

Health, Safety & Security Review

VOLUME 8 | ISSUE 3 2022

Middle East

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IN THIS ISSUE we highlight our MENA HSE Forum, taking place in Dubai in September, which will bring together HSE experts from leading companies in the region including Aramco, ADNOC, Drydocks World, Abu Dhabi Waste Management Centre (Tadweer) and Be'ah, along with strong representation from Dubai Municipality. It will provide a valuable opportunity to share experiences and best practices as well as to showcase the latest innovations for the advancement of HSE in the Middle East (p10). We also look at mitigating the risk of cancer in firefighters (p24), an issue of which there is growing awareness; how digital technologies can protect lone workers (p17); and the latest in protective clothing (p19).

Louise Waters, Editor

Editor: Louise Waters

Email: louise.waters@alaincharles.com

Editorial and Design Team: Mariam Ahmad, Prashanth AP, Fyna Ashwath, Miriam Brtkova, Praveen CP, Robert Daniels, Shivani Dhruv, Matthew Hayhoe, Prince Kariappa, Rahul Puthenveedu, and Louise Waters

Magazine Sales Manager: Richard Rozelaar
Tel: +44 20 7834 7676 Fax: +44 20 7973 0076
Email: richard.rozelaar@alaincharles.com

Head Office:
Alain Charles Publishing Ltd, University House,
11-13 Lower Grosvenor Place, London SW1W 0EX, UK
Tel: +44 20 7834 7676, Fax: +44 20 7973 0076

Middle East Regional Office:
Alain Charles Middle East FZ-LLC,
Office L2-112, Loft Office 2, Entrance B,
PO Box 502207, Dubai Media City, UAE
Tel: +971 4 448 9260, Fax: +971 4 448 9261

Production: Dinesh Dhayalan, Ranjith Ekambaram and Eugenia Nelly Mendes
E-mail: production@alaincharles.com

Subscriptions: E-mail: circulation@alaincharles.com

Publisher: Nick Fordham

Chairman: Derek Fordham

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Dubai Airports wins Gold Stevie Award

Safety

Dubai Airports has been named the winner of a Gold Stevie Award in the ‘Most Innovative Workplace Redesign During Covid-19’ category in the seventh annual Stevie Awards for Great Employers.

Dubai Airports was recognised with the award for undertaking a number of impressive initiatives during the Covid-19 pandemic to protect the health and wellbeing of employees and passengers. This included the redesign of the Dubai Airports workplace with the installation of onsite testing and vaccination facilities and making these free of charge for all staff and their families.

A series of important technology changes were also implemented in a very short period – redefining ways of working at Dubai Airports. This included the introduction of an online collaboration platform and relaxing of video conferencing restrictions to enable remote working, rollout of DAInsignia e-signature platform enabling a 100% digital



Dubai Airports has been awarded for its Covid-19 initiatives.

workforce with the ability to work from anywhere. The automation of HR employee services, which helped to eliminate paper and enhance the employee experience, was also noted. Not only did these changes improve efficiency but also enabled true contactless work maximising safety for all employees.

Welcoming the win at the awards, Majed Al Joker, chief operating officer of Dubai

Airports said, “Dubai and the UAE’s response to the pandemic has been hailed globally in how it balanced the safety of people while also protecting the economy. We knew that the restoration of consumer confidence was the first critical requirement towards achieving meaningful recovery, and we worked accordingly to ensure that our employees and customers felt confident in our ability to keep them safe at DXB.”

Ramtech announces partnership with Immix

Security

Global wireless solutions firm Ramtech has announced a new partnership with leading security monitoring software provider Immix. The collaboration will enhance the technology offering of both firms, by delivering a combined complete fire protection and safety solution within the global security market.

Under the new agreement, Ramtech’s innovative WES wireless evacuation system will integrate with the Immix CS/GF platforms – a monitoring solution that operates with more than 500 leading video, audio, alarm and GPS systems. Facilities and site managers can now monitor security and fire risk across a range of industries through one system 24/7 – saving time and enhancing efficiency.

John Tyrer, sales director at Ramtech said, “Protecting properties, people and site assets has always been a top priority for Ramtech.”

Enova celebrates one million hours without lost time injury

Health

Enova, a joint-venture between Majid Al Futtaim and Veolia, the regional leader in energy management and multi-technical services, has celebrated a major milestone – completing one million hours of operations without a single staff-related lost time injury (LTI) since January 2020 at Cleveland Clinic Abu Dhabi.

Tasked with delivering Cleveland Clinic Abu Dhabi’s building management services,

including oversight of the 364-bed hospital’s mechanical, electrical, plumbing, and facility maintenance, Enova’s full-time staff have deployed an ‘Always Safe’ strategy adapted from joint venture partner Veolia.

Scrupulous adherence to these safety principles have resulted in one million hours at one of the UAE’s most advanced hospitals with no reported staff injuries that lead to lost time, a remarkable achievement during the global Covid-19 pandemic.

“Delivering more than two years of support without a single lost time injury by our on-site staff highlights the significance of Enova’s commitment to the overall medical sector,” said Renaud Capris, CEO at Enova.

To ensure the continuation of health and safety best practice, Enova’s team has daily ‘Always Safe’ processes that inform the facility management of five clinical floors, three diagnostic and treatment levels, and 13 floors of critical and acute patient units.



Occupational Health & Safety Management System

Why it's better for your organization

ISO 45001

ISO 45001, Occupational Health & Safety (OH&S) management system is the world's first ISO standard focused on the health & safety of the worker. Its emphasis on risk prevention, innovation and continual empowerment benefit both organizations and the wellbeing of their workers. As well as increasing employee engagement and publicly demonstrating commitment to sustainable work by providing safe and healthy workplaces, this standard focuses on key business challenges such as the supply chain and continuity planning. This allows organizations to anticipate, adapt and respond, providing both resilience and agility in the global marketplace.

ISO 45001 Occupational Health & Safety Management Systems

An integrated and upgraded approach

ISO 45001 is based on the ISO high level structure (HLS) that brings a common framework to all management systems. Aligning different management system standards brings greater efficiency and effectiveness.

Leadership and empowerment

ISO 45001 allows leaders of an organization to show their commitment to safe and healthy workplaces in a way which hasn't been seen before, and allows organizations that truly put their people first to demonstrate this by integrating broader wellness/wellbeing agendas into their management system. At the same time, ISO 45001 recognizes the value created by an actively engaged and empowered workforce.

Bringing health and safety and continuous improvement into the heart of your business

ISO 45001 is an opportunity for organizations to align their strategic direction with their OH&S management system and increase focus on improving worker health and safety. Being recognized globally, the standard will ensure that your customers understand the importance you place on OH&S and your workers' wellbeing across business.

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Inspiring trust for a more resilient world

Tadweer urges farmers to use septic tanks

Waste management

The Abu Dhabi Waste Management Centre (Tadweer), in partnership with the Abu Dhabi Agriculture and Food Safety Authority (ADAFSA), has carried out an awareness campaign targeting farm owners in Abu Dhabi. It aims to educate farmers on the importance of septic tank maintenance to avoid pests and disease vectors, such as mosquitoes and flies.

The campaign, which will run until Q3 2022, seeks to inform farm owners on the importance of maintaining septic tanks and avoiding any practices that trigger the spread of epidemics and diseases that can affect humans, animals and plants. In addition, the campaign raised awareness on the importance of following best practices to reduce public health pests, such as mosquitoes and flies.

The campaign aligns with Tadweer's efforts to build an integrated waste management system and combat public health pests, as well as provide customers and the community with value-added services in line with the best international standards and practices.

Mohamed Alnaqbi, acting director of the pest control department at Tadweer, said, "The campaign directly aligns with the centre's strategic objectives to promote awareness among farm owners on the importance of following best practices to combat public health pests. It also highlights the need to clean and close septic tanks tightly to maintain the health and safety of our



Image Credit: Tadweer

The campaign also raised awareness on the importance of following best practices to reduce public health pests.

community and to avoid risks resulting from the reproduction of mosquitoes and flies."

Badr Al Shehhi, communication and community services director at ADAFSA, said, "Our participation highlights our commitment to achieving biosecurity in farms and raising awareness on maintaining sewage tanks to avoid the proliferation of pests."

IOGP publishes guidance on well control

Oil & gas safety

To address well control incidents, IOGP has published new guidance that can help the industry safely plan and execute well construction and abandonment for prevention of loss of well control.

IOGP report 608 – **Recommended Practice for Pore Pressure and Fracture Gradient Analysis for Well Design – Construction, Intervention, and Abandonment** aims to define shared language between subsurface and drilling specialists and provide a globally applicable recommended practice for the preparation of PPFG predictions, definition and communication of associated risks and uncertainties, and approaches to real-time PPFG monitoring during well construction, intervention and abandonment.

IOGP's PPFG Task Force was formed in March 2021 to reduce risks and improve safeguards in well control practices. The guidance can be downloaded from the IOGP Publications Library.

AESG becomes approved by the Saudi Civil Defense

Fire and life safety

AESG, a specialist engineering and advisory firm, announced it has achieved the status of Saudi Civil Defense-approved fire and life safety (FLS) consultants. As one of the few global consultancy firms to achieve this certification, AESG is uniquely positioned to expertly guide construction projects in the Kingdom in implementing the highest international standards and industry best practices. The firm's extensive presence and

commitment to the Kingdom will grant the country's developers access to a pool of highly qualified consultants, thereby enabling them to strictly adhere to the FLS requirements of the new Saudi Building Codes which were issued in 2018 and implemented in July 2021.

Saeed Al Abbar, chief executive officer, AESG, said, "Becoming a fully licensed Saudi engineering firm and Saudi Civil Defense-approved FLS Consultant is a further step in our commitment and expansion to the Saudi

market. AESG's international experience throughout the Middle East, Asia and UK, coupled with our deep local understanding of the Saudi market, enable us to work closely and effectively with clients and local authorities to deliver the best outcomes."

