

MALAYSIANS are not unfamiliar with our nation's hot and humid climate but the issue of rising urban temperatures cranking up the heat to unbearable levels is taking its toll both on the residents and real estate. Malaysia averages a scorching 32°C and currently experiences more frequent heatwaves, prompting the notion that cooler cities are no longer a luxury, but a necessity. One of the easiest ways to cool a city is by employing the power of nature, transforming it from a concrete jungle to a lush haven of greenery.

The recent heatwaves in Malaysia were truly a force to be reckoned with. In April this year, the Malaysian Meteorological Department (MET Malaysia) issued 748 heat alerts for various areas nationwide, which surpassed last year's total of 397 alerts. Emergency measures were rolled out to deal with the heat after temperatures threatened to reach 40°C, claiming one life and damaging crops.

What's to be blamed?

The culprit is the urban heat island (UHI) effect. This happens when concrete buildings and asphalt absorb and retain heat, creating a microclimate that is several degrees hotter than surrounding areas. A study published in Malaysia's Sustainable Cities and Society journal found that KL's UHI effect can be as high as 7°C from its normal average temperature, which is a significant difference that inevitably impacts everything from energy consumption to public health.

Malaysia worked with the United Nations' climate bank, the Green Climate Fund to draft the National Adaptation Plan. It is planned for completion by 2026 and will go beyond emissions mitigation and address issues surrounding water security, agriculture, infrastructure and public health in the face of climate change.

While trees are one of the best ways to reduce the build-up of UHI, the recent incidents of trees falling during storms in Kuala Lumpur, Petaling Jaya and other parts of Malaysia, sparked the cutting down of trees by many local authorities.

However, falling trees and branches during storms are the result of their unchecked development. Trees are losing their original spots in the city to make way for gruelling construction sites and other developments. Climate change also perpetuates the issue, affecting mature, older trees that tower significantly over crosswalks and buildings.

Extreme climate stress will show after a few years and trees will exhibit reduced growth, diminishing their natural defences and creating a haven for pests and diseases to thrive. Malaysia's drastic weather patterns from hot and dry to cool and wet weaken internal wood, and the way councils trim trees does not help either. Branches are shaved and leaves are pruned but only near the middle of the trunk and below, leaving the tree extremely top-heavy. In some cases, developments shaking the soil cause the roots to loosen, creating a dangerous combination of factors that could send trees toppling.

Stop cutting down trees: Proper landscaping cools a city

By
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7°C

temperature difference
caused by the urban heat
island effect (UHI)

37°C

cooler average temperature
in Singapore due to good
landscaping

A good example of excellent tree maintenance is Singapore. The small island lacks the greenery Malaysia does but their temperatures average 3°C cooler than here. Their tree upkeep is top-notch in a way that the entire tree's weight is balanced out, stabilising its core and strengthening its foundation. They also do not sacrifice trees for unnecessary developments. Anyone who has been to Singapore will also notice that their trees, especially the roadside ones, seldom exceed a certain height as they are pruned down to encourage foliage cover.

Experts needed

Arborists and landscapers are crucial to keeping cities cool. Trees and plants are natural air conditioners through a process called transpiration, which is where water moves through a plant and evaporates from aerial parts such as leaves, stems and flowers. The released water vapour is what cools the air around us. It was found that a single mature tree can transpire hundreds of litres of water a day, which then lowers surrounding air temperature by up to 3°C. So Malaysia's practice of cutting down trees while simultaneously issuing heatwave warnings is paradoxical and counterproductive.

Green infrastructure also has advantages that go beyond lowering temperatures. Because trees provide shade, less solar radiation reaches sidewalks and buildings, which can drastically reduce cooling costs for both homes and businesses. According to a study by Universiti Putra Malaysia back in 2018, carefully placed trees can cut energy usage for air conditioning by up

to 25% around buildings.

Beyond trees, it is possible to create a cooler urban atmosphere by carefully placing climbers, shrubs and even green roofs. In order to shade buildings and lessen heat absorption, shrubs and climbers can be used to create vertical green walls. The layer of vegetation on a green roof functions as insulation, lowering interior temperatures and preventing heat transfer into buildings. Incorporating green infrastructure into the current urban planning framework allows green corridors connecting parks and other green areas to be built, improving air circulation throughout the city.

What is being done?

Housing and Local Government Minister Nga Kor Ming stated that the National Landscape Department will choose appropriate plant species to be replanted alongside Kuala Lumpur's roads. Prime Minister Anwar Ibrahim has ordered Kuala Lumpur Mayor Datuk Seri Kamarulzaman Mat Salleh to plant 100 trees for every tree that is felled in the city. Dewan Bandaraya Kuala Lumpur was also directed to establish a task force soon to closely monitor and maintain the shade trees in the capital city, which should include stakeholders such as non-governmental organisations, arborists and experts from the Forest Research Institute Malaysia. While it's commendable that such measures will lead to more trees in the city, it is crucial to ensure proper upkeep and maintenance. Without adequate care, the cycle of falling trees and their subsequent removal will persist.

