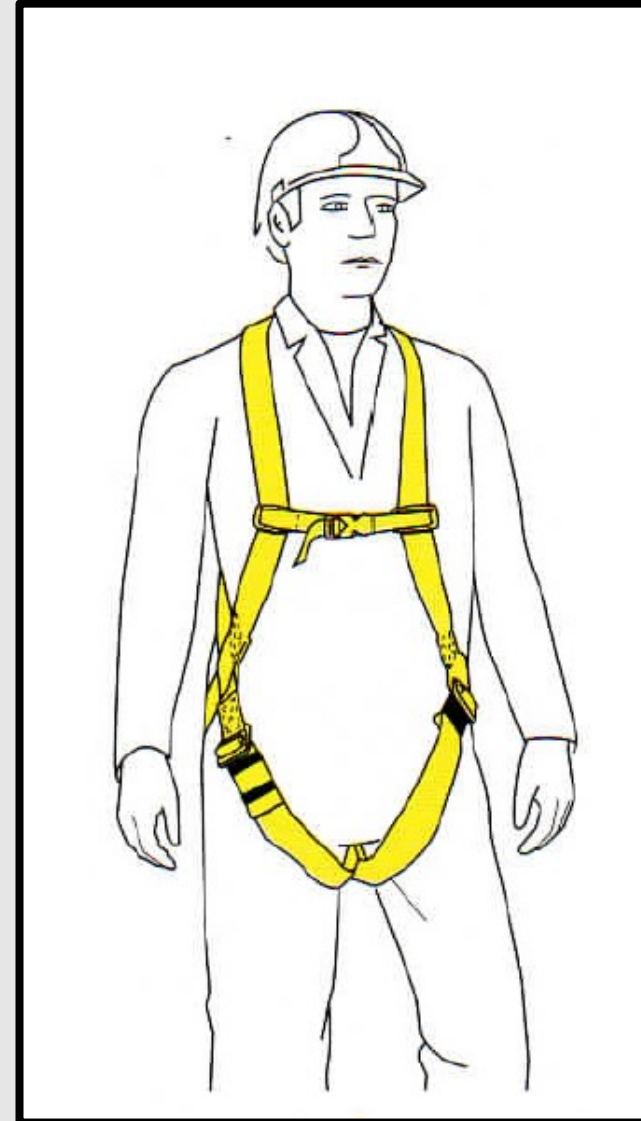
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Passive Protection inflated bag system



harness

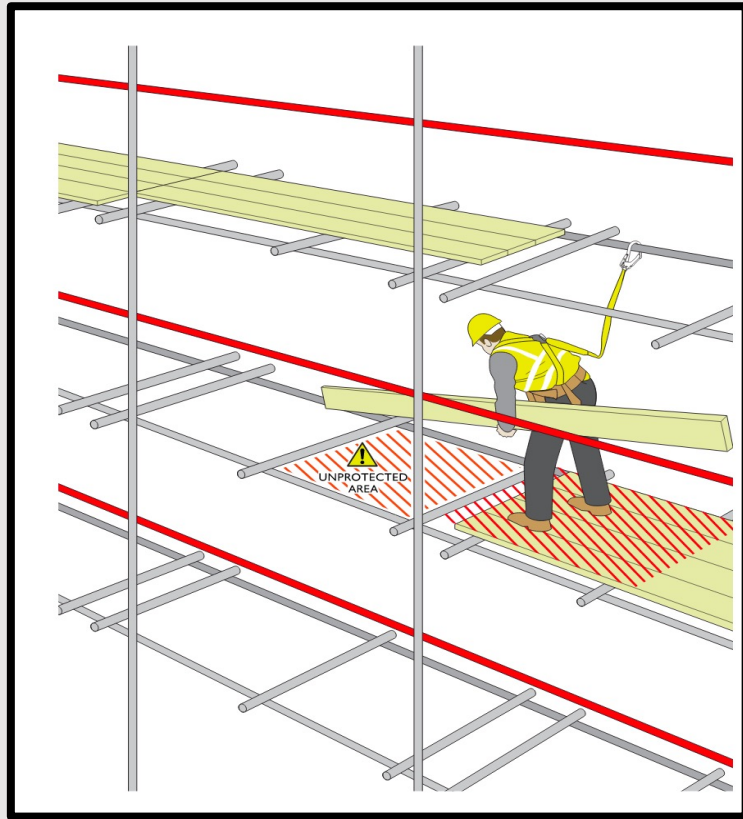


1 metre in length



Problem  
or opportunity?

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HSLT 24 kg



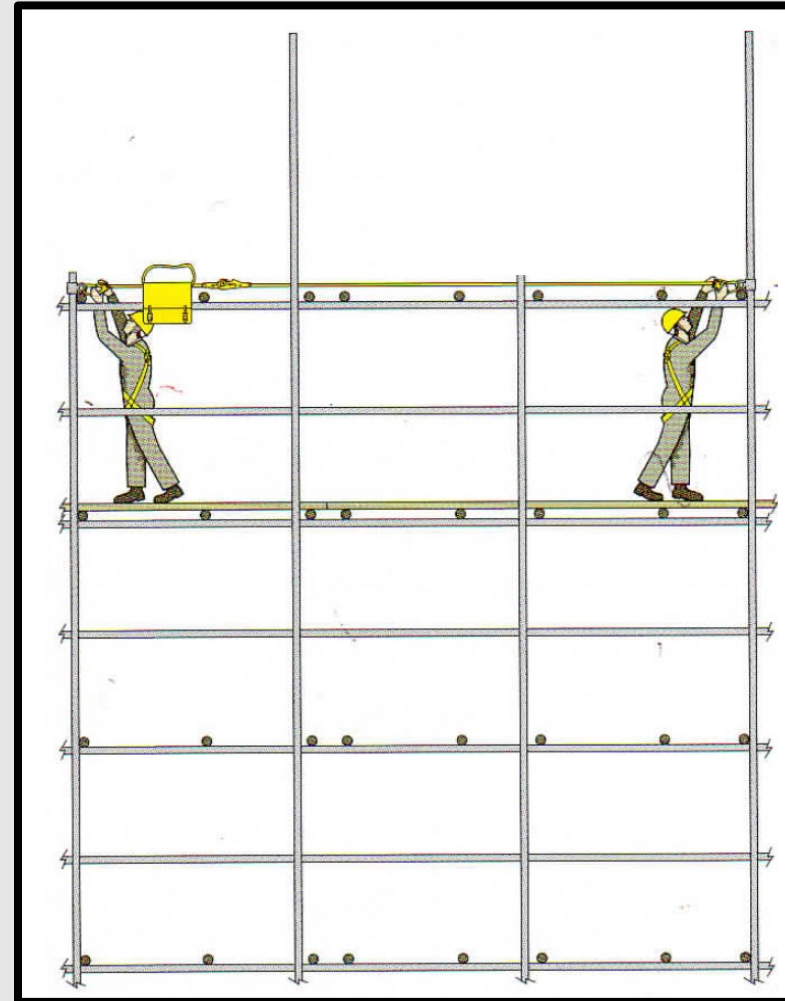
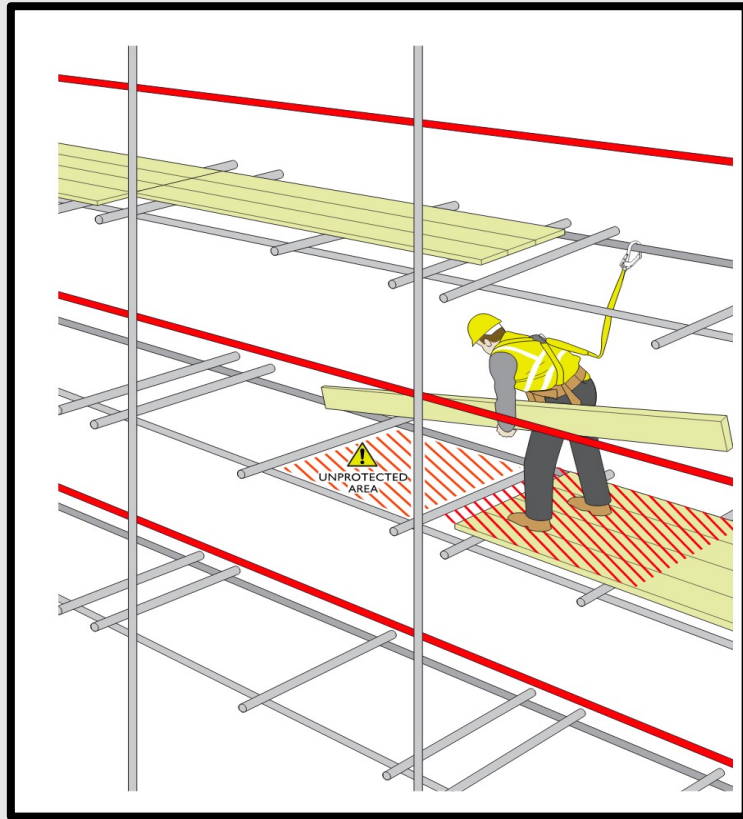
VSLT 22kg