With the Saudi Civil Defense FLS approval, AESG's consultants will now work with the authority to ensure new and existing building designs and implementations comply with the Saudi Building Codes.

EHS pursues transformational projects

Health

The board of directors at Emirates Health Services (EHS) presented three major transformational projects worth US\$15mn that are scheduled to be completed by December 2022, as part of its efforts to adhere to the government work methodology the UAE Council of Ministers introduced in January 2022. They are Community Mental Health, Virtual Healthcare using Metaverse (Metahealth), and the Integrated Revenue Cycle Management System.

H.E. Dr Mohamed Salim Al-Olama, chairman of the EHS board of directors said, “Emirates Health Services is committed to being among the first government entities to implement the transformational projects approach since its nationwide launch. We



The EHS board of directors discussed the progress of three major transformational projects.

strive to significantly advance the health services we provide by embracing advanced technologies, developing treatment protocols and abiding by the highest standards of medical services, in line with the UAE’s leading position on the global health map.”

“The strategy we have developed is in line with government policies and consistent with

national strategies, which seek to develop government operations, drive digital transformation in the health services sector, meet the highest international standards and embrace the latest in advanced medical technology,” Dr Al-Olama added.

Members of the board decided to launch and activate the Meta Healthcare platform, which makes Emirates Health Services the first health authority in the world to launch health services in the Metaverse. The objective is to develop healthcare services and improve customer experience, by taking advantage of the advanced 3D, virtual reality, and Metaverse technologies, to offer virtual medical consultations through smart devices and expand access to health services provided by EHS.

Advanced AI Implemented at Zero Incremental Cost



AI for Security & Operations



Databaseless Access Management



Advanced Perimeter Protection



Management of Facilities

AI for Safety Concerns



Gas Leak Detection



Smoke and Fire Detection



Preventive Maintenance on Equipment



Detection of PPE



Management of Roads

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→ events calendar 2022

September			
6-7	MENA HSE Forum	DUBAI	www.hse-forum.com
13-15	Intersec Saudi Arabia	RIYADH	www.intersec-ksa.ae.messefrankfurt.com
20-23	Security Essen	ESSEN	www.security-essen.de
27-28	4th CCPS MEPSC	DAMMAM	www.ache.org/ccps/conferences
October			
10-12	ISNR Abu Dhabi	ABU DHABI	www.isnrabudhabi.com
25-26	OFSEC	MUSCAT	www.ofsecevent.com
30-1 Nov.	FIREX Egypt	CAIRO	www.ifsecandfireegypt.com
30-3 Nov.	ADIPEC	ABU DHABI	www.adipec.com
December			
6-8	Middle East HSE & Sustainability Week	BAHRAIN	www.energyinst.org

Please verify dates and location with organisers as this information can be subject to change

OFSEC 2022 to bring together the fire, safety and security industries

Fire, safety & security

OFSEC 2022, the dedicated exhibition in Oman on Fire, Safety and Security, takes place from 25 - 26 October 2022 at the Oman Convention and Exhibition Centre, Muscat, Sultanate of Oman. It will bring together local and international participants who will showcase their innovative solutions, technologies and services to meet the requirements of governments, businesses, industrial & commercial entities, and the aviation; construction; infrastructure; transportation; manufacturing; oil and gas; and utilities sectors.

The dynamic economic and infrastructure development in Oman and the region has made the Middle East the most vibrant

safety and security market in the world, with a growth rate of over 10% annually since 2012, according to a recent research by G4S. There is a diverse demand for fire, safety and security equipment, ranging from the smallest of businesses to large corporates and home-users.

OFSEC will link practitioners, suppliers, distributors and manufacturers from the fire, safety and security industry, with key decision makers from the government and private sectors, making it an effective networking platform. The event also aims to create synergy and strengthen the collaboration between the authorities and industries.

The event will attract participation representation

from over 30 countries, with a slew of product and service launches. The event will provide a platform to share best practices, tackle challenges, stay abreast with the latest global trends and explore breakthrough methods for the integration of safety and security technologies.

Areas include a dedicated SME Pavilion, where entrepreneurs and local start-up firms will meet centre stage with international participants to showcase their products and services; and an Outdoor Demonstration Area, providing a unique opportunity to showcase and captivate an audience of key decision makers.

The OFSEC Summit is the definitive meeting place facilitating multi-stakeholder

dialogue with power-packed networking opportunities among C-Level executives, leading industry experts, decision makers, policy makers and government officials from across the value chain. The Summit will address the latest topics shaping the fire, safety and security landscape. It will feature an expansive line-up of stellar speakers, case studies, panel discussions and unique presentations providing access to a wealth of industry leading knowledge, sharing best practices and experiences, spotlighting trends, information exchange, insights and outlooks with actionable takeaways.

For further information, see the website at www.ofsecevent.com

OPTIMISING HSE & ESG strategy

The stage is set for the MENA HSE Forum, now in its seventh year, which takes place from 6-7 September at the Grosvenor House, Dubai.

More than 100 stakeholders from the HSE community in UAE, Saudi Arabia, Qatar, Oman and Bahrain are set to come together at the leading HSE event to share experiences and best practices as well as access the latest innovations to advance HSE.

This edition features five key sessions including:

1. **Process Safety Frameworks** – Aramco, Chevron and Tadweer demonstrate how to deliver an effective process safety management strategy to increase efficiencies while reducing lost time incidents
2. **Role of HSE Leadership in Crisis Management** – Adnoc, Drydocks World and Zawawi Powertech Engineering will address the challenges faced by companies during any emergency and identify strategies to

maintain consistent HSE standards

3. **Future of Digitalisation in HSE** – Petrofac and Fujairah Natural Resources Corporation will analyse the impact of disruptive technologies which can help your organisation create an holistic culture of risk identification

4. **Learning about Occupational Health & Behavioural Safety from Global Transforming Events** – Asyad Drydock, Be'ah, John Energy and Oman Electricity Transmission Company will examine the impacts of the pandemic on OHSE to best position your organisation to address these in 2023 and beyond

5. **How ESG moved from a Cost Centre to a Value Driver** – Insights on the relationship between ESG and investment

returns to help you drive your investment decisions and integrate environmental sustainability in your business.

Speakers include Eng Raed Mohammed Al-Marzooqi, manager of studies and system section, health and safety department, Dubai Municipality; Dr Eng Hani Hossni, EHS

“This is a premier opportunity to build new relationships and network in person with the MENA HSE community.”

The Forum will take place in Dubai.

director Tadweer; Ronald Otte, directory of Safety & Occupational Health and Hygiene, Emirates Global Aluminium; Gerardo Daniel Abalde, group head, Saudi Aramco; Lynn Hobballah, head of health & safety, Petrofac; Saleh Al Balushi, head of HSE, Drydocks World; and Peter Michael Hamel, department head OHSE, Be'ah.

The growing list of sponsors includes Vin Technology Systems, MILWAUKEE, Benchmark ESG, BSI, Clyde & Co, Fugro, GTSC, iOmniscient, ITT-Innovations, ITAC Safety & Environmental Consultants, MACS-G, ARASCA Medical Equipment Trading and Al Hoty-Stanger.

Vinay T, head of Business Development at Alain Charles Events, commented, “We identified a need to access the latest safety solutions for the workforce across the board, which led us to create this exclusive platform for HSE companies to display and demonstrate their services and solutions to key players in the region. This is also a premier opportunity to build new relationships and network in person with the MENA HSE community.” ■

Please register at <https://www.hse-forum.com/mena/register>

Image Credit: Adobe Stock





Image Credit: be'ah

Eng. Tariq Al Amri, CEO be'ah.

Q&A

Leading in sustainable waste management

Eng. Tariq Al Amri, CEO of Oman's waste management company be'ah, discusses the company's focus on economic and environmental sustainability.

Can you give us some brief background on be'ah and its role?

be'ah was established in 2007 to support a cohesive plan laid out in the National Strategy Report of 2006 to adopt proper waste management practices. We have witnessed incredible growth ever since. Today, be'ah is a corporate citizen aligned with Oman's Vision 2040 with a business direction to generate In-Country Value by developing the capabilities of the Oman waste management sector and supporting Omani-owned businesses.

At be'ah we invest in leading the change to put the waste management sector on its strongest possible footing for the future. We believe that by maximising the effective utilisation of our resources and minimising destructive environmental impacts, we build a solid foundation for both economic and environmental sustainability for our nation and future generations.

Today, be'ah operates numerous state-of-the-art waste management sites including 10 engineered landfills and 16 transfer stations.

What measures have you put in place to promote sustainable waste management practices?

Over the years, be'ah has entered into strategic agreements to further the company's circular economy ambitions and made great strides with recycling through a number of key deals with stakeholders to support local recyclers. be'ah facilitated and supported two local companies to launch UCO recycling operations using a biofuel, and provided technical and logistics support to paper recycling plants.

By end-Q4 2021, be'ah increased bin deployment across all governorates to address community concerns and achieved 100% service coverage based on reasonable solid waste expectations. The majority of the solid waste recorded came from the private sector, followed by industry and government. We continue to monitor requirements closely through the call centre and social media touchpoints and address overflow requests adequately for all regions. Further to this, be'ah now has at least one operated engineered landfill in each service area except North Al Sharqiyah, which is still under construction.

We are working systematically towards the completion of our operated transfer stations, and the rehabilitation of traditional dumpsites.

How is be'ah working to raise public awareness of waste management and engage local communities in protecting the environment?

be'ah understands that every sustainability initiative begins with people. We invest in community projects so that our people can benefit from social and economic development. This investment is evident through the multiple approaches taken by be'ah to meet the themes of our projects.

Last year, we launched several successful initiatives:

- be'ah joined forces with the World Health Organisation (WHO) and Ministry of Health for a campaign about the proper disposal of masks. The awareness campaign to reduce littering of used masks in public places was launched on traditional and digital platforms. It created 261,008 views from 78 screens and billboards across 26 locations. Online, be'ah held three

educational webinars and created a drumroll of content across various social media platforms resulting in a total of 495,663 views and 22,245 engagements.

