

Background Information for Press Release on Slope Safety before Wet Season in 2022

Dr Raymond Cheung
Head of Geotechnical Engineering Office



Landslide Statistics in
2021

01

Coping with Landslide Risks

02

Five Decades since Tragic
Landslides on 6.18 in 1972

03



Images in this presentation can be downloaded at:

https://drive.google.com/drive/folders/1iy32FMsXrdsOZ7UknOo8VfCwVM_brEDB?usp=sharing

01

Landslide Statistics in 2021

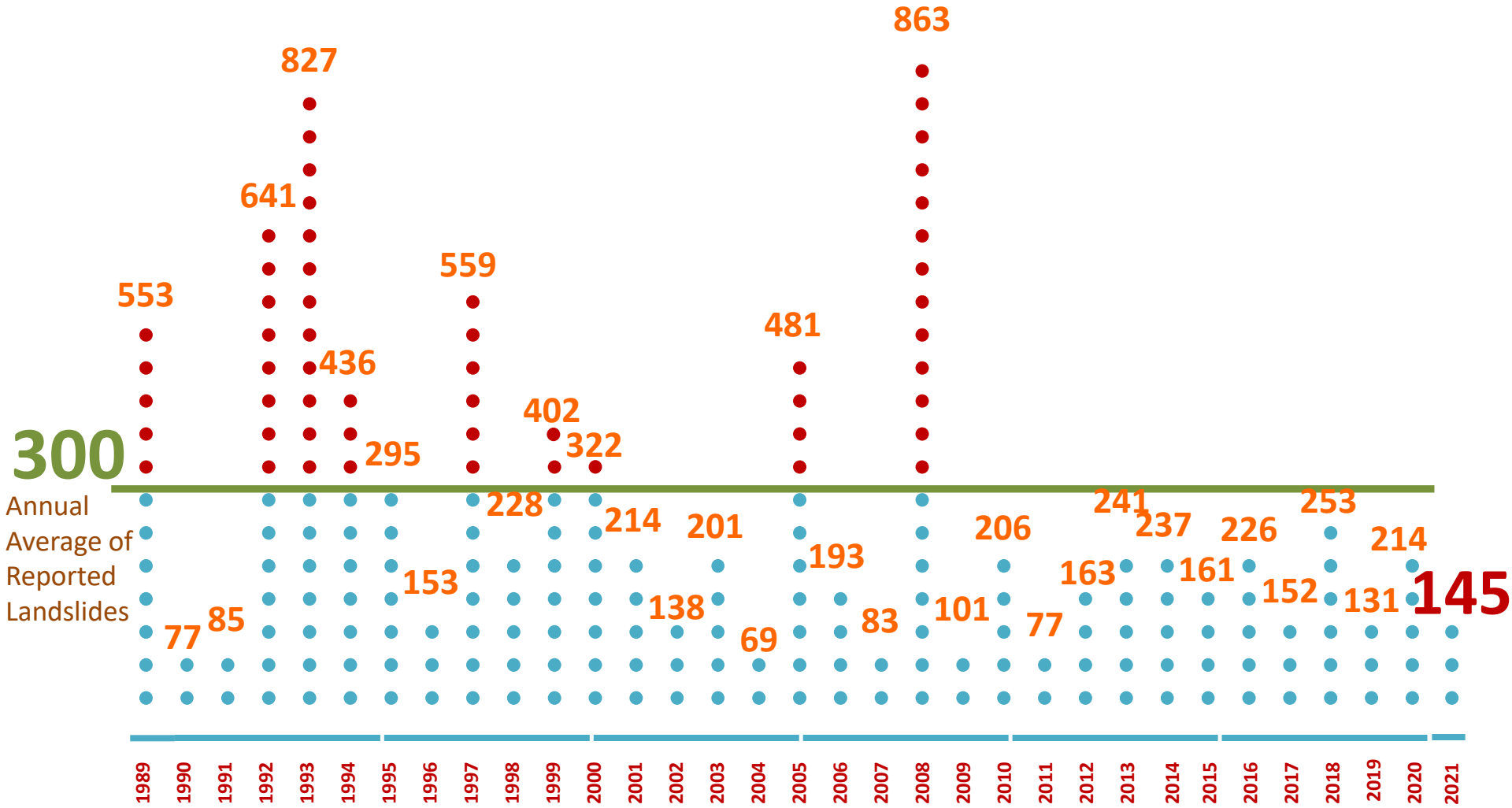
No. of Landslides Reported in 2021

145

Over 80% of reported landslides affected roads, footpaths, squatters and buildings



