## TIME TO LOOK AT WHAT LIES BENEATH

Two sinkholes in the same area show thorough study of KL roads is needed, say experts

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ITH three sinkholes appearing in the city in a matter of days, experts have urged the authorities to analyse the geological conditions of certain areas in the federal capital.

The unsettling proximity of the first and the last sinkholes in Jalan Maharajalela and Jalan Dewan Bahasa Dan Pustaka, some 700m from one another and less than 48 hours apart, also warrants scrutiny.

Geologist Dr Azhar Hussin said many factors contributed to such incidents, but even if all of them were taken into account, the ap-



Geologist Dr Azhar Hussin says sinkholes caused by burst pipes could be attributed to multiple factors. FILE PIC

pearance of two sinkholes in the same area pointed to something more disconcerting.

"The fact that the 2014 sinkhole in Jalan Imbi-Jalan Pudu intersection happened along the same stretch some 1km away is too much of a coincidence."

Azhar said the sinkholes caused by burst pipes could be attributed to multiple factors, in-

cluding intense earthworks resulting in the removal of soil, its movement, an increase in the water table and flow, as well as an increase in rainfall.

"However, the sheer scale of development, worksites and tall buildings in the area, compounded by rainfall and the possibility that no one is monitoring whether water is pumped out or drained properly in these areas, could have contributed to an increase in the water table in the soil, that it eventually caved in."

Azhar, however, said Kuala Lumpur City Hall could chart the way ahead by working with agencies such as the Minerals and Geoscience Department and conduct a thorough study on what lay beneath.

"They have to do composite urban, geological, utility, hydrological and transport mapping of the entire Kuala Lumpur," he told the New Straits Times.

"We can only analyse what goes on and predict the risks that the city geologically faces when we have a cross mapping of sorts and compare it with data or maps that are already available."

He said this when asked if Kuala Lumpur's high quotient of underground limestone and the uneven topography contributed to sinkholes.

Azhar said although it was natural to attribute sinkholes to soil with limestone content, the massive unchecked development in Kuala Lumpur suggested something else. He said the big theoretical questions, such as whether the city was sinking like Jakarta as how scientists had observed, could only be answered conclusively with such a map.

Civil engineer Dr Ratnasamy Muniandy agreed that a thorough investigation of what lay above and beneath the city had to be conducted thoroughly.

"From an engineering standpoint, what was done before and what is being done now need to be mapped out. This includes the construction above ground and what is taking place below.

"The other issue that we need to look at is climate change. We have been experiencing heavy rainfall for more than a month, so the natural state of the soil and its moisture is changing."

The professor from Universiti Putra Malaysia's Engineering Faculty also said the authorities could enlist universities and academics for their expertise

City Hall announced on Monday that "another sinkhole" had surfaced in Jalan Dewan Bahasa Dan Pustaka due to an underground burst pipe.