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# Aim to sustain and regenerate Earth environment

Love Earth with great care.  
We rent Earth from children, not gift  
from ancestors. (Proverb from Africa).

We must keep Earth environment with  
great care.  
We should hand over Earth  
environment with good conditions to all  
life of next generations in Earth.  
Because we rent living space from them.



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# Garden Crete Lite

Light weight, Permeable and Sustain water inside.



New concept of earth friendly materials substitute for concrete and soil.

Take measures to cope with

- Flood of City environment.
  - Infections of Disease in Tropical and Sub tropical environment.
  - Heat island Phenomenon of Earth environment
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## Purpose of Development for Earth environment by Garden Crete Lite

- **Flood of City environment**
- **Reason** Concrete building and Asphalt pavement of city invade space of Green and natural environment of city.



**Solution** Garden Crete Lite will recover natural water circulation of city environment.



### **Infections of Disease in Tropical and Sub tropical environment**

**Reason** Caused by infections from mosquito to human because of damp environment and temperature of Tropical and Sub tropical Zone.



**Solution** Improvement hygiene environment of city.

### **Heat island Phenomenon of Earth environment**

**Reason** Decrease space of Green and natural environment of city by Concrete and Asphalt paving.



**Solution** Use GCL and not accumulate heat in building and pavement.



# Solution by Garden Crete Lite for Earth environment 1

Flood cased by heavy rain in city.

100mm/hours of heavy rain damage city function often recently. River can not keep such volume of heavy rain suddenly.



Problem is structure of city which covered by concrete and asphalt.

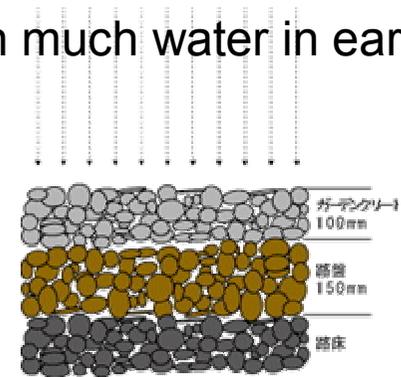


Water can not permeable in ground. And also heavy rain can not throw water into sewerage. So it happens flood suddenly and it damage functions of city.

GCL is new concept of materials it substitute concrete and asphalt.

Permeable speed 0.1cm/second  
Capacity of sustain water 311litter/m<sup>3</sup>  
So GCL can sustain much water in earth.

100mm thickness of GCL can sustain 30litter/m<sup>2</sup> of water inside.



GCL is just like as sponge, it can sustain water inside and permeable In earth. This characteristic can protect city from heavy rain and flood.

# Solution by Garden Crete Lite for Earth environment 2

## Solution of disease infection in tropical and sub tropical country

Pour sewerage environment and many puddle of pavement at tropical and subtropical country outbreak malaria and dengue fever caused by mosquito.

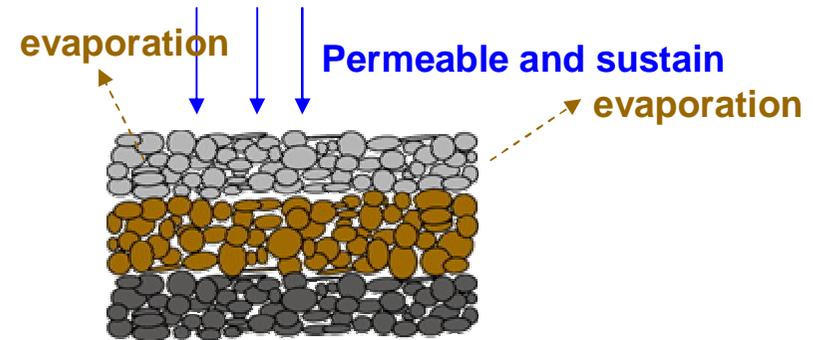


**Unsanitary and dump environment outbreak mosquito and many kind of bacteria .**

Temperatures of tropical and subtropical environment (over 20 degree) can outbreak mosquitoes which carry factors of dengue fever .

