**Photos by** AZHAR MAHFOF, RAJA FAISAL HISHAN, FAIHAN GHANI and YAP CHEE HONG

(22 December 2021) The Star, P 12

# Homeless and struggling



**Answering an SOS:** Members of the Armed Forces and Fire and Rescue Department delivering aid by boat to flood victims in Taman Sri Muda, Shah Alam.





**Carrying on together:** (Clockwise from top) Residents and volunteers join forces in a massive clean-up effort to make their homes and neighbourhood liveable at Taman Sri Nanding in Hulu Langat. Residents of Taman Sri Muda wading through floodwaters with their personal belongings, loved ones and furry family members as they make their way to shelter and safety. A man looking at damaged clothes, furniture and household items strewn outside a house along Jalan Tiong Nam in Kuala Lumpur.

Inside the SMART Tunnel during Mode 4.

## SMART TUNNEL STRETCHED BEYOND THE MAX

### Diversion of stormwater twice its handling capacity averted major floods in KL centre

## OPERATION OF SMART STORMWATER SYSTEM



| Mode | Upper Deck | Lower Deck | Lower Channel | Tunnel Cross-section |
|------|-----------|-----------|---------------|---------------------|
| 1 | | | Empty | |
| 2 | | | Flood Water | |
| 3 | ⛔ | ⛔ | Flood Water | |
| 4 | ⛔ | ⛔ | Flood Water | |

**Berembang Pond**

**Mode 1**
70 cumec

**Mode 2**
70 - 150 cumec

**Taman Desa Pond**

**Mode 3**
>150 cumec

**Mode 4**
>150 cumec (prolonged storm)

| Berembang Pond | Tunnel Capacity | Taman Desa Pond | Total Capacity |
|----------------|-----------------|-----------------|----------------|
| 0.6 million m³ | 1 million m³ | 1.4 million m³ | 3 million m³ |

**By JOHNNY YEW**

THE Stormwater Management and Road Tunnel (SMART) tunnel diverted five million cubic metres of water – despite three million cubic metres being its maximum capacity – to prevent major floods in KL city centre over the weekend.

The combined storage capacity of the SMART tunnel is three million cubic metres of water – equivalent to 2,000 Olympic-size swimming pools. The five million cubic metres of water were diverted from Sungai Klang and Sungai Ampang to the Taman Desa Reservoir.

The SMART tunnel, which works on a four-mode system, had Mode 4 initiated last Saturday as flows at the confluence reached more than double its maximum capacity due to prolonged rainfall.

The entire 9.7km tunnel, which includes a 3km motorway, was closed to traffic to facilitate stormwater diversion.

"Excess floodwaters needed to be channelled into the upper and lower traffic tunnel compartments while automatic watertight gates were opened for floodwater to pass through," said SMART chief operating officer Mohd Noor Mohd Ali.

"The five million cubic metres of water that we managed is a record high and beyond the tunnel's actual capacity of three million cubic metres," he added.
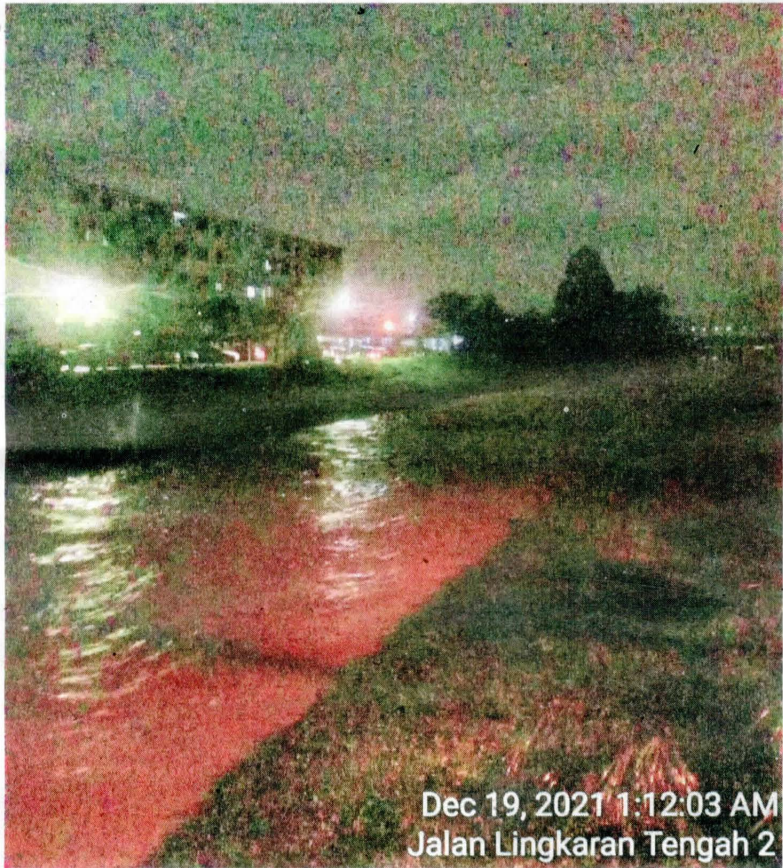
The SMART tunnel serves as a climate mitigation infrastructure and a showcase of Malaysia's technological innovation.

