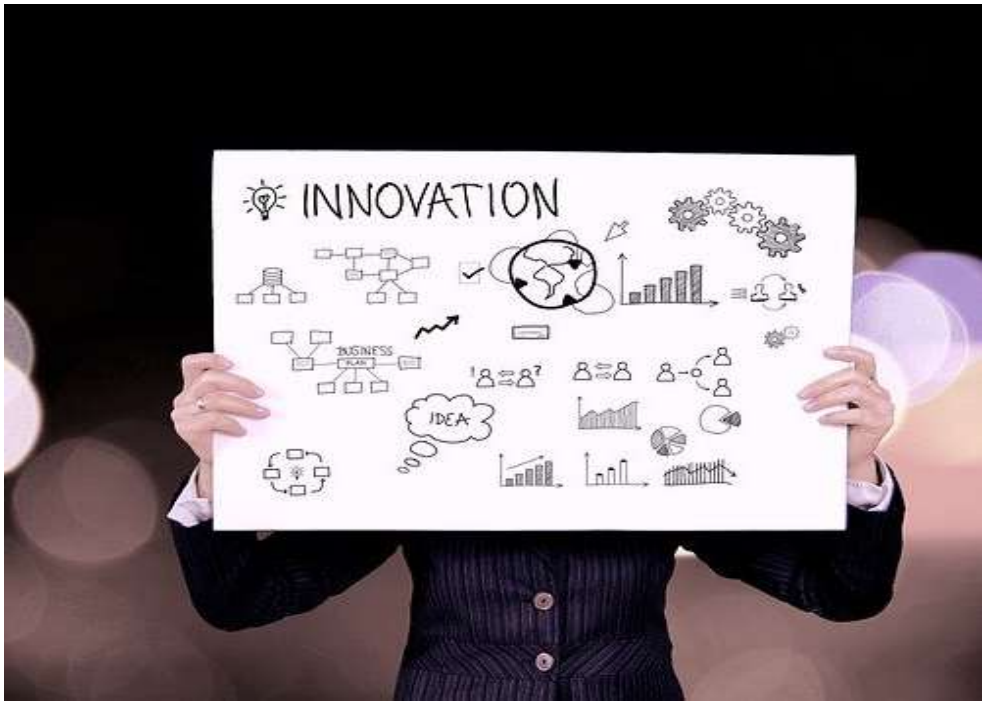
Challenges and Innovations in Occupational Safety



Dr. Michael Cash
Group HS Director
Garenne Construction Group

Seminar

- Simple
- Make us all think
  - my first challenge for you
- Current Challenges in OSH
- Generally regarding innovation
- Generation Z

Challenges in OSH

Change is influencing what we do:

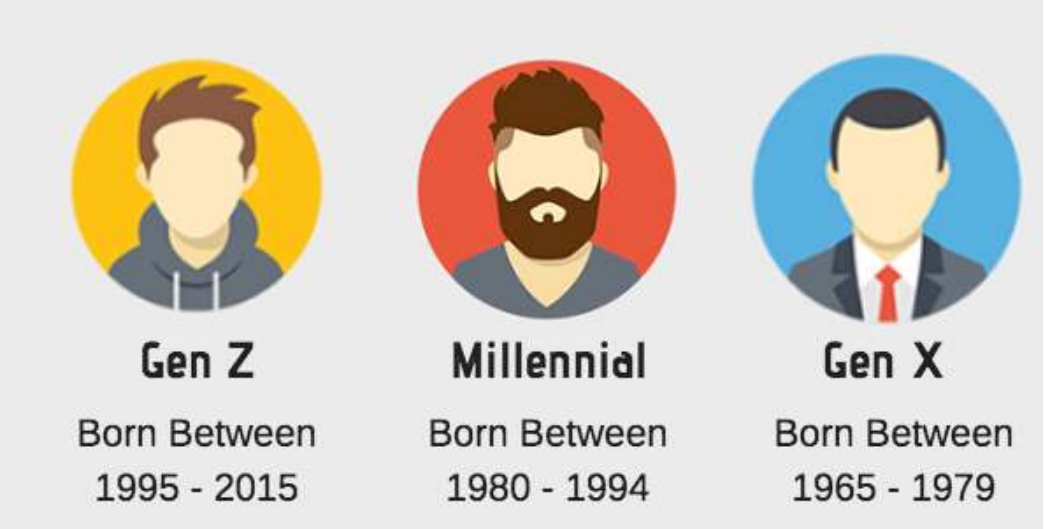
- The theories that we use
- The work that we do
- Technologies we apply
  - Internet of things
- The outcomes we wish for