- Our Ramadan campaign entitled 'Unacceptable. Truly Unacceptable.' aimed to educate the public about food waste. be'ah approached multiple stakeholders who enthusiastically participated by sharing our message. Overall, the campaign received over 35,000 shares and
- Eco-Innovate Oman (EiO) 2.0, a project that will run throughout 2022 and train Omani SMEs to evaluate their operations and their value chains using Greenhouse Gas Accounting which is considered the first step in identifying ways to make their operations greener and more sustainable.

What do you think is the role of innovation and new technologies in promoting safe and sustainable waste management operations?

Innovation is a comprehensive term. be'ah has been at the leading front of employing and incorporating the various aspects of it in its core strategies as well

as daily operations. To give an example of innovation aspects; digitalisation in the waste management sector will deliver more effective waste management regimes. Its introduction in Oman will allow our economy to recover more of the valuable materials present in waste streams, reducing the amounts of raw materials mined or imported and avoiding the associated environmental and climate impacts.

As of the mandate of Oman’s Vision 2040 to achieve inclusive and sustainable development, be’ah aspires to establish sustainable waste management practices in line with international standards, provide

adequate innovation and infrastructure to meet the waste management demand of the country, ensure efficient waste management services and raise the level of public awareness about waste management.

What measures has be’ah taken to ensure robust health and safety standards and advance the wellbeing of employees?

The health and safety of our employees and our business partners at be’ah is our number one priority. We have a robust Risk Management Process that identifies, assesses, evaluates and monitors all risks arising from be’ah’s operations. Additionally,

all of our departments have a focal ‘Risk Champion’ that is regularly trained and works closely with the Risk Management Department to feed back learnings from operations as part of the continuous improvement process. Our Integrated Management System is certified against ISO 9001, ISO 14001 and ISO 45001, which is in alignment with be’ah’s strategy.

As part of our Strategy in Phase 3 ‘be’ah Excellence’, which is directly feeding in the Vision 2040 of the Sultanate of Oman, we are focusing on the next step change in our Occupational Health, Safety and Environmental performance. With a clear focus on

streamlining existing processes and ensuring OH&S to be embedded in every single step, to enhancing OH&S performance of our service providers by supporting them in managing the main risk areas, such as Road Traffic and Hands & Fingers.

We believe that if we can create and maintain a safe working environment for everybody in – and working with – be’ah, we will be the most efficient and thereby create the best possible value for everybody being part of the big be’ah family. This can only be achieved if we all work together and I am confident that I have the support from all of our employees and business partners. ■






- Report, Track & Investigate HSE or Service Quality Incidents
- Audit & Inspection Management and Compliance
- Track & Analyse Behavioural Observation
- Manage Training & Equipment Compliance
- End to End Permit to Work system
- Action Tracking & Compliance Management
- Digitalize & Track Management of Change
- KPI Reporting & Tracking
- Digital Journey Management to manage journeys across the organization



1705, X3 Tower, Cluster X, Jumeirah Lake Towers, Dubai UAE

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www.macs-g.com

HSE front and centre

HSE has been at the heart of Drydocks World's vision and mission since its establishment in 1983, and the company's newly-appointed head of HSE, Saleh Al Balushi, is all set to continue the journey.

As a global leading provider of marine, ship repairs, conversions, new building, rigs and MRO projects, Drydocks World, a DP World company, has played an important role in Dubai's economy since its establishment. Now, it not only operates a massive and expanding yard in the region, it also continues to grow its global footprint, with the first phase of a unique mega yacht repair and maintenance facility in Montenegro set to start by the end of the year.

The company's vision is to be the global leader and destination of choice for ship repairs, conversions, new building, rigs and MRO projects – and integral to this vision is its fundamental principle of “Zero Harm to People and the Environment”, enshrined as a core value, which sets the framework for its objectives and actions to continually improve. “Our goal is to make sure everyone goes home safely by adopting a zero harm approach and building a culture where safety is naturally ingrained into our everyday actions and mindset,” says the company.

According to the Drydocks World OHS policy statement, “The leadership in DDW is committed to continue the actions towards Zero Harm to People and the Environment within our business. DDW strives to achieve Occupational Health & Safety (OHS) Excellence by ensuring our initiatives are aligned with the best practices, continual improvement and DP World's HSE strategy.”

The company's mission ties in with this, committing to provide services and products meeting client requirements in an ethical, professional, safe and environmentally friendly manner, to treat all employees with respect, and to ensure a healthy, positive and safe

working environment.

Its OHS policy statement and sustainable environment policy statement set out clear objectives to these ends, with defined KPIs to meet the goals of the company on an annual basis.

The company has also established a comprehensive Environmental Strategy, which focuses on measuring and managing direct environmental impacts and preventing global climate change, in line with DP World and UAE Net Zero strategy. Drydocks World embraces DPW's commitment of Zero CO₂ emissions to the environment, and sets an annual target for the reduction of carbon footprint.

“I am so proud that Drydocks World has enshrined HSE as a core value in terms of its mission and vision,” says Al Balushi.

“That makes my job as head of HSE easier in terms of implementing and communicating best strategies and international practices when it comes to health, safety and environment. This commitment is cascaded from the top, from the CEO, Captain Rado Antolovic, and his leadership team, to the entire organisation. Our main goal is to embed the HSE culture amongst the organisation and to make everyone committed and aware of how important HSE is for Drydocks World, both here in Dubai and across our global operations.”

Al Balushi notes the important place Drydocks World has in Dubai's business heritage, stressing that HSE has been a core value of the organisation from the very beginning. “An important aspect of my job is to continue the journey of HSE success, a journey of 39 years, evolving year by year.”

This commitment to HSE is reflected in the number of national and international awards the company has received, including the British Safety Council's five-star rating, and 11 Sword of Honour awards. Drydocks World is certified to ISO 45001:2018 and ISO 14001:2015 international standards.

All too often, HSE officers are hampered by a lack of support and resources from the leadership, but are held responsible for implementing daily safe system of work with their colleagues from other departments. This is clearly far from being the case at Drydocks World, where Al Balushi pays tribute to the CEO's “amazing commitment to HSE”.

“Our CEO himself is leading it along with myself,” says Al Balushi. “In many organisations it is often the case that the commitment is not there – there might be a policy on paper, but in reality the commitment is uncertain.”

Al Balushi will take the opportunity to communicate this commitment at the MENA HSE Forum, where will be speaking on the topic of HSE leadership, giving examples from Drydocks World.

Al Balushi expresses his appreciation for the production of the forum in Dubai, as a hub for the region.

“A lot of big names and companies are participating in the forum, so this is a very important initiative for myself and others to communicate and share best practices, knowledge, experience and technology altogether in one place, as well as to discuss the challenges. It is great to have the opportunity to meet new people and interact in the coffee breaks.

“So it's a golden opportunity to share knowledge and learn from each other.” ■

Security under the spotlight in Saudi Arabia

Intersec Saudi Arabia will reconvene for its fourth edition from 13-15 September, 2022, at the Riyadh Exhibition Center, uniting the Middle Eastern and global security industry for exhibitions, conferences and networking.

“We’re expecting a sell-out show with plenty of new updates and business connections in the Middle East’s largest and fastest growing market for security, safety and fire protection.”

Alexandria Robinson,
Intersec Saudi Arabia’s show director.



Image Credit: Messe Frankfurt Middle East GmbH

The fourth edition of Intersec Saudi Arabia is returning in September 2022, after the 2021 iteration was delayed due to international travel restrictions.

The event, hosted by Messe Frankfurt Middle East, will invite regional players from security, safety, and fire protection, including private and public sector organisations.

After a pandemic-affected 2020, Intersec Saudi Arabia aims to capitalise on what 6WResearch predict is a US\$906mn market for video surveillance, access control, intrusion detection, and fire safety systems and equipment. Events such as Intersec remain a cornerstone for the continued

growth in this sector and building a secure future.

Alexandria Robinson, Intersec Saudi Arabia’s show director, explained, “We’re looking forward to delivering a fully booked Saudi show that will deliver above and beyond what is expected of the Intersec brand.

“Saudi is the largest and fastest growing market for security, safety, and fire protection in the Middle East, and Intersec Saudi Arabia 2022 will present the ideal platform for international and local exhibitors to re-connect and gain direct access to key players.”

Intersec Saudi Arabia is supported by government entities including the Saudi Ministry of Interior, Saudi Civil Defense, and

the Saudia Standards, Metrology and Quality Organization.

More than 120 exhibitors from 20 nations are expected to participate, with a number of key figures taking to the event’s Security Leaders’ Summit.

The summit’s first day alone will host panels on ‘Transformation of The Kingdom, Development, and Implications Security aligning with the requirements of the Vision 2030’, ‘Strategic opportunities in solving the Talent gap for the Security Industry in the Kingdom’, and much more over the three-day event. ■

Register and learn more at www.intersec-ksa.ae.messefrankfurt.com/ksa/en.html

The event reconvenes for its fourth edition in 2022.

Downtime in HEALTHCARE

Health, Safety and Security Review Middle East heard exclusively from Emad Fahmy, NETSCOUT's systems engineering manager for the Middle East, on the varied impact of downtime on the healthcare industry.

“Downtime in healthcare can have a severe negative impact on patient safety and treatment, customer service, hospital reputation, and overall trust by patients, families and communities.”

Analysing the cost of downtime requires a multi-faceted approach.



Emad Fahmy, systems engineering manager for the Middle East at NETSCOUT.



Image Credit: Adobe Stock

Downtime comes at a significant cost to all sectors, and while automation and workforce growth in healthcare is attempting to rise to the challenge, it remains a significant issue for productivity and efficiency in the sector.

Emad Fahmy, systems engineering manager for the Middle East at NETSCOUT, examines the cost and impact of downtime in this exclusive comment.

“The high cost of downtime has always been a significant concern for businesses. On average, a minute of downtime can cost an organisation US\$5,600, whereas an hour of lost production time can cost over a

staggering US\$100,000, depending on the value of the products manufactured at the factory.

