IPAF Conference

Expo 2020 Dubai

Rob Cooling & Rob Munn

EXPO 2020 DUBAI UAE

WORLD EXPO

Working at Height at Expo 2020 Dubai

Objectives

- Provide background on the World Expo taking place in Dubai in 2020
- Introduce Expo's health and safety strategy and approach
- Focus specifically on health and safety operations and the management of work at height
- Identify significant challenges and next steps

EXPO 2020 DUBAI UAE

BETTER TOGETHER CARE · RESPECT · PRIDE

20 October, 2020 – 10 April, 2021

Expo 2020 Dubai site

4.38

square kilometres

3 international airports will serve the Expo audience

The Expo site is equidistant from Dubai & Abu Dhabi international airports

20 minutes away from Al Maktoum International Airport by car

200+

Participants

- Participating Countries
- Corporates
- Academia
- Multilateral Organizations
- Foundations & NGOs

25

Million Visits

30 %
National

70 %
International

Expo Village
Route 2020 Station
Opportunity District
AlWasl
Sustainability District
Mobility District

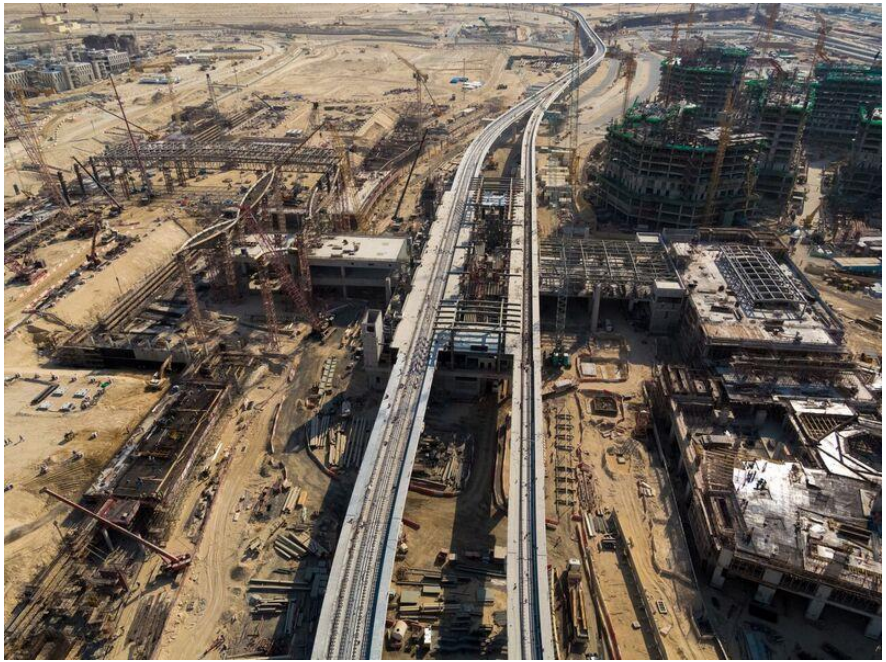
Mobility Pavilion

Sustainability Pavilion

Al Wasl Plaza

Over 80% of infrastructure will be retained following the Expo event

Site Progress
November 2018



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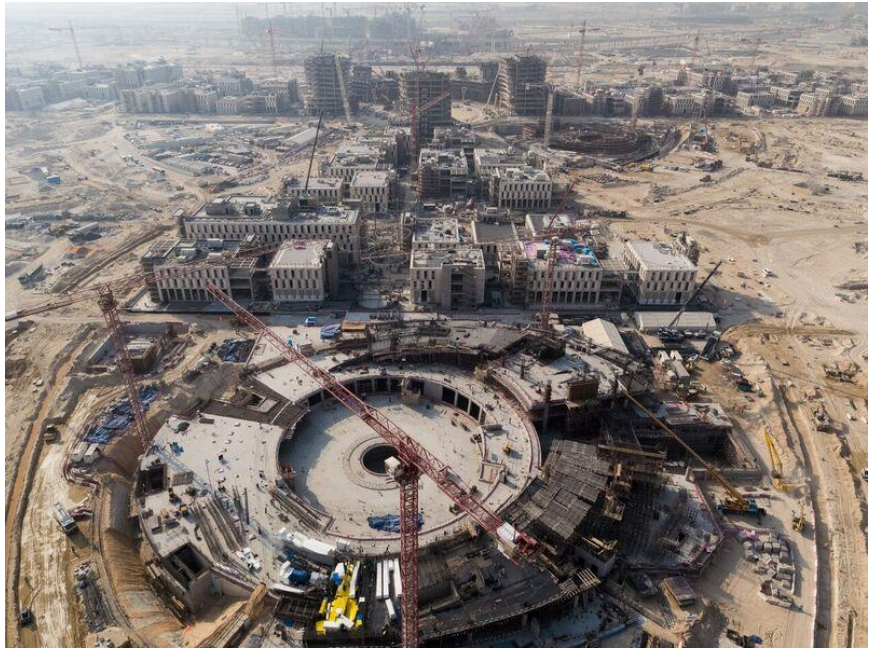
Site Progress
November 2018



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BETTER TOGETHER CARE · RESPECT · PRIDE

Health and Safety Strategy

EXPO 2020 DUBAI UAE

HSQE Strategy

Vision

- Vision – to work together in driving continual improvement and delivering a lasting legacy