Typical Horizontal Safety Line Technology (HSLT)

Typical Vertical Safety Line Technology (VSLT)

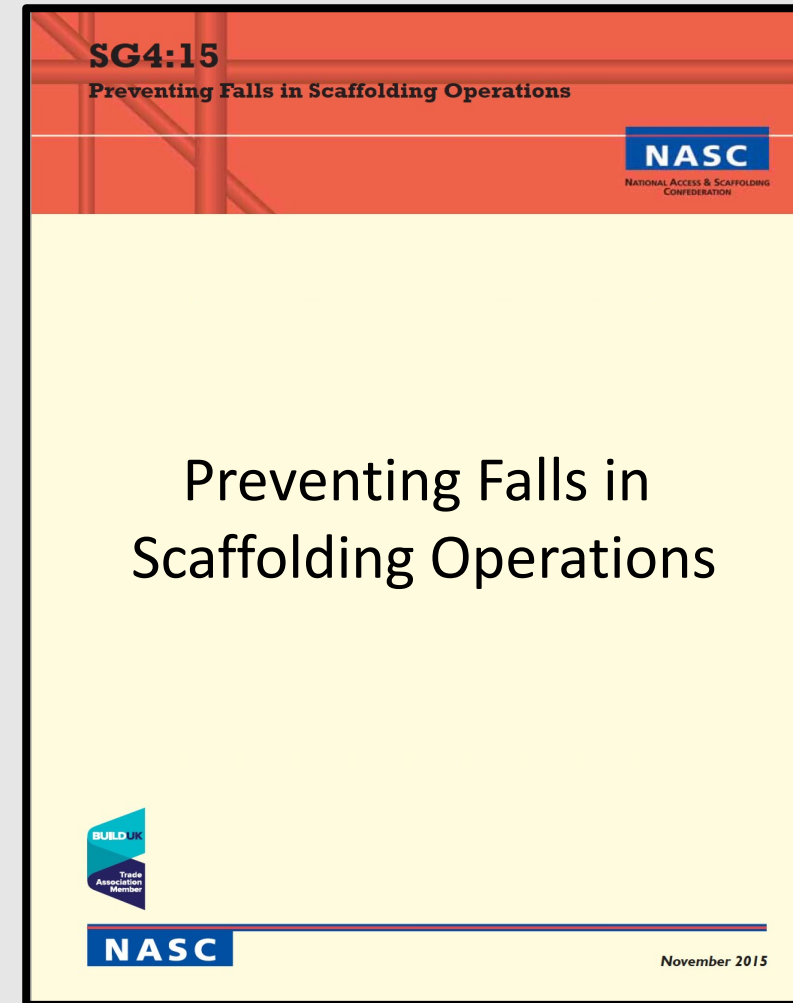
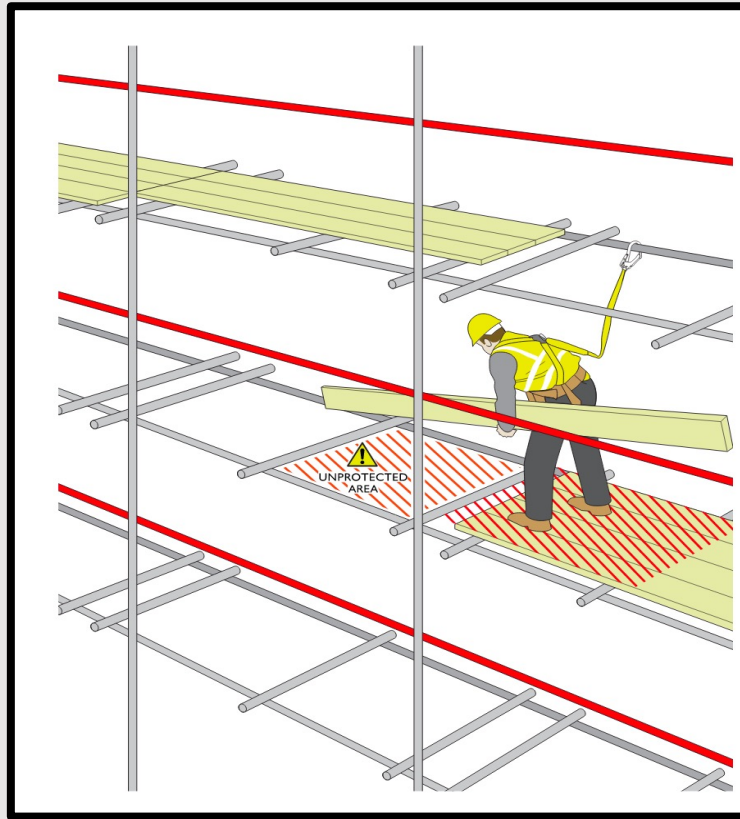
Problem  
or opportunity?

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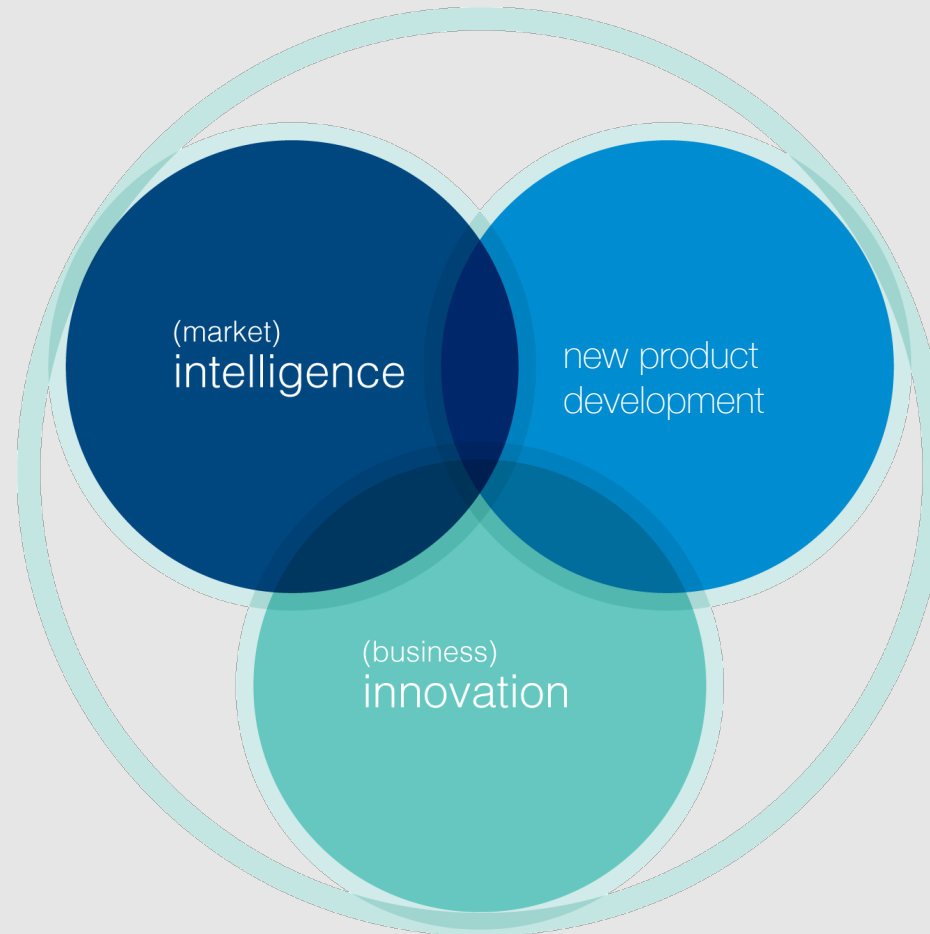
Problem  
or opportunity?