Landslide Statistics over the Years



Landslide Statistics in 2021

2

Landslip
Warnings
issued

2021.6.28

No. of reported
landslides during
Landslip Warning

3

Duration
(hour)

6

Landslide Potential
Index

9.6

Black Rainstorm
Warning in force

2021.10.8

No. of reported
landslides during
Landslip Warning

10

Duration
(hour)

48

Landslide Potential
Index

72

Tropical Storm "Lionrock"
on 8-10 Oct

Reported Landslides Leading to Significant Consequence in 2021



2021.6.28

South Lantau Road near Upper Cheung Sha Beach, Lantau Island

Landslip Warning and Red Rainstorm Warning

Debris volume over 2,000 m³

Temporary road closure and damage to taxi stand

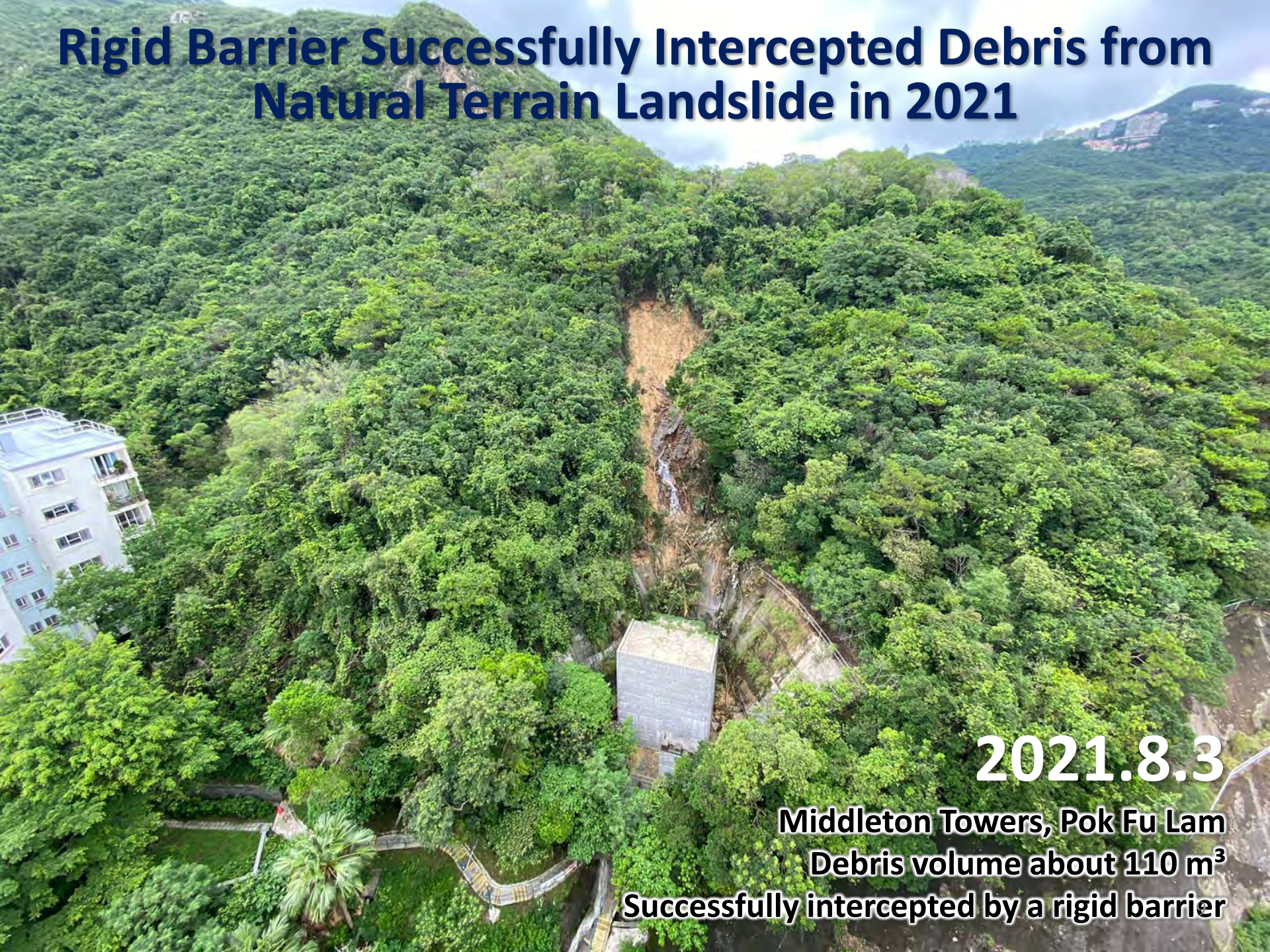
Reported Landslides Leading to Significant Consequence in 2021