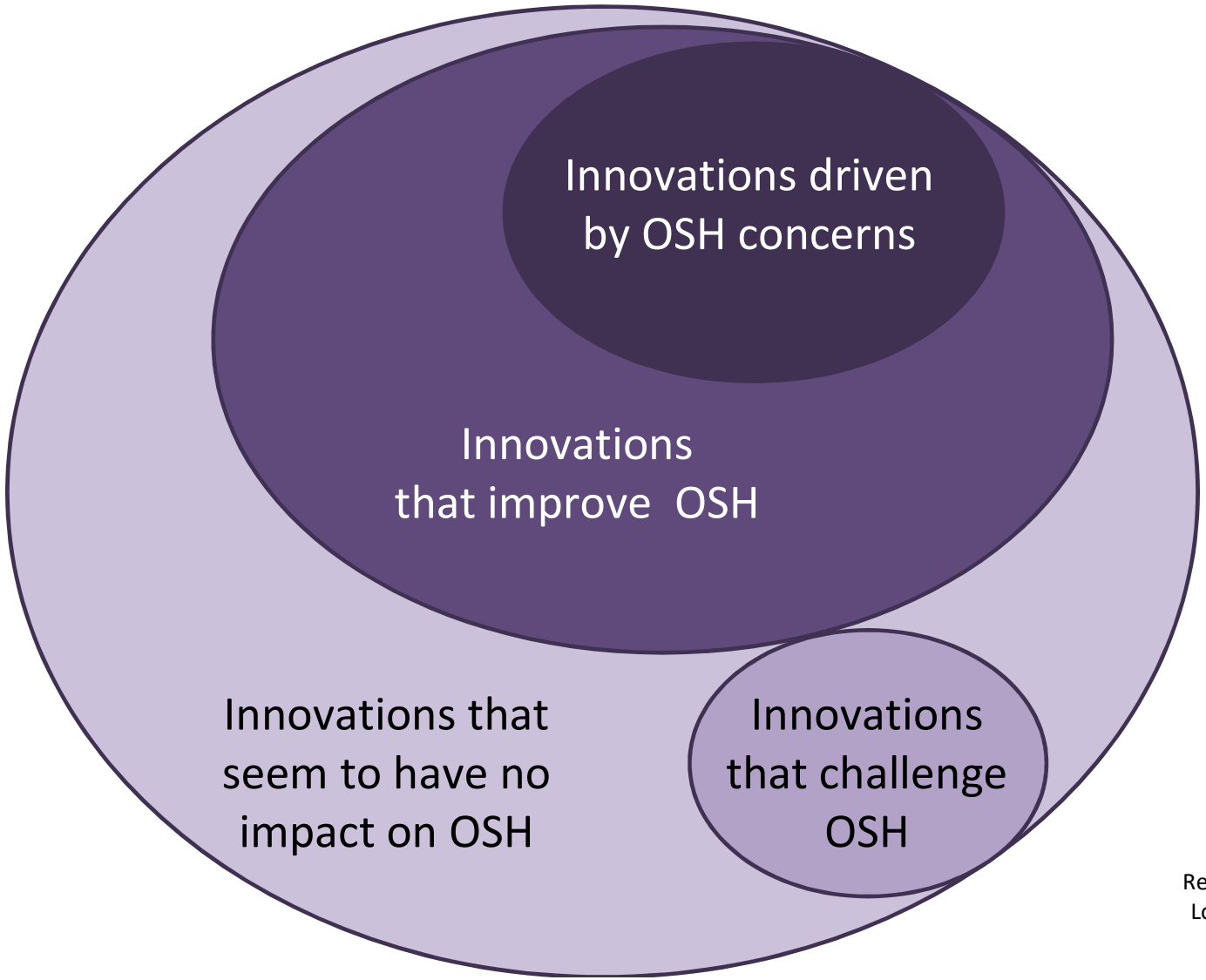
Megatrends

- Demographic change
- Mental health and stress
- Theories and new approaches
- Data, digital and technology
- Changing world of work e.g. GIG Economy
- Fitness and chronic ill health

Generation Z

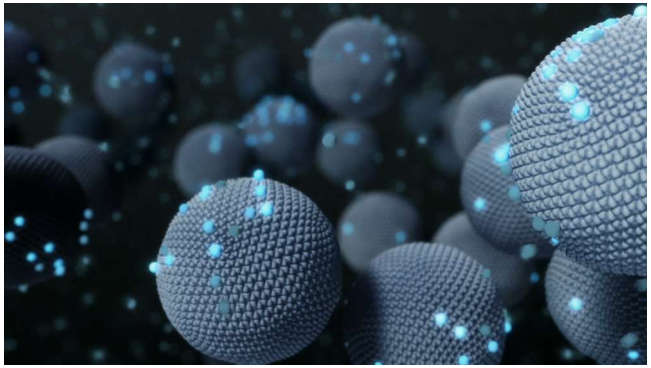
- Education / short attention span
- Digitisation
- Health and wellbeing
- Visual literacy
- Bitesize and self-learning
- Mobile engagement
- Engagement through storytelling
- Democratization of learning