“In the healthcare industry, the cost of information technology (IT) downtime is similar to that of other industries, with most recent studies stating costs ranging from U\$5,300 to US\$9,000 per minute. However, the risk of unanticipated IT disruptions in the health care industry raises implications that go well beyond the loss of revenue.

“When electronic patient records are inaccessible for a few hours or any given day, or imaging and radiology systems are unable to relay X-rays, MRIs,

or ultrasounds across the network, the impact extends far beyond doctors and medical personnel carrying out their duties.

“Downtime in healthcare can have a severe negative impact on patient safety and treatment, customer service, hospital reputation, and overall trust by the patients, families, and communities towards the afflicted health institution. These implications and experiences are unquantifiable in monetary value, due to the impact they have on the humans involved. Whether the source for the disruption in services is related to performance or security, the consequences are significant and far reaching.” ■

Tips for effective decontamination

Hughes Safety Showers shares some advice on the effective use of safety showers and eye washes.

Safety showers and eye washes are designed to be simple to activate in the event of an emergency, going from off to on within a second. Once they have been installed in the correct position, within 10 seconds reach of the hazard with no obstructions as per EN and ANSI standard stipulations, employees must be made aware of their location and how to use them effectively.

The Hughes range of plumbed-in safety showers can deliver 76 litres of water every minute. But how long should a casualty remain under the column of flushing fluid? European and International standards recommend that the safety shower should provide a minimum of 15 minutes continuous water flow, yet it does not specify how long the affected body part should be rinsed to ensure a thorough decontamination.

The hazardous chemicals an employee may be exposed to should be identified when performing a risk assessment prior to purchasing safety shower and eye wash equipment. Once the properties are known, the correct equipment can be selected, and the flushing time adapted. The examples below were taken from the Canadian Centre for Occupational Health and Safety (CCOHS) website:

- Five minutes for non-irritants or mild irritants
- 15-20 minutes for moderate to severe irritants and chemicals that cause acute toxicity if absorbed through the skin
- 30 minutes for most corrosives
- 60 minutes for strong alkalis (e.g., sodium, potassium or calcium hydroxide).

Of course, medical attention should be sought as soon as possible, and the flushing procedure repeated if irritation persists.

Safety showers are not suitable for treating the eyes and face due to the high flow rate and pressure, which could cause damage to this delicate area. Mains fed eye wash stations deliver a controlled flow of 12 litres per minute of aerated water, non-injurious to the eyes. Following exposure to hazardous chemicals, the worker should:

- Activate the eye wash. It is essential that employees are trained in how to activate the eye wash on site, as methods can differ from one model to another
- Hold the eyelids open using their fingers and lower head towards the stream of water
- Flush the area for a minimum of 15 minutes, rolling the eyes around if possible



The Hughes range of plumbed-in safety showers can deliver 76 litres of water every minute.

Image Credit: Hughes Safety Showers

- If irritation continues, then repeat the process
- Seek medical assistance.

It is imperative that all employees are offered full training and instruction in the proper use and location of emergency showers and eye wash stations, it should never be assumed that workers are aware of the procedures.

A hands-on drill is effective to put the learning into practice. The UK Health and Safety Executive stresses the need to “be prepared” stating, “You need to plan and practice to cope with foreseeable accidents, incidents or emergencies”. This includes having the right equipment in place, such as PPE and decontamination products, along with the correct procedures to act and deal with a casualty.

Hughes Safety Showers offer an extensive range of showers to suit all environments and industries, to discuss your site requirements, please do not hesitate to contact the company at www.hughes-safety.com

New report highlights safety shower trends

Global Insight Services has produced a report on Emergency Shower & Eye Wash Station Market Analysis and Forecast to 2031, which provides analysis of the impact of latest market disruptions such as the Russia-Ukraine war and Covid-19 on the market; a qualitative analysis of the market; in-depth segmentation and market size data by categories, product types, applications, and geographies; and comprehensive analysis of key issues, trends and drivers, restraints and challenges, competitive landscape, as well as recent events such as M&A activities in the market.

An emergency shower is a safety shower that is installed in a work environment where there is a possibility of coming into contact with hazardous materials. The shower is designed to quickly remove any hazardous material from the body and to rinse the eyes if they have been exposed to an irritant. An emergency eye wash station is a similar device that is designed to flush the eyes with water in the event of exposure.

The report highlights several key trends in the emergency shower and eye wash station technology.

One is the trend towards more compact and space-saving designs. This is especially important in

industries where space is at a premium, such as healthcare and manufacturing.

Another trend is the move towards more user-friendly designs. This includes features such as easy-to-use controls and self-contained units that do not require plumbing or electricity.

Finally, there is a trend toward more environmentally-friendly designs. This includes the use of recyclable materials and the use of water-saving features.

The key drivers of the emergency shower and eye wash station market are the stringent government regulations regarding the safety of workers in the

chemical and manufacturing industries, and the growing awareness of the importance of safety in the workplace. The increasing number of accidents and injuries in the workplace is also driving the market for emergency shower and eye wash stations.

The key restraints and challenges are lack of awareness about the importance of having an emergency shower and eye wash station in workplaces; and lack of trained personnel to operate the equipment in case of an emergency.

For more information see <https://www.globalinsightservices.com/inquiry-before-buying/GIS21774/>

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Application of lone worker monitoring

Lone worker monitoring is growing in prominence across industries to protect workers and operators alike. With solutions ranging in applications and efficacy, what does industry need to keep in mind when selecting their solution?

“With a constantly innovating and shifting array of potential solutions... operators may struggle to navigate the array of products and select the ideal solution for their environment...”



Image Credit: Adobe Stock

Lone worker solutions continue to innovate, integrating a range of technology from Windows-based application software to Fourth Industrial Revolution (4IR) technologies such as AI.

With a constantly innovating and shifting array of potential solutions for worker monitoring, operators may struggle to navigate the array of products and select the ideal solution for their environment and expectations.

A key consideration to be made is the environment in which solutions will be deployed, such as the extreme temperatures in metalworks and oil and gas

production. Certain solutions integrate temperature monitoring within wearable systems, alerting workers and operators of unsafe conditions and listing critical health indicators associated with extreme conditions, such as core body temperature, heart rate and sweat rate.

This was shown to be a key consideration when Emirates Global Aluminum (EGA) recently announced the rollout of a testing scheme for wearable solutions, designed to prevent heat-related illness amongst industrial workers.

"We have focused on preventing heat-related illness each summer for many years,"

said Abdunnasser Bin Kalban, CEO of EGA. "Wearable technology offers the prospect of zero cases every summer, and I am optimistic about this trial," he added.

EGA's 'Beat the Heat' programme is a summer-long effort that aims to build knowledge of heat-related illness. In addition to these efforts, EGA employees also have access to other preventative technologies, including hydration tests before and during shifts; cooling showers; cooling booths; drinking stations; icemakers; portable air conditioning units; UV protection; and electrolyte drinks.

Uniting these preventative

Lone worker monitoring is benefitting from the innovation of the 4IR.

lone worker monitoring

technologies with a comprehensive set of monitoring criteria within the wearable tech is providing a conducive environment to minimise risks for workers and deliver optimal results during the testing scheme.

Naturally, wearable tech operates as a complement to existing safety measures and facilities, rather than a replacement.

For remote environments or unmanned sites, systems that integrate cloud-based monitoring may prove more effective.

In environments that rely on peer-to-peer messaging, operators are noticing a growing trend of delayed, restricted contact, and periods of low signal during vital contact or emergency situations.

This is where cloud-based platforms step in. Suez Advanced Solutions UK, part of the wider Suez Group, is a specialist in water network services, developing wastewater treatment solutions adapted to local conditions and health standards.

Water sampling technicians at the firm were often caught short on unmanned or remote sites, relying on the aforementioned peer-to-peer messaging systems while working on open water or sludge pits. Combining these conditions with the working from height requirements of the role made SUEZ's choice of the cloud-based StaySafe solution a no-brainer.

The cloud-based application connects mobile devices to a central hub and utilises real-time updates on safety status, with staff able to remotely locate workers on a map and send immediate assistance. A customisable hub can integrate tailored reporting lines and escalation procedures in line



Image Credit: Soter Analytics

AI may be the next frontier for wearable technologies supporting lone worker monitoring.

with company policy, making this a flexible option for remote monitoring. Following the implementation of StaySafe, SUEZ Smart & Environmental Solutions' QHSE leader, Lidia Aleksinska, said, "We have found people's day-to-day behaviour is very strongly linked to their mobile phones, so moving the provision of lone working monitoring from a dongle device to a mobile phone has been very effective".

The same solution was integrated within Veolia's water division, implementing the system during standard working hours and call-outs after hours. "At the end of the trial, over 92% of Veolia's trial participants said they would prefer to use the StaySafe app compared to our old system," explained Scott Murphy, manager operational excellence at Veolia Australia - New Zealand.

In-app training, GPS accuracy and highly visible emergency button helps streamline emergency processes for operators integrating their solution into the HSE protocol.

Looking to the future, wearable tech for lone worker monitoring is sure to develop within the Fourth Industrial Revolution. 4IR technologies are already being implemented, such as StaySafe utilising the cloud, but the industry isn't stopping there.

Soter Analytics recently secured a US\$12mn investment to develop AI-driven wearables, which utilise artificial intelligence

to prevent musculoskeletal injuries. This technology aims to be more suited to the physical demands of warehousing, manufacturing and construction.

Matthew Hart, Founder and CEO at Soter Analytics, commented, "Today marks an important milestone for Soter Analytics and our mission to empower organisations to make their workplace safer. Our bespoke technology provides an end-to-end safety solution through AI and machine learning, and this fundraise shows that our investors and partners have recognised the strength of our product.

"The wearable tech and adjoining analytics dashboard has already seen a 55% reduction in manual handling injuries, with the recent investment to be directed towards research and development to tailor the solution to specific applications."

