

Cladding risk for buildings

THE fire at the EPF building in Petaling Jaya recently shows how dangerous unapproved cladding panels can be when the insulating foam catches fire. It was reported that the fire was initiated by sparks that occurred during maintenance work on the building. On TV later that night, a fire department official said that dozens of buildings had been identified as using similar flammable cladding panels.

If that is the case, the cladding on these buildings are at high risk of catching fire if the building is struck by lightning. The average lightning stroke in Malaysia carries more than 30,000 amperes, or several thousand times more current than a welding machine used at construction sites.

Hence, if a cladding panel is struck by lightning at or near the top of a high-rise building, the lightning current can cause major sparks to occur simultaneously at several interconnecting links of the cladding panel frame. These big sparks, in theory, can cause the insulating flammable foam to catch fire.

The problem is compounded by the fact that the majority of high-rise buildings in the country do not fully comply with the Malaysian lightning protection standard MS-IEC62305. Even those building installed with conventional lightning rods, which are specified in the standard, do not fully comply with the standard because these rods were not installed at locations with high risk of lightning strikes. As a result, these buildings are still at risk of damage from lightning strikes.

Numerous high-rise buildings in the country have been installed with non-conventional lightning rods such as the early streamer emission (pic), collection volume method (CVM) and charge transfer system (CTS) air terminals. The manufacturers of these rods claim that their system either attracts or repels lightning strikes. However, scientific studies conducted by lightning experts for the past 20 years have shown that these claims are false. The most recent study also cited case studies conducted in this country that provide clear evidence of the failure of these rods to protect buildings from light-



ning strikes (see <http://www.iclp-centre.org/pdf/Cooray-CIGRE-2011.pdf>).

In fact, the Energy Commission (Suruhanjaya Tenaga) had issued a directive that only lightning protection systems complying with the Malaysian standard should be used from September 2011 (<http://www.st.gov.my/images/article/polisi/circular/lightning.pdf>). However, until today, the directive has not been enforced and non-conventional lightning rods are still being installed on many new high-rise and public buildings.

In view of the fire at the EPF building, the relevant authorities should instruct building owners to immediately remove the dangerous cladding panel before another fire occurs due to maintenance work, lightning or errant fire-

works display. It is better to live temporarily in an unsightly building than to become victims of an inferno like the Grenfell Tower in London last year.

As for the non-conventional lightning rods, the Energy Commission should start enforcing the directive on high-profile organisations that have stubbornly ignored it all these years. These include Sirim, JKR and the Fire and Rescue Department. The use of non-conventional lightning rods at their head office buildings has long misled the public into believing that these rods are safe to use.