- Working together achieves better health & safety, worker welfare, environment and quality outcomes

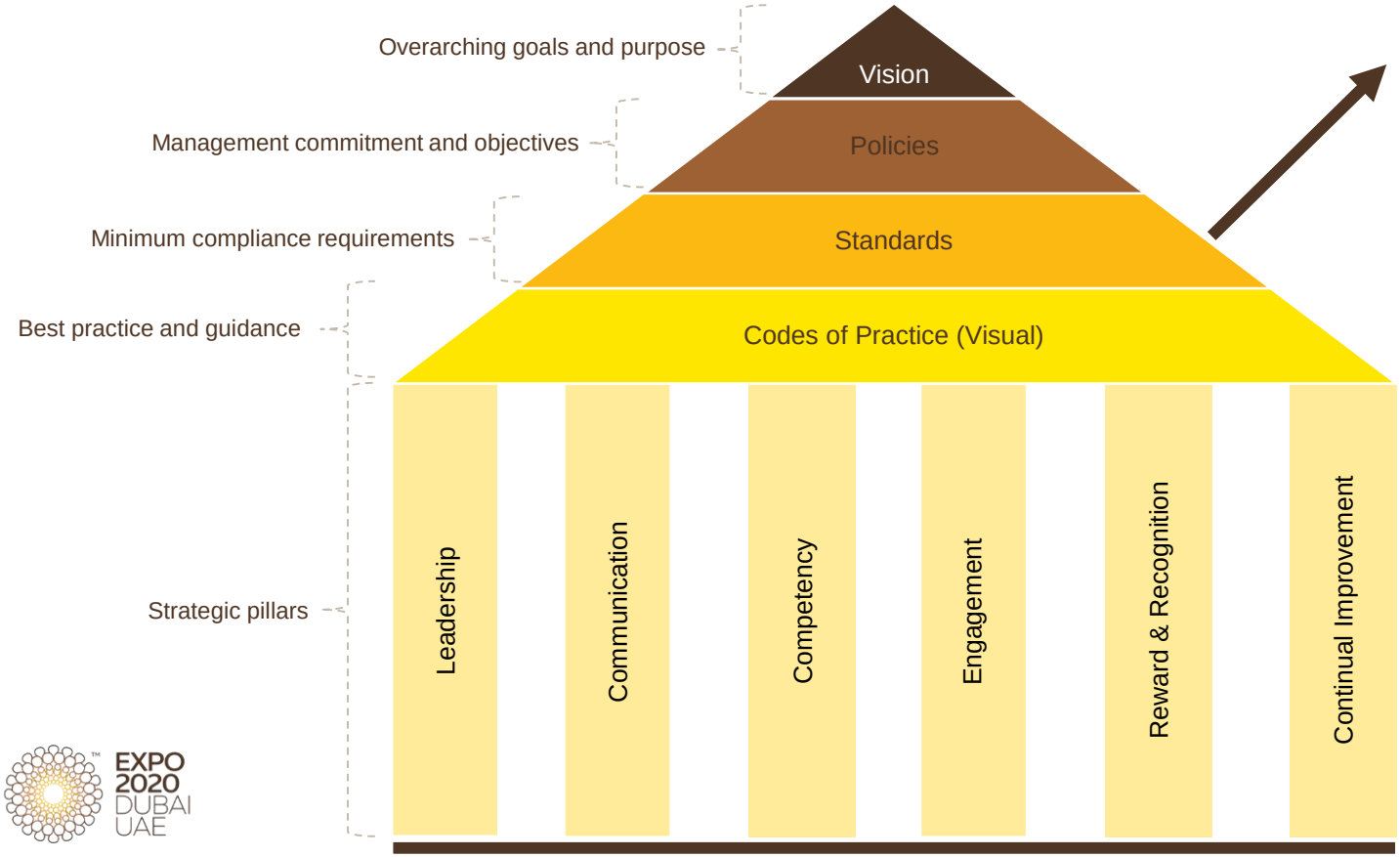
HSQE Strategy
Values

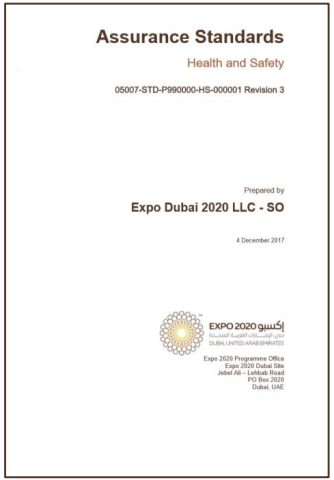
We care for others, and ourselves ensuring we go home in a safe and healthy condition every day. We take worker health and well-being just as seriously as occupational safety

We respect the environment and promote sustainable practices. We look for opportunities for our work to have a positive impact on the environment

We take pride in the work that we do and strive for excellence in quality. We focus on getting it right first time, reducing defects and the need for rework

HSQE Strategy
Framework




Assurance Standards

Health and Safety

05007-STD-P990000-HS-000001 Revision 3

Prepared by

Expo Dubai 2020 LLC - SO

4 December 2017

EXPO 2020 DUBAI UAE

Expo 2020 Programme Office
Expo 2020 Dubai Site
Jebel Ali – Lehbab Road
PO Box 2020
Dubai, UAE

