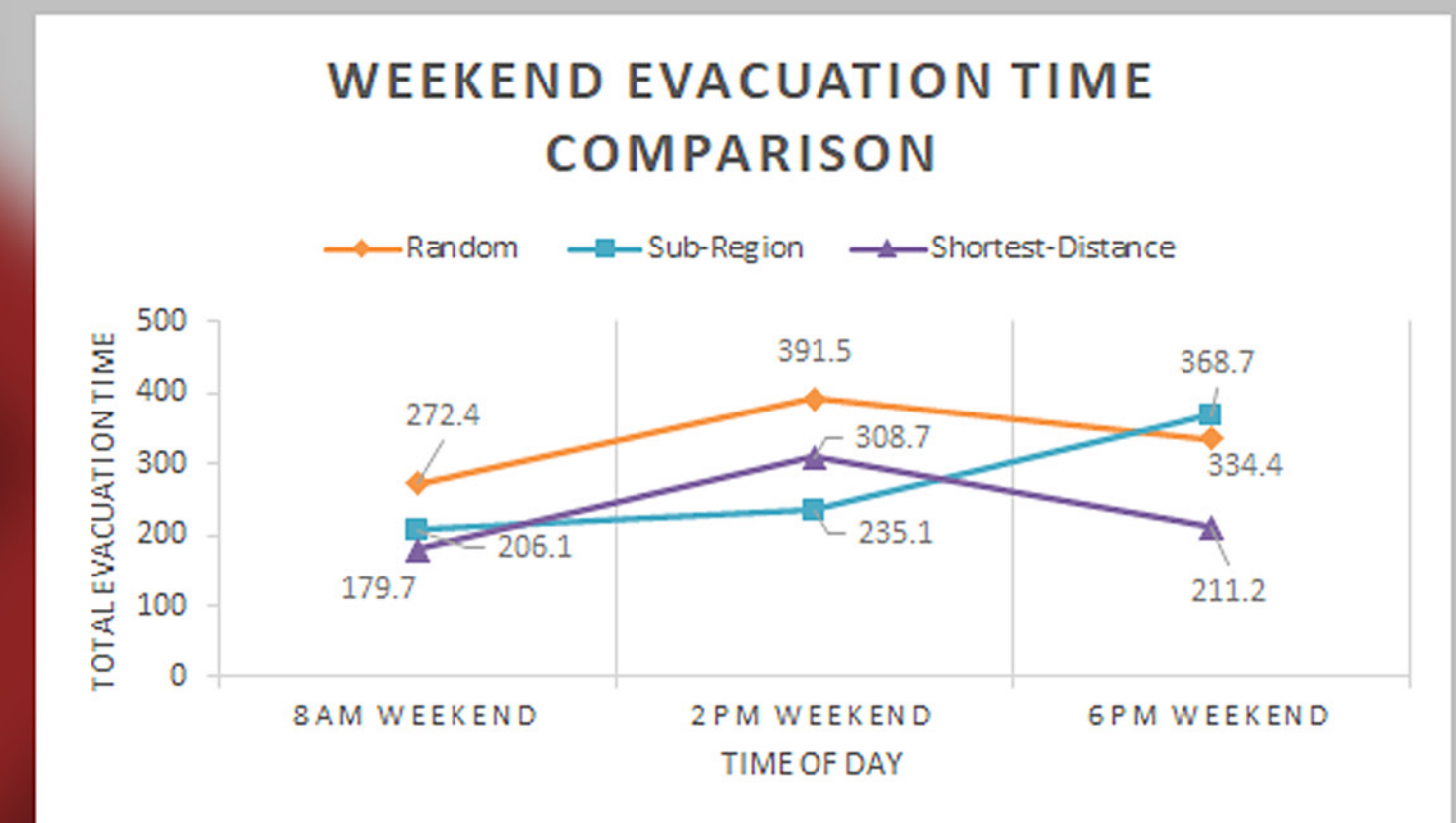