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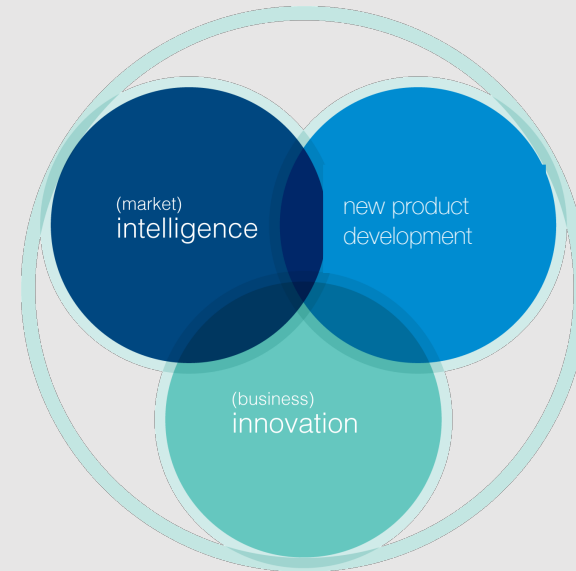


Problem  
or opportunity?

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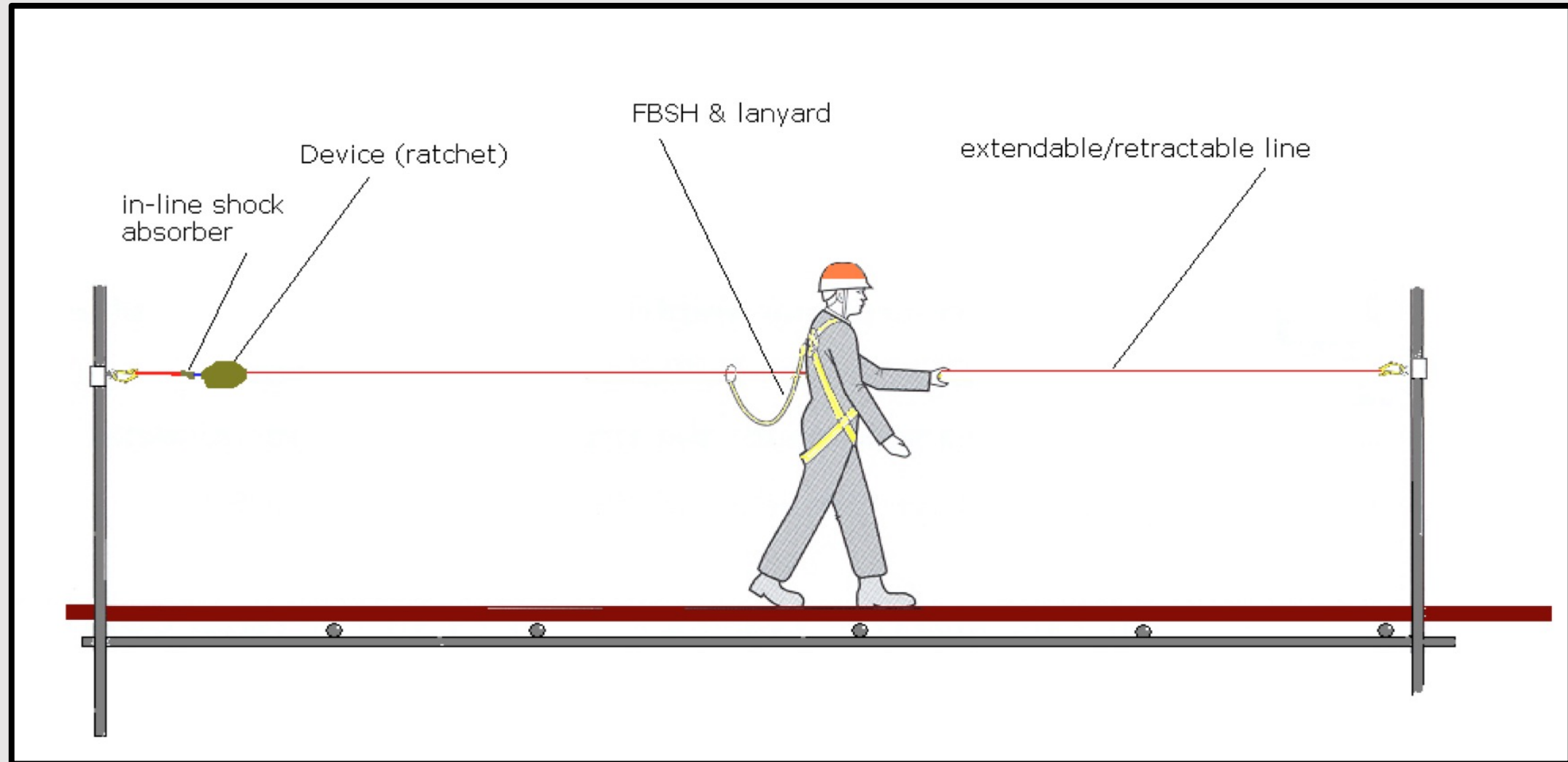