Ref. Professor Alistair Gibb
Loughborough University

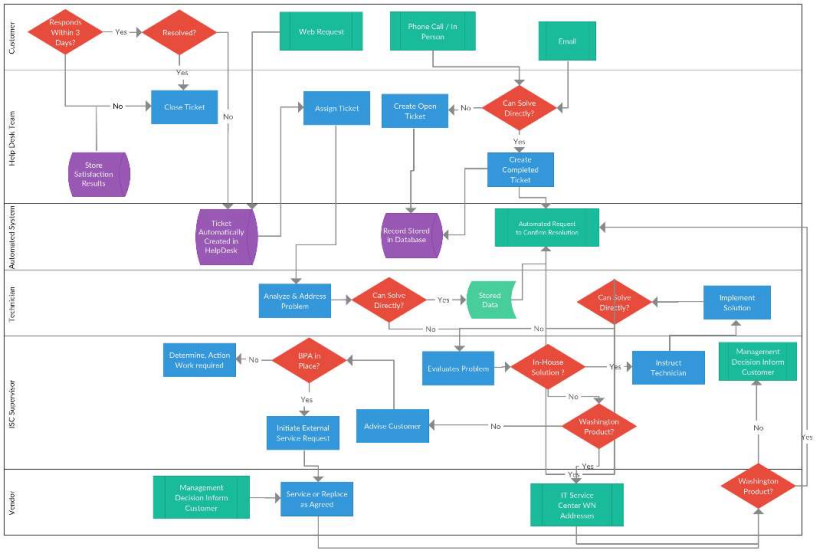
Innovations that Challenge

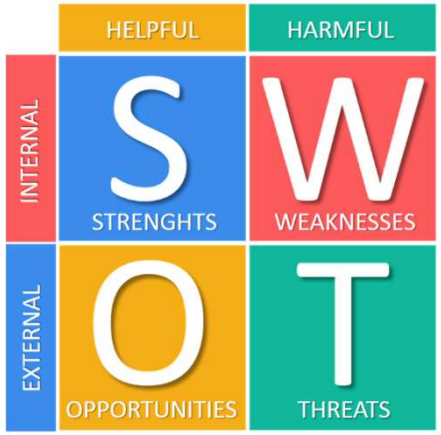


Tools and Equipment – driven by safety

Innovation and Change

- Considered carefully
- What will it improve
- What difficulties could it cause
- What more do we need to do