Wearable tech is changing with the times, and operators and workers alike will have a number of considerations when choosing the optimal solution for them. ■

"People's day-to-day behaviour is very strongly linked to their mobile phones... moving the provision of lone working monitoring from a dongle to a mobile phone has been very effective."

Lidia Aleksinska, QHSE leader at Suez Smart & Environmental Solutions.

Keeping industry WORKERS SAFE

Safety clothing and the essential role of personal protective equipment in the Middle East's industrial landscape. Martin Clark reports.

“Worker safety has always been priority number one in an industrial landscape that is both challenging and inherently dangerous.”

Selecting the perfect protective clothing solutions present an array of factors to consider.



Image Credit: Adobe Stock

Worker safety has always been priority number one in an industrial landscape that is both challenging and inherently dangerous.

Operating with hydrocarbons and combustible or explosive materials represents a permanent hazard that calls for strict protocols and the best safety wear – the growing prominence of these markets and conditions across the Middle East will undoubtedly come with a growing importance of adequate

personal protective equipment (PPE).

In the Middle Eastern context, the climate and sometimes extreme environment can also exacerbate any industry-specific threats.

It means keeping workers safe, and yet comfortable, and able to operate and perform efficiently – a perennial test for suppliers of PPE, an area that spans protective clothing, footwear and headwear, as well as respiratory protection and other areas.

It is a market that is expected to see significant growth in the years ahead, according to research.

Frost & Sullivan forecasts growth of 3.7% for PPE in the oil and gas space alone through to 2023.

The global oil and gas PPE market generated revenues of US\$6.3bn in 2018, it reported.

While the Middle East's oil and gas sector represents just a portion of this total, it is nonetheless a market on the rise,



Image Credit: Adobe Stock

serviced by a host of leading suppliers.

PPE is also an area which gained huge public exposure over the last two years with the Covid-19 outbreak – and not always for good reasons.

The unprecedented demand for PPE during the Covid-19 pandemic also witnessed a concerning influx of new and even existing PPE brands selling products that were not always up to scratch.

That is a massive problem in highly sensitive areas, including both healthcare and oil and gas.

Ansell was among industry leaders to call out the problem urging safer, more sustainable PPE in an open letter this year to EU regulators.

“These often don’t meet minimum protection levels or claim higher protection properties than they can provide – despite this, their prices make them attractive to buyers,” the

company noted in a March statement.

Unfortunately, it notes, such practices are growing exponentially due to poor market surveillance and the absence of severe penalties to combat fraud.

This increasing non-compliant PPE also creates an unfair competitive environment and could mislead customers, creating unsafe work environments and potential accidents.

For healthcare workers –and,

of course, energy industry professionals working on critical installations like offshore platforms, refineries and gas plants – it’s a life or death issue.

In an industry that values worker safety so highly, and where companies maintain their very reputation through a commitment to safety, it points to an era in which investing in quality, both in terms of equipment and brand, will be increasingly good for business. ■

NNT and Polygiene’s protective uniform partnership

Protective clothing

NNT and Polygiene have teamed up to launch new frontline workwear uniforms for health professionals.

The new workwear, launched under the Workwear Group logo, utilises Polygiene’s StayFresh technology, which inhibits the growth of odour-causing bacteria in fabrics. This allows treated garments to be washed less frequently, saving time, energy and water.

“We are proud to partner with NNT to grow our offering within the WWG portfolio, a respected global provider, of high quality



Image Credit: Adobe Stock

The partnership will release new ranges under the Workwear Group logo.

and performance workwear,” said Ulrika Björk, Polygiene CEO.

Björk continued, “The added value of Polygiene StayFresh

performance in these scrubs will provide the frontline in the healthcare industry the confidence of a hygienic uniform

as well as confidence in a fresh uniform when in a public arena. We look forward to continuing to grow our partnership in the seasons to come.”

StayFresh uses a patented silver salt solution, tested rigorously by independent laboratories to prove its safety and effectiveness. As it is incorporated during garment manufacture, it continues to work throughout the products’ lifecycles.

The results are scrubs and uniforms giving the wearer all-day freshness that does not cost the earth in energy or resources.

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Workplace gas safety – a connected future

David Head, senior marketing manager at Dräger, on the future of gas safety and the Fourth Industrial Revolution's role in protecting workers.

“The ideas and technologies promised as part of a Fourth Industrial Revolution have brought far-reaching benefits... when it comes to gas safety the potential benefits are significant.”

David Head, senior marketing manager

The Fourth Industrial Revolution has already begun to shift the safety landscape.



Image Credit: Dräger Safety

Industry 4.0, and the ongoing automation of traditional industrial practices using modern smart technology, has played a prominent role in the evolution of workplace safety in the past decade. Recent developments in digitalisation and connectivity are further transforming the way we work, and making workplaces smarter and safer.

The ideas and technologies promised as part of a Fourth Industrial Revolution have

brought far-reaching benefits – spanning big data and cloud computing to predictive maintenance – which have had a positive impact on many industry sectors.

When it comes to gas safety the potential benefits are significant, and there have been some major advances in innovation (particularly in connectivity) of portable gas detectors over recent months.

Sectors where gas is a risk, such as the oil and gas or utilities

industries, are now able to access real-time monitoring of hazardous environments via inter-connecting portable systems which communicate and respond to one another to safeguard personnel. Systems have capacity for wider application, including fixed gas systems, going forward.

Using new innovations, a connected smart safety system can now be created to link portable gas detectors which might be used in confined spaces.

This offers a number of key benefits, including live monitoring, whereby key information is displayed in real time via an online user interface. This interface is available to anyone who has the appropriate permissions, meaning that workers on site, or managers in a central location, can pinpoint the position of their colleagues and the status of their gas safety at any given moment. If an alarm is activated by any individual device, colleagues and managers would be immediately alerted to the risk, and receive the key information displayed on the management dashboard.

Furthermore, emergency services can be granted access to the data which allows them to manage an emergency situation, if needed, and the data can be logged for later analysis.

This means that hazards can be identified more quickly, countermeasures can be initiated faster, and correlations and anomalies can be analysed more easily to identify root causes. This



Image Credit: Dräger Safety

Integrating 4IR technology into gas safety measures helps protect workers and operators.

is important in improving outcomes, not only in post-event analysis but in real-time through live monitoring.

Another key benefit of this type of digitalisation is that it offers opportunities for more efficient asset management, simplifying a range of processes that were previously more

“Increased transparency, easier management and reduced potential for human error are key outcomes.”

complex, and centralising management whilst decentralising execution.

This makes device management and compliance far more straightforward, as data in relation to operational status, testing and calibration results can be collected and accessed from anywhere, with the ability for analysis to be performed automatically. Device updates can also be distributed centrally with ease, notifications can be sent to users, and a complete documentation history for each gas detection device is automatically stored on the connected system.

Increased transparency, easier management and reduced potential for human error are key outcomes of the smart system,

leading to significantly improved safety to life and cost savings at the same time.

Of course, it is vital that comprehensive training and a thorough understanding of such technologies is well-embedded as part of any new roll-out. Without this, there is a real risk that the full benefits may not be realised.

With demand growing to generate better safety insight and information to better inform safety policies and approaches, there is an increased requirement for safety data. And whilst this may feel challenging, advances in safety technologies are making this increasingly possible, and straightforward.

As connected and digital safety is starting to be better understood and harnessed across multiple industry sectors, and alongside the range of operational benefits, this new technology heralds new potential to safeguard those exposed to gas safety risks in the workplace. ■

www.draeger.com



Image Credit: Dräger Safety

Dave Head, Dräger Safety's head of marketing.

Reducing the risk

There is growing recognition of the risks to firefighters of occupational cancer. Raising awareness, training in good work practices as well as appropriate use and decontamination of PPE are critical.

“Firefighters are four times more likely to have been diagnosed with cancer than the general population.”

There is a growing awareness of the links between cancer and firefighting, with the International Association of Firefighters (IAFF) claiming that occupational cancer claims the lives of more firefighters than any other work-related hazard. University of Central Lancashire (UCLAN) research has found that firefighters are four times more likely to have been diagnosed with cancer than the general population.

In July 2022, the International Agency for Research on Cancer (IARC), the cancer agency of the World Health Organization (WHO) re-classified firefighter occupational exposure as a Group 1 carcinogen, the cancers identified in relation to this reclassification including mesothelioma and bladder cancer. This is likely to have a major impact on the fight against firefighter cancer, from medical research to presumptive laws.

Firefighters are increasingly exposed to carcinogenic substances and toxic contaminants from fires. Not only is there a danger to firefighters themselves from breathing in or ingesting these substances, getting them on their skin or in their eyes, there are dangers that arise

from reusing or coming into contact with contaminated clothing or PPE that has not been correctly cleaned and stored. This can also contaminate vehicles and fire stations.

The USA’s NIOSH comments, “It is important for the Fire Service to educate its members about safe work practice. Sound work practices are designed to reduce exposures to hazardous agents, which is key to reducing occupational illnesses, including cancer. Training should emphasis the proper use and care of PPE and turnout gear, and the proper use of approved respiratory protection during all phases of firefighting.”

Measures should include fully documenting all fire or chemical exposures; wearing appropriate and correctly-fitting PPE; proper removal of PPE to avoid contamination transfer; robust cleaning and disinfection of PPE; changing out of contaminated gear and taking a shower as soon as possible after exposure.

In the USA, a new app has been launched to help North Carolina firefighters track their exposure to carcinogens while on the job, and a National Firefighter Registry (NFR) of active and former firefighters has been created, with the goal of understanding and

reducing cancer in the US Fire Service.

In the UK, the Fire Brigades Union (FBU) has led on research into the links between cancer and firefighting, and best practice that can help mitigate the potential risks from fire contaminants. This includes compiling a Firefighters Cancer and Diseases Registry, and using that research to produce best practice training for firefighters, as well as video training for firefighters to help protect themselves and their families from fire contaminants.

