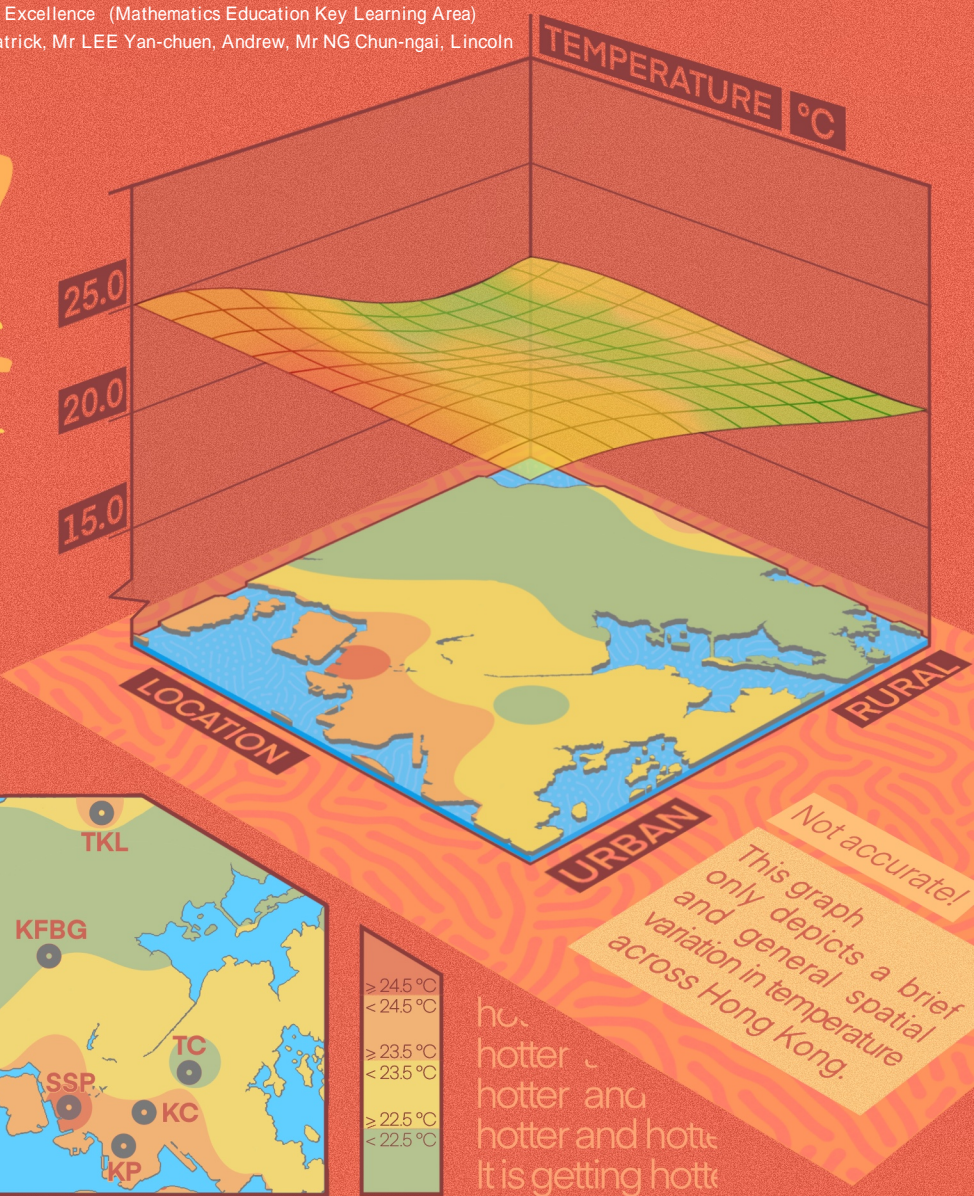


URBAN Heat island EFFECT

The 2024 annual mean temperature recorded by observatories in Hong Kong :

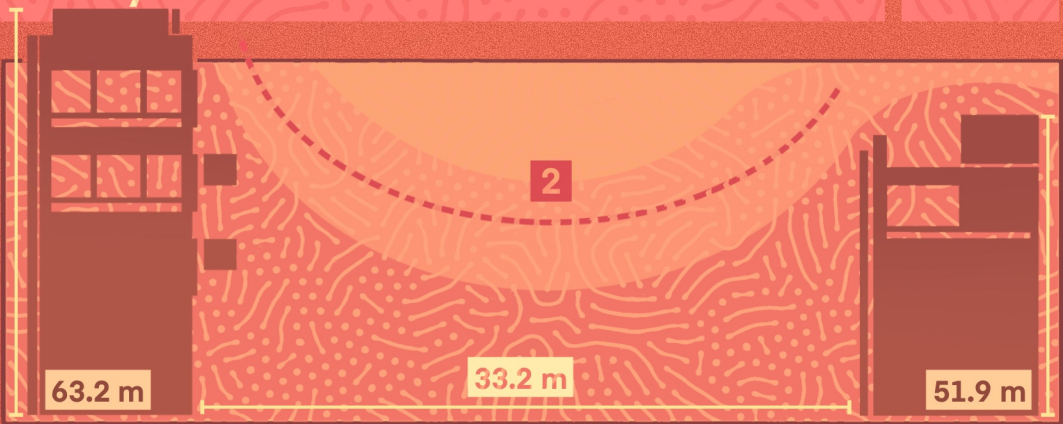
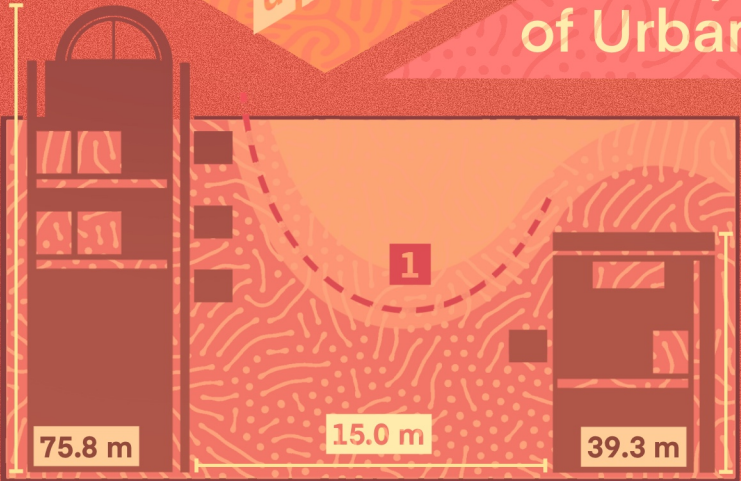
Sham Shui Po	24.6 °C
King's Park	24.3 °C
Kowloon City	24.2 °C
Kadoorie Farm & Botanic Gardens	21.7 °C
Ta Kwu Ling	23.8 °C
Tate's Cairn	20.0 °C



Urban areas are **hotter** than rural areas. Why?

Hot air produced by car engines and air conditioning are trapped between buildings, forming **urban canyons**.
The deeper the canyon, the hotter the area.
Deepness of canyon can be found by **aspect ratio**.

$$\text{Aspect Ratio of Urban Canyon} = \frac{\text{average height of buildings}}{\text{road width}} = \frac{a + \beta}{2w}$$



1 Roughwork :

$$(39.3 + 75.8) \div 2 \div 15.0$$

$$= 57.55 \div 15.0$$

$$= \mathbf{3.84}$$

(corr. to 3 sig. fig.)

DEEP

2 Roughwork :

$$(63.2 + 51.9) \div 2 \div 33.2$$

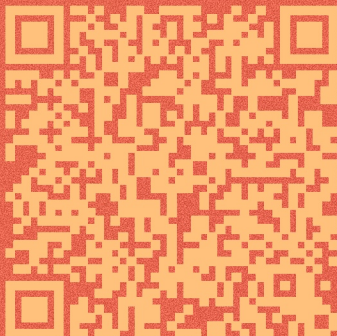
$$= 57.55 \div 33.2$$

$$= \mathbf{1.73}$$

(corr. to 3 sig. fig.)

REGULAR

for more info:



The deeper the canyon, the **higher** the ratio, **more heat** is trapped, resulting in a higher temperature.