the potential



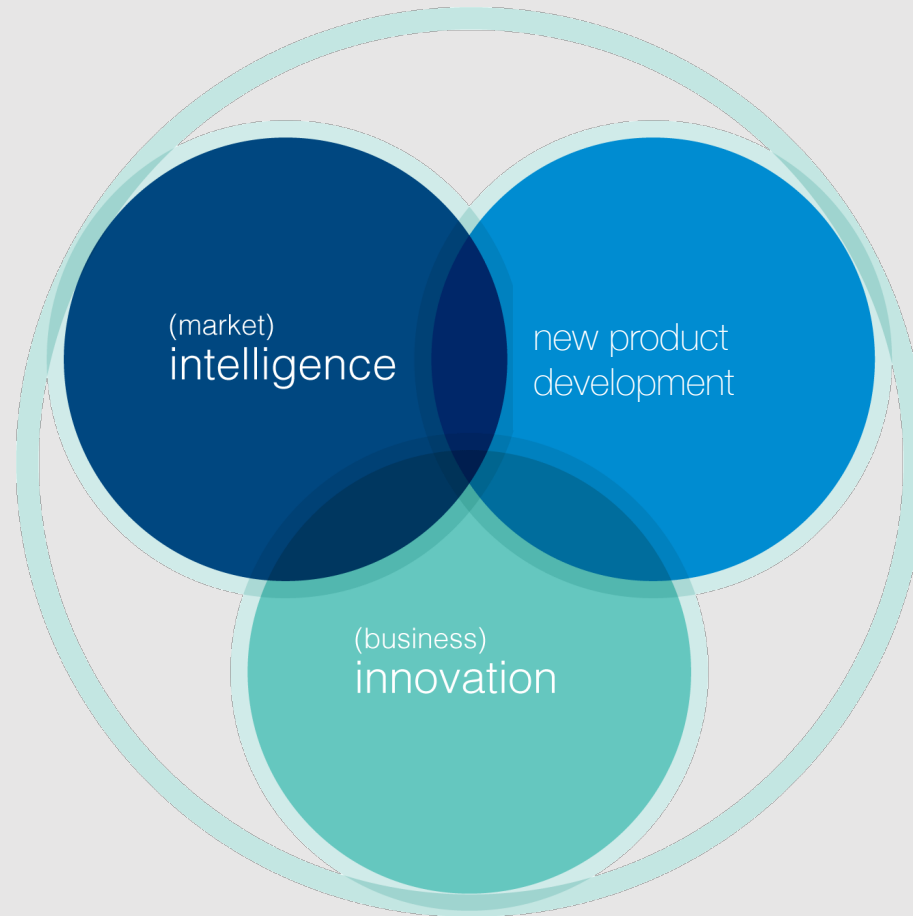
the opportunity





Uncertainty.....  
new product development

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Scaffolding – new build & maintenance,

Roofing – maintenance

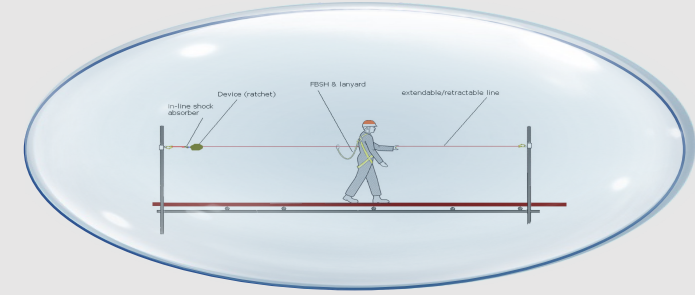
Installation maintenance & inspection

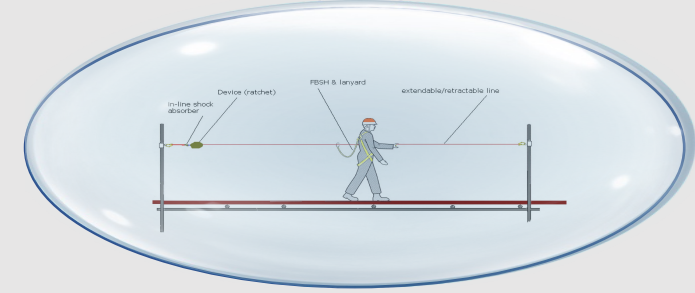
Emergency services and military

Powered mobile access platforms ('Cherry pickers') and static access platforms.

Large scale fabrication work – this category would include the likes of aircraft manufacture, wind turbine manufacturers etc

Transport – Loading, Unloading & Maintenance

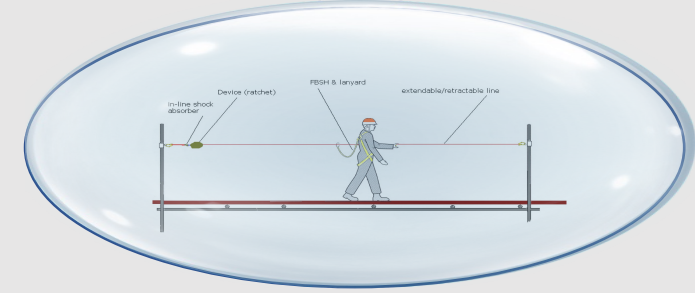




## The Issues

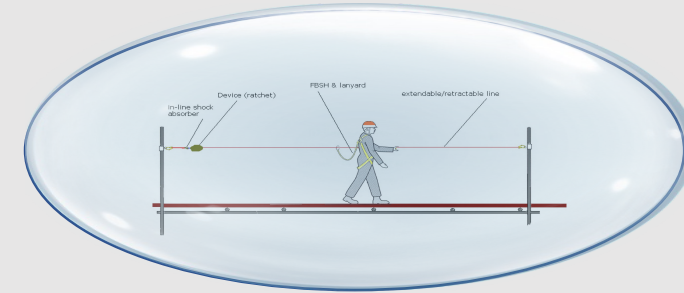
- Could a product be designed that could save peoples lives (safety critical)
- Can the science be determined – a thin corded rope....
- Did the design architecture needed for the device already exist.....
- Or would they have to be created
- Is this commercially viable

## Defining the NPD – getting the words right is really important



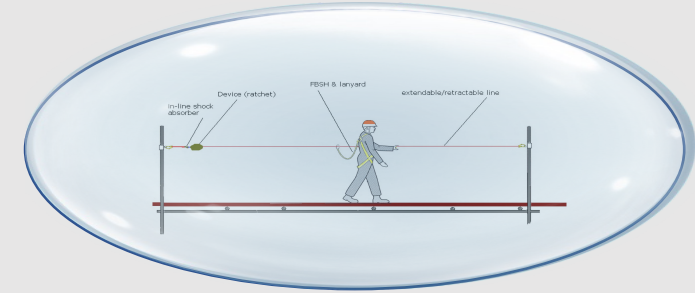
The product is a horizontal safety line device (with ‘inline’ shock absorber), which once attached to two fixed anchor points, is then tensioned by means of an integral ratchet.

A worker with a Full Body Safety Harnesses is then able to attach himself to this line by means of the carabiner fixed at the end of the FBSH lanyard, this allow the worker to operate safely within his now extended (2 – 8 metres) work space.



The product architecture [we'll cover this in Managing NPD Module]

1. The Rope
2. The enclosure
3. The reel
4. the ratcheting system (feed out - reel in)
5. the shock absorber



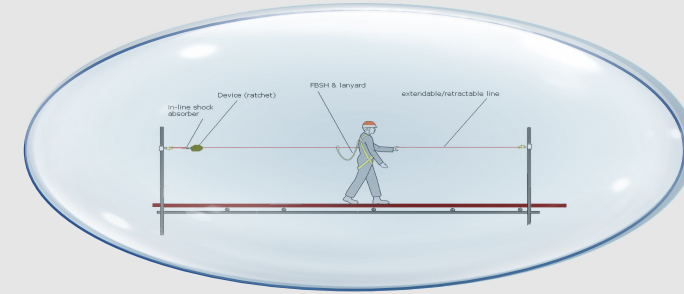
Initial trials and testing to understand;