Riccardo Favara, global head of personal protective equipment division at German machine builder Meiko comments, “With our international customers, we see that the topic of decontamination is rapidly gaining relevance. This term is increasingly penetrating the consciousness of firefighters themselves and also of professional organisations.”

Meiko has created equipment and robust processes for cleaning and disinfecting respiratory equipment. TopClean D, a specialised washer for the mechanical pre-cleaning of PPE, decontaminates and cleans breathing apparatus equipment thoroughly, to protect firefighters from residual fire-related toxins. ■

Addressing skills shortages

Fraser Heggie, chief technical officer for global hazardous area services provider Eutex, discusses the impact the loss of an ageing workforce has on the global skills bank, and how it is accelerating in-country training across MENA and Asia.

“For us that translates into a shortage of electrical technicians who have experience of working in hazardous areas.”



Image Credit: Eutex

To say that the past eight or so years have been testing ones for the energy industry is an understatement. A prolonged period of downturn which saw oil prices tumble had a severe impact right across the oil and gas sector. As we moved towards recovery, we were hit by a global pandemic.

Two years later, as we emerge from that, we are seeing a steady resurgence in business thanks to the current price of a barrel of oil and the renewables sector taking

off on a rapid upward trajectory.

While that's good news for business, it does leave many sectors of the industry with a specific challenge, and that's the shrinking pool of competent, skilled staff who have the experience to take this boom in business forward.

Skills shortages exist particularly in technical roles; for us that translates into a shortage of electrical technicians who have experience of working in hazardous areas, where a sound

knowledge of the environment they work in is crucial. Those shortages exist both in the oil and gas sector where our core business lies, and in the emerging hydrogen sector which has the same commonalities when it comes to working with electrical equipment in potentially explosive environments. Still a relatively new field of energy supply, hydrogen will present an enormous global skills shortage across all levels of safe production, storage, distribution and use.

ABOVE: There are skills shortages in technical roles in particular.

There are several reasons for these shortages. Uppermost is the loss of an ageing, but highly experienced workforce, who after years of instability in the price of oil price and a drop in wages, followed by the challenges of Covid, decided enough was enough and decided it was time to leave the industry for good.

The Covid-imposed restrictions on travel also had a noted impact on the skills gap across Asia and MENA. That, and the reduced availability of experienced personnel, has changed how operators and supply chain companies have approached the training and mentoring of young technicians across Singapore, Thailand, the UAE and elsewhere.

The upcoming generation of exciting young talent which is developing in each of these countries is eager to learn, keen and ready to work. But youth and enthusiasm are no substitute for experience, expertise and an instinct which has been honed over the years in a high-risk environment where there is no room for error.

“We now provide on-line mentoring support and coaching where face-to-face is no longer possible.”

The right training provides an invaluable foundation, but practical experience has to be gained, and we need to look at short to medium term solutions until these young technicians gain more experience.

As a globally positioned



Image Credit: Adobe Stock

The rapid development of hydrogen will present challenges in terms of skilled personnel.

company Eutex, like many others, has adapted and changed how we do things. Pre-pandemic, we would have brought experienced personnel, who had developed years of experience globally, to coach and share their expertise with up and coming young in-country technicians, mentoring them on a one-to-one basis, passing on their years of knowledge to the next generation.

Adapting the approach

Over the past couple of years, that hasn't been possible, so we've adapted our approach. We now provide on-line mentoring support and coaching where face-to-face is no longer possible. That ensures that while the next generation of electrical technicians are building up their own depth of knowledge, they will always have access to someone they can contact for advice, who can point them in the right direction.

There are other advantages. Companies operating on a global basis are working hard to reduce their reliability on foreign

workers, turning their attention instead to an increased focus on recruiting, training and developing local talent.

That has accelerated the commitment they are making towards supporting nationalisation policies across the region, further growing and developing strong relationships with the people they work with and in the countries in which they operate.

Building a workforce which predominantly comprises local content will be crucial in the continuing growth of the energy sector, and we work closely with key clients to support nationalisation initiatives which are narrowing the skills gap.

The loss of knowledge we are seeing offshore is not unlike the loss of skilled tradesmen working in other sectors, where an experienced workforce is often being replaced by automation.

But automation isn't a feasible option for the type of work we do; a machine cannot walk up and down steps, pull cable into place and wire it up properly, so it cannot be a fallback or

substitute for skilled, experienced personnel.

So we have to look at other options, including how we can adapt some of the products we use, such as cables, types of cable glands and junction boxes to make installation easier and more straightforward.

Advances in technology have brought huge benefits right across the energy industry, particularly in recent years, but to some extent, that comes with a price, and that is how we ensure the training that is being provided today keeps up with the technology that is developed tomorrow.

Being ready for the future needs a new approach, and adapting to ever-changing requirements demands an agility and willingness to continue to look at how we can do things better or differently. The loss of a generation of skills will be keenly felt across the industry. Our challenge is to bring on the next generation while ensuring that safety is always the number one priority and at the forefront of all we do. ■

The evolving nature of oil spill response

Andy Nicholl, principle preparedness & response authority at Oil Spill Response Ltd., discusses considerations responders need to be aware of as new marine fuels are developed.



Image Credit: Adobe Stock

“The traditional marine bunker fuel market has been supplemented by a wide range of new, cleaner next-generation fuels.”

ABOVE: Oil spills can have a catastrophic impact on the environment.

The topic of Low Sulphur Fuel Oil (LSFO) was thrust into the spotlight in July 2020 when the MV Wakashio vessel ran aground in Mauritius. At the time journalists noted that this fuel is relatively new to the market, some referring to it as a ‘Frankenstein fuel’.

Over 30 years ago, only two types of marine fuels were considered to be the main concern: Fuel Oil (FO) and Marine Diesel Oil (MDO).

Since this time, a raft of emission control regulations have been developed and implemented

by the Marine Environment Protection Committee of the International Maritime Organization (IMO).

In the period 2007–2012, annual greenhouse gas emissions from shipping amounted to approximately 1,000 Mt of CO₂ representing about 3% of global man-made emissions (IMO, 2015). Reducing this burden is important in terms of the Paris Agreement commitments, and further regulations are expected in the future to support the ongoing drive to decarbonise shipping.

There are two principal ways in which operators of ships can comply with the regulations:

- ❖ Use of compliant fuel, collectively referred to as Low Sulphur Fuel Oil (LSFO).
- ❖ Continuing to use traditional high sulphur fuels but investing in exhaust gas after-treatment to remove (“scrub”) sulphur from the exhaust gases.

The traditional marine bunker fuel market has consequently been supplemented by a wide range of new, cleaner next-generation fuels, designed to comply with the prescriptive

specifications required under the Global Sulphur Cap. Other fuels that have the potential for contributing to this revolution include Liquefied Petroleum Gas (LPG), methanol, bio-fuels, synthetic methane, hydrogen and ammonia.

But what happens when one of these new fuels is accidentally spilled in the marine environment? Responders, such as Oil Spill Response Limited (OSRL), are familiar with the characteristics of conventional Fuel Oil and Marine Diesel Oil together with the respective clean-up techniques that can be applied in the event of a spill, but the new generation fuels are potentially very different. Fundamentally, whenever an unfamiliar oil type is spilt, there are five questions responders need to know:

“Without knowing the actual characteristics of the oil that has been spilled, response efforts could be hampered.”

1. Will it flow?

The pour point is the temperature below which the oil ceases to flow. This is determined by the chemistry of the oil including the presence (or absence) of wax and other constituent compounds. Oil spilled into a marine environment quickly assumes the surrounding sea's ambient temperature, however, if the sea temperature is below the pour point of the oil, the oil will cease flowing and behave as a semi-



Image Credit: Adobe Stock

solid, highly viscous material.

This is typically the case with traditional high-sulphur FO; however, the new-generation blended low-sulphur fuels have a much broader range of pour points, which may well be lower than the ambient sea temperature at the time and place of a spill. In this scenario, the oil will continue to flow and spread easily, with implications for which response techniques are most effective.

2. Will it spread?

A spill of MDO has a low viscosity at all ambient temperatures and will spread thinly in all directions over a wide sea area. With the new-gen blended LSFOs, however, there is no set standard for the viscosity at ambient temperatures.

3. Can it be dispersed?

Dispersants applied from aircraft, surface vessels or subsea are sometimes used to treat spills of crude oils. Typically, this technique is normally ruled out for spills of Fuel Oil on account of the higher viscosity quickly rendering this technique

ineffective. However, the lower viscosity of some blends of LSFO may enable a longer window of opportunity during which dispersant may be effective.

4. Can it be picked up?

Heavy viscous oils may have limited spreading characteristics but they are problematic to recover, in part because these semi-solid materials are very difficult to pump. Skimmer manufacturers have developed several innovative methods to overcome this hurdle, but this makes equipment selection critical when building stockpiles for preparedness and at the time of a response.

Furthermore, conventional Fuel Oil (FO) can be very sticky, adhering to any substrate or material that it encounters. These properties again have implications for response that are already well understood by responders.

5. How can planning for response to a marine fuel spill be improved?

One of the problems responders

face is that the physico-chemical parameters that are provided on Safety Data Sheets, and other specifications that accompany marine fuel, typically relate to refinery-based composition or operational combustion characteristics rather than “real-world” fate and behaviour when spilt into a marine environment.

The challenge is not just restricted to new-gen LSFO but applies across all marine fuels including new technologies now being used to power ships such as MSAR, LNG and, of course, traditional high sulphur Fuel Oil, which is still used widely.

Due to the potentially wide variation in product characteristics, without knowing the actual characteristics of the oil that has been spilled, response efforts could be hampered, with potentially detrimental consequences on impacted resources.

However, the response community is adaptable and resourceful in finding solutions to practical issues of combatting spilt oil in ways that are sympathetic to the environment. ■

Johnson Controls launches next-generation one-bolt coupling

Fire suppression

Johnson Controls, a supplier for smart and sustainable buildings, has launched the next-generation Grinnell G-Fire One-Bolt Figure 579A Coupling, with customised gaskets for more secure fitting on fire suppression pipe joints. It is grooved, rigid coupling, optimal for out-of-the box, push-on installation, designed for a smooth implementation experience and optimised to join fire suppression piping faster and easier.