2021.11.5

**Peak Road, Mid-Levels
Debris volume over 2,000 m³
Traffic obstruction for a week**

Rigid Barrier Successfully Intercepted Debris from Natural Terrain Landslide in 2021



2021.8.3

Middleton Towers, Pok Fu Lam

Debris volume about 110 m³

Successfully intercepted by a rigid barrier

Flexible Barrier Successfully Intercepted Debris from Natural Terrain Landslide in 2021

2021.10.9

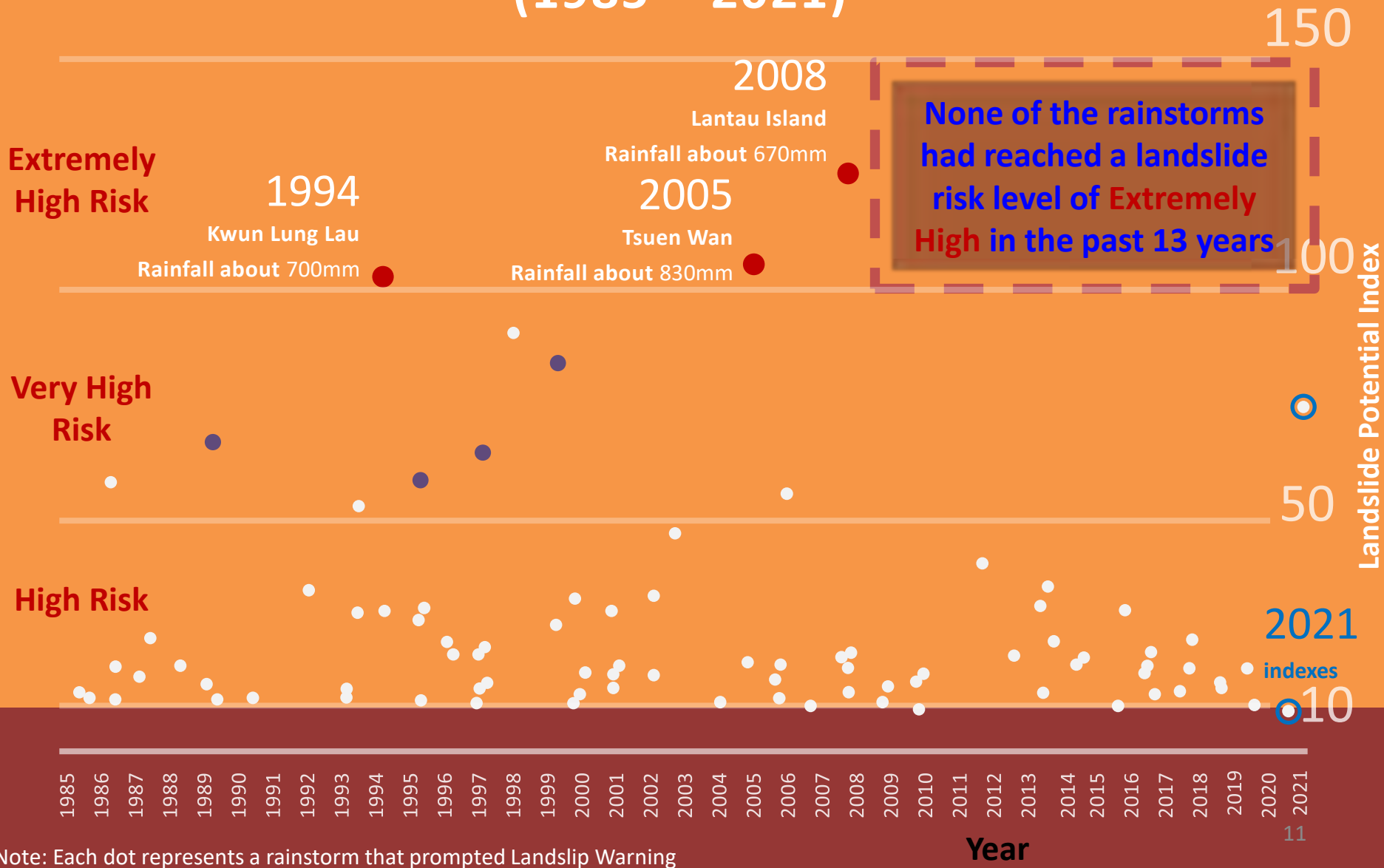
Pa Mei near Ma Wan San Tsuen, Tung Chung, Lantau Island

