

RoboK - SiteLens

employing AI for real-time analysis of CCTV to pre-emptively detect and alert on hazards

the challenge

The freight industry, a cornerstone of the global economy, is driven by an unrelenting demand for the movement of goods. Key processes such as loading, unloading, and transport present substantial safety risks due to the interaction between workers and machinery. The sector is afflicted by incidents of near-misses, unsafe working at heights, speeding plant vehicles, restricted zone breaches, PPE non-compliance and so on.

These safety concerns are particularly pressing in areas where compliance is critical, such as the access points for loading and unloading where precision, coordination, and strict adherence to operational guidelines are essential. Ensuring the well-being of workers in these high-stakes environments is of utmost importance and requires constant vigilance and adherence to safety standards.

Statistics from International Labour Organization (ILO), which estimates that around 2.3 million people die from work-related accidents each year globally. Additionally, industrial sites in the EU reported 30.5% of non-fatal work accidents and 23.2% of fatal work accidents in 2020 were due to losing control of machinery, tools, or transport/handling equipment. In the UK alone, UK HSE data shows 11 fatal and 28,000 non-fatal injuries in 2019/20, relating to vehicle incidents and falls.

Challenges with conventional approaches to safety implementation have limitations such as:

- **Passive and reactive safety surveillance:** Traditional approaches heavily rely on manual oversight and passive surveillance, often reacting to incidents/breaches rather than proactively implementing measures to prevent them.
- **Lack of timely and structured information:** Obtaining timely and structured information for managing large, dynamic logistics sites can be challenging and can lead to various safety failures.
- **Manual approaches to situation based safety training:** In the absence of video data illustrating real-life safety scenarios, workers may not fully grasp the training, which can lead to an incomplete understanding of the risks involved and the necessary precautions to prevent accidents.

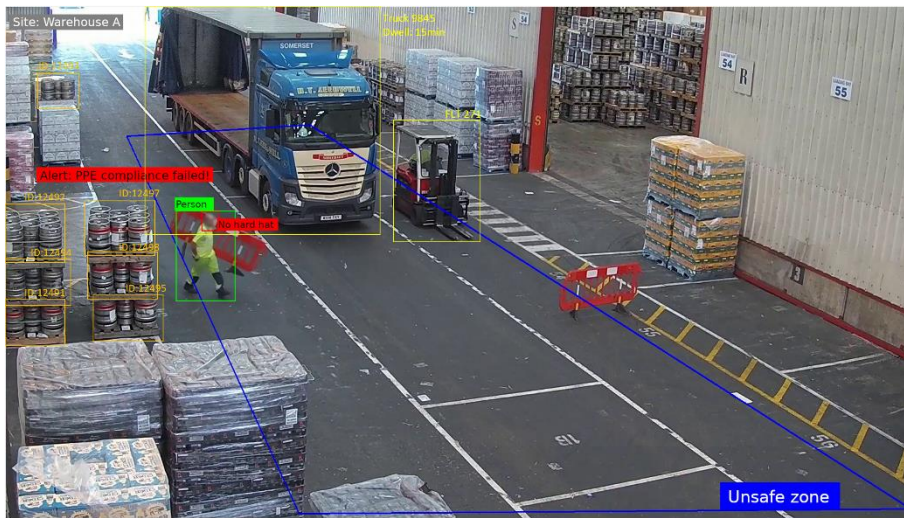
the innovation

SiteLens by RoboK introduces an innovative safety paradigm in logistics environments, employing AI for the real-time analysis of CCTV to pre-emptively detect and alert on hazards. It redefines monitoring, moving from passive to proactive, and is attuned to the nuances of human-machine interactions and compliance with safety protocols. This system not only alerts but also learns and adapts, providing a user-centric platform that empowers logistics personnel with actionable intelligence, contributing to a culture of safety and enhanced

