



BCAA-IOSH WSH Conference 2024

Fostering Strong WSH Culture through Technology and Innovation in the Built Environment

15 August 2024

9am to 5pm (Singapore Time)

Conducted virtually via Zoom

SG TIME	TOPICS & SPEAKERS
9.00 am	Welcome Address & Keynote Presentation: Trends of Technology Adoption for Construction Safety in the UK Mr Sarim Iqbal, Institution of Occupational Safety and Health (IOSH) Construction Group, United Kingdom
9.20 am	WSH Technology in Construction Mr Alvin Tan, Senior Manager (WSH Technology), Workplace Safety and Health Institute, Ministry of Manpower, Singapore
9.50 am	Power of Artificial Intelligence (AI): The Road to Predicting Field Accidents with > 80% Accuracy Mr Denis Branthonne, Co-founder & Chief Executive Officer, Novade, Singapore
10.20 am	Break
10.40 am	Technology Driven Safety: Revolutionizing Cross Island Line Construction Project CR116 for the Future Mr Henry Kim, Senior Project Director, Gammon Construction Limited, Singapore.
11.20 am	Embracing Smart WSH Technologies & Effective Surveillance System in Construction Mr Guo Jinshun, Workplace Safety and Health Officer, Zheng Keng Engineering & Construction Pte Ltd, Singapore
11.55 am	Welltech's Technology-Driven Approach to Enhancing Workplace Safety and Health Mr Kenny Quah, Assistant General Manager, Welltech Construction Pte Ltd, Singapore
12.30 pm	Lunch Break
1.30 pm	Digital Approach to Foster a Proactive Safety Culture in Organizations <ul style="list-style-type: none"> Mr Pawan Singh, Chief Business EHS Head, Siemens Energy Technology Solutions, India Mr Pradip Singh, Vice President (Business Excellence), IntelliSmart, India
2.10 pm	Centralized Management Platform (CMP) and Smart Site Safety System (SSSS) for Construction Ms Jackie Wong, Chief Executive Officer, Chain Technology Development Co. Limited, Hong Kong
2.40 pm	Protecting Construction Workers: AI-Powered Solutions for Climate-Induced Health Risks Dr. Nayake B P Balalla, Occupational Health Specialist, Kare Occupational Health Specialist Service, Brunei
3.10 pm	Break
3.30 pm	Strategies for Addressing Human Error in the Construction Industry: Insights from HPO and HPI Perspectives Mr Mohamad Aliasman Morshidi, Principal Consultant, Scorpion Tact Services, Kuala Lumpur, Malaysia
4.00 pm	Fight or Flight: Embracing AI and New Technology in WSH for the Construction Industry Mr Hugh Maxwell, Maxwell Safety Limited, United Kingdom
4.30 pm	Elevating Safety and Efficiency of Crane Operations using Advanced Camera Technology Mr Stuart William Glennie, Managing Director, Lifting Hardware – Asia Pacific, Kito Crosby, United Kingdom
5.00 pm	End of Conference



The presentation materials are available for download till **30 Aug 2024** at <https://go.gov.sg/wshc2024> or scan QRCode to access.



MR. ALVIN TAN
Senior Manager (WSH Technology), Workplace Safety and Health Institute, Ministry of Manpower, Singapore

WSH Technology in Construction

Harnessing technology as a catalyst for achieving the strategic goals of WSH 2028, the WSH Institute will showcase transformative applications in the construction sector, fostering a safer and healthier work environment. This includes the utilization of video surveillance systems, video analytics, electronic permit-to-work systems, vehicular safety technology, smart inspections employing 360° cameras, and robotic solutions.

Alvin Tan is the Senior Manager (WSH Technology) at the WSH Institute (WSHI), a department within the Occupational Safety and Health Division (OSHD) of the Ministry of Manpower (MOM). With over a decade of experience in commercial ship repair, retrofitting, and work pass policy implementation, Alvin joined WSHI in 2020. His current role involves spearheading the identification and integration of WSH technology solutions in the construction and facilities management sectors. Over the years, he has collaborated with government agencies, industry associations, Institutes of Higher Learning, and technology vendors to identify, develop, and test WSH technologies at various readiness levels. Alvin has also played a pivotal role in partnering with agencies to scale the adoption of WSH technologies and promote practical WSH tech solutions within the industry.