Landslip Warning and Black Rainstorm Warning

Debris volume about 220 m³

Successfully intercepted by a flexible barrier

Landslide Potential Index of Rainstorm that Prompted Landslip Warning (1985 – 2021)



02

Coping with Landslide Risks

Continuously Strengthening of Slopes

Landslip Prevention and Mitigation Programme

to upgrade **150** government man-made slopes and to conduct safety-screening studies for **100** private man-made slopes each year



Rigid Barrier



Flexible Barrier

to implement risk mitigation works for **30** natural hillside catchments each year

Over 500 debris barriers were constructed under the Landslip Prevention and Mitigation Programme

Continuously Strengthening of Slopes



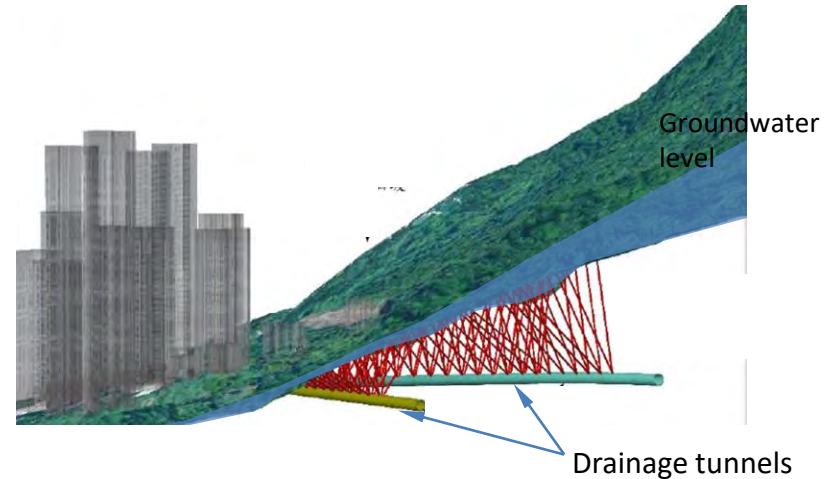
Use of soil nails to enhance the robustness of slope



Enhancement of slope drainage capability



Study on identification of landslides through artificial intelligence



Use of drainage tunnel to regulate regional groundwater

Continuously Strengthening of Slopes

Regular Slope Maintenance



Routine Maintenance Inspection

- ◆ at least once every year
- ◆ complete all slope inspection and maintenance prior to onset of wet season
- ◆ inspect the drainage channels and clear any blockage after a heavy rainstorm

Engineer Inspections for Maintenance

- ◆ once every 5 years
- ◆ by a professionally-qualified geotechnical engineer
- ◆ geotechnical engineer to provide advice on slope maintenance and improvement works

Improving Community Resilience against Extreme Rainstorm



More than 90% of fatal landslide cases had occurred
while Landslip Warning was in force