Leadership

EXPO 2020 DUBAI UAE

Leadership
Key Activities

- Leadership Tours
- Worker Welfare Leadership Tours
- Leadership Participation in Practitioner Forums
- Leadership Behaviours

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BETTER TOGETHER CARE · RESPECT · PRIDE

Leadership

Leadership Behaviours

Leadership Practices	Example Behaviours
Leads by example	• Wears 5 point PPE when out on site • Organises and participates in leadership tours • Attends and contributes to Contractor health and safety meetings • Participates in joint (Consultant / Contractor) health and safety inspections • Coordinates with other projects and stakeholders on health and safety
Communicates a shared vision	• Delivers health and safety moments during meetings • Ensures knowledge shares and visual standards are communicated • Briefs the team on Expo's health and safety topic of the month • Provides information on relevant health and safety matters and lessons learned
Develops competence to enable others to act	• Ensures training is provided to Consultants and Contractors on Expo's health and safety standards • Incorporates health and safety performance into appraisals and informal reviews • Ensures key project team members attend Expo's health and safety leadership training • Understands Expo's significant hazards and golden rules
Engages the workforce in the better together vision	• Attends health and safety inductions • Attends daily activity briefings • Participates regularly in health and safety toolbox talks • Attends and contributes to project safety leadership team meetings
Rewards & recognises	• Provides recognition (verbal or written) to individuals and teams for good health and safety performance • Attends contractor health and safety award ceremonies • Nominates an individual for the programme health and safety (Care) award • Nominates an organisation for the programe health and safety (Care) award
Looks for ways to continually improve	• Reports observations (positive and negative) and near misses • Ensures health and safety is included in progress meetings • Maintains project health and safety risk profiles • Escalates significant health and safety issues for top management attention

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Communication

EXPO 2020 DUBAI UAE

Communication
Key Activities

- Health and Safety Campaigns
  - Risk profiling
  - Global / local events
  - Milestones
- Visual Standards
- Knowledge Shares
- Stand Downs

Health & Safety
Knowledge Share

Mobile Welfare Facilities

Expo 2020 requires all of its contractors to provide suitable welfare facilities on the site. Contractors find providing such facilities a challenge where activities require small teams engaged in multiple locations. Consequently, contractors are forced to transport workers throughout the day to and from fixed facilities. In some cases, workers may have to walk excessive distances to the nearest facility.

The Solution

Lang O'Rourke have constructed a mobile unit that contains an airconditioned rest area, a prayer room and toilets. This unit contains an built-in 500-gallon water tank that is fuel by a diesel generator, however, plans are afoot for a solar powered facility. The unit is 2.5m wide x 5m long and can easily be towed by a four-wheel drive pickup vehicle.

Benefits

1. It can provide immediate access to suitable welfare facilities which is particularly important during the summer months.
2. It saves valuable time transporting workers around the site to a fixed welfare facility.
3. It prevents workers from walking across non-pedestrianised areas to a suitable facility.

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Competency

EXPO 2020 DUBAI UAE

Competency
Health and Safety Training

- Health and Safety Leadership
- Construction Safety Awareness for Managers
- Supervisor Activity Briefing “Train the Trainer”
- Visual Impact Training

Engagement

EXPO 2020 DUBAI UAE

Engagement
Key Activities

- Executive Safety Leadership Team
- Programme Safety Leadership Team
- Project Managers Health & Safety Meeting
- Practitioner Forums
- Worker Social Event

EXPO 2020 DUBAI UAE

BETTER TOGETHER CARE RESPECT PRIDE

EXPO 2020 إكسبو
دبي، الإمارات العربية المتحدة
DUBAI UNITED ARAB EMIRATES
إكسبو
WORLD دولي
EXPO
BETTER TOGETHER
CARE RESPECT PRIDE
HSQE
LEADERSHIP
EVENT
18 April, 2018
CARE
RESPECT
PRIDE

الشركاء من فئة شريك أول رسمي
OFFICIAL PREMIER PARTNERS
Emirates NBD
Emirates
etisalat اتصالات
NISSA
PEPSICO
SIEMENS
Ingenuity for life

Engagement
Worker Social Event

- Expo 2020 Dubai Cricket Tournament launched in October 2017
- Annual event intended for workers
- Platform for communicating important health and safety messages
- 16 teams participated