**Garden Crete Lite can substitute characteristic of soil.**

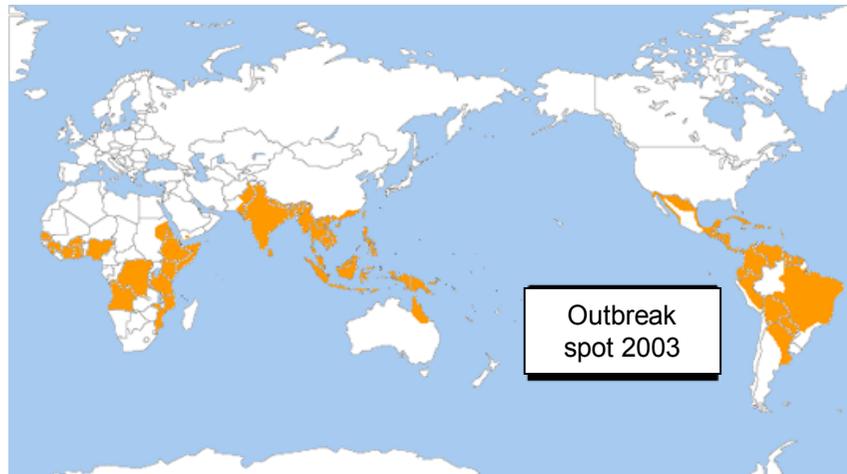
GCL can transpire water into air easily. So surface of GCL can keep dry conditions continuously. These dry conditions can produce cool and hygienic conditions of urban environment.



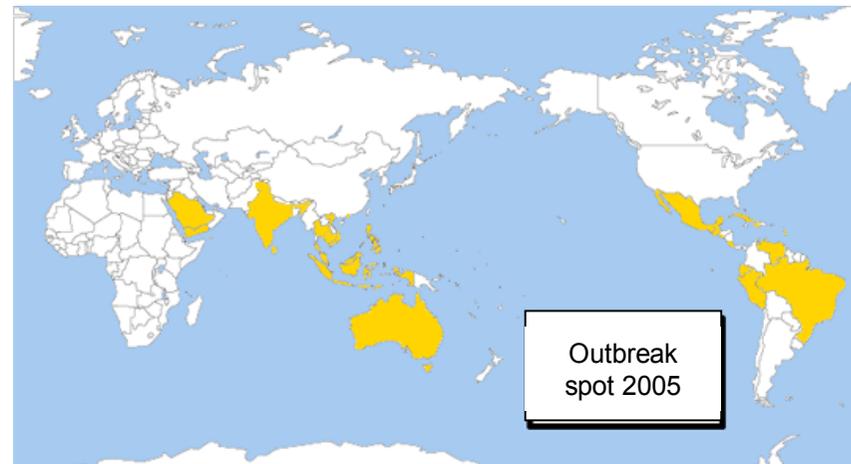
Raw materials of GCL can be supplied from tropical and subtropical country. And mixing of GCL is very easy. So GCL become familiar in tropical and subtropical country very easily

# Related document: Outbreak area of Dengue Fever

2003



2005



# Solution by Garden Crete Lite for Earth environment 3

## Protect earth from heat island phenomenon

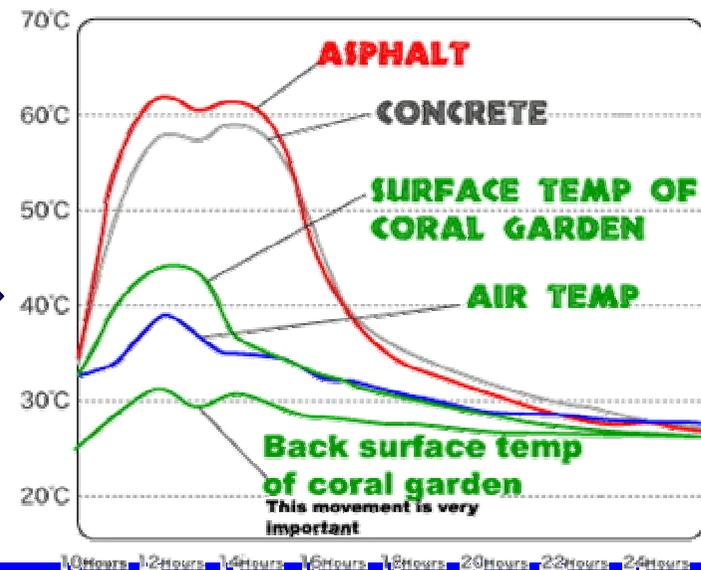
Heat island phenomenon is going on worldwide and become reason of local heavy rain, sunstroke, shortage of water etc.



Decrease space of green and natural environment but increase of concrete and asphalt .  
These phenomenon decline functions of transpirations of earth surface.  
So it lose adjustment of temperature in city.