Improving Community Resilience against Extreme Rainstorm

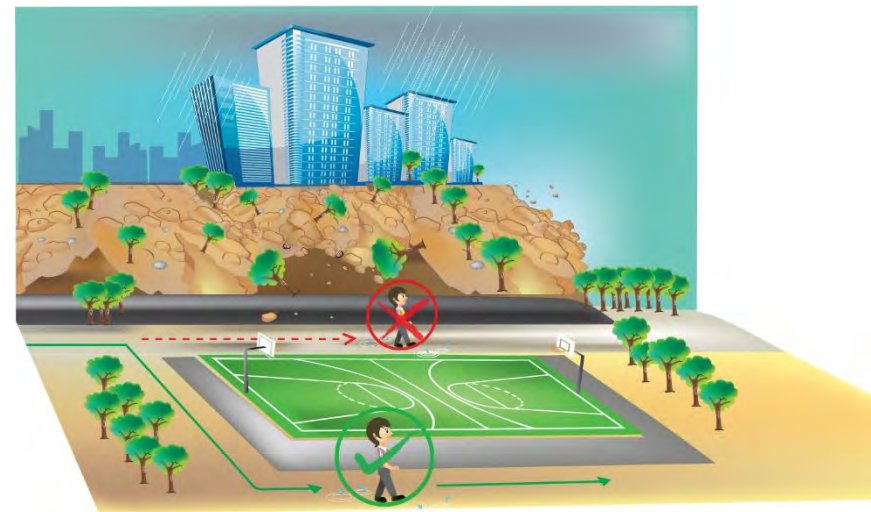
Landslide Self-help Tips **Keep away from slopes**



Stay in rooms on higher floors and/or furthest away from slopes, and follow rescuer's instructions and move immediately to a safe shelter if condition permits



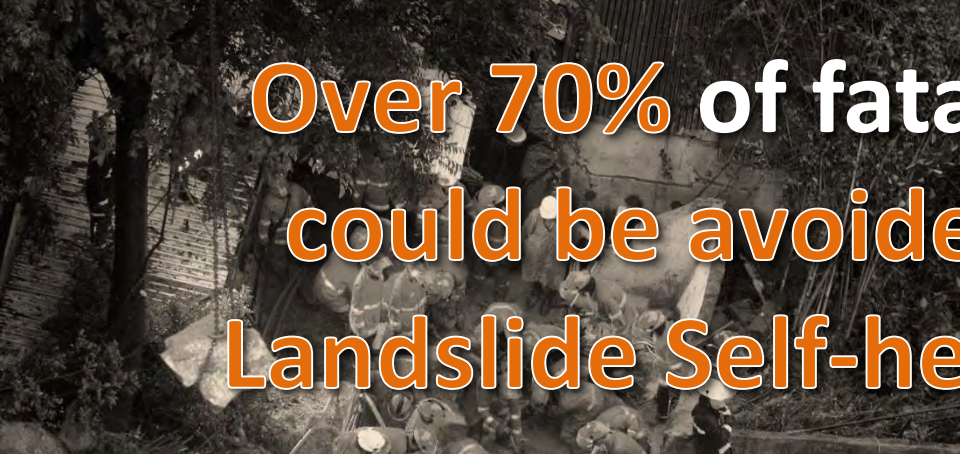
Avoid driving in hilly areas



Keep away from slopes



Over 70% of fatal landslide cases **could be avoided** if the advice in **Landslide Self-help Tips** were taken