MR. DENIS BRANTHONNE
Co-founder & Chief Executive Officer, Novade, Singapore

Power of Artificial Intelligence (AI): The Road to Predicting Field Accidents with > 80% Accuracy

Envision a world where proactive measures replace reactive responses in construction safety. Picture a scenario where field data and artificial intelligence (AI) collaborate to identify risks before they materialize, and actionable insights empower seamless compliance enforcement. This presentation will delve into the transformative power of AI and data analysis in predicting and preventing accidents, with a specific focus on Novade's capabilities. Through the fusion of data-driven safety and AI, technology is enabling companies to mitigate costs linked to accidents, downtime, and insurance premiums.

Denis Branthonne is the visionary co-founder and CEO of Novade, a prominent construction management solution provider for the building and infrastructure industry, with its headquarters based in Singapore. With a proven track record in building global teams, Denis is a business leader whose multicultural upbringing—rooted in Europe, educated in the United States, and deeply connected to Asia—has profoundly shaped his perspective. Combining technical expertise with a hands-on approach, Denis is frequently present on construction sites, ensuring that Novade's software aligns with real-world practices. This hands-on involvement serves as a testament to his unwavering commitment to driving digital transformation through practical innovation.

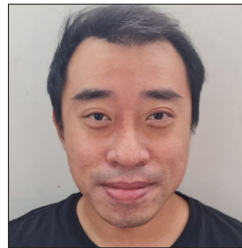


MR. HENRY KIM
Senior Project Director, Gammon Construction Limited, Singapore

Technology Driven Safety: Revolutionizing Cross Island Line Construction Project CR116 for the Future

The presentation will delve into the technological advancements adopted in Project CR116, which encompasses the construction of Ang Mo Kio interchange station and associated tunnels for the Cross Island Line, with a focus on enhancing safety and productivity. It will elaborate on the cutting-edge technologies utilized in the project, including AVUS Augmented Visualisation of Underground Services for the protection of utility services, Autonomous Robotics, Immersive VR Platform, Lidar Reality Capture by Leica 3D Laser Scan, Robotics Fumigation, and 4D BIM for enhancing operatives' safety through training. The speaker will also address the challenges and opportunities associated with the adoption of modern technology within the construction industry.

Henry Kim has over 35 years of overall experience, including more than 20 years of dedicated work on Singapore Mass Rapid Transit (MRT) projects with the Land Transport Authority (LTA). His recent MRT projects with LTA include TEL C913, C937, and Circle Line C886, and he is currently involved in the Cross Island Line CR116 at Ang Mo Kio. Notably, in the C937 project, he successfully converted a planned Cut & Cover tunnel to a TBM bored tunnel by diverting the Singapore River, a creative engineering idea that was recognized in the Engineering Excellence 50 in 2015. Even though it presented significant engineering challenges, the project was completed on time. Henry currently serves as the Senior Project Director for CR116 with Gammon Construction Limited.

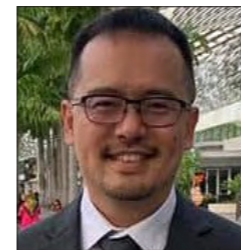


MR. GUO JINSHUN
Workplace Safety and Health Officer, Zheng Keng Engineering & Construction Pte Ltd, Singapore

Embracing Smart WSH Technologies & Effective Surveillance System in Construction

The presentation aims to share the various WSH technologies adopted by Zheng Keng Engineering & Construction Pte Ltd in various construction projects. The speaker will provide insights into the transformative efforts and the company's commitment to leveraging advanced digital technologies to enhance workplace safety and health. The presentation will discuss the implementation of WSH technologies, highlighting their benefits and challenges. Key technologies to be discussed include the Video Surveillance System with Video Analytics, Automated Lightning Alert Warning System, Surveillance Systems for construction plants and machineries, SMART Traffic Light A.I System as well heat stress management measures.

Guo Jinshun is a Workplace Safety and Health Officer with 15 years of experience at Zheng Keng Engineering & Construction Pte Ltd. He has played a pivotal role in managing and implementing the company's WSH Management System across various projects in Singapore. Mr. Guo actively supports the implementation of WSH technologies and promotes their use among subcontractors involved in the projects.

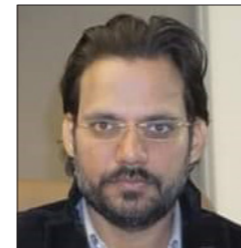


MR. KENNY QUAH
Assistant General Manager, Welltech Construction Pte Ltd, Singapore

Welltech's Technology-Driven Approach to Enhancing Workplace Safety and Health

This presentation showcases Welltech's innovative use of technologies that include use of dashboarding with data analytics, custom applications, Artificial Intelligence/Virtual Assistant (AI/VA), and robotics to elevate safety and health standards. It will elaborate the recent adoption of Tableau to consolidate safety data from various platforms including Hubble, Novade, DigitalBuild and BES, providing real-time insights and predictive analytics. Additionally, it explores the use of custom applications to enhance Prefabricated Prefinished Volumetric Construction (PPVC) installations and AI/VA for safety non-compliance, as well as the deployment of spraying robots to automate hazardous tasks and mitigate work-at-height risks. Practical applications of these technologies in improving safety protocols and minimizing risks will be discussed, along with the challenges and prospects of integrating these technologies into safety and health frameworks.