The projects

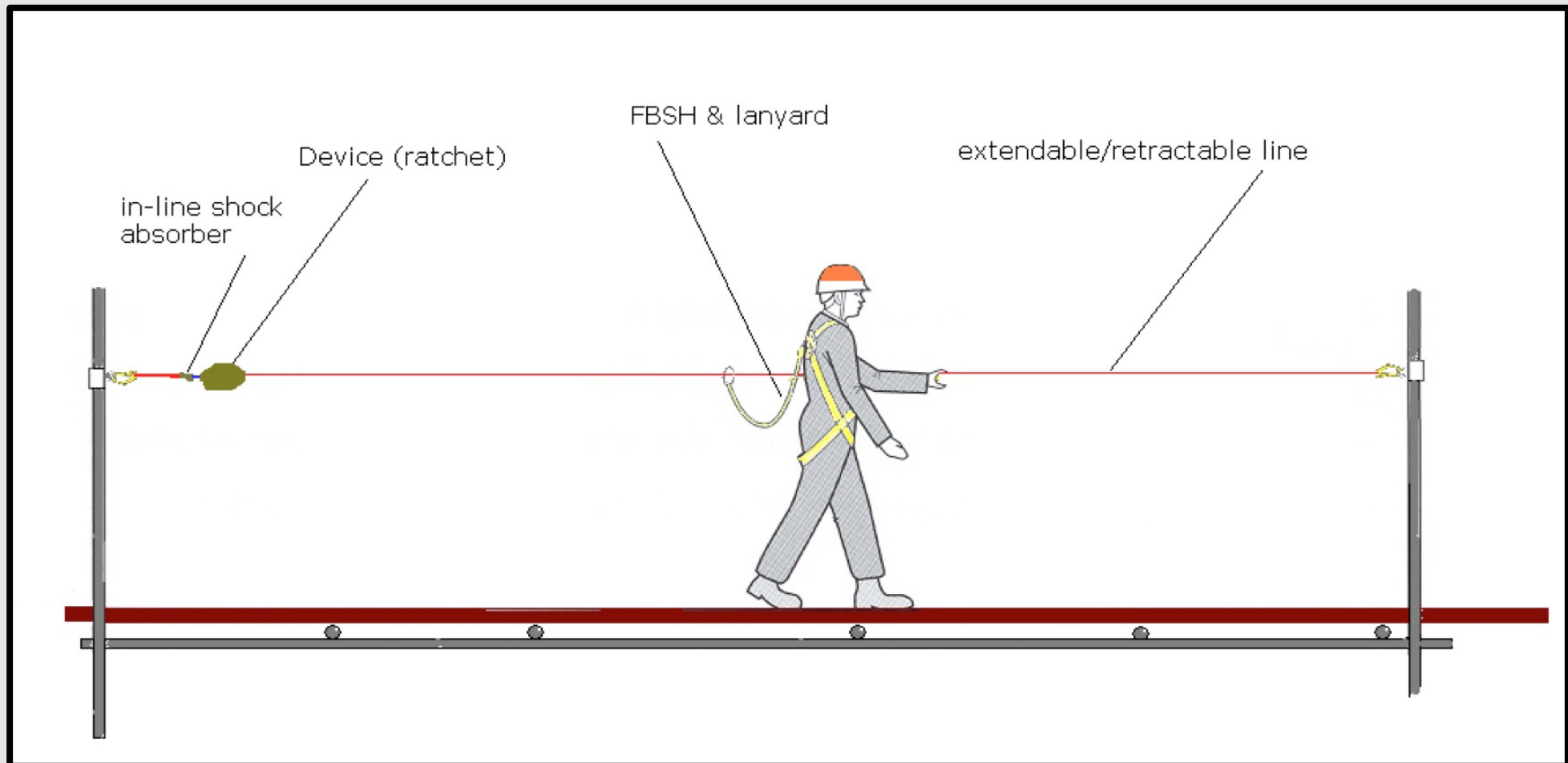
- the physics,
- the dynamic forces
- the ergonomics
- essentially.....the maths

Visits to health and safety equipment exhibitions  
in the UK, Europe and North America  
contact made with a myriad of rope manufactures

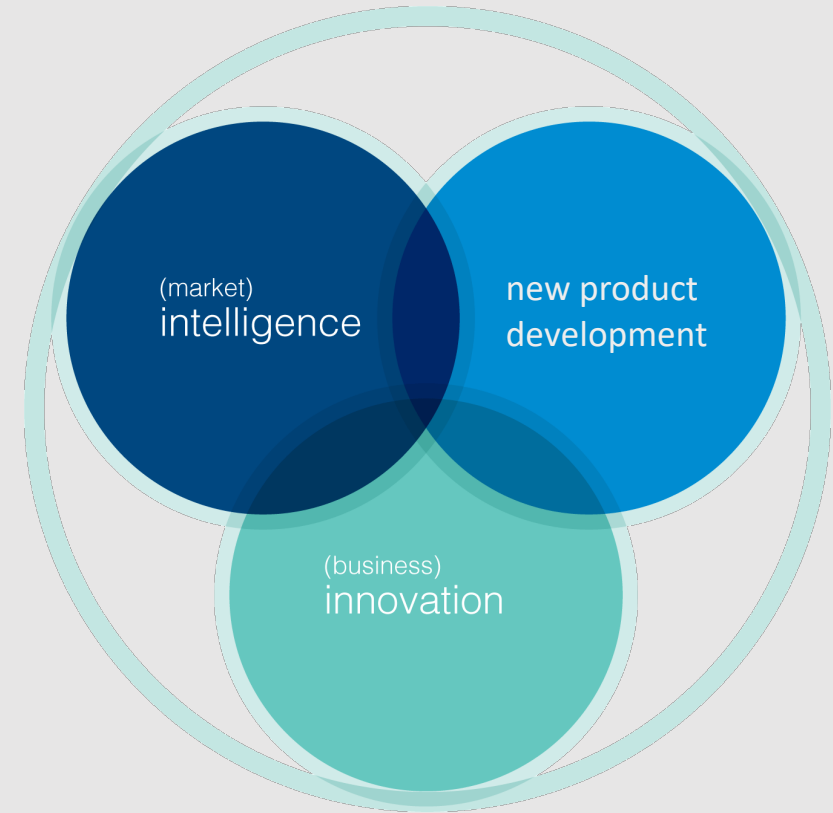
A visit to Qinetiq ex DERA (Defence Evaluation and Research Agency)  
His Majesty's Balloon Factory



It's an idea, but no design....yet



the potential



the opportunity

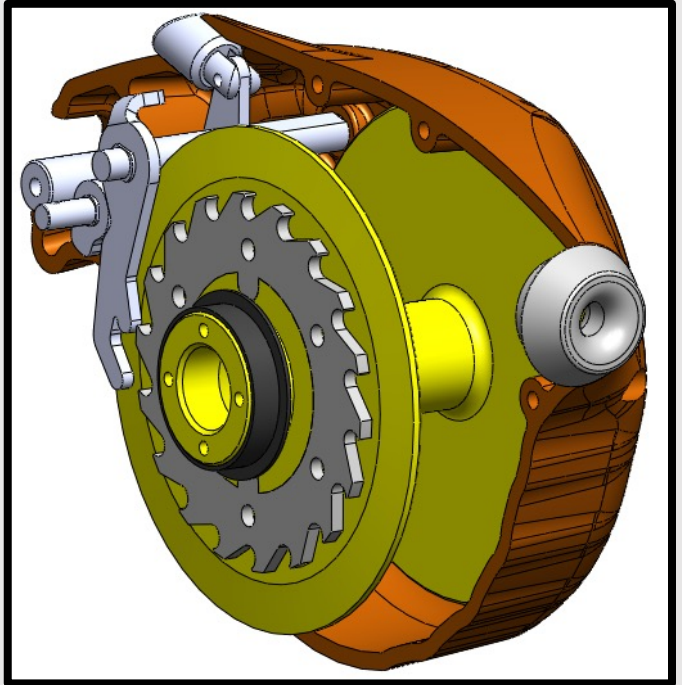
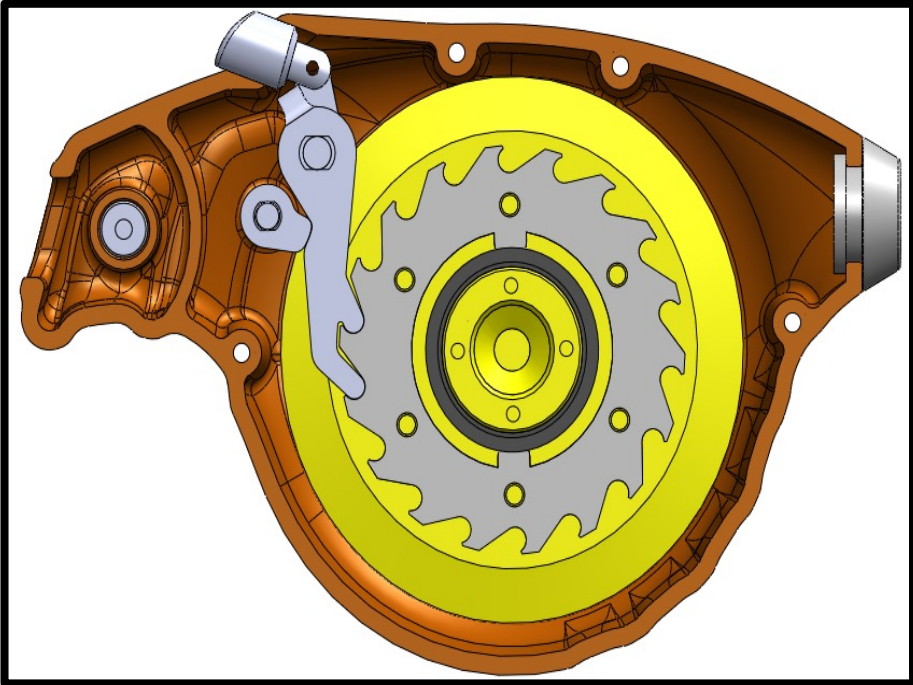
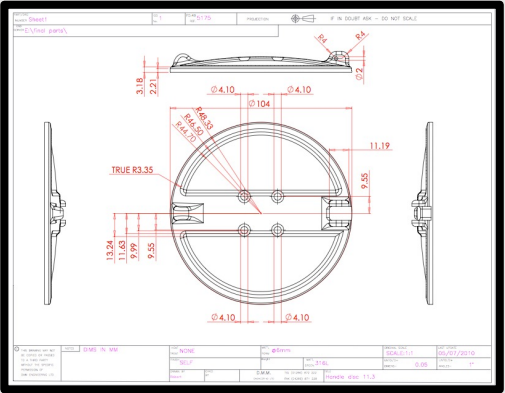
# THE PRODUCT DESIGN BRIEF