مدينة دبي
DUBAI SPORTS CITY
EXPO 2020 DUBAI CRICKET TOURNAMENT FINAL
CONNECTING MINDS, CREATING THE FUTURE
15:0

EXPO 2020 DUBAI
UNITED ARAB EMIRATES
DUBAI SPORTS CITY
مدينة دبي الرياضية

DUBAI
INTERNATIONAL
STADIUM

Knockout	Last 16	Quarter Finals	Semi Finals
DWTC/AECOM-Village Project Sat Oct 27, 2018 10:00 - 13:00 ICC Academy Cleveland Bridge			
	Sat Dec 22, 2018 19:30 - 22:30 ICC Academy		
EXPO2020/ PMC B Sat Nov 3, 2018 14:00 - 17:00 ICC Academy JVBO Besix Orascom			
		Fri Jan 4, 2019 15:00 - 18:00 ICC Academy	
			Fri Jan 25, 2019 10:30 - 13:30 ICC Academy
Transguard B Fri Nov 9, 2018 14:00 - 17:00 ICC Academy WSP			
	Thu Dec 27, 2018 19:30-22:30 ICC Academy		
Shapoorji Pallonji Sat Nov 10, 2018 14:00 - 17:00 ICC Academy Laing O'Rourke			
Enova Sat Nov 10, 2018 10:30 - 13:30 ICC Academy Transguard A			
	Fri Dec 28, 2018 10:30 - 13:30 ICC Academy		
Expolink A Route 2020 Fri Nov 16, 2018 14:00 - 17:00 ICC Academy Al Shafar United			
		Fri Jan 4, 2019 19:00 - 22:00 ICC Academy	
Parsons A Fri Nov 30, 2018 19:30 - 22:30 ICC Academy E-Construct			
	Fri Dec 28, 2018 18:30 - 21:30 ICC Academy		
Tristar Sat Dec 1, 2018 10:30 - 13:30 ICC Academy Al Futtaim Carillion B			

FINAL

Thursday
January 31, 2019
18:00 - 21:00
DIS

Semi Finals	Quarter Finals	Last 16	Knockout
			Etisalat Sat Dec 1, 2018 19:30 - 22:30 ICC Academy Turner & Townsend
		Sat Dec 29, 2018 10:30 - 13:30 ICC Academy	
			Al Naboodah B Sun Dec 2, 2018 19:30 - 22:30 ICC Academy AECOM A
	Fri Jan 11, 2019 10:00 - 13:00 ICC Academy		
Sat Jan 26, 2019 10:30 - 13:30 ICC Academy			
			ALEC Mobility Project Fri Dec 7, 2018 10:00 - 13:00 DIS EXPO 2020/ PMC A
		Sat Dec 29, 2018 18:30 - 21:30 ICC Academy	
			North 25 Fri Dec 7, 2018 10:30 - 13:30 ICC Academy Al Naboodah A
			AECOM B Fri Dec 7, 2018 14:00 - 17:00 DIS China State
		Sun Dec 30, 2018 19:30 - 22:30 ICC Academy	
			Al Futtaim Carillion A Fri Dec 7, 2018 18:00 - 21:00 DIS CoEx Project Team
	Sat Jan 12, 2019 10:30 - 13:30 ICC Academy		
			Al Shafar General Contracting Fri Dec 14, 2018 10:30 - 13:30 ICC Academy Cracknell
		Thu Jan 3, 2019 19:30 - 22:30 ICC Academy	
			Arabtec Dubai South Mall Fri Dec 14, 2018 19:30 - 22:30 ICC Academy Parsons B

Reward and Recognition

EXPO 2020 DUBAI UAE

Reward and Recognition
Key Activities

- Monthly Awards (Care, Respect and Pride) – Organisational and Individual
- Participation in Project Awards
- Annual Awards Scheme

Reward and Recognition
Supporting Project Level Awards

EXPO 2020 DUBAI UAE

BETTER TOGETHER CARE · RESPECT · PRIDE

Reward and Recognition

Better Together Awards

- 11 Awards categories
- Open to all Consultants and Contractors involved in the delivery of Expo
- 125 entries
- Awards ceremony to take place in December
- Awards for winner and highly commended of each category

Continual Improvement

EXPO 2020 DUBAI UAE

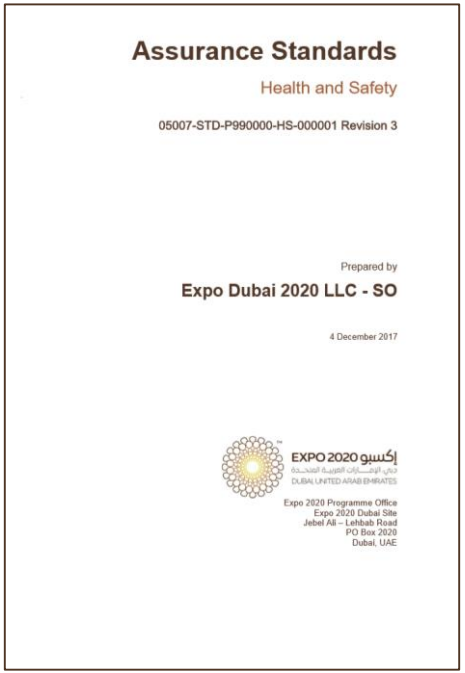
Continual Improvement
Key Activities

- Risk based audit programme
- Third Party Project Assessments
- Independent Monitoring - UK Health & Safety Executive
  - Health and safety policy and strategy review
  - Construction phase on-site monitoring programme
    - 6 monthly inspections

Health and Safety Operations

EXPO 2020 DUBAI UAE

Working at Height
Standards



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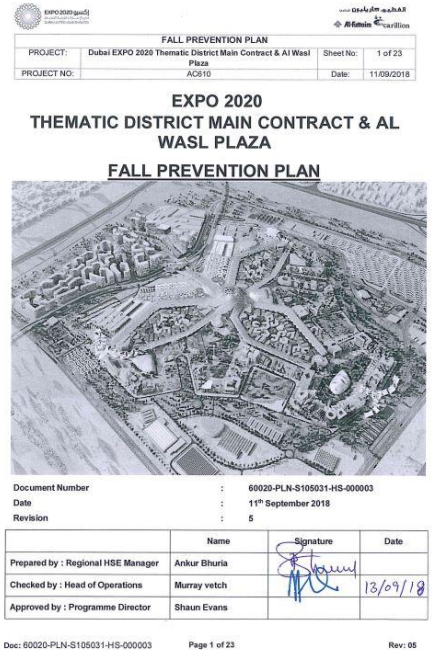
EXPO 2020 إكسبو
دبي، الإمارات العربية المتحدة
DUBAI, UNITED ARAB EMIRATES