Ref. Professor Alistair Gibb
Loughborough University

LUSKInS – Free Falcon

https://www.youtube.com/watch?v=YyNTKt5gnBI

HGV Access Walkways

Mansafe Systems

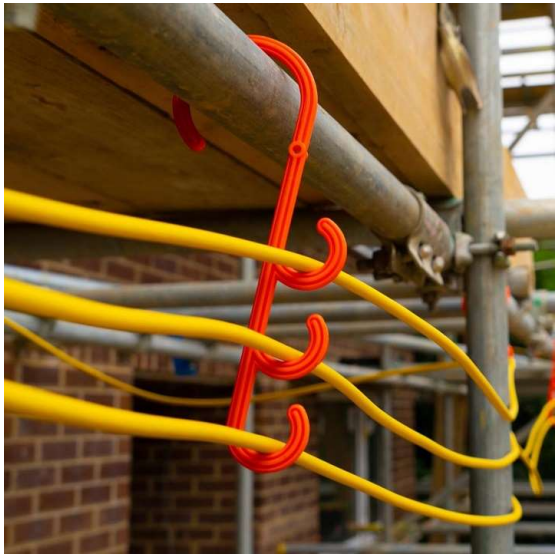
Drones

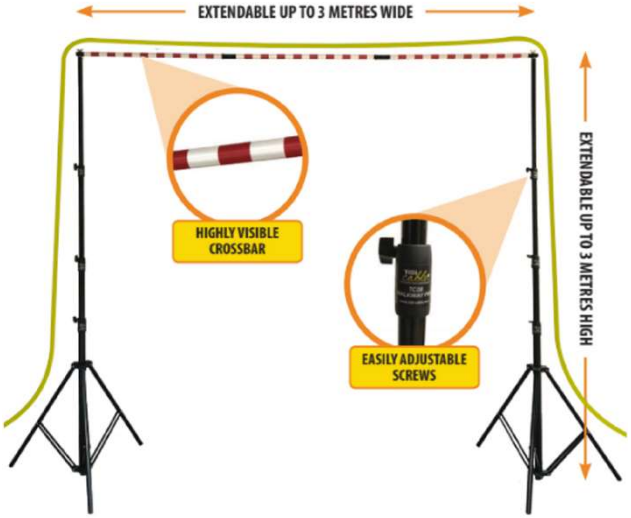
Cleaning Gutters

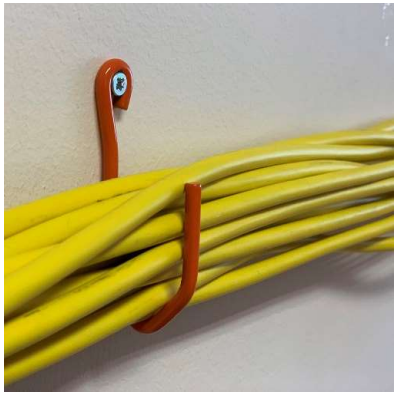
Kerb Lifters

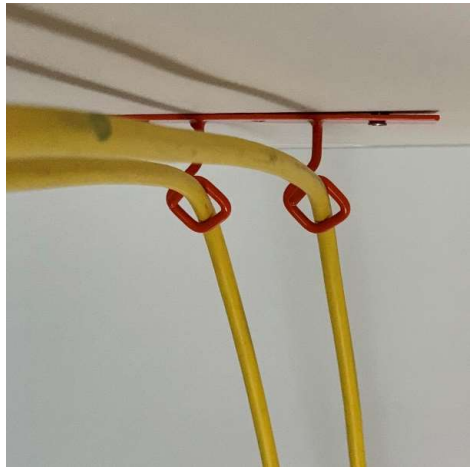
Blockcarpet

Tidi Cable




EXTENDABLE UP TO 3 METRES WIDE
HIGHLY VISIBLE CROSSBAR
EASILY ADJUSTABLE SCREWS
EXTENDABLE UP TO 3 METRES HIGH



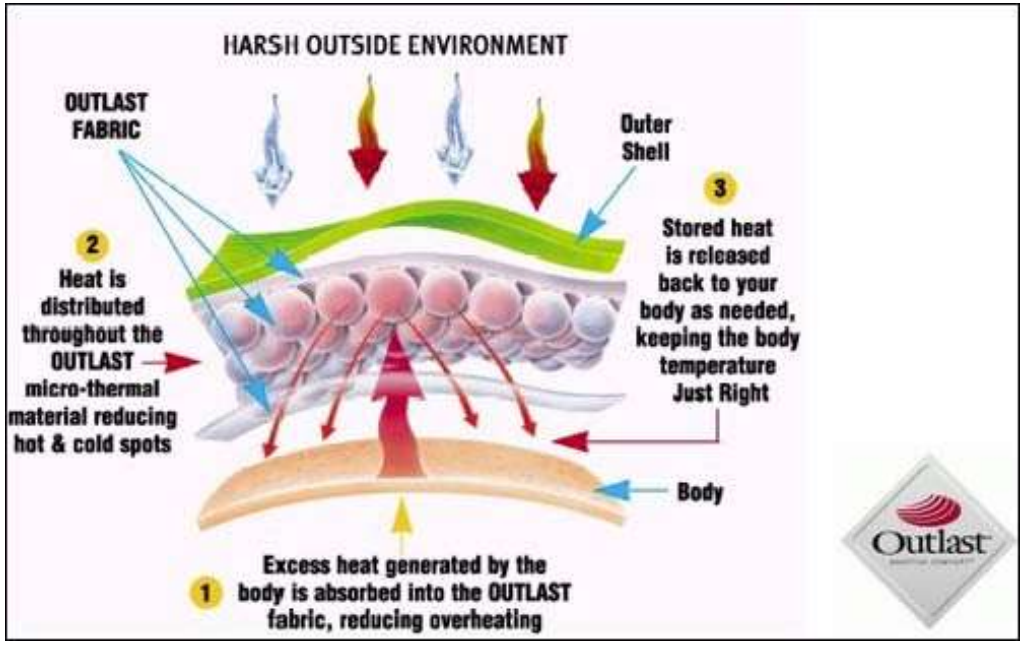


Rebar Works

Brain Saving Helmet

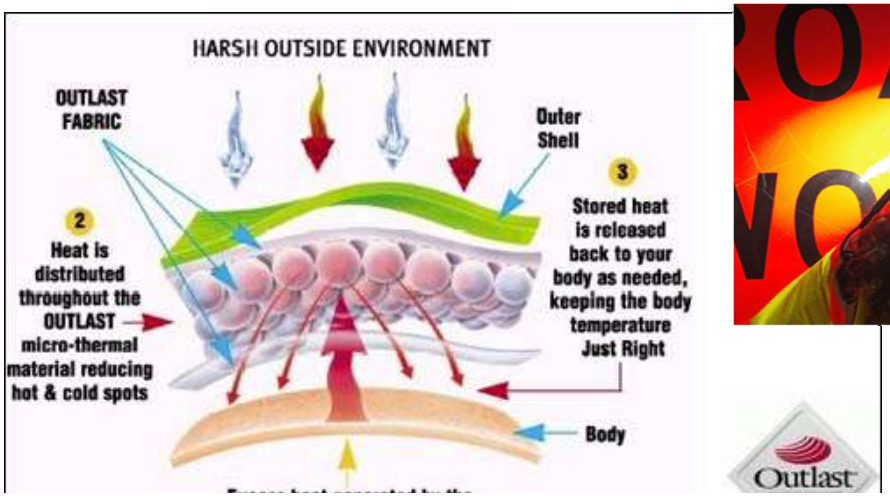
Multidirectional impact protection system

