

Media Coverage

Publication: *The Business Times*

Date: 17 May 2021

Author: -

How sensor technology helps construction workers stay safe during a pandemic

Through IMDA's Open Innovation Platform, sensor company TraceSafe partners home-grown Boustead Projects to develop an innovative solution to prevent virus transmission

Ensuring safety at the workplace isn't easy even during the best of times. With the pandemic, a new set of challenges is thrown into the picture. Construction firms reopening sites in the wake of the Covid-19 pandemic need to take additional precautions to prevent and curb the spread of Covid-19.

They set up work zones, segregate employees and appoint safe management officers (SMO) to enforce safe distancing and other safety measures. Some companies have come up with visual aids, such as helmets and harnesses in different colours for the various work zones to enforce the new safety requirements.

But home-grown engineering and construction firm Boustead Projects E&C Pte Ltd figured that there must be a better and more cost-effective way. It leveraged the Infocomm Media Development Authority's Open Innovation Platform (OIP) to find a technology partner with the expertise to help solve this new challenge for the construction sector in the new normal.

Through the OIP, the company was paired up with sensor firm TraceSafe Asia Pacific.

Together, they developed SafeSite, a novel digital system that uses electronic monitoring devices, also known as tags, to automatically track workers' movements within sites, ensure compliance with safety guidelines, and facilitate contact tracing when necessary.

By integrating workforce management data, such as employees' risk exposure to Covid-19 and the number of healthy workers on site at any one time, the SafeSite safety tracking system provides real-time monitoring and allows for quick response to prevent virus transmission at work sites.

Useful beyond the pandemic

The SafeSite system will be useful even after the pandemic passes, says Mr Howard How, director of environmental, health and safety at Boustead Projects.

"We could geofence restricted areas and use the tags to warn site supervisors and workers of unauthorised access. We could also geofence areas that have higher safety risks, and use the tags to buzz workers and prompt them to be more careful when they enter these areas," he notes.

"SafeSite can be used at construction sites widely and improve the industry in the long run."

How the SafeSite system works

Workers are given electronic monitoring devices, also known as tags, that can be worn on helmets. The tags would buzz and vibrate should they move too close to one another, and are in breach of safe distancing guidelines.

The tags also work with existing infrared scanners and other sensor technologies to record workers' temperature, detect if they are wearing masks and other personal protective equipment, as well as alert supervisors to infractions.

The records are then fed into a centralised cloud-based system that gives Boustead Projects real-time data on close contacts of workers, based on proximity and duration of contact at the worksites, enabling site supervisors to conduct swift and accurate contact tracing when needed.

Boustead Projects has been trialling SafeSite with 50 employees at one site since November. With the pilot proceeding smoothly, it is working with TraceSafe on a second iteration of the tag that will be smaller and can be worn not just on the helmet, but on the wrist or uniform.

TraceSafe will produce 1,000 of the new tags and distribute them to more workers in five construction sites within the next few months.

About IMDA's Open Innovation Platform

Launched in 2018, the OIP seeks to accelerate digital innovation by matching real business challenges of problem owners to tech solution providers. For each round of innovation calls, challenges are introduced to address issues faced by an individual organisation or a sector. In the wake of the pandemic, a new category has been added to address nationwide challenges that, once tackled, will allow Singapore to emerge stronger post-Covid.

In the case of Boustead Projects, the challenge it faced on implementing new safety requirements at work sites applies to the rest of the sector.

To encourage participants to create trailblazing technologies like SafeSite, the OIP has a structured process that covers ideation to commercialisation, as well as a facility for prototyping and other activities. So far, it has organised over 190 challenges, convened more than 10,000 problem solvers and initiated over 60 innovation projects. Many more projects are in the pipeline.

Mr How says that Boustead Projects was drawn to the OIP's promise of cost-effective, customised solutions. "We needed a system that can be integrated with our existing safety, operational and resource management software, but the solutions we found in the market did not fulfil that requirement and would cost too much to modify," he explains.

"Through the OIP, we got a feasible and affordable proposal from TraceSafe, and was able to work with the company to finetune the details to meet our needs," he adds.

For TraceSafe, the OIP has opened more doors, says Ms Jasling Ong, its managing director.

"Before working with Boustead Projects, we were mostly involved in healthcare tracking and other sensing projects for both overseas clients and the Singapore Government. We were looking for opportunities in other industries to build up our portfolio of solutions," she explains.

Since TraceSafe won the project with Boustead Projects, other construction firms, including some from Japan and Malaysia, have approached it to customise similar solutions.

Ms Ong says: "Going through the structured OIP process and creating SafeSite with Boustead Projects really gave us the right use cases and inputs to make a difference for construction firms.

"When we move on to other sectors, we will leverage the OIP too, because it really helps us to find out what customers want and we get a lot of details through the challenge statements that we might not get otherwise."

Upcoming: A better matching system and a virtual sandbox

Both companies are also looking forward to new OIP features to be introduced in mid-2021.

A smart discovery engine will analyse problem statements and recommend solvers with the relevant experience to improve the matching process and encourage more companies, from small- and medium-sized enterprises to multinational corporations, to co-create solutions.

Additionally, a virtual sandbox hosted on cloud infrastructure, with access to digital tools, reusable software assets, testbed environments and community partners, will speed up the development cycle of proof-of-concepts from months to weeks.

With these two new features, the OIP is expected to cater to a wider variety of innovation needs, and facilitate hundreds more matches between enterprises and solution providers.

Boustead Projects and TraceSafe plan to rely on it for their other challenges. “Now that we understand the nuts and bolts of the OIP initiative, we will definitely use it for other problems,” says Mr How.

Ms Ong of TraceSafe adds: “The OIP does a wonderful job of connecting industry players with technology providers like ourselves to collectively tackle real-world problems, and we want to continue to be a part of it.”

Visit the OIP website to discover connections that can transform your business.