Expo 2020 Programme Office
Expo 2020 Dubai Site
Jebel Ali – Lehbab Road
PO Box 2020
Dubai, UAE

Management Arrangements

Hazards & Controls



FALL PREVENTION PLAN			
PROJECT:	Dubai EXPO 2020 Thematic District Main Contract & Al Wasl Plaza	Sheet No:	1 of 23
PROJECT NO:	AC610	Date:	11/09/2018

EXPO 2020
THEMATIC DISTRICT MAIN CONTRACT & AL WASL PLAZA

FALL PREVENTION PLAN

Document Number : 60020-PLN-S105031-HS-000003
Date : 11th September 2018
Revision : 5

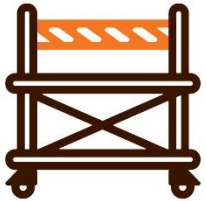
	Name	Signature	Date
Prepared by : Regional HSE Manager	Ankur Bhuria		
Checked by : Head of Operations	Murray vetch		13/09/18
Approved by : Programme Director	Shaun Evans		

Doc: 60020-PLN-S105031-HS-000003 Page 1 of 23 Rev: 05

EXPO 2020 DUBAI UAE

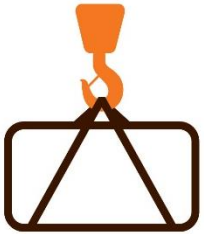