Kenny has over 24 years of experience in the construction sector. He joined Welltech in 2007 as a Project Manager. From 2015 to 2018, Kenny served as the Head of Corporate Safety. Currently, he holds the position of Technical Director for the company, where he is responsible for monitoring the latest advancements in relevant technologies, robotics, and automation, and implementing them to enhance workplace safety and health.



MR. PAWAN SINGH
Chief Business EHS Head, Siemens Energy Technology Solutions, India

Digital Approach to Foster a Proactive Safety Culture in Organizations

The presentation focuses on enhancing safety and operational efficiency through data-driven technology, encompassing hazards management systems, behavior-based safety management, and contractor management systems. It introduces various technological advancements such as mobile apps, e-SAFE web tools, smart electrical gloves, body sensors, voltage sensing bands, and smart helmets to bolster safety measures. Additionally, it emphasizes innovations like online appointment systems for safety inductions and training assessments, integration of alarms and control systems for real-time monitoring of safety measures. The incorporation of gamification in safety training is highlighted as a means to boost employee engagement and optimize information retention, transforming traditional safety programs into engaging, and motivational experiences.

Pawan Singh is a Senior Environmental, Health, and Safety (EHS) Leader with over 19 years of experience in environmental, health, and safety management across diverse industries. Currently serving as the Chief Business EHS Head at Siemens Energy Technology Solutions, India, he oversees EHS protocols across over 50 sites in South Asia. Pawan is a Certified Independent Director on Environmental, Social, and Governance (ESG) from the Indian Institute of Corporate Affairs (IICA). His expertise encompasses EHS program development, regulatory compliance, safety training, and strategic EHS initiatives, contributing significantly to the safety and sustainability practices of top-tier organizations.



Mr. Pradip Singh
Vice President (Business Excellence), IntelliSmart, India

Pradip Singh is the Vice President (Business Excellence), IntelliSmart, India and Environmental, Social, and Governance (ESG) Impact Leader with over 20 years of experience in Quality, Health, Safety, Security, and Environment (QHSSE) management across the telecom, infrastructure, and oil & gas industries. Pradip has extensive international exposure and expertise in developing and implementing safety protocols, conducting advanced incident analysis, and ensuring regulatory compliance. Leading a team of QHSSE professionals, he excels in strategic planning, risk mitigation, and fostering a culture of safety and sustainability.



MS. JACKIE WONG
Chief Executive Officer, Chain Technology Development Co. Limited, Hong Kong

Centralized Management Platform (CMP) and Smart Site Safety System (SSSS) for Construction

To address the Construction Industry’s needs for improved productivity and safety, Chain has developed the Centralized Management Platform (CMP) for progress tracking and the Smart Site Safety System (SSSS) for worker safety. The CMP is a web-based 3D GIS Platform that enables easy visualization of construction progress, integrated instrumental monitoring, and comprehensive reporting and analysis capabilities. The SSSS is a comprehensive system comprising modules for access control, confined space monitoring, AI-powered CCTV surveillance, asset management, and more. By demonstrating these innovative solutions, the presentation aims to showcase the tangible benefits that construction companies can expect, including improved site and worker safety, increased transparency of site progress, and centralized data management for better decision-making.

Jackie Wong is the CEO of Chain Technology Development Co. Limited. She is one of leading influencers to drive Digital Transformation in the Architecture, Engineering and Construction (AEC) Industries in Hong Kong. Throughout the years, she has developed her reputation and credibility in the industry to provide Digital Twin Solution to manage site progress and enhance worker safety. Her vision is to bridge the innovative technologies with the AEC sector to create a smarter and safer work environment.



DR. NAYAKE B P BALALLA
Occupational Health Specialist, Kare Occupational Health Specialist Service, Brunei.

Protecting Construction Workers: AI-Powered Solutions for Climate-Induced Health Risks

This presentation will explore the impact of climate change, particularly excessive heat and air pollution, on the health and safety of construction workers. It will discuss the use of technology, specifically AI-powered smart wearables, as a proactive measure to safeguard the workforce and prevent heat stress among construction workers.