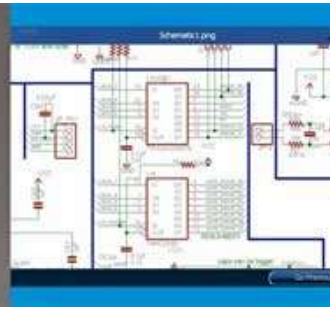
Conventional Meets Technology



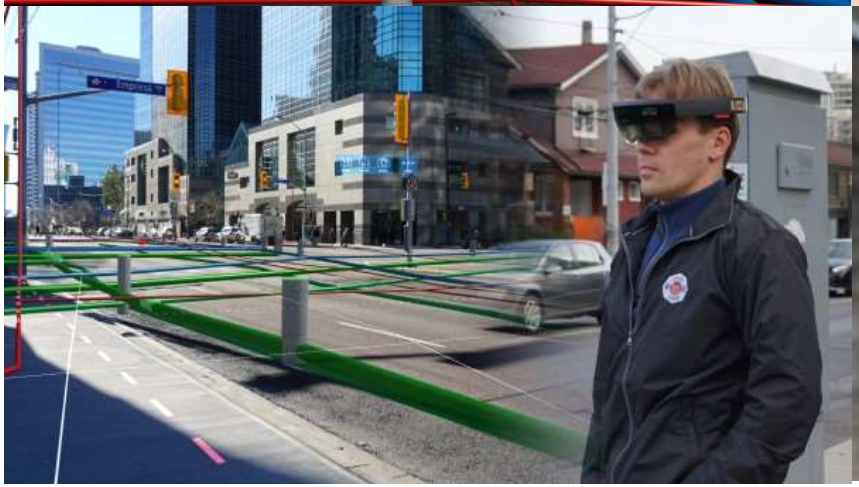
Protective clothing and safety gear

- Programmable clothing
- Colour changing gloves
- Smart safety glasses
- Smart headset
- Halo headlamp

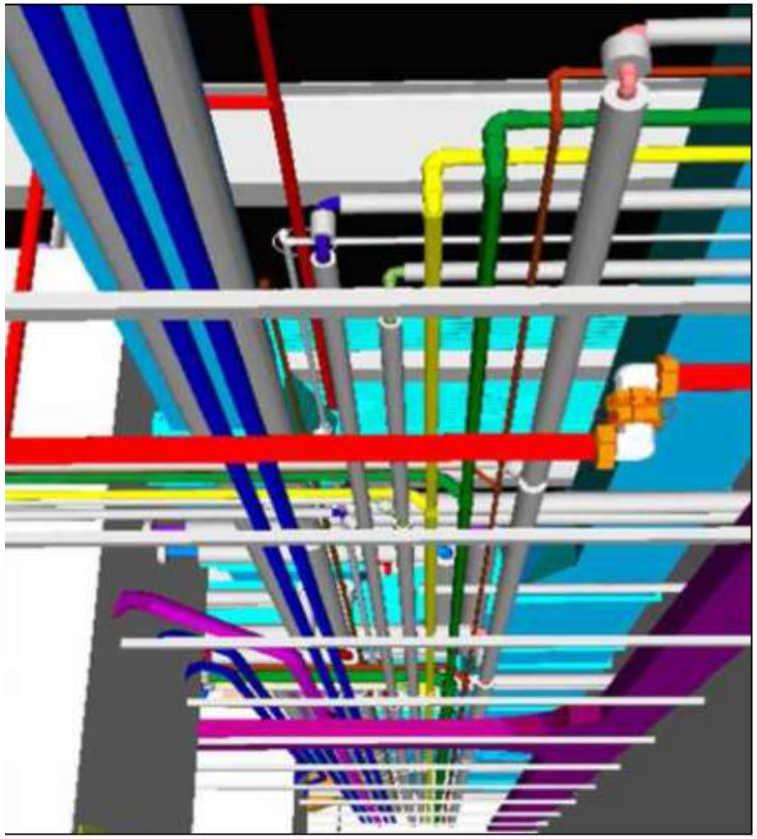




Augmented Reality



Building Information Management (BIM) Modelling



We can design hazards and risk out but….