BETTER TOGETHER CARE · RESPECT · PRIDE

Working at Height
Expo Significant Hazards



Working at Height

Mobile Plant & Equipment



Lifting

Breaking Ground & Excavation

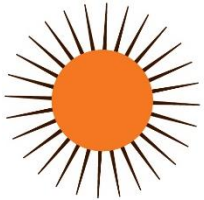
Driving

Hot Works

Energised Systems

Confined Spaces

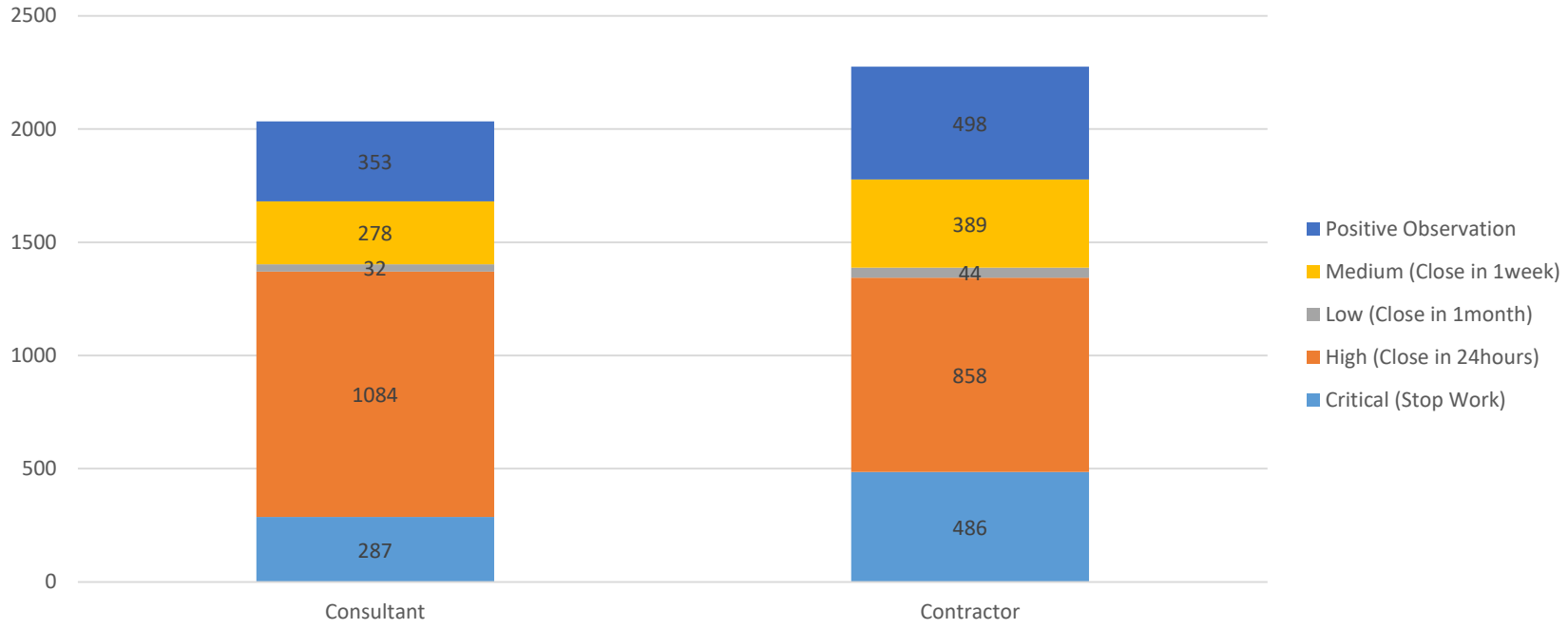
Temporary Works



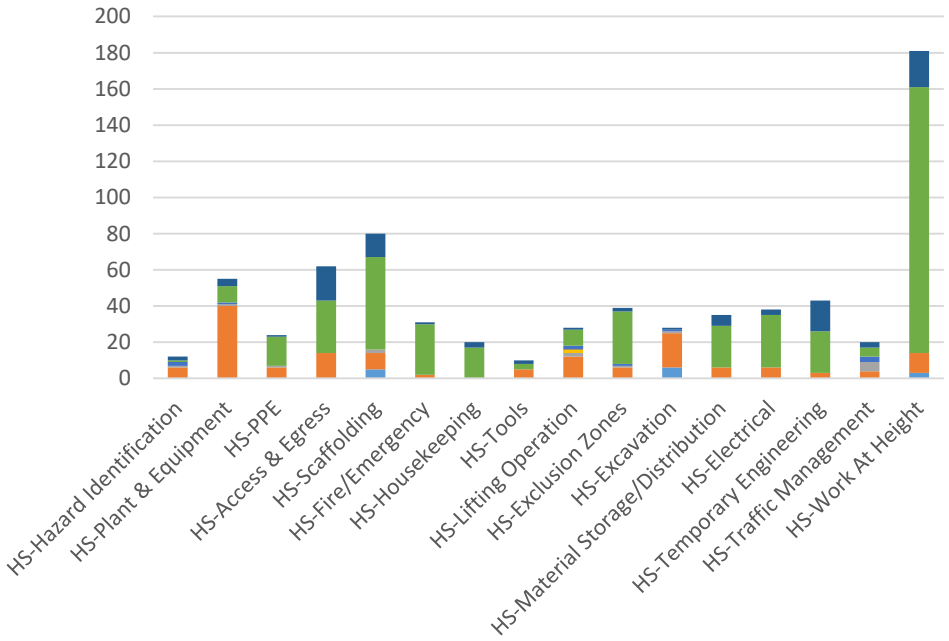
Working in the Heat

Working at Height

Programme Trends – Average Monthly Observations



Working at Height
Programme Trends (Critical Stop Work)



Top 5 by Risk:

1. Work at Height
2. Scaffolding
3. Access & Egress
4. Plant & Equipment
5. Temporary Engineering / Works

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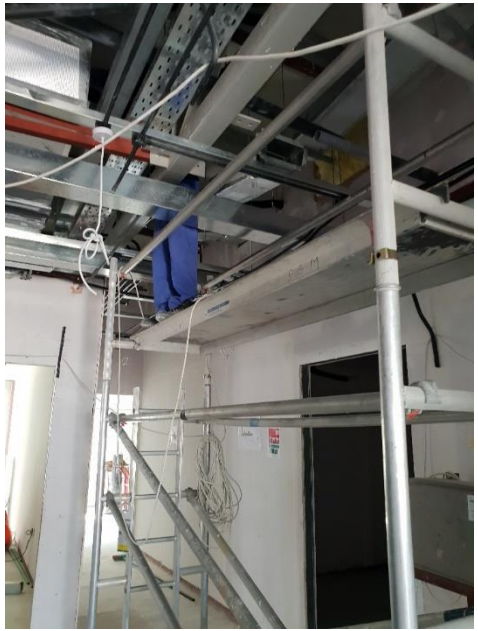
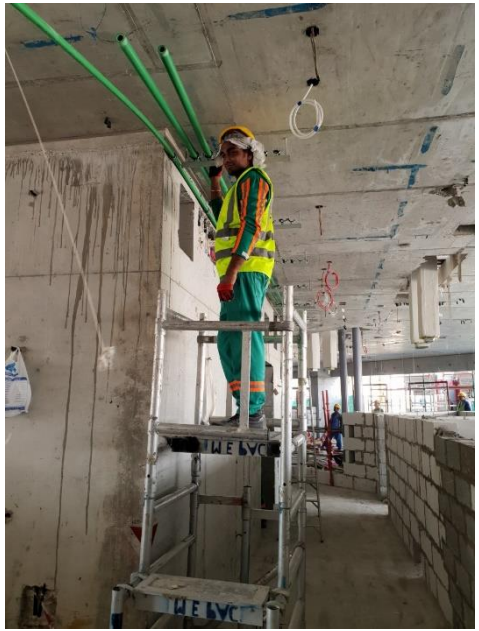
BETTER TOGETHER CARE · RESPECT · PRIDE