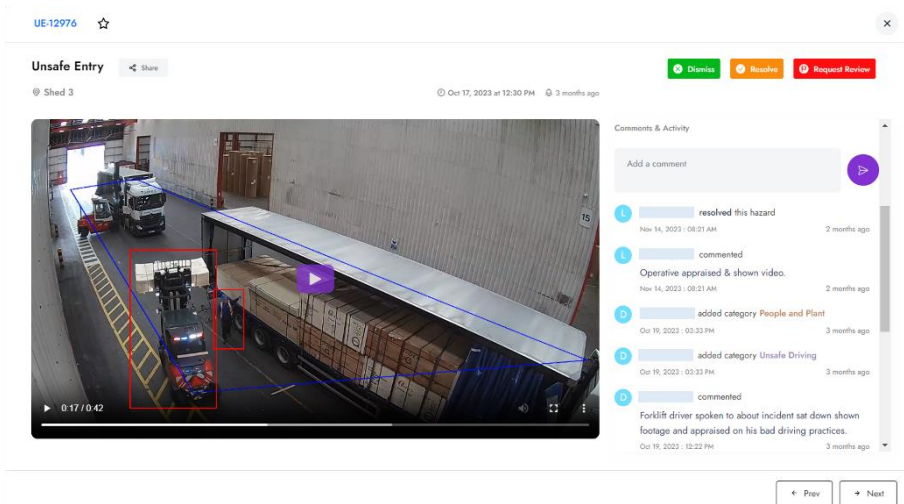
operational decision-making. SiteLens exemplifies the shift towards continuous, intelligent monitoring systems that prioritize human safety in complex industrial settings.

Innovation features:

SiteLens core innovation approach lies in its real-time AI-driven analysis of multiple camera feeds in transport & logistics environments. The solution captures intricate details including personnel, vehicle and assets movements, equipment dynamics, and behavioural analysis within these sites enabling actions and root cause analysis.



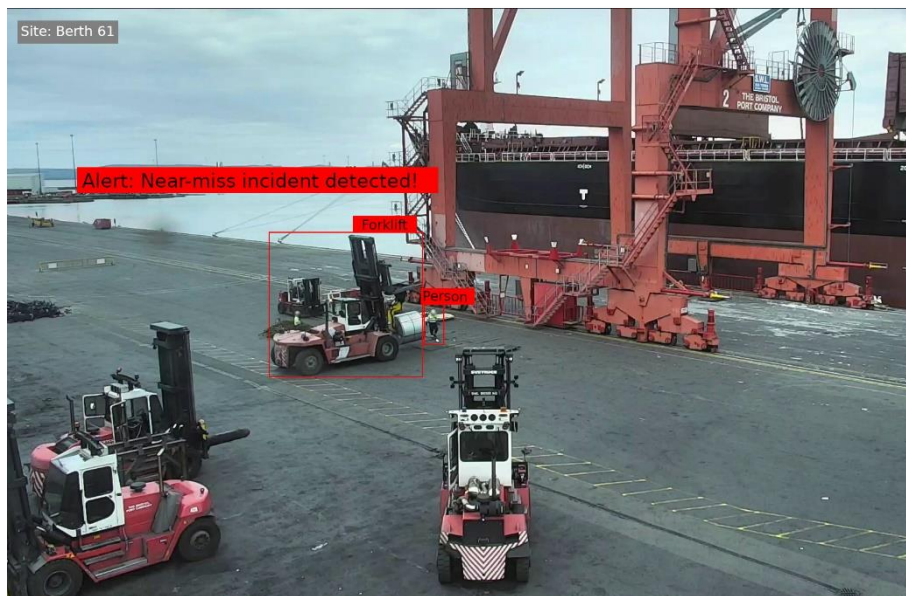
- AI-powered analytics: SiteLens transcends traditional, reactive safety methods by integrating AI with current CCTV infrastructure. This combination ensures automated, proactive site oversight, promptly identifying potential hazards and providing immediate, actionable alerts and comprehensive preventative insights.