“Whether contractors are installing a fire sprinkler system in a storage facility or standard commercial space, their time is valuable. Joining pipe shouldn’t be time consuming or laborious,” said Martin Schulte-Frankenfeld, global director product management, Johnson Controls.

“We’ve improved this next generation coupling with customised gaskets so contractors can simply position the coupling and tighten a single bolt. We’re excited to offer such a time-

saving addition to our One-Bolt Coupling portfolio that gives contractors more confidence in their fire suppression system installations,” he added.

Along with speeding up the installation process, the One-Bolt 579A Coupling features centre-stop gaskets, designed for specific coupling sizes to help ensure proper positioning. The 1.25" and 1.5" coupling sizes keep its proven, powder-lubricated gasket, ideal for small pipe diameters. The 2" and 4" sizes use

a redesigned self-lubricating gasket, intending to optimise roll and pinch protection. A low-profile spine allows contractors to install couplings in tighter spaces, while 360-degree pipe contact guarantees a rigid joint.

The 579A comes pre-assembled and pre-lubricated, and offers a three-piece housing and one bolt to tighten. The single-bolt design eliminates alternate tightening and assists in consistent installations and dependable product performance.



The coupling aims to join fire suppression piping faster and easier.

Image Credit: Johnson Controls

uvex’s climate-optimising product range

PPE

uvex has combined research and development with the use of intelligent materials and processing technology to create a unique range of climate-optimising products.

uvex climazone functions like the body’s own climatic system: deviations in conditions are balanced and the body temperature remains at a consistently comfortable level. It has developed testing methods and devices to enable a comprehensive and proven measurement of climate characteristics.

In order to offer hand protection with reliable grip, the brand has developed the uvex climazone hand-climate management system, which stores excess moisture in the material or wicks it away. Its helmet ventilation system comes with three variable ventilation zones on the safety helmet, which can be opened or closed as needed. The arrangement lets warm air escape, keeping a comfortable head climate.

Guardian’s new website ensures height safety for workers

Safety at height

Guardian has introduced a state-of-the-art, 360-degree height safety website. Designed to be a comprehensive height safety resource for all, guardianfall.com brings to life the company’s refocused ‘Height Safety Simplified’ brand position announced in 2021.

From the unique navigational tools to the robust, future-proof content management system, the new website is the culmination of extensive internal and external research

across global markets to make safety as simple as possible for the worker at height.

Callum Nixon, head of UX at OTM, the agency partner behind the new website, said, “Our primary task was to completely rework the structure and UX of Guardian’s website, to embody the ‘Height safety. Simplified’ proposition. This included a total redesign of the content management system and streamlining the customer’s online experience, from initial exploration to product customisation and selection to

training course browsing and purchase, as well as easy connection to local experts and support teams.”

The responsive mobile and tablet interface of the macro structural elements delivers the entire power of the website at the touch of a finger. Each element covers offerings of fall protection, dropped object prevention, foreign material exclusion, and lifting, as well as custom design and installation solutions provided by the company’s engineered systems group.

Teledyne GMI brings firefighters gas detection capabilities

Gas detection

With the aim of enhancing safety and improving detection for fire services and first responders, Teledyne GMI has introduced the Gas Laser, capable of detecting natural gas remotely.

Fire personnel and first responders are frequently called to natural gas emergencies using equipment that puts them close to potentially dangerous structures.

The Gas Laser, which uses highly advanced laser technology, supports remote detection, allowing the operator to work at a safer distance from the hazard location.

When access to a property cannot be established, the Gas Laser can operate through glass, giving the user an audible and visual indication to the presence of methane.

The quick scan permits fire personnel and first responders to make rapid decisions and establish control of the gas and

ignition sources should a gas escape be detected.

It is particularly useful by making it safer to scan areas which may be difficult to reach



Image Credit: Teledyne GMI

The Gas Laser brings remote gas detection capabilities to firefighters.

such as busy roadways, hazardous yards, fenced off areas, etc.

It can operate under a variety of field conditions including a wide range of temperatures, light rain or fog and reasonable amounts of dust on the instruments window. Its rugged design also ensures it stands up to normal field use and operating conditions.

Gas Laser features include:

- Quick scans for common venting points from a safe distance;
- Detection distance of 30 metres;
- Eight hour run-time;
- High visibility and sunshine-resistant guide laser equipped for location accuracy;
- Graphic interface for easy user interpretation;
- Colour camera with Bluetooth, WIFI, and datalogging onboard;
- Certified Intrinsically Safe to Class I, Division 2, Group D, T4.

Streamlight updates Survivor right-angle light

Safety lighting

Streamlight, a leading manufacturer of flashlights for fire/rescue and industrial professionals, has introduced the Survivor X as an updated version of its popular Survivor right-angle light.

The new Survivor now offers 250 lumens, new features for improved operation and multiple power options to suit user needs and budgets.

The light is available as a rechargeable system or in an economical alkaline model, both for use in division 1 hazardous environments. Also available is the Survivor X USB, a budget-friendly USB rechargeable option for use in Division 2 conditions.

Streamlight chief revenue officer, Michael F. Dineen, commented, "Fire and rescue personnel, industrial firefighters, utility workers and others now have an even more powerful and versatile tool to use when operating in the trying conditions they often face."

MSA releases ALTAIR io 4 Gas Detection Wearable

Gas detection

As part of its connected work platform to simplify safety, curb risk and boost productivity, MSA has introduced the all-new ALTAIR io 4 Gas Detection Wearable with fully integrated cellular connectivity right at the box.

The ALTAIR io 4 delivers real time visibility to help improve safety and productivity for workers, worksites and workflows.



Image Credit: MSA

Features of the new technology include:

- CAT-M LTE cellular connectivity;
- Automatic integration with MSA Grid cloud-based software;
- Over-the-air updates;
- Automatic bump test and calibration;
- MSA id digital device assignment;
- Rugged, durable design and industry-leading XCell sensor.

Sophos announces Sophos X-Ops

Cybersecurity

Global leader in nextgen cyber solutions Sophos has announced a new cross-operational unit linking SophosLabs, Sophos SecOps and Sophos AI, the established teams of cybersecurity experts at Sophos, to help organisations increase their defenses against changing and complex cyber attacks.

Sophos X-Ops leverages the well-researched threat intelligence from the three separate groups, delivering stronger and more innovative protection, detection and response capabilities.

“We’ve unified three globally recognised and mature teams within Sophos to provide this breadth of critical, subject matter and process expertise. Joined together as Sophos X-Ops, they can leverage the strengths of each other, including analysis of worldwide telemetry from more than 500,000 customers, industry-leading threat hunting, response and remediation capabilities, and rigorous artificial intelligence to measurably improve threat detection and response,”



Image Credit: Adobe Stock

The framework combines three of Sophos’ operational teams of cyber experts.

explained Joe Levy, chief technology and product officer.

Continuing, Levy added, “Modern cybersecurity is becoming a highly interactive team sport, and as the industry has matured, necessary analysis, engineering and investigative specialisations have emerged. Scalable end-to-end operations now need to include software developers, automation engineers, malware analysts, reverse engineers, cloud infrastructure

engineers, incident responders, data engineers and scientists, and numerous other experts, and they need an organisational structure that avoids silos.”

Sophos X-Ops provides a stronger cross-operational foundation for facilitating innovation against cyber attacks, an approach that aims to accelerate security workflows and enable the ability to quickly detect and respond to novel and priority indicators of compromise.

Intel introduces TRC hardware attack solution

Cybersecurity

Intel has unveiled a new hardware chip to explicitly detect circuit-based timing failures that occur as a result of attacks.

TRC (tunable replica circuit) is first delivered in the 12th gen Intel Core processor family. It expands the suite of the Intel Converged Security and Management Engine to add fault injection detection technology to the cyber protections within the system. The chip also detects electromagnetic fault injections.

“Software protections have hardened with virtualisation, stack canaries and code authentication before execution,” said Daniel Nemiroff, senior principal engineer at Intel.

“This has driven malicious actors to turn their attention to physically attacking computing platforms. A favorite tool of these attackers is fault injection attacks via glitching voltage, clock pins and electromagnetic radiation that cause circuit timing faults and may allow execution of malicious instructions and potential exfiltration of secrets.”

NETSCOUT unveils Arbor Insight to combat shifting threat landscape

Cybersecurity

NETSCOUT SYSTEMS, INC., a provider of cybersecurity, service assurance and business analytics solutions, has introduced Arbor Insight, a technology that, when combined with Arbor Sightline, enhances and expands threat detection, service delivery and network operator visibility.

Designed to address the evolving threat landscape, the new technology combines NETSCOUT’s DDoS leadership with ASI, the metadata technology, correlating

multiple sources of network telemetry with intelligence and local configuration.

Insight delivers an 80+ facet record for each monitored network communication, while providing security and network operations teams with the optimal dataset to perform critical tasks.

The system utilises advanced traffic reports (ATRs), augmenting users’ workflows with immediate visibility into key areas of interest, facilitating speed-of-thought drill downs on potential threats.

“Arbor Insight extends the value of Sightline by providing the right dataset at the speed of thought with integrated end-to-end workflows for superior visibility and performance,” stated Tom Lyons, vice president of product, NETSCOUT.

“ATRs provide the ideal solution for short- and longer-term reporting, so operators can better answer network, security and business questions and provide reliable, relevant services to their customers.”

والمزالج علامة المواصفات الأوروبية «CE» مع اختبارها وفقاً للمعيار «BS EN 12209»، كما أن الكثير من المتخصصين، كالمهندسين المعماريين، يطالبون باعتماد الحوادث التي يستخدمونها من نظام «سيرتيفايير».

ضمان السلامة والالتزام بالمعايير

تنص اللوائح القياسية للسلامة من الحرائق على أن المبنى إذا كان يُخل بمعايير السلامة من الحرائق، يجوز فرض عقوبات شديدة وغرامات كبيرة على المسؤول عنه. فمراعاة المعايير عملية دائمة لا تتوقف، ولذا يجب أن تظل أبواب الحريق والحدائد المثبتة بها قادرة على أداء وظيفتها بكفاءة وفعالية ما دام المبنى قائماً.

والصيانة الدورية ركيزة أساسية للحفاظ على أبواب الحريق. فبصرف النظر عن الالتزام باللوائح، ينبغي التأكد باستمرار من أن جميع لوازم الباب تؤدي وظيفتها كما ينبغي، كأي لوازم إضافية واجبة كحدائد الفتح والغلق، وأشرطة الغلق المنتفخة بالحرارة (المصممة للتمدد وإحكام غلق الباب داخل إطاره في حالة نشوب حريق) ولافتات الباب ذات الصلة. ويمكن أن يتسبب إهمال أساسيات الصيانة في تقليل العمر التشغيلي لباب الحريق بشدة، حتى عند استخدام الحدائد المناسبة.

يقر بذلك أمر الإصلاح التنظيمي (للسلامة من الحرائق) لعام 2005 بالمملكة المتحدة، إذ يشترط - قانوناً - التأكد من تركيب الأبواب المقاومة للحريق على الوجه الصحيح والحرص على حسن صيانتها لكي تؤدي الغرض منها. وحرصاً على حماية المبنى، يتحتم على جهات العمل - على سبيل المثال - تعيين «مسؤول» لإجراء تقييمات منتظمة لمخاطر الحرائق، بحيث يفحص كافة عناصر السلامة من الحرائق؛ كفتح أبواب الحريق وغلقها. وفي إطار تقييمات المخاطر الجارية، تعتبر فترات الصيانة المنتظمة أمراً بالغ الأهمية، مع منح المسؤولين فرصة لاكتشاف أي تلف يلحق بلوازم الباب وإصلاحه. وفي حالة ظهور أي مشكلات تتعلق بالحدائد، فعلى صانعي القرار التصرف، على جناح السرعة، والاستعانة بالمتخصصين لاستبدال الحدائد أو إصلاحها حتى يُفتح الباب أحسن فتح ويُغلق أحكم إغلاق من جديد.

وسواء أكان في مبنى تجاري أم سكني أم مؤسسي، فلباب الحريق جيد الفتح والغلق أهمية قصوى في تأمين ذلك المبنى من الحرائق. لكنه لن يحقق الغرض منه إلا إذا كانت الحدائد المثبتة به على أحسن ما تكون. ولزماً على كافة الأطراف المعنية والمسؤولين في سلسلة التوريد أن يدركوا هذه العلاقة المهمة بين الحدائد والسلامة من الحرائق، وإلا سيخاطرون بالإخلال بالمعايير الصارمة للسلامة من الحرائق. وفصل الخطاب: إن حدائد الباب ليست مجرد لمسة نهائية، بل إنها ركيزة من ركائز السلامة من الحرائق.

عدة محاور وقضايا؛ بداية من الوقاية، ومروراً بالاحتواء، ووصولاً إلى الإخلاء. ولهذا كله أهمية كبيرة عند تصميم مبنى آمن من الحرائق وصيانتته. وبالنسبة للمهندسين المعماريين وواضعي المواصفات والمفتشين وأصحاب المبنى، من الواجب توفير قدر مقبول من السلامة من الحرائق لشاغلي المبنى والزائرين على السواء. لهذا تؤدي أبواب الحريق دوراً أساسياً، فهي جزء من نظام الحماية السلبية من الحرائق، ووسيلة من وسائل الهروب، والغرض منها فصل الدخان والنار خلال نشوب حريق. وهكذا تحمي المبنى وأفراده لفترة زمنية محددة، لكنها ليست الحل الوحيد لتلك المصيبة حين تقع.

الحماية المزدوجة

تجمع الحدائد والسلامة من الحرائق علاقة مميزة. فلكي تؤدي وظيفتها وتتوفر فيها معايير السلامة، لا بد أن تكون جميع أبواب الحريق المخصصة لهذا الغرض، بخلاف الأبواب المخصصة للخزائن المقفلة وقنوات أسلاك الكهرباء، مزودة بالحدائد اللازمة، كالمفصلات وغالقات الأبواب والأقفال والمزالج. فكل جزء من لوازم الحدائد هذه مصمم للعمل مع باب الحريق، ويصح الباب بدونها عديم الفائدة، بل يمكن أن تعرّض سلامة هذا الباب للخطر فور تلف أي جزء أو أحل بالمعايير الصارمة لأداء وظيفته.

ومثال ذلك أنه لا غنى عن غالقات أبواب الحريق، سواء أكانت مخفية أم مثبتة على ظهر الباب، لأداء وظيفة من الوظائف الأساسية، وهي إحكام غلق الباب من أي زاوية في إطاره أو حتى تعشيق المزلاج. وبتسهيل حركة الإغلاق، فإن لهذه الغالقات دوراً حيوياً في التأكد من أن باب الحريق يؤدي دوره المتمثل في عزل أقسام الحريق بالمبنى.

ونظراً لأهميتها، فلا بد من اختبار أجهزة الغلق المتحكم بها وفقاً للمعيار «BS EN 1154» وتقييمها في اختبار الحماية من الحريق وفقاً للمعيار «BS EN 1634». وعند تركيب الغالق، لا بد أن يكون أيضاً متوافقاً مع الآليات المثبتة بالباب. وفضلاً عن وجود علامة المواصفات الأوروبية «CE» عليه، ينصح الخبراء - بشدة - بضرورة اعتماده من نظام جهة خارجية كنظام «سيرتيفايير» لتوفير التفاصيل اللازمة لطريقة تركيبه.

وبالمثل، فإن للمفصلات والمزالج دوراً مهماً في ضمان سلامة باب الحريق، فالعرف أن تُثبت ثلاث مفصلات باب الحريق، ويجب أن تظل مثبتة بإحكام على الدوام، لكي تمنع أي تفحم أو تلف في خشب الباب في حالة نشوب حريق. والأقفال والمزالج ضرورية هي الأخرى، إذ تضمن أن يظل الباب مغلقاً داخل إطاره، وتكون حاجزاً فعالاً في حالة نشوب حريق. ولا بد من أن تحمل الأقفال

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الحماية من الحرائق تشمل الوقاية ثم الاحتواء وصولاً إلى الإخلاء

ضمان الالتزام بمعايير السلامة من الحرائق

المهندس دانيال ماي يعمل مديراً بشركة «كونسورث أركيكتكتشرال هاردوير»، وهي شركة رائدة في تصنيع وتوريد الحدائد. وفي هذا المقال، يناقش العلاقة المحورية بين السلامة من الحرائق ومواصفات الحدائد، ويبين كيف أن عدم استخدام أساسيات الحدائد يخل بمعايير السلامة. وقد أسهب في بيان المخاطر الناجمة عن إهمال تركيب الحدائد وصيانتها على السلامة من الحرائق في المؤسسات.

الحرائق ومواصفات الحدائد، بالنسبة للوالم الأساسية، متلازمان لا يفترقان.

منهج السلامة من الحرائق

تعتبر قضية السلامة من الحرائق - بحد ذاتها - من الموضوعات المعقدة. إذ تغطي

لا ريب أن الحريق خطرٌ لا يمكن التكهّن بوقت وقوعه، ويشكل ما لا يُحصى عدده من المخاطر للمباني والمؤسسات. وفي ظل تشديد اللوائح لحماية المباني والممتلكات والأفراد والشركات، فإن السبيل الذي يتوجب على المؤسسات أن تسلكه ينطوي على معدات السلامة من الحرائق في جوهره. ويبدو أن الالتزام بمعايير السلامة من

فني هذا العدد ...



4

تصايات

ضمان الالتزام بمعايير السلامة من الحرائق

ما ضمن محتويات القسم الإنجليزي:

التطورات: تطورات السوق.

مقالات وتحليلات: السلامة من الحرائق، رصد العامل المنعزل، رشاشات الماء الآمنة، الملابس الواقية.

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المصنعة، لوبز ووترز - بريد إلكتروني: louise.waters@alaincharles.com

فريق التحرير والتصميم، براشانت إيه بي، براشانت شاكاريما، ميريام برينكوفا - زاؤول بونفديو - فينا أشوات، براقين سي بي، روبرت دانيلز، ماتيو هابجو - سامنتا بين - شيفاني ديوف - مادهوري راميش - مادورينا سينجوبتا

مدير مبيعات المحلّة، ريلشارد روزيلار

هاتف: +442078347676 - فاكس: +442078347676

بريد إلكتروني: richard.rozealan@alaincharles.com

المكتب الرئيسي

Alain Charles Publishing Ltd, University House, 11-13 Lower Grosvenor Place, London SW1W 0EX, UK.

Tel: +44 (0) 207 834 7676. Fax: +44 (0) 207 973 0076

مكتب الشرق الأوسط الإقليمي

Alain Charles Middle East FZ-LLC, Office 112, Loft 2B

صندوق بريد: ٥٠٢٠٧، مدينة دبي للإعلام، الإمارات العربية المتحدة.

هاتف: +٩٧١ (٤) ٤٤٨ ٩٤٦٠ - فاكس: +٩٧١ (٤) ٤٤٨ ٩٤٦١

الإنتاج: مامنا كارتيك، نيللي مينديز، ديفيش ضالان - رانجيت إكهارام

بريد إلكتروني: production@alaincharles.com

الاشتراكات بريد إلكتروني: circulation@alaincharles.com

الناشر: نك فوردهام

مدير المبيعات: مايكل فريج

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الطباعة: مطبعة الإمارات - دبي

المترجم: عز الدين م. علي - بريد إلكتروني: ezzeddinmal@gmail.com

التصميم والإخراج الفني: محمد مسلم النجار - بريد إلكتروني: alnajjar72@gmail.com

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