SUMMARY

When one reaches the entrance of lift lobby, he keys in his destination floor on the decimal keypad. The LED display immediately confirms his choice of floor and then signs up the letter corresponding to the individual lift that has been allocated to his journey.

One can walk to the assigned lift without any hurry, because Miconic 10 times the distance from every keypad to any lift. One knows which lift will come for him, so he doesn’t have to waste time or energy ‘second-guessing’ the next lift arrival, which means both better service and more comfort in the lobby. When the lift arrives and the door opens, his destination floor is re-confirmed on the stop indicator located in the car entrance.

He enters the car, but there are no more buttons to push, so there is no crowding in the doorway. The absence of all buttons except ‘Door Open’, ‘Door Close’ and the regulatory alarm function also prevents over-cluttering of the control panel. Progress is monitored on a floor indicator in the car.

The floor-stop indicator flashes your destination floor just prior to arrival; the doors open and the journey is probably just completed 25—50% faster, and in significantly greater comfort than one could have done using any other lift system.

The above is the type of vertical transport system found in an intelligent building for which one could probably step in and find it’s superior performance.
In this research study, we are dealing with this so called “call allocation control algorithm”. This call allocation produces improved passenger average waiting time under most traffic condition by 30%.

This dissertation presents the analysis concerning studies for the vertical transport system - Mronic 10. Critical evaluation in terms of its performance level for the simulation result as well as field study at URA HQ are presented.

There are altogether 7 chapters in this dissertation. Following the first chapter of Introduction, research objective and its methodology, Chapter 2 spells out the fundamental building requirement for vertical transportation with the lift design criteria, design approach, traffic design analysis and the conceptualisation of the call allocation control algorithm with the mathematical model presented.

An introduction to Mronic 10 system, in which the control algorithms and the key system functionality were also covered under Chapter 3.

Chapter 4 gave an overview of the Mronic 10’s hardware and software system architecture with its ability for the system to rationalise traffic

Applications of the simulation program to demonstrate the system performance—Round Trip Time, Waiting Time and Number of Stops with the attempt to analyse the result with a practical case study are provided in Chapter 5.
Chapter 6 attempts to determine the performance based on its simulation results, field study and customer satisfaction survey and analyses on the comparisons of data collected from the various findings were presented.

Lastly, the summing up of the study, recommendation are made for further study and proposed of a future practice were concluded in Chapter 7.