- Always-on monitoring: SiteLens operates as a full-spectrum, vigilant platform, working in tandem with on-site CCTV cameras around the clock. It diminishes the need for manual oversight by autonomously generating real-time alerts and highlighting otherwise overlooked hazards.
- Human centricity: SiteLens is engineered with a focus on the user experience, tailored to assist and empower those overseeing logistics operations. It delivers pertinent and actionable information to staff managing multiple tasks in fast-paced environments.

how it was implemented

In a strategic partnership with the Bristol Port Company, RoboK's innovative cloud based AI-driven software solution, SiteLens, was deployed to transform their safety oversight. Merging effortlessly with the port's existing CCTV network, SiteLens provided a comprehensive view of operations, detecting safety hazards in real-time. It became a narrative of change, from passive monitoring to proactive prevention.

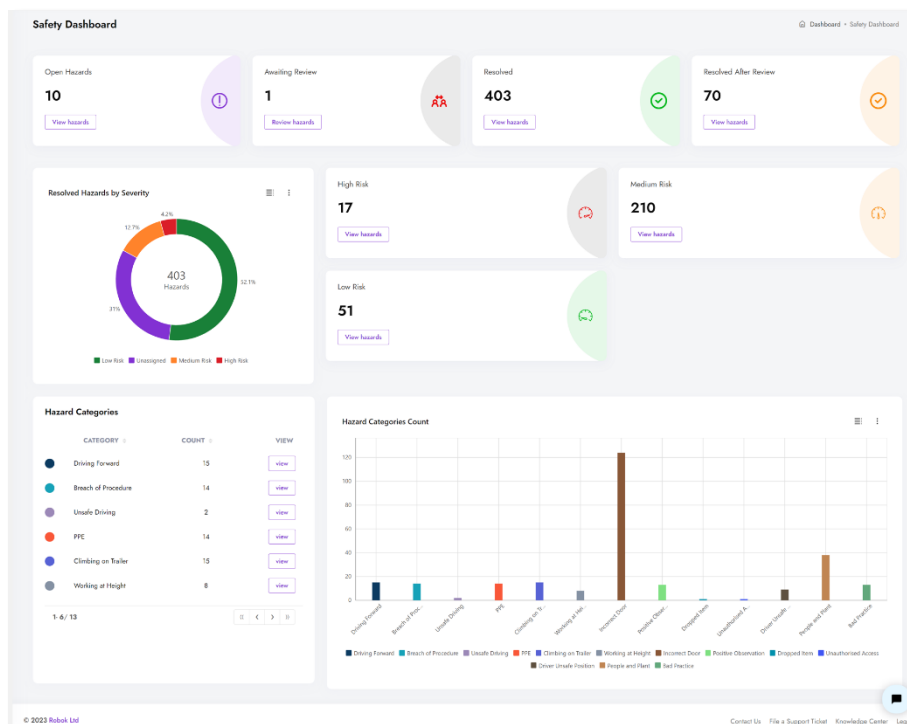


A series of workshops led by RoboK's experts helped the port's staff familiarize themselves with the intuitive interface, where incidents were not only recorded but also evaluated and addressed through a collaborative platform. This approach fostered a communal sense of responsibility towards safety, as each recorded incident spurred collective analysis and action.

The platform has become an instrumental part of daily safety briefings. Prior to the commencement of shifts, managers review outstanding incidents, providing incident severity and initiating escalation procedures when necessary. The capability to download incident clips enhanced the training department's ability to create situational awareness programs, embedding real-world scenarios into safety drills.

A key feature of SiteLens is its comprehensive reporting tool, offering a panoramic view of safety metrics, trend analyses, and the status of issues—whether open or resolved. This functionality not only improved visibility across the site but also underpinned decision-making with robust data.