design - concept..  
development



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requisite within any country of purchase

The product will conform to all industrial standards (BS;EN) for personal protect equipment/prevention of falls from height BS;EN 795 Class B & C

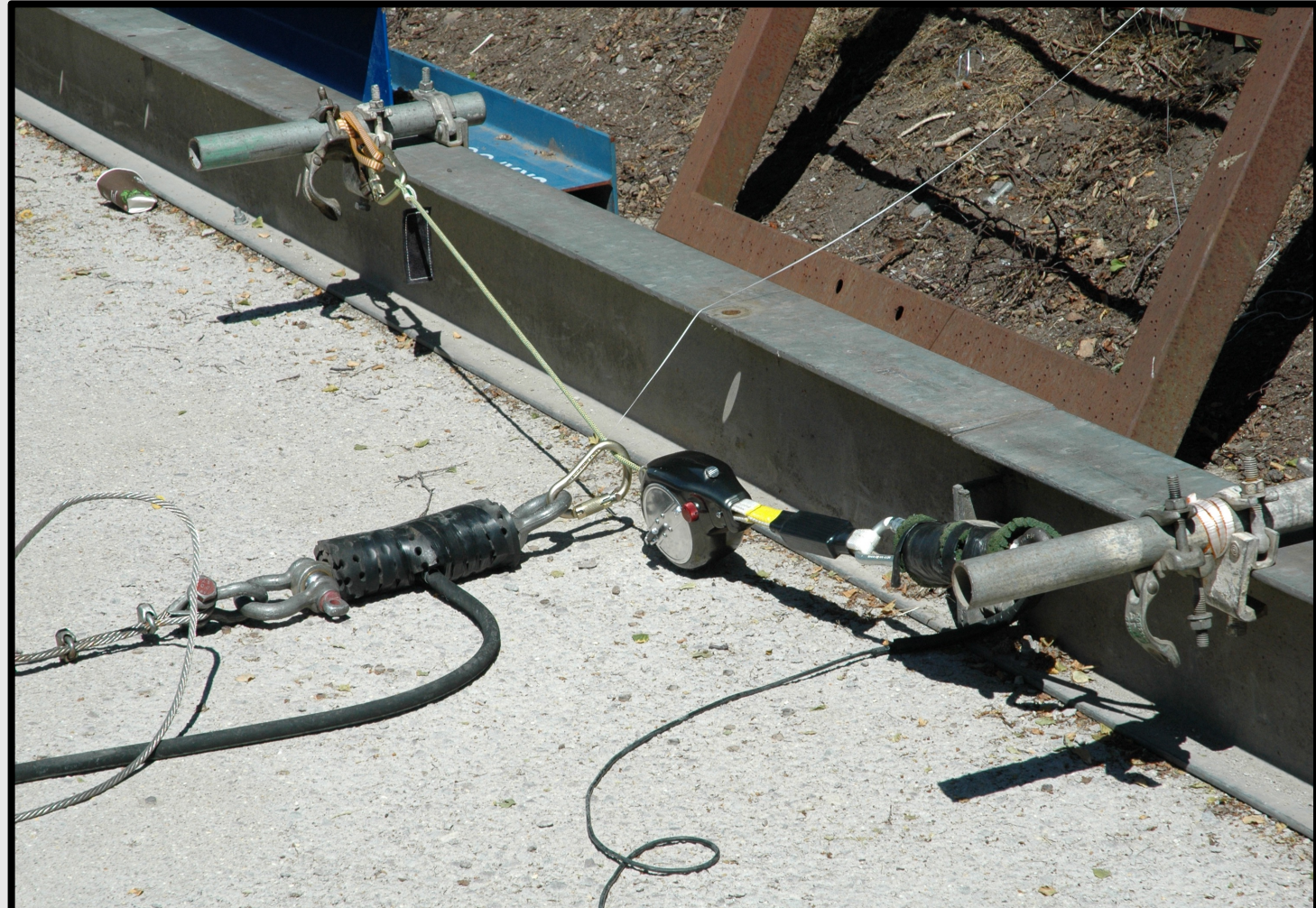
- BS;EN 354 (lanyards)
- BS;EN 355 (energy absorbers)
- BS;EN 362 (line connectors)
- BS;EN 363 anchorage systems
- BS;EN 365 generation of instruction and maintenance documentation for safety equipment.

- For the overseas market, compliance with British Standards would assist in ensuring conformity with other international standards.
- (ISO )Quality & Reliability – although stipulated by the design team, the responsibility for quality and reliability was given over to the suppliers. All of these companies manufacture to ISO 9001 – 9002 standards.
- The device tested by Satra Technology Ltd of Kettering, the testing being in line with EN 795, as a class C device.

design - concept..  
standards

Statutory Compliance...Independent test facility

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design - concept..  
standards

