Before we begin…

Q: Who are the stakeholders that are interested?

A: Imagine all of you are part of BCA, HDB.

Evaluating Effectiveness of Cool Coating on Outdoors Environment

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Background

More population living in urban regions

- 3% in 1800 vs 61% projected by 2030 (Hien & Ignatius, 2016)

Responsible for up to 70% of greenhouse emissions (Hoornweg, Freire, Lee, Bhada-Tata, & Yuen, 2011)

Vegetation removed

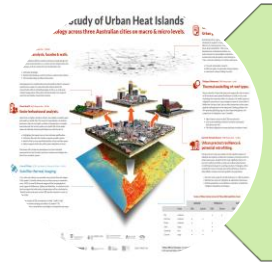
Impacts of UHI

The temperature is higher in over-developed areas

Existing Solutions

Trees and vegetation (Ballinas & Barradas, 2016)

“Cool” roofs and pavement (Alchapar, Correa, & Cantón, 2014)



Urban planning with UHI consideration (Maimaitiyiming, et al., 2014)

Research Gap, Objective , Scope

Research Gap

1. Experiments conducted in small scale
2. Different climate

Objective

Assess effectiveness of cool coating on urban thermal balance

Scope

Analyse surface temperatures on roofs, pavement and walls

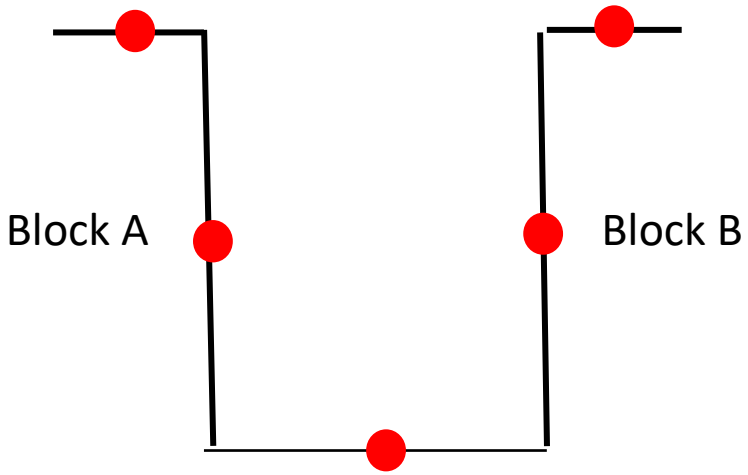
Proposal of Methodology

A) Collection of Data

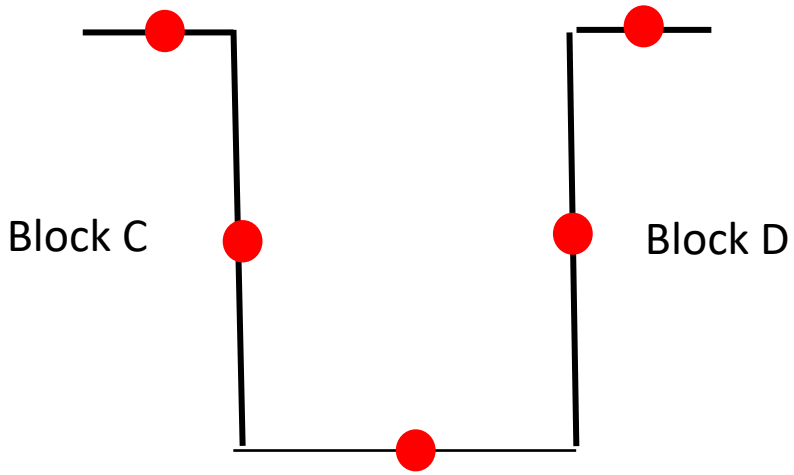
- 1) Hydrotransmitter - humidity and temperature
- 2) Air velocity transmitter - air velocity
- 3) Datalogger – records
- 4) Pyranometer - solar irradiance
- 5) Pyrgeometer – radiation

B) Duration: 3 months

Time interval: 5 minutes



Control



With coating

Potential Challenges

1) Site to conduct experiment

2) Installation of equipments

Conclusion

1) Expected to succeed

2) Cut in energy consumption, saving cost

Future work: Use data to show correlation between cool coating and cost of energy consumption

Reference

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