As the world's first dual-purpose tunnel, its two purposes are to reduce flood problems in Kuala Lumpur – notably the Merdeka Square area and the upper catchment of Klang River – and relieve traffic congestion at the southgate entrance into the city centre.

Since it was opened to traffic in May 2007, there has been nine Mode 4 activation, including two this year.

Previous water diversions took about three hours but due to continuous torrential rainfall in Kuala Lumpur, Putrajaya and Selangor, the operation on Saturday took about 22 hours – setting a new record of sorts.

SMART's multi-modal water diversion system controls rising waters and diverts excess stormwater from overflowing at the catchment of the Sungai Klang basin and at its confluence with Sungai Ampang. This prevents spillover into the city centre in Jalan Tun Perak, Jalan Melaka, Leboh Ampang, Dataran Merdeka and surrounding areas.

If the five million cubic metres of water had not been managed in time and efficiently, areas in the heart of Kuala Lumpur, such as around Masjid Jamek, would have been severely flooded.

To date, the SMART Tunnel has diverted floodwaters on 40 occasions for Mode 3 and Mode 4, and averted an estimated RM1.4bil in public damage.


Dec 19, 2021 1:12:03 AM
Jalan Lingkaran Tengah 2
Before SMART activation at KL Middle Ring Road 2 (MRR2).