03

Five Decades since Tragic Landslides on 6.18 in 1972

Five Decades since Tragic Landslides on 6.18 in 1972

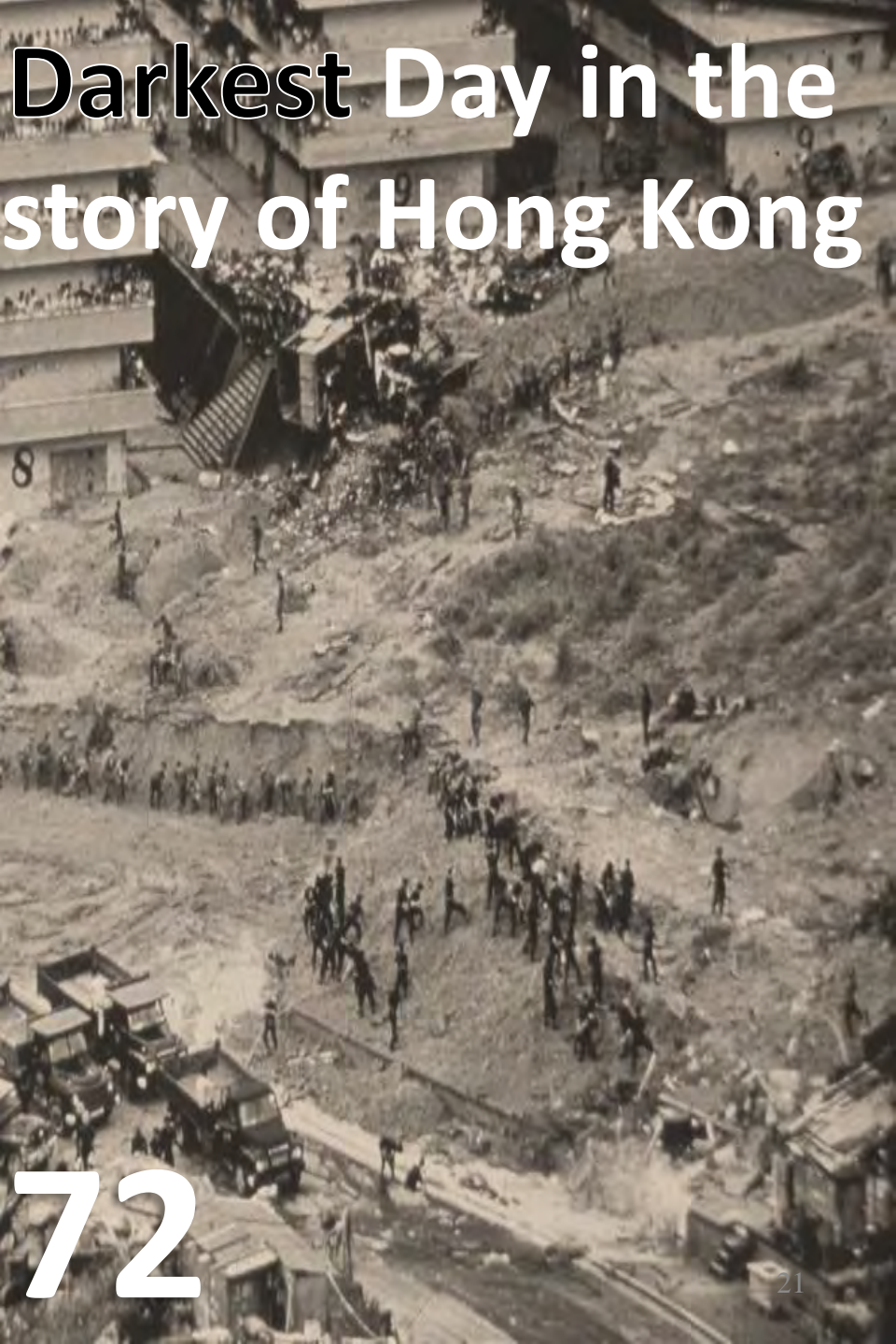
Remembrance and Public Education Activities

A series of Remembrance and Public Education Activities:

- ❖ Guided tours at Po Shan Drainage Tunnel - Landslide Sci-Tech Chamber
- ❖ Roving exhibition
- ❖ Production of thematic video