Working at Height
Challenges



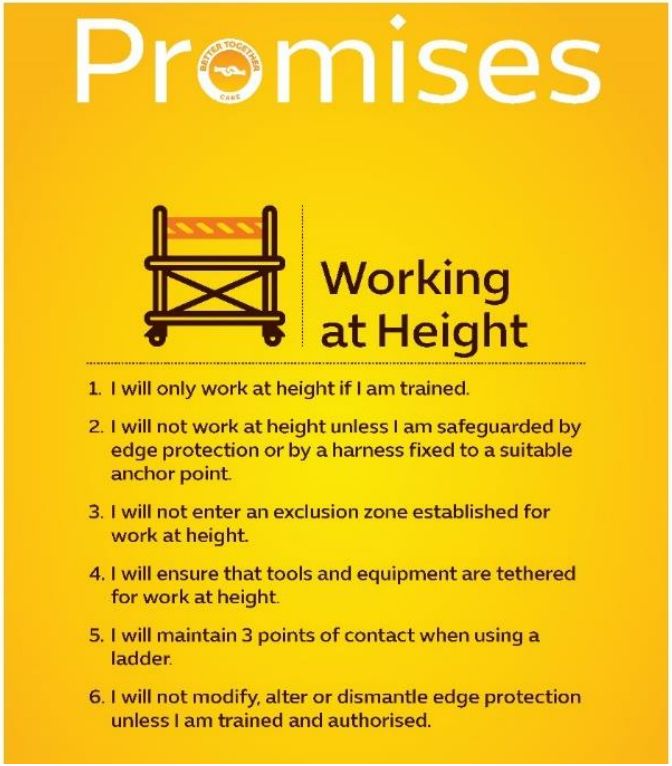


Working at Height
Getting it Right

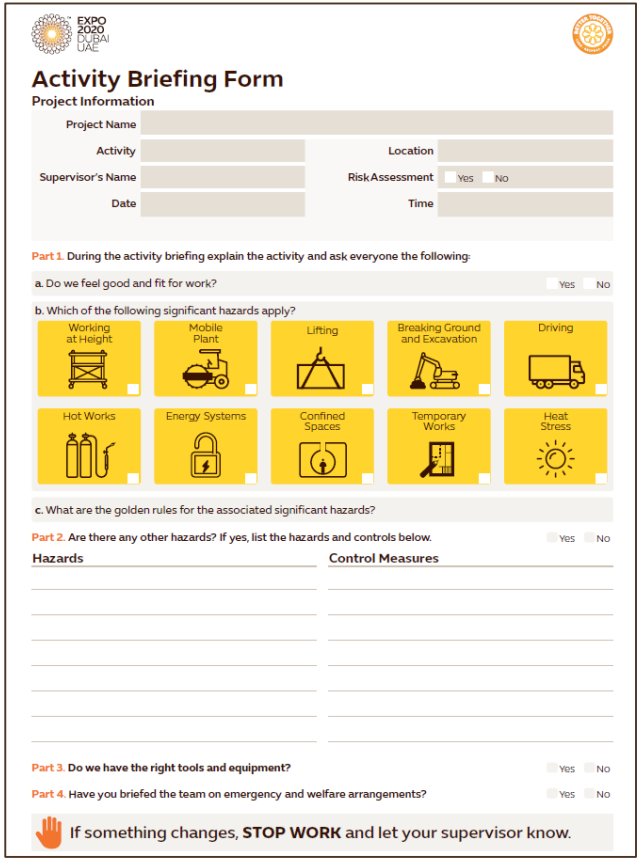
Working at Height

Key Behaviours

- 10 significant hazards
- 6 critical behaviours (promises) for each hazard
- Focus on front-line operatives
- Clear and observable
- A range of tools to support deployment



Working at Height
Activity Briefings



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Activity Briefing Form

Project Information

Project Name			
Activity		Location	
Supervisor's Name		Risk Assessment	Yes No
Date		Time	

Part 1. During the activity briefing explain the activity and ask everyone the following:

a. Do we feel good and fit for work? Yes No

b. Which of the following significant hazards apply?

Working at Height	Mobile Plant	Lifting	Breaking Ground and Excavation	Driving
Hot Works	Energy Systems	Confined Spaces	Temporary Works	Heat Stress

c. What are the golden rules for the associated significant hazards?

Part 2. Are there any other hazards? If yes, list the hazards and controls below. Yes No

Hazards	Control Measures

Part 3. Do we have the right tools and equipment? Yes No

Part 4. Have you briefed the team on emergency and welfare arrangements? Yes No

If something changes, **STOP WORK** and let your supervisor know.

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Working at Height
Knowledge Shares

Health & Safety
Knowledge Share

Inertia Reels

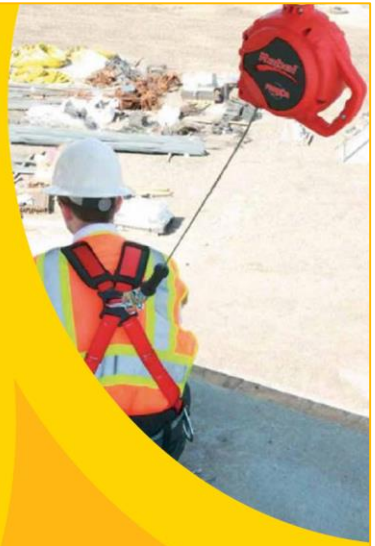
A suspension of work was raised when it was identified that a team was using an inertia reel fixed horizontally on a slab to arrest a fall not in line with the manufacturer's specifications.

Key Points

1. The hierarchy of control should be applied for all work at height, with fall restraint selected before fall arrest.
2. Any fall arrest equipment should minimise the distance and consequences of a fall, typically by correct selection of the anchor point.
3. Most self-retracting inertia reels should be mounted directly overhead and offer a 30-degree working area beneath the anchor point, to minimise any pendulum swing should the individual fall.
4. Inertia reels must be inspected and tested by a competent person every six months.