After SMART activation at KL Middle Ring Road 2 (MRR2).
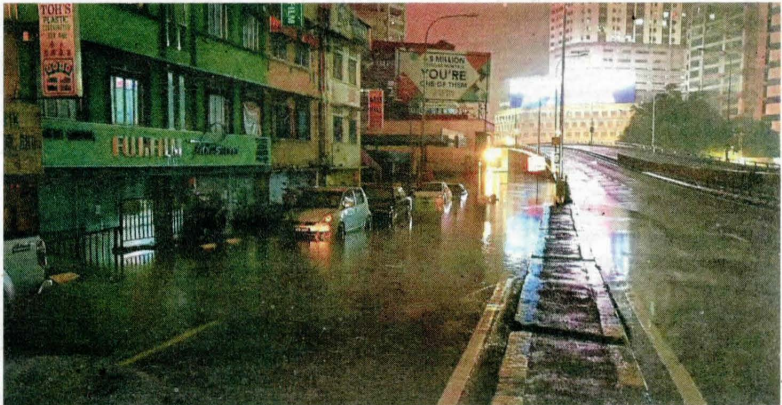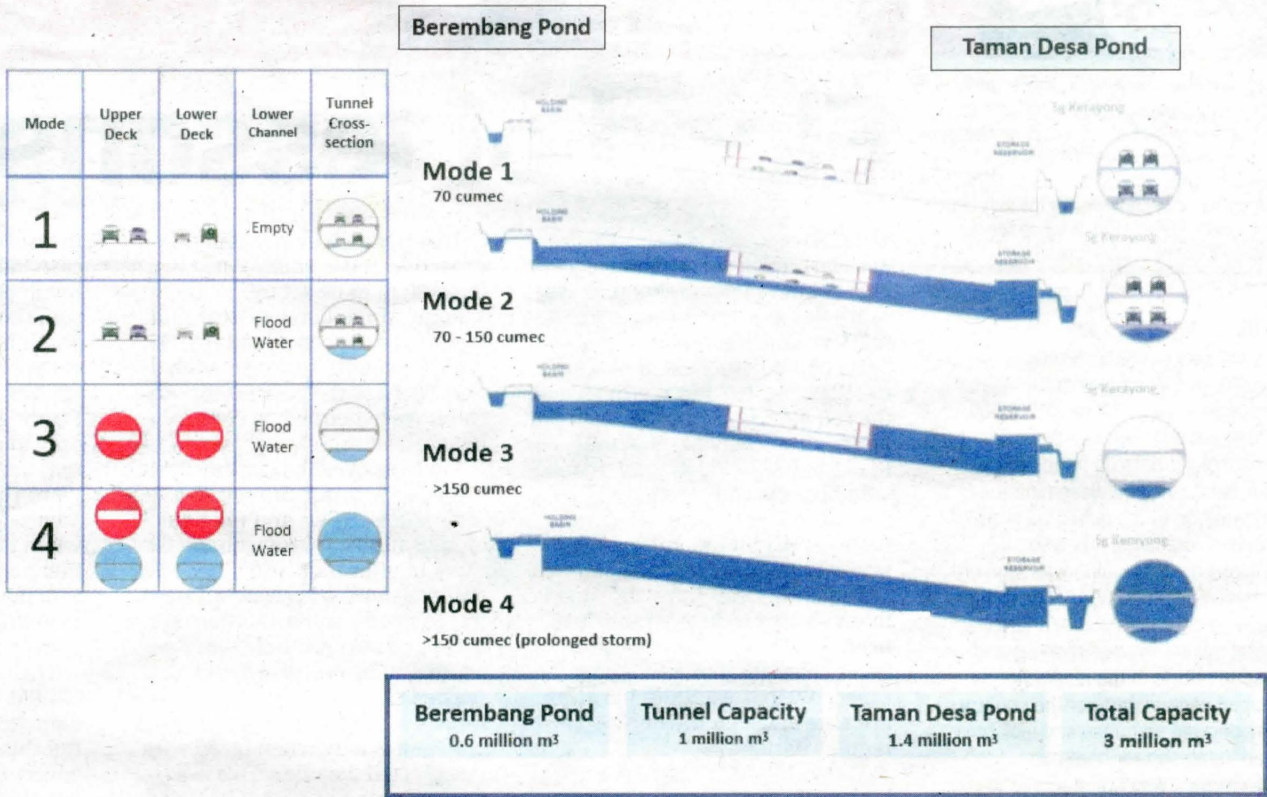

Before SMART activation at Pekeliling area in Kuala Lumpur.
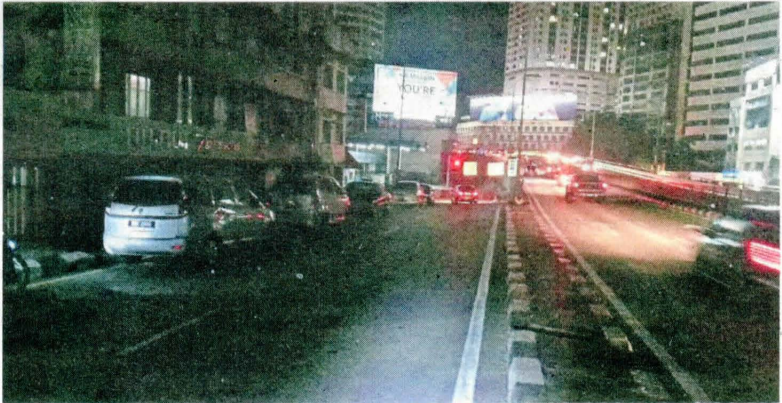

After SMART activation at Pekeliling area in Kuala Lumpur.


Before SMART activation at Pertama Complex in Kuala Lumpur.


After SMART activation at Pertama Complex in Kuala Lumpur.