Dr. Balalla graduated from the University of Peradeniya, Sri Lanka with an MBBS in and obtained a Master’s Degree in Occupational Medicine from the National University of Singapore in 1992. With over 30 years of experience in Occupational Health practice, he has worked in Brunei for the past 22 years, serving as the Head of the Occupational Health Division at the Ministry of Health and currently working as an Occupational Health Specialist at Kare Occupational Health Specialist clinic. Dr. Balalla is a Member of the OH committee of the Safety, Health, and Environment National Authority and was involved in drafting the Workplace Safety and Health Order 2009 and Regulations. Additionally, he is an IOSH certified member and a Specialist of the International Institute of Risk and Safety Management.



MR. MOHAMAD ALIASMAN MORSHIDI
Principal Consultant, Scorpion Tact Services, Kuala Lumpur, Malaysia

Strategies for Addressing Human Error in the Construction Industry: Insights from HPO and HPI Perspectives

The presentation will discuss the significance of human error in the construction industry and the imperative need to comprehend its root causes from both the Human Performance Optimization (HPO) and Human Performance Improvement (HPI) perspectives to improve the safety performance at workplaces. The HPO approach emphasizes optimizing the conditions and environment in which humans operate, addressing systemic factors such as poor equipment design, inadequate training, and flawed organizational processes that contribute to human error. Conversely, the HPI perspective focuses on enhancing individual knowledge, skills, and abilities through effective training, coaching, and performance management strategies. By integrating insights from both HPO and HPI, the construction industry can develop a comprehensive framework for addressing human error, encompassing measures to optimize the work environment, implement robust safety management systems, and provide ongoing training and development opportunities for workers. This holistic approach, considering both systemic and individual factors, is essential for reducing the occurrence and mitigating the consequences of human error in this high-risk industry.

Mohamad Aliasman Morshidi is an accomplished Health, Safety, and Environment (HSE) professional with extensive experience in engineering, facilities management, and construction. Holding a Bachelor of Engineering (Mechanical) from the University of Queensland Australia and a Master of Business Administration (MBA) from Mara Technology University (UiTM), he has over 20 years of expertise in HSE management in manufacturing, construction, and oil & gas industries. He has been involved in significant construction projects and has contributed to the establishment of integrated HSE management systems. Currently serving as the Vice President 1 of Malaysian Society for Occupational Safety and Health (MSOSH) (2022-2024), he is also a technical member of the Institution of Occupational Safety and Health (IOSH), a member of the American Society of Safety Professionals (ASSP), and a Specialist member of the International Institute of Risk and Safety Management (IIRSM).



MR. HUGH MAXWELL
Maxwell Safety Limited, United Kingdom

Fight or Flight: Embracing AI and New Technology in WSH for the Construction Industry

In an era of constant change, the integration of AI and technology presents a pivotal opportunity for the construction industry and other global sectors. This presentation aims to explore the benefits, implications, and necessary adaptations to fully leverage suitable technological solutions. Drawing from real-life examples across various industries, including construction, the presentation seeks to inspire engagement and proactive adoption of transformative technologies.

Hugh Maxwell is a distinguished professional in Risk, Health, Safety, and Environment (HSE) cultural change and leadership development, with a wealth of international experience spanning over thirty countries. He is dedicated to protecting people, promoting best practices, and leveraging technologies for optimal impact. Maxwell holds fellowships with esteemed organizations such as the Institution of Occupational Safety and Health (IOSH), the International Institute of Risk and Safety Management (IIRSM), the Institute of Leadership, the Chartered Management Institute, and the Institute of Industrial Accidents. Through Maxwell Safety Limited, he collaborates with businesses to achieve world-class safety performance.



**MR. STUART
WILLIAM GLENNIE**
Managing Director
Lifting Hardware
– Asia Pacific
Kito Crosby,
United Kingdom

Elevating Safety and Efficiency of Crane Operations using Advanced Camera Technology

This presentation will discuss with the use of case studies about the hook-mounted crane cameras that are cutting-edge technology designed to enhance safety and monitoring in crane operations. Mounted directly on the crane's hook block, these cameras provide real-time, high-definition visuals of the load and surrounding area, improving load positioning accuracy and reducing blind spots. These cameras contribute to a safer work environment by minimizing hazards and enabling better-informed decisions, leading to fewer accidents and increased productivity.

Stuart Glennie has over 16 years of experience in the crane and lifting industry, particularly in dynamic lifting environments offshore. Currently serving as the Managing Director for Kito Crosby, he has gained extensive experience across multiple industries and end market segments that utilize lifting devices and rigging. Stuart is passionate about technology and turn-key solutions, and his expertise and leadership have significantly enhanced safety and efficiency in lifting operations throughout the Asia region.