Statutory Compliance...Independent test facility

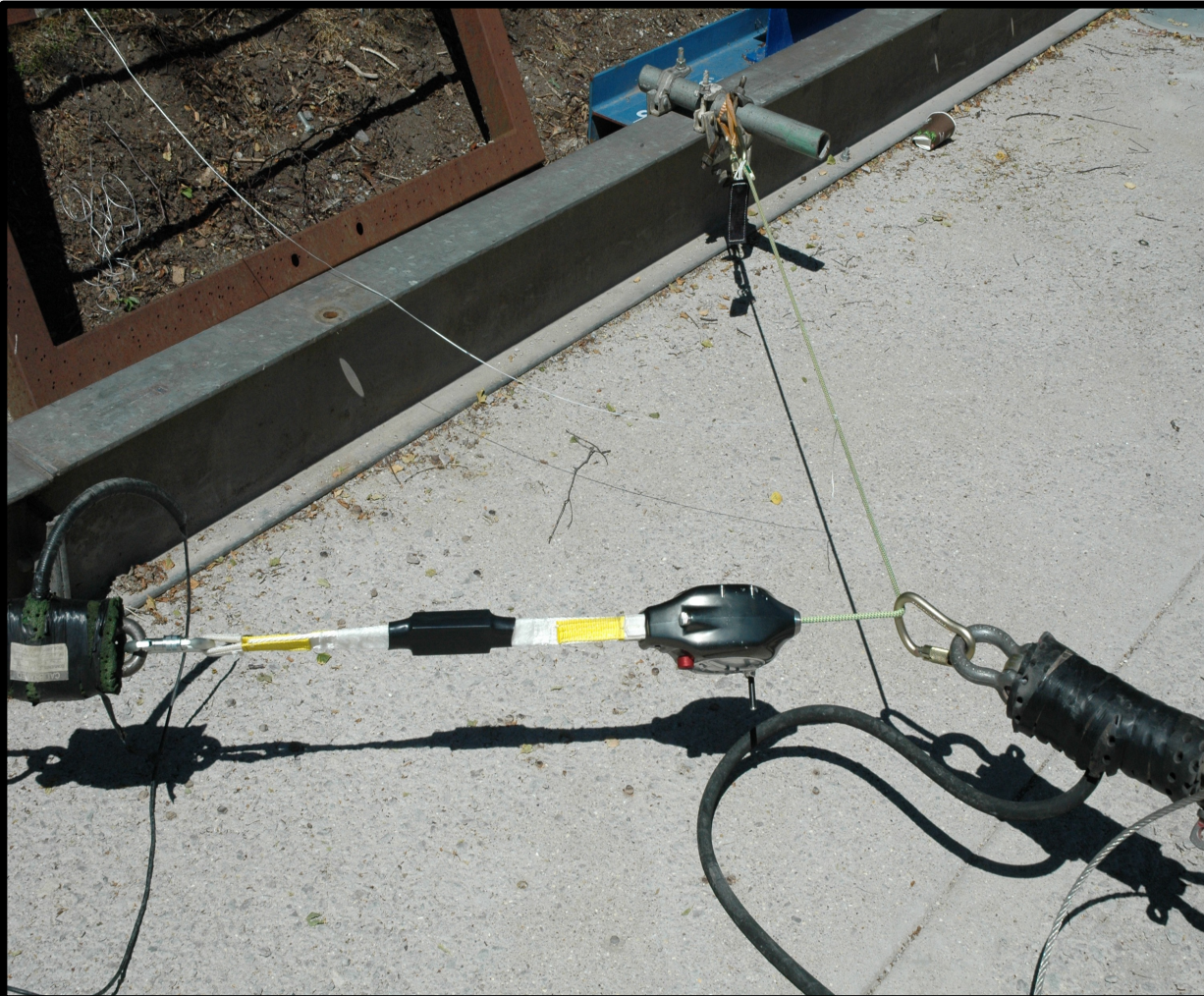
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design - concept..  
standards

Statutory Compliance...Independent test facility

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**SATRA**  
TECHNOLOGY CENTRE

SATRA Technology Centre Ltd  
Wyndham Way, Telford Way Industrial Estate  
Kettering, Northamptonshire NN16 8SD  
United Kingdom  
Tel: +44 (0) 1536 410000  
Fax: +44 (0) 1536 410626  
e-mail: info@satra.co.uk

**UKAS**  
0048

Firm: Multilog Limited  
North Bank Road  
The Docks  
Port Talbot  
SA13 1RE

For the attention of: Alan Mumby

## Technical Report

Subject: LIMITED TESTING OF TEMPORARY HORIZONTAL ANCHOR LINE IN  
ACCORDANCE WITH EN 795: 1996 CLASS C  
Our ref: SPC0200048/1150/3 issue 2  
Date: 24<sup>th</sup> January 2012  
This replaces report reference SPC0200048/1150/3 dated 12<sup>th</sup> January 2012

**Conditions of Issue:**

This report may be forwarded to other parties provided that it is not changed in any way. It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.

Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only.

Tests marked † fall outside the UKAS Accreditation Schedule for SATRA. All interpretations of results of such tests and the comments based upon them are outside the scope of UKAS accreditation and are based on current SATRA knowledge.

A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the customer as a result of information supplied in the report.

Report signed by: D Harrison  
Position: PPE Technologist  
Department: Safety Product Centre

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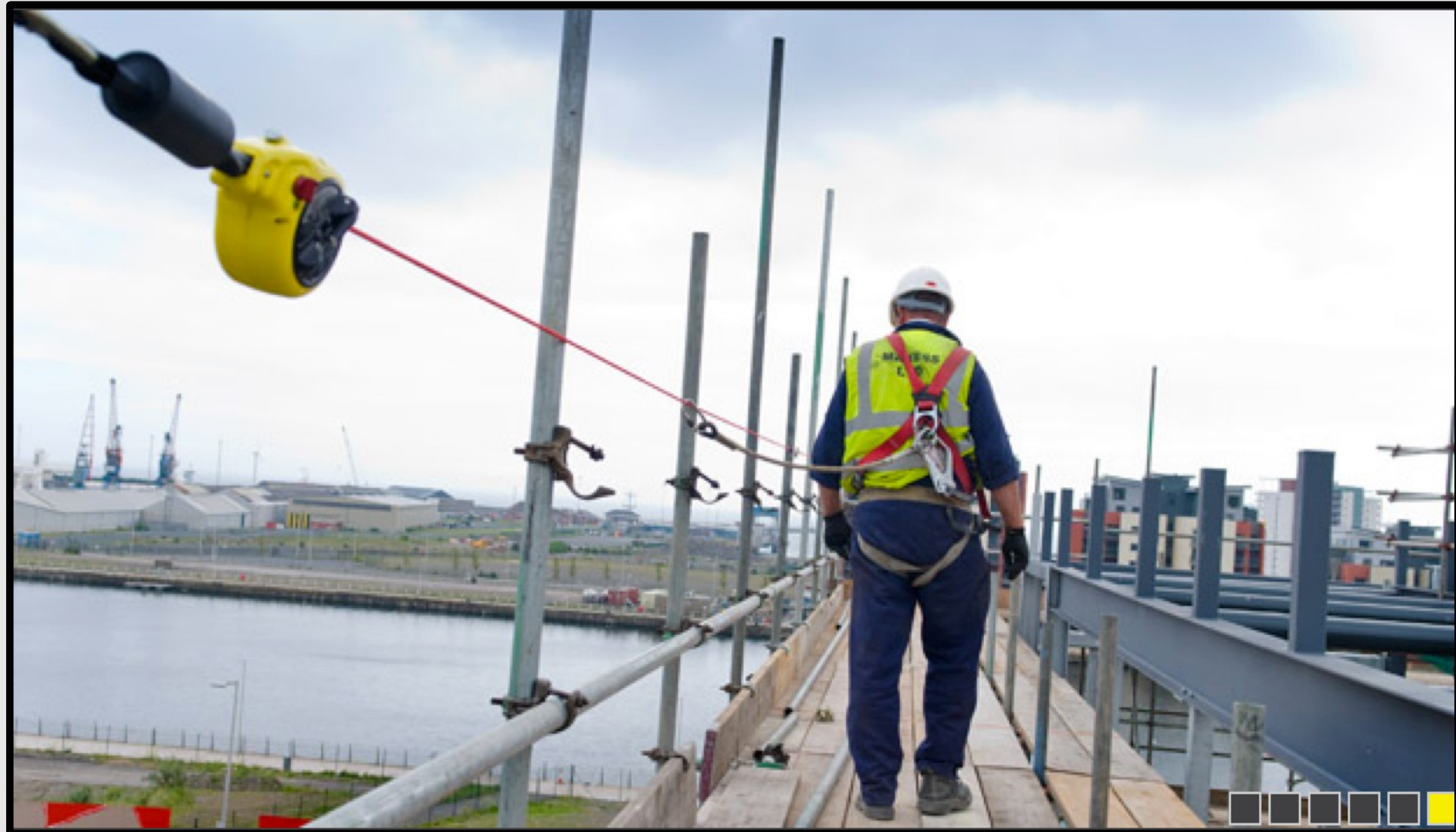
*D Harrison*



design - concept..  
development

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**MDI Associates**  
Managing  
Design &  
Innovation