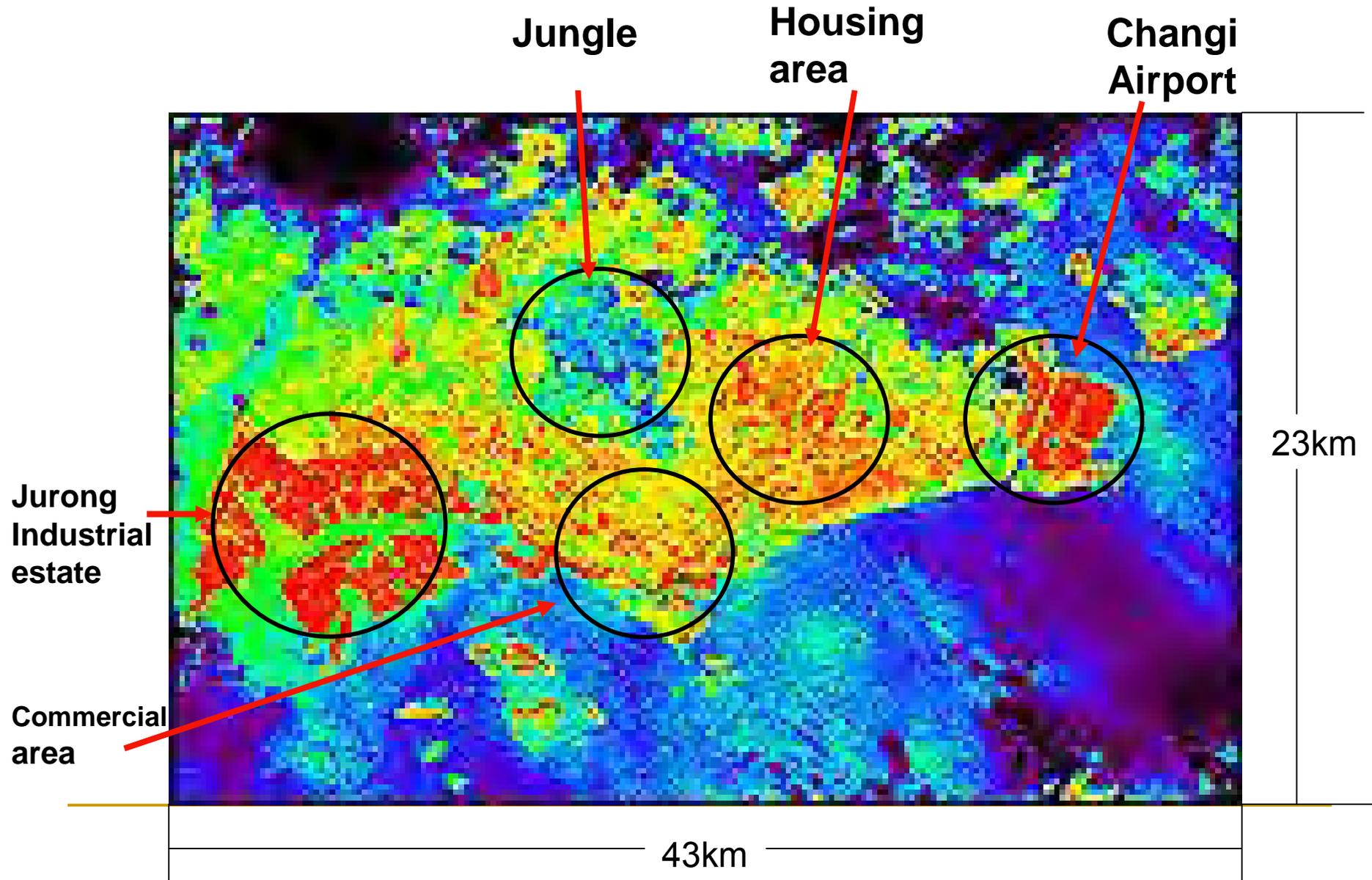
Water carried away from concrete and asphalt surface to drain. So it can not retain and permeable water in earth.  
Also Concrete and asphalt accumulate heat from sunshine inside.

GCL can retain and permeable water into earth and recover natural water circulation of city



GCL can reduce average temperature of city by usage for roof top, car park ,pavement and housing.

# Surface temperature of Singapore by view from satellite



# Characteristic of Garden Crete Lite

Patent Application Number 200405926-7 Singapore  
Method Of Water-Retentive/Permeable Concrete Paving  
and Water-Retentive/Permeable Concrete Block

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**1. Water permeability 0.1cm/second**  
10 times faster than asphalt

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**2. Water retains ability 311 litter/m<sup>3</sup>**  
Garden Crete Lite is just like as natural sponge.

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**3. Weight 906kg/m<sup>3</sup>**  
Less than 50% of concrete and 60% of soil weight.

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Pumice and Lime



Harden by water



# Practical use of Garden Crete Lite

Garden Crete Lite substitute from concrete, asphalt and soil to

Paving



Shore protection



Plant base



Permeable and sustain characteristic of water substitute for concrete and asphalt.

Plant base materials Substitute for soil.