

Here is the footage from “Site Safety Seminar for Capital Works New Works Contracts”, which was held on May 12, 2014. This is the 1st Q & A session.

The speakers, from left to right, were

Dr. Eric LUO, Senior Research Fellow of Hong Kong Polytechnic University

Mr. Au Ming-cheong, Project Manager of Able Engineering Company Ltd.

Mr. Timothy LAU, Senior Manager / Safety & Health of the Housing Department

Ms. Alice NG Yuk-wa, Engineer/Gas Standards A3/2 of EMSD

Mr. CHAN Kin-chung, Senior Safety & Environmental Manager of Hanison Construction Company Ltd.

I want to ask Ms. Ng from EMSD, are there any limits on settlement and vibration in terms of the design of common town gas pipes?

The second question is, given that many town gas pipes may have been worn out in many estates, have you come across any cases in which worn-out town gas pipes, such as ground-surface pipes or underground pipes, leaked without specific damages? If yes, how many years have these pipes been used? Thank you.

Thanks for your questions. Let me begin with the first question. Regarding the matter of settlement, town gas companies have taken settlement into account in terms of design. Take the landfill area, such as Tseung Kwan O, as an example. In Tseung Kwan O, PE (plastic) pipes are used which allow for a little bit more vibration than DI or GI pipes, indeed settlement has been taken into consideration. As for the second question, we have received cases in which pipes were naturally rusted without damages caused by construction sites or a third party. These situations did happen but it may not have directly related to the age of the pipe. Early last year, some DI pipes in an estate in Tai Koo went rusted. Why did they go rusted? It was because they were affected by a water pipe nearby. Therefore, apart from the age of the pipe, we should also consider the facilities nearby. If there are water pipes or planters nearby, pipes may be rusted more seriously but it has no obvious relationship with the age of the pipe. So we do not see the relationship between pipes being rusted and their ages, instead we would check any facility nearby, normally the corrosion is more serious with water pipes and planters nearby.

Hi, I would like to ask Able and PolyU. Your CCS system has the technology of both BCMS and CCS, or, my first question is, regarding the plane XY and Z, how do you

locate Z? The second question is, is the technology purposed for a mobile danger zone or a fixed danger zone? If it is for a mobile danger zone, isn't it necessary for BIM Model to be renewed frequently? If yes, how do you consider the time or human resources spent? Hope you can share it with us. Thank you.

The question is about how the height of Z in XYZ is positioned. Since the site is in fact a rather complicated environment, horizontal positioning is relatively easier, but as I said about positioning by shift measuring, we only have got XY. Normally we have four receivers to serve as position references. The receivers can measure new 3D positions. By putting three receivers on a plane and one to two on the top, we can measure 3D positioning.

The second question will be answered by Raymond.

The second question is exactly what we have just supplemented in the end. It is not difficult for us to do the setting as long as the computer drawings are provided. As Dr. LUO has said, the technology is extended from Building Information Modelling. If you have the AutoCAD drawings which are converted to BIM at your site, we can upload one working floor to the system for each week. With our receiving station situated on the highest floor, the technology can be applied in site patrols to working floors. As for what you have added on, it is easy to set the danger zone. To show the danger zone on the computer, all you have to do is to specify the zone in the computer drawing.

Sorry, I would like to follow up on the question. The first thing is, do you mean that this is a fixed danger zone rather than a mobile crane that can move around, or is it also applicable for a mobile crane? The second question is, as far as I understand, your system is an early warning system, right? Does your system give early warnings through flashing light or sounds? If so, if an object is falling down, will the workers have the time to react? Does that mean every worker needs to have the system and understand what actions he should take when there is flashing light or a siren, if he knows where the danger zone is? Could you share with us your thoughts about the questions related to the test results? Thank you.

We have discussed it during the discussion. Some ways have also been introduced just now, including a sensor being attached to the hook of a crane. If a worker walks past the sensor above his head, he will hear signals. The kinds of signal can be set up to your preference. In the latest tests, a Chinese audio signal like "You have entered the

danger zone” was set. I think Dr. LUO can make a simple setting in which a crane’s hook pops up over your head. There are many other ways extended from this idea. For example, you can define the edge of slope as a danger zone. If a driver drives towards the danger zone of the site, signals will be given, telling him he has reached the edge of slope. More are still being developed. We can follow up on them, right? Dr. LUO?

Not only can fixed danger zones be defined, a positioning gadget can also be put on an excavator. The excavator can be a threat itself. If a worker walks near it, he will also receive a warning.

Are there any other questions? Thank you.