**TECHNICAL FILE**

**REFERENCE NUMBER:** 00110158

**IN ACCORDANCE WITH ANNEX III OF PPE DIRECTIVE (89/686/EEC)**

**Company:**

**CONTENTS**

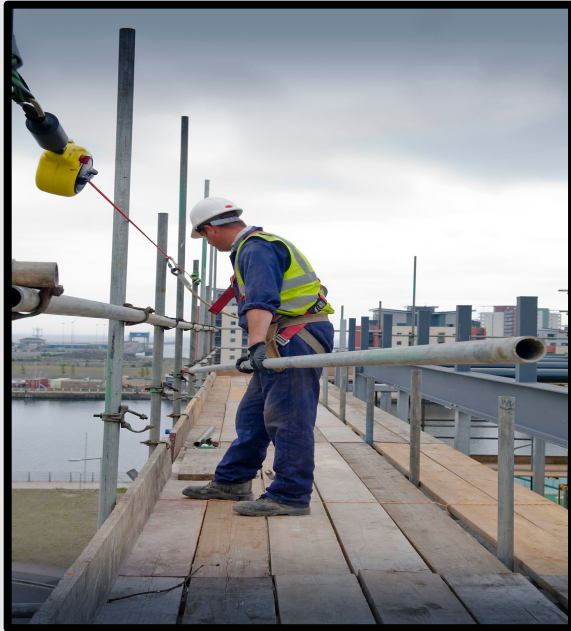
|           |                                                  |
|-----------|--------------------------------------------------|
| Section 1 | EC Type-examination: application details         |
| Section 2 | Manufacturing details                            |
| Section 3 | Group and product descriptions                   |
| Section 4 | Master material list                             |
| Section 5 | Compliance with Annex II of Directive 89/686/EEC |
| Section 6 | User Information Notice                          |
| Section 7 | Quality control procedures                       |
| Section 8 | Test reports                                     |



Compliance to  
PDS

Field trials (Swansea Docks)

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design - concept..  
standards

Innovation Management

**SATRA**  
TECHNOLOGY  
CENTRE  
Notified Body 0321

Issued to: **Multilog Ltd**  
North Bank Road  
Port Talbot  
SA13 1RE  
Wales  
UK

SATRA Client: P1206

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**EC Type-Examination Certificate**

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**Number 5626 Issue 1**

This is to certify that the product group reference MILMAN 800 comprising the following products

| Product Ref. | Description                                                                                                                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MILMAN 800   | Temporary flexible horizontal anchor line for spans up to 8 metres.<br>Device consists of a sealed drum with an integrated turning handle to dispense and retract the fibre rope anchor line.<br>The device includes an integrated energy absorber. |

**Classification:**  
EN 795:1996 Class B  
Also tested to and found to meet the requirements of EN795:1996 clauses 4.2 and 4.3.3 for a Class C system

**Technical reports**  
SATRA: SPC0200048/1150/1, SPC0200048/1150/2

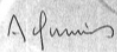
has been subject to an EC Type-examination in accordance with Article 10 of the PPE Directive (89/686/EEC) and has been shown to satisfy the relevant provisions of this Directive for the complex category through:

- i Testing to the following standard: EN 795:1996 (\*A1:1997)
- ii Examination of the relevant technical documentation.

You are therefore licensed to mark the product(s) listed above in accordance with Article 13 of Directive (89/686/EEC) and any relevant amending Directives once you have drawn up an EC declaration of product conformity. Please note that:

1. Full details of the certification and product are contained in the manufacturer's technical file
2. This certificate is only valid if embossed with the text - "SATRA - European Notified Body 0321"
3. This certificate is issued subject to the conditions on the reverse side of this certificate
4. CE marking of production is also reliant on current compliance with Directive 89/686/EEC Article 11

Signed:  (G. Graham)

Signed:  Date: 16th February 2012

On behalf of SATRA

SATRA Technology Centre, Wyndham Way, Telford Way, Kettering, Northamptonshire, NN16 8SQ, United Kingdom

The cost of meeting regulations, standards and quality levels can vary greatly between differing products.

time & resources

All of the above will add considerable time to the length of the project.

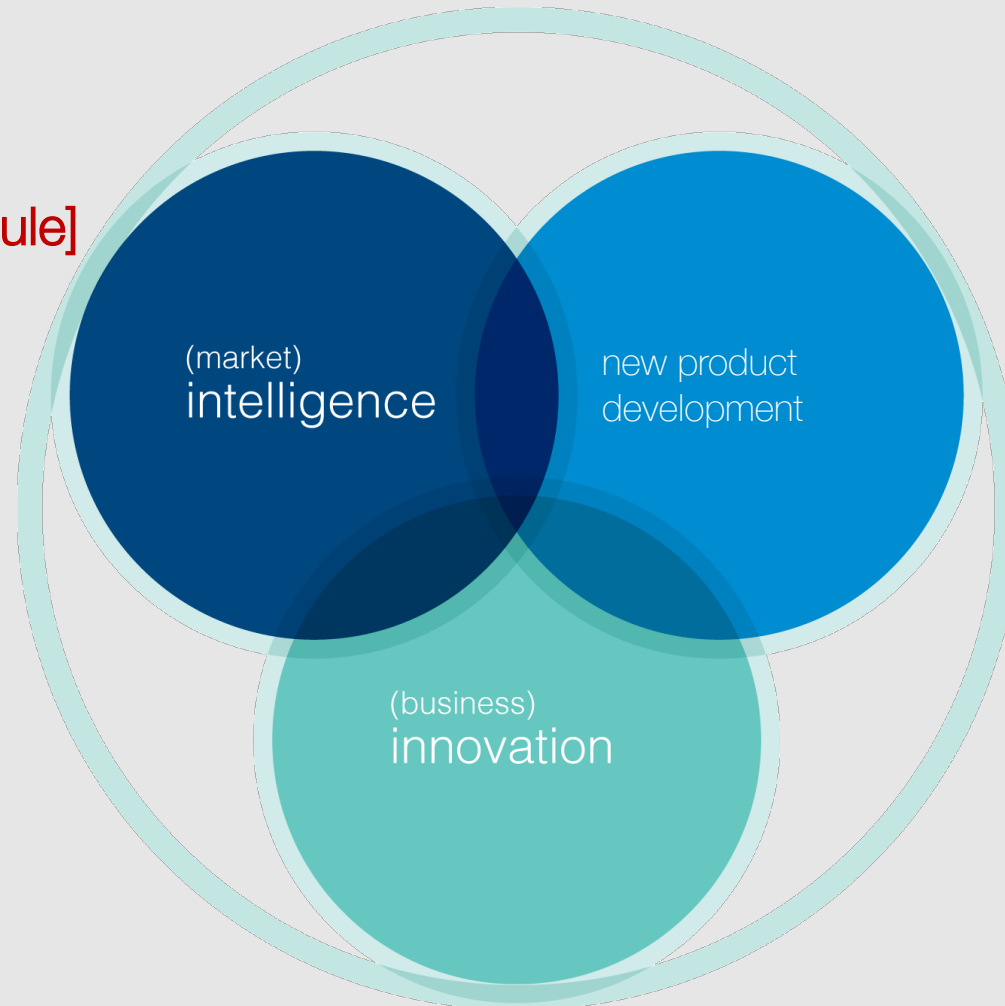
Can part or all of the work be sub-contracted?

Can the potential manufacturer take care of the compliance testing etc?

Consider when evaluating a product for compliance:

- Testing required
- Admin involved
- Certification required
- Time implications
- Maintenance of compliance

[Market intelligence –  
we'll cover this in Managing NPD Module]



The Lego Paper – your feed back.....?

next week, live from the shed.....Innovation Across the Borders

do we have to do everything?