Recommendations

1. Review work at height tasks to confirm the hierarchy of control is applied; seeking to avoid work at height, preventing falls and minimizing the distance and consequences of a fall.
2. Review use of inertia reels and confirm they are being used in line with the manufacturer's specifications. Common restrictions for the reel include the following:
   - Should only be used in the correct orientation and angle
   - Should not be used as a restraint or work positioning device
   - Should only be used by one person at a time
   - Should only be used in a way to minimise the likelihood of a swing fall.



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Health & Safety
Knowledge Share

Serious Near Miss – Falling Material

A section Aluma shield edge protection fell to the ground from a link bridge when it was being removed. The scaffolder had not realised that the sections of edge protection were only secured with cable ties and when the ties were cut, he was unable to stop the section of edge protection falling to the ground. No injuries occurred.

Key Points

1. There was no temporary works design or specification for securing the Aluma shield edge protection sections to the link bridge hand rails.
2. Although a start of work briefing had been given, the scaffolding team had not reviewed the fixing points or considered whether tethering of the equipment to prevent it from falling was required.
3. The requirement for an exclusion zone had been identified but the charge hand allowed work to commence before it had been implemented.

Recommendations

1. Ensure that planning for edge protection installation /removal considers both the fixings required and the tethering of equipment.
2. Consider alternatives such as green netting which provides the required level of protection for a walkway but creates less risk.
3. Ensure that those in charge of work are fully aware that the proposed control measures (e.g. tethering, exclusion zones, etc.) must be in place prior to commencing work.

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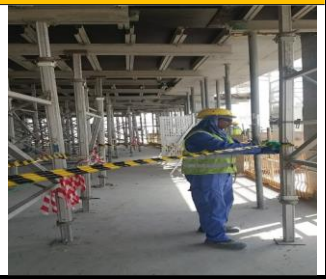
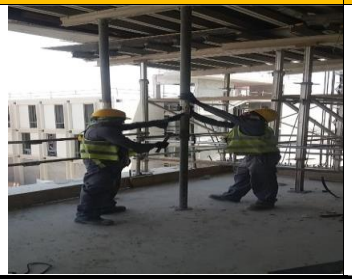
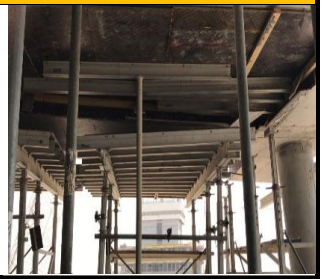
BETTER TOGETHER CARE · RESPECT · PRIDE

Working at Height
Visual Task Sheets

1. Obtain a Permit to Strike the table from your Supervisor	2. Provide an exclusion zone at all levels below where materials might fall during striking	3. Remove the Peri Props below the infill supports	4. Lower the table enough to remove the infill materials
			
5. Obtain a safe work platform to access the table at height	**6. Carefully remove all infill materials and pass to others**	**7. Once all materials are removed, install wheel jacks on each leg**	**8. Manually relocate the table**

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BETTER TOGETHER CARE · RESPECT · PRIDE

Working at Height
Topic of the Month

- Main cause of fatality in the construction industry
- Focus on the hierarchy of control and planning of work at height

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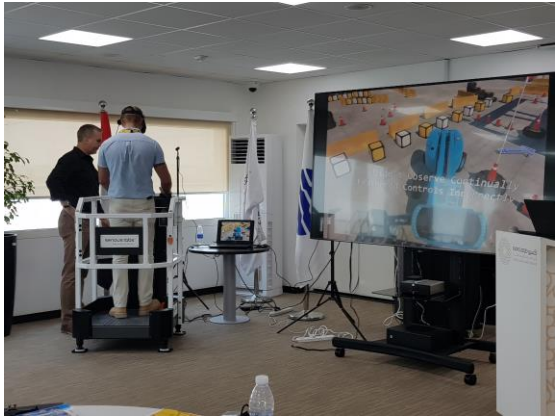
BETTER TOGETHER CARE · RESPECT · PRIDE

Working at Height
Engagement

- Practitioner Forums
  - PASMA – Tower Week
  - IPAF – MEWP Selection
  - Rapid Access – MEWP VR
- Visual Impact Training



Working at Height
Engagement

EXPO 2020 DUBAI UAE

BETTER TOGETHER
CARE · RESPECT · PRIDE

Working at Height
Inspections and Audits

- Based on trend analysis
- Focus Audits
  - PMC
  - Supervision Consultants
  - Contractors
- Focus Inspections
  - Supervision Consultants
  - Contractors

Summary

EXPO 2020 DUBAI UAE

HSQE Strategy
Key Challenges

- Understanding Expo assurance standards
- Focusing on planning and prequalification
- Appointing a competent main contractor
- Managing subcontractors and manpower providers
- Driving assurance requirements through the supply chain
- Managing subconsultants and ensuring coordination between different disciplines
- Allocating resources and ensuring capability
- Coordinating effectively and managing interfaces
- Encouraging leadership involvement

HSQE Strategy
Looking Forward

- Ramping up construction activity
- Subcontractor engagement
- International Participants
- Event Operations
- Legacy

EXPO 2020 DUBAI UAE

BETTER TOGETHER CARE · RESPECT · PRIDE

EXPO 2020 DUBAI UAE

WORLD EXPO