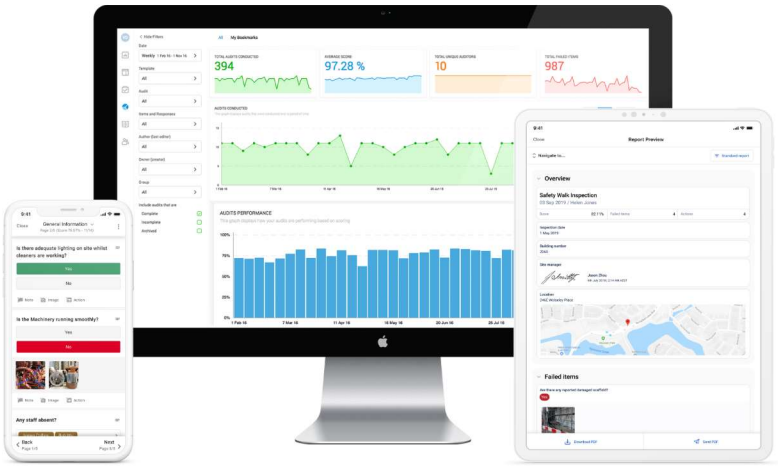
What is design?

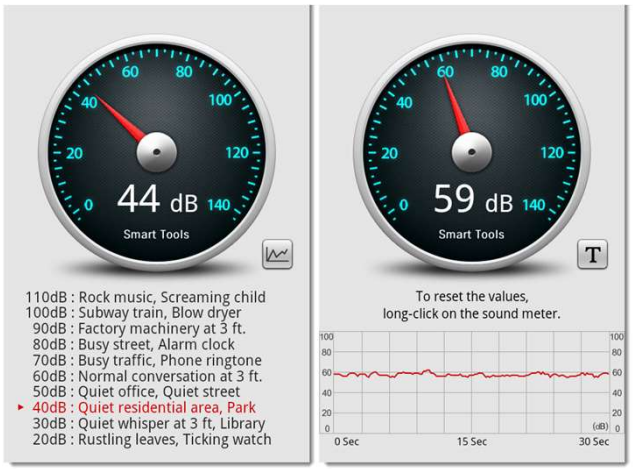
- Architecture and Buildings
- Equipment
- Mechanical systems
- Electrical systems
- Programmes and Schedules
- Daily works
- Preconstruction / contractual information
- ???

Vibration and HAV Monitors

	Description	Make	Model	HAV m/s²	Time to Exposure Action Value 100 points (Safe Limit)	Time to Exposure Limit 400 points (Maximum Exposure)	Exposure points per 30mins (Trigger Time)
4							
5	**Scabblers**						
6	3 headed scabbler	Mcdonald	MSG3	5			
7	3 headed scabbler	Mcdonald	S1VR	3.8			
8	Needle gun	Macdonald	NG10	6.3			
9	Pole scabbler	Mcdonald	1UF TVR	5			
10			**Average**	**5.0**	2h 8m	8h 3m	25
11							
12	**Jack Hammers & Pick Guns**						
13	Heavy duty breaker	Atlas copco		4.2			
14	Heavy Duty Breaker	Doosan	DCT25BV	3.4			
15	Heavy duty breaker	Sullair		3.24			
16	Heavy duty breaker	Sullair	MK250	3.24			
17	Heavy Duty Breaker	Sullair	MK25	3.24			
18	Heavy Duty Breaker	Sullinair	MK210	3.24			
19	JCB Heavy duty breaker	JCB	HM25	4			
20			**Average**	**3.5**	4h 5m	16h 20m	12
21							
22	Pace Pik breaker	Belle	Midi 20-140	11.6			
23	**Medium duty Demo Hammer**	**Doosan**	**DCT10PV (10kg Breaker)**	5.05	**1h 58m**	**7h 51m**	**26**
24	**Medium duty Demo Hammer**	**Atlas Copco**	**TEX09PE (9kg Breaker)**	5.3	**1h 47m**	**7h 7m**	**28**
25			**Average**	**7.4**	55m	3h 39m	55
26							
27	**Light Duty Picking Hammer**	**Atlas Copco**	**TEX05PE**	3.8	**3h 28m**	**Over 8hrs**	**15**