By integrating SiteLens, Bristol Port Company took a significant step towards reinforcing its commitment to safety. The platform’s ability to distil vast streams of video data into actionable intelligence has not only strengthened safety procedures but has also fostered a more informed and vigilant workforce.



result

The implementation of SiteLens at the Bristol Port Company yielded transformative results including:

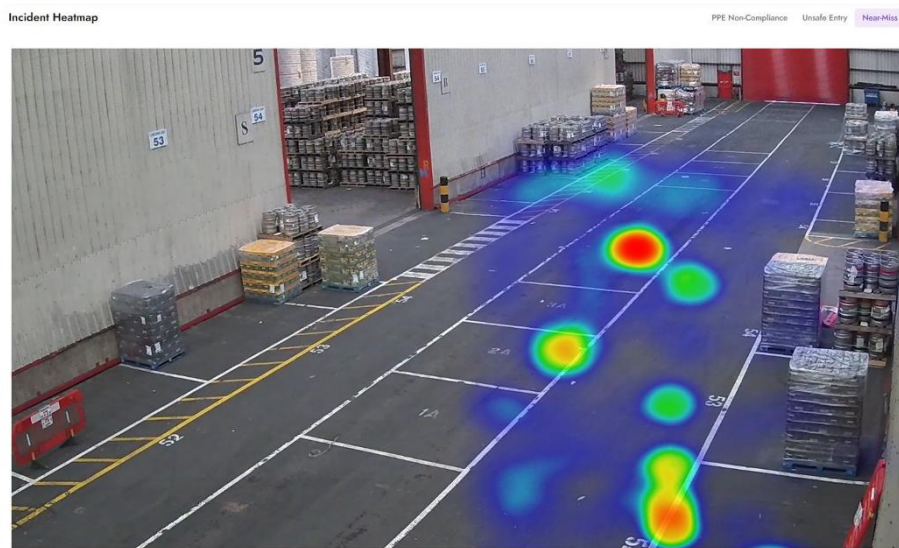
- The deployment of RoboK’s SiteLens at Bristol Port Company marked a significant advancement in workplace safety management. The AI-powered system, which seamlessly integrated with existing CCTV setups, enabled a profound reduction in safety breaches—by a remarkable 90% reduction within the first quarter of its operation. This impressive outcome underscores the system's capacity to detect and pre-empt safety hazards effectively.
- Beyond the direct impact on incident numbers, SiteLens has been instrumental in enhancing safety training protocols. The system’s ability to provide real-time footage and analysis has enriched situational awareness among employees, ensuring that

safety training is rooted in practical, real-world scenarios. The interactive platform has become a conduit for continuous learning and safety education, demonstrating the power of integrating technology with human-centric training methods.

- A pivotal aspect of this success story is the fostering of a people-first safety culture. SiteLens has promoted an environment where the welfare of individuals is paramount, influencing a shift in mindset towards preventive measures and collective safety consciousness.
- Furthermore, the platform has catalysed a collaborative synergy between the operations, safety, and training departments. By utilising the shared platform, cross-departmental teams have been able to communicate more effectively, coordinate safety efforts, and streamline responses to potential hazards.
- The visibility provided by SiteLens into daily operations has not only facilitated immediate responses to emerging hazards but also enabled comprehensive root cause analyses. These insights into user behaviour and operational dynamics have been invaluable in developing targeted strategies to mitigate risks, illustrating the transformative potential of AI in enhancing occupational safety.

Reflecting on the profound impact of SiteLens, David Brown, CEO of the Bristol Port Company, shares his insights:

“Operatives on the next shift are more alert to keeping themselves and each other safe. I am impressed by how much useful detail we have gained through RoboK’s AI platform.”



conclusion

The strategic deployment of RoboK's SiteLens technology across various sectors is gaining momentum, with exploratory projects underway, like the current initiative at the Port of

Tyne, National Highways, Transport for Wales and Network Rail. This expansion indicates a growing recognition of the value that such advanced monitoring systems bring to operational safety and efficiency.

As we move forward, there is a concerted effort to not only extend the reach of this technology but also to enhance its capabilities. Upcoming feature enhancements are set to include a range of additional monitoring use cases such as lone worker safety, manual handling practices, seat-belt usage, non-smoking compliance in critical zones, and meticulous tracking of vehicle trajectories.

This commitment to continuous innovation ensures that the solution remains dynamic and responsive to the evolving needs of the freight industry. It's a testament to the adaptability of the technology and its potential to redefine safety standards across various environments. With this forward-thinking approach, RoboK is poised to keep setting new benchmarks for safety and operational excellence in the industry.

LINK: <https://robok.ai/>