The Darkest Day in the Landslide History of Hong Kong



18 June 1972



Resettlement area in Sau Mau Ping
Over 100 cottages buried by debris

71 fatalities

Present Day

Sau Mau Ping Memorial Park





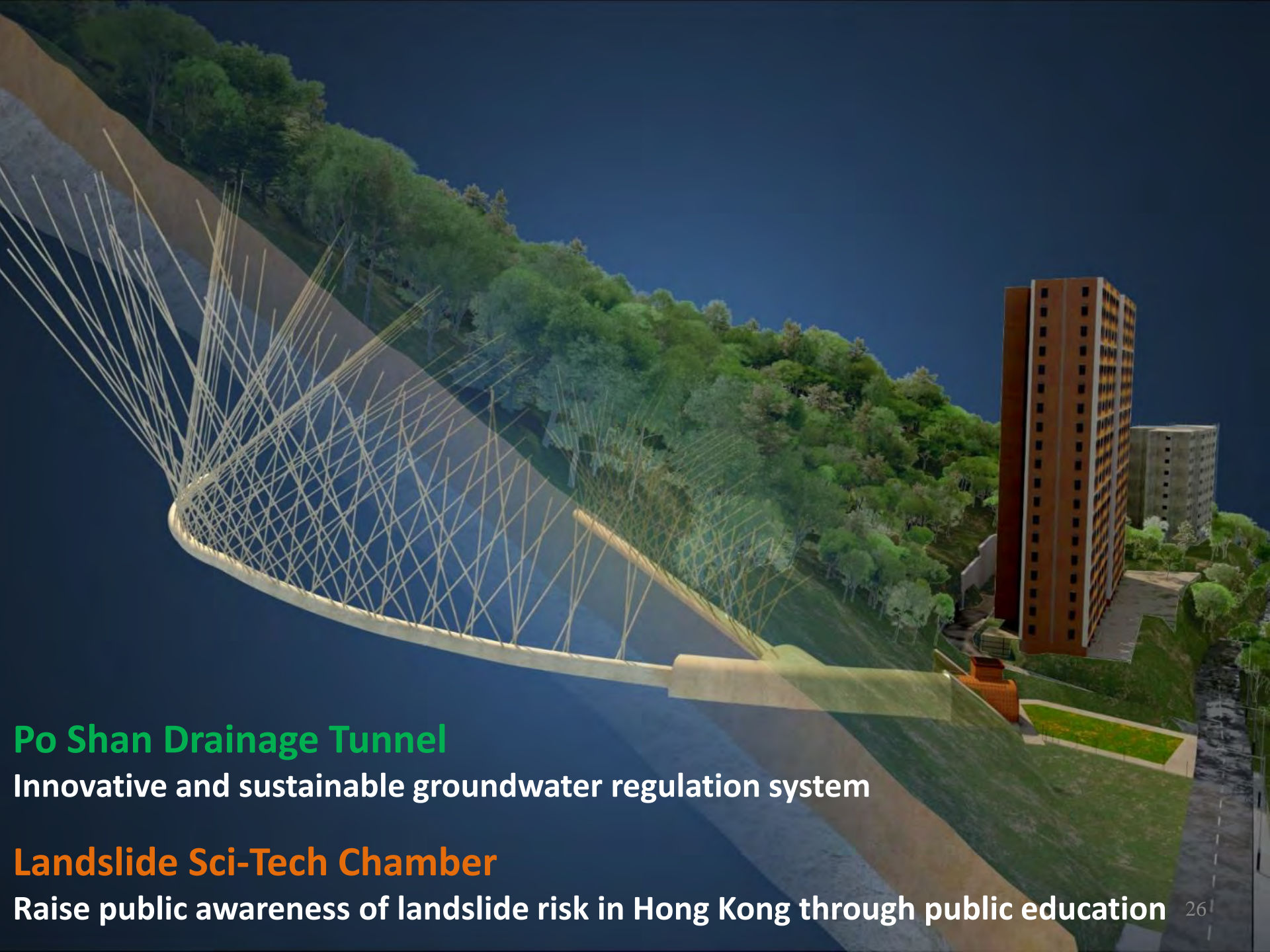
Po Shan Road, Mid-Levels
A 12-storey residential building collapsed
Top 4 storeys of an adjacent building were torn off

67 fatalities



Present Day

Kotewall Road Rest Garden
and Po Shan Drainage Tunnel




Po Shan Drainage Tunnel

Innovative and sustainable groundwater regulation system

Landslide Sci-Tech Chamber

Raise public awareness of landslide risk in Hong Kong through public education



氣候變化
與
斜坡安全

**Po Shan Drainage Tunnel –
Landslide Sci-Tech Chamber**
(opened to public for guided tours since September 2021)

**DRAINAGE TUNNEL
EXPRESSION GALLERY**
排水隧道體驗廊



山泥傾瀉知識廊
LANDSLIDE WISDOM GALLERY

變
與
斜坡安全



氣候變化印象廊
**CLIMATE CHANGE
IMPRESSION GALLERY**



寶珊災難紀念廊
PO SHAN MEMORIAL GALLERY



Images in this presentation can be
downloaded at:

https://drive.google.com/drive/folders/1iy32FMsXrdsOZ7UknOo8VfCwVM_brEDB?usp=sharing