Apps and Software





EPIC

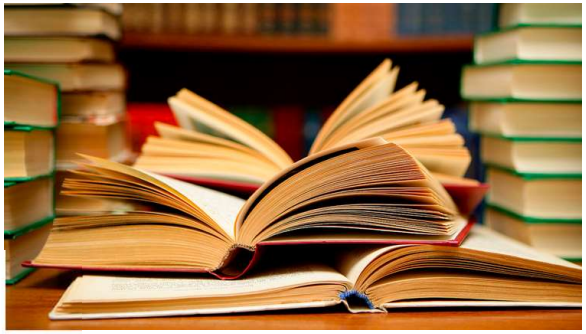
Tideway

Do Our Homework

iosh

citb

HSE Health & Safety Executive



mpa British Precast

Generation Z

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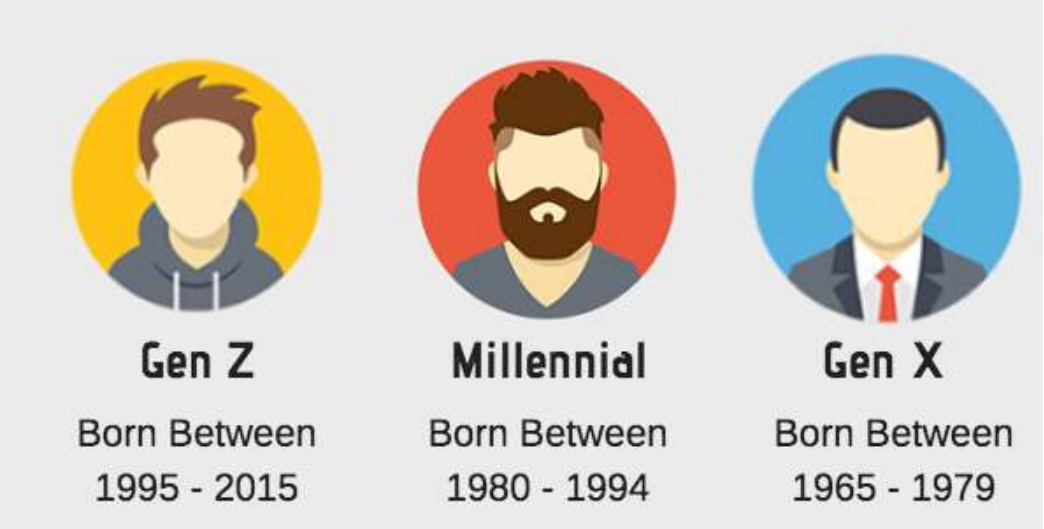
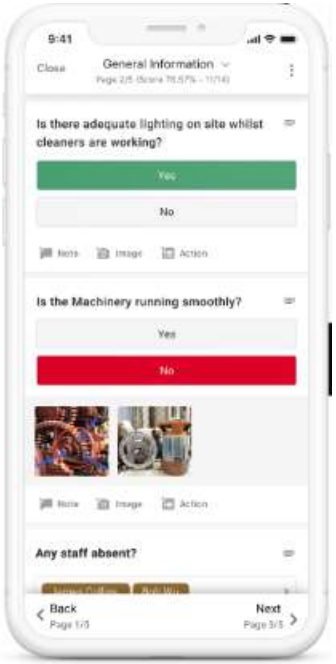
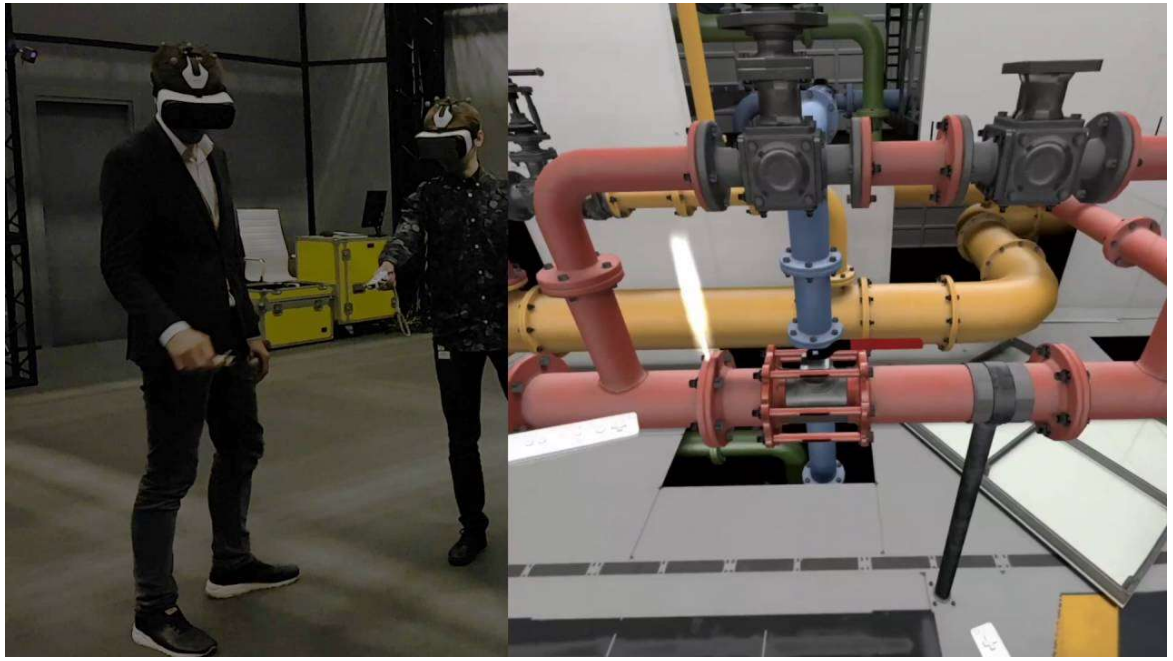
- Democratization of learning



