

Summary of the projects of the top 3 teams

1. Raffles Junior College (A location selection model for low-cost businesses)

The team collected and processed a wide-range of data across different locations in Bishan. Using GIS, the team analysed and plotted data to enable entrepreneurs who are starting up low-cost businesses to search for and select the optimal location for their shop. Unlike major corporations which can hire consultants, SMEs and entrepreneurs lack the resources to survey and differentiate the geographic variation of market groups and compare rental prices, and hence are unable to choose the optimal location to set up shop. The objective is then to select the ideal location based on business needs such as youth traffic, adult traffic, rental prices and comparatives, across the different spatial distributions.

The team noticed that a distinct positive relationship between rental prices and human traffic. Using a map, the team observed that rental prices are affected primarily by the flow of human traffic. Hence the team derived that as the flow of human traffic increases, the demand for that shop space also increases.

2. Millennia Institute (Beautifying our rivers)

The team investigates the source of river pollution using GIS. Surveys were conducted to investigate the concerns toward the state of Kallang River among park visitors. A GPS equipment was used to record the coordinates of the rivers. Multiple ring buffer zones of at least 10m between a golf course and the river were suggested to reduce the relatively more alkaline surface runoff into the river. The team also suggested additional methods of reducing algae growth and setting up more signages.

Collection of pH value, dissolved oxygen and temperature was done through collecting of water samples at each of the 32 points of the Kallang River and analysed. The team found that with water becoming more alkaline, the amount of algae was also higher.

3. NUS High School (Childcare or Childscare?)

The team investigates the availability and accessibility of childcare centres in popular residential areas (eastern and western) for young or existing families. The project focuses on comparing Tampines DGP and Bukit Batok DGP because they are popular Development Guide Plan (DGP) zones in Singapore. Both DGP zones have also shown increasing trends of young families settling in these two regions.

The team conducted field and telephone surveys on the maximum capacities, strengths, waiting list, subsidies and fees per month of centres. Coordinates

were generated by visiting them on site and using GPS handheld device to track and locate their locations. Other information data came from population census and MCYS. The results mapped out showed that the childcare centres in Bukit Batok were more aggregated while the child care centres in Tampines spread out more evenly.

It is useful to apply GIS to tracking the clusters and accessibility of child care centres. The data created can be used to study other relational datasets such as attendance and any HFMD outbreak for better management.