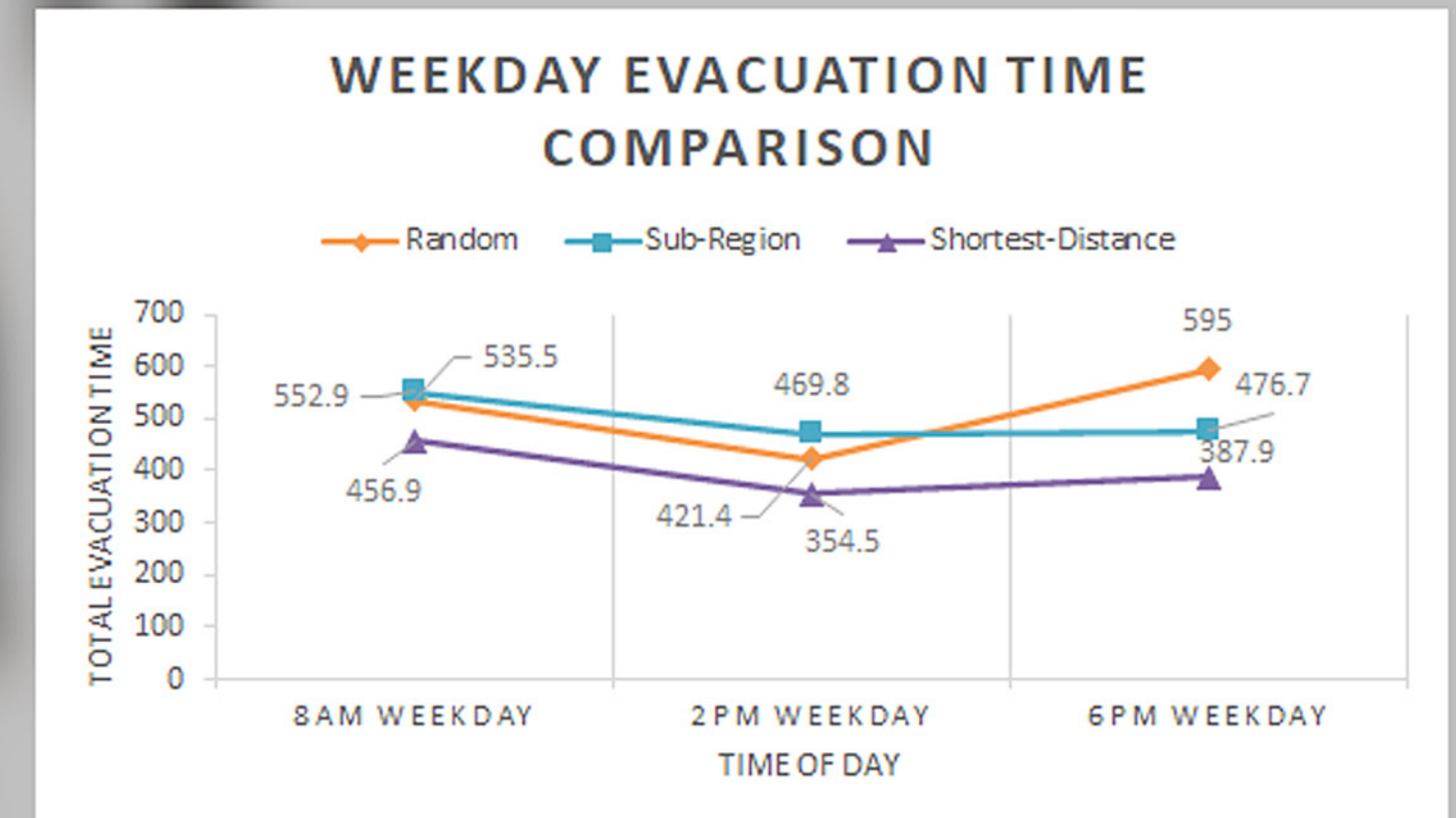