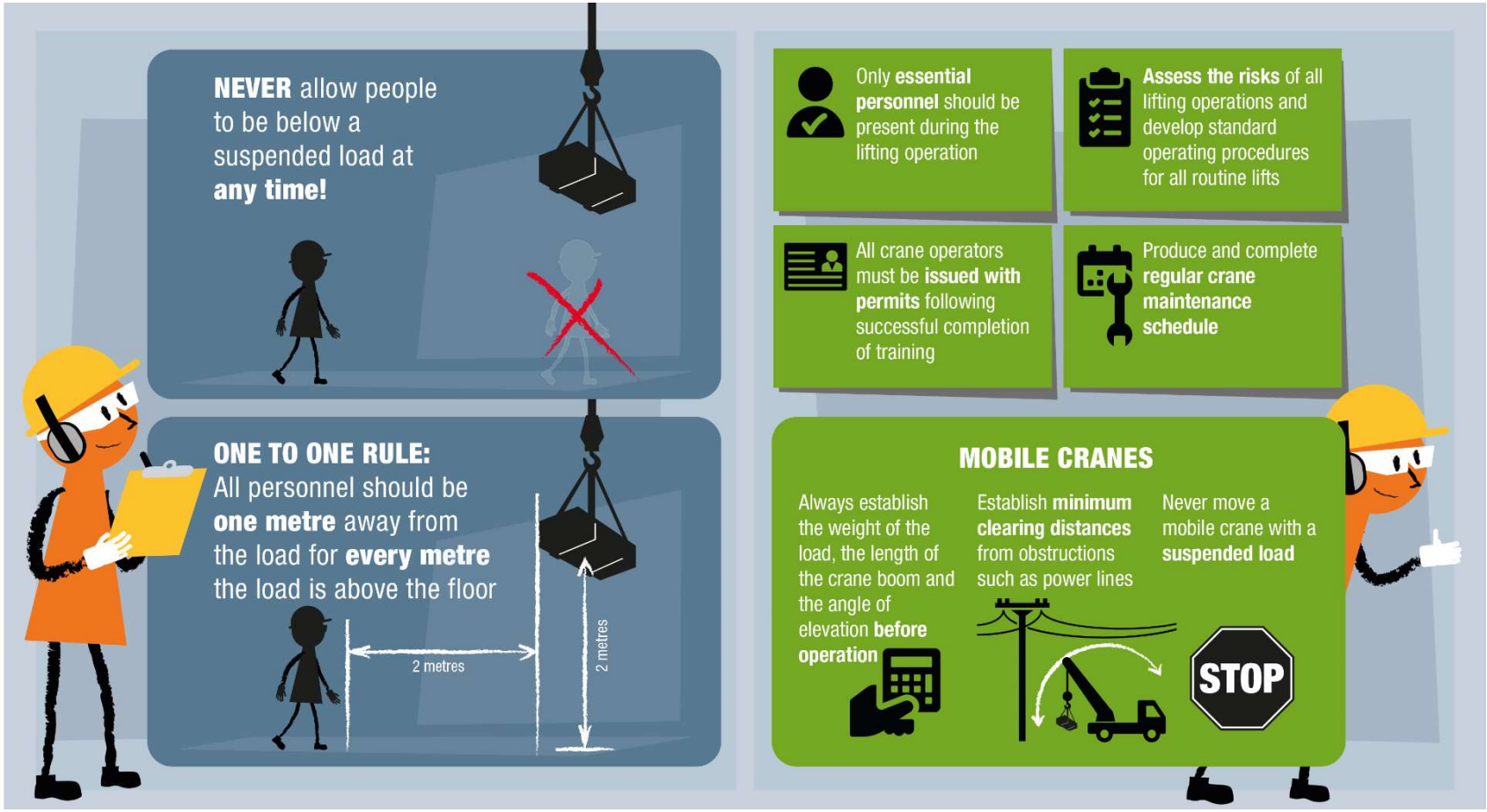
Mobile Engagement and VR





Serious Gaming

Visual Literacy: Falling Objects & Cranes



Story Telling

Seminar

- Simple
- Make us all think
- Future Challenges in OSH
- Generally regarding innovation
- Generation Z

Seminar

- To effect changes we need to be:

BE BOLD

Take risk

CHALLENGE CONVENTION

Be curious

EBRACE CHANGE

FINAL CHALLENGE

Michael Cash
Group HS Director
Garenne Construction Group
michael.cash@garenne.je
07786 391232