

NEWS RELEASE

For Immediate Release

Think City Land Surface Temperature Mapping Shows Malaysian Cities are Getting Hotter

KUALA LUMPUR, Mar 5, 2021– The results of a land temperature study conducted by Think City has revealed marked increases in the peak land surface temperatures of five Malaysian cities over several decades. The study observed land surface temperatures in the Kuala Lumpur city centre, Bayan Lepas, George Town, Johor Bahru and Ipoh.

While comparisons of temperatures within each city were carried out across different timeframes, and each terrain held unique geographical characteristics that influenced the temperature, the Think City Analytics team observed a consistent increase across all five locations. The rise in temperature in urban areas has been linked primarily to the urban heat island effect, the lack of greenery and global warming.

According to Dr. Ceelia Leong, Geospatial Analyst at Think City the urban heat island effect is caused by the types of materials used in cities such as concrete and bitumen, which absorb and re-emit the sun's heat more than natural landscapes.

“Increases in temperature, linked to climate change and urban expansion is a growing challenge for the liveability of cities, human health and urban wildlife. We used satellite imagery to map the extent of the heat island effect in Malaysian cities and to observe changes over the past few decades.

“Two characteristics were clearly evident. Firstly, Malaysian cities are getting hotter due to the increasing intensity of development, which is compounded by the effects of climate change. Secondly, the maps showed that urban greening had beneficial impacts, with the ability to lower urban temperatures between two and eight degrees Celsius,” she said.

Hamdan Abdul Majeed, Managing Director of Think City, said that the key aim of the temperature mapping was to get a snapshot of what cities were undergoing and to find solutions to battle the effects of climate change.

“At Think City, the use of analytics is extremely crucial so that we can create strategies and formulate solutions for better cities in an informed manner. At the same time, there is a duty to inform the public as the battle against climate change requires a concerted effort from both the public and private sectors as well as the community-at-large.

“The democratisation of data in this manner, making it easily available through our Urban Analytics Portal is part of our climate response effort and one of the ways that we can alert and educate communities, as we identify solutions and assist communities in adapting to extreme climate events.

“As we are in the decade of action to take concerted steps towards achieving the sustainable development goals, adapting to the impacts of climate change does not fall solely onto the shoulders of Malaysia’s policy-makers. Rather, it will require ‘all hands on deck’, from the government, the private sector to the general public,” he added.

“We aim to continue studies in a similar vein on a regular basis to continue monitoring the impacts of the urban heat island effect and climate change in Malaysia, and to keep finding solutions to mitigate or adapt to the harmful impacts.”

To see the Land Surface Temperature maps visit: <https://thinkcity.com.my/urban-analytics/>.

-END-

About Think City

Think City is an impact organisation dedicated to making cities more liveable, resilient and sustainable. We are a consultancy, project delivery partner, institute and venture builder, providing urban policy thinking, management and implementation of urban solutions in Malaysia and beyond. Adopting a community-first, evidence-based approach, Think City focuses on four main areas: Placemaking,

Resilience, Analytics and Conservation. Established in 2009 to spearhead urban regeneration in George Town, we have now expanded our work nationwide, implementing projects that enhance the environment, economy, culture, arts and heritage, and resilience of cities. For more, see thinkcity.com.my.

MEDIA ENQUIRIES: maya.tan@thinkcity.com.my.

APPENDIX

Key observations/Topline findings

(More details available on: <https://thinkcity.com.my/urban-analytics/>)

Study area	Key remarks and observations	Notes
Kuala Lumpur City Centre	<ul style="list-style-type: none"> ● Comparing December 1989 & October 2019 ● Peak temperature increase (e.g. 31.04° – 29.40°) was 1.64° ● Compared to other Malaysian cities, KLCC has been able to demonstrate the efficiency of its domestic gardens, parks and woodlands <ul style="list-style-type: none"> ▪ Hottest areas: City Centre, Bukit Bintang, Pudu, Chow Kit, Kampung Baru ▪ Least warm: KL Forest Eco Park, Taman Botani Perdana, and public spaces and gardens in Mahameru and KLCC 	30 years
Bayan Lepas	<ul style="list-style-type: none"> ● Comparing February 1988 & February 2020 ● Peak temperature increase was 5.63° ● Significant increase in temperature is related to the growth of industries and urbanisation in Bayan Lepas, post-2008 (land reclamation of southeast Penang). The land reclamation made way for the construction of Malaysia's first Free Trade Zone aimed at boosting Penang's competitive edge to grow the economy¹ <ul style="list-style-type: none"> ▪ Hottest areas: Industrial, commercial and residential areas. Bayan Lepas Free Industrial Zones, Diamond Valley Industrial Park, Bandar Bayan Baru, Bayan Indah, Queensbay Mall, Penang International Airport recorded surface temperatures in the highest range (over 33°C) ▪ Least Warm: The least warm area pointed to an unoccupied and non-operational factory located in <u>Lintang Kampung Jawa</u> 	32 years

¹ Chee, S.Y., Othman, A.G., Sim, Y.K., Adam, A.N.M. and Firth, L.B., 2017. Land reclamation and artificial islands: Walking the tightrope between development and conservation. *Global ecology and conservation*, 12, pp.80-95.

George Town	<ul style="list-style-type: none"> • Comparing February 1988 & February 2020 • Peak temperature increase was 6.37° • Hottest areas: Locations reaching maximum temperature over 34°C are located in Batu Lanchang, Jelutong, Fortune Park Industry, KOMTAR and George Town World Heritage Site (GTWHS) • After receiving UNESCO World Heritage status in 2008, George Town gained immense traction in popularity in businesses and hospitality services which explains the high concentration of human activities leading to amplified UHI effects 	32 years
Johor Bahru	<ul style="list-style-type: none"> • Comparing May 2005 & May 2018 • Peak temperature increase was 6.70° • Hottest areas: Seri Purnama and Pasir Gudang are confluences for many heavy industries e.g. transportation and logistics, petrochemicals, electronics, and plastics. Skudai and Bandar Johor Bahru, where many human activities and businesses concentrate also recorded higher temperatures. • Extensive monoculture activities detected • JB's rapid gentrification and increased economic corridors and number of industries have contributed to significant temperature rise especially in Kawasan Perindustrian Tanjung Langsat and Pasir Gudang where they rose to over 33°C in 2018 	13 years
Ipoh	<ul style="list-style-type: none"> • Comparing November 1998 & March 2019 • Peak temperature increase was 6.75° • Areas that fell into the maximum range in 1998 expanded by 245% in 2019 (from 66 km² to 163 km²) indicating extremes in Ipoh's ecological change and urban trends. This projects an unsustainable ecosystem that can affect human well-being, environmental conditions, biodiversity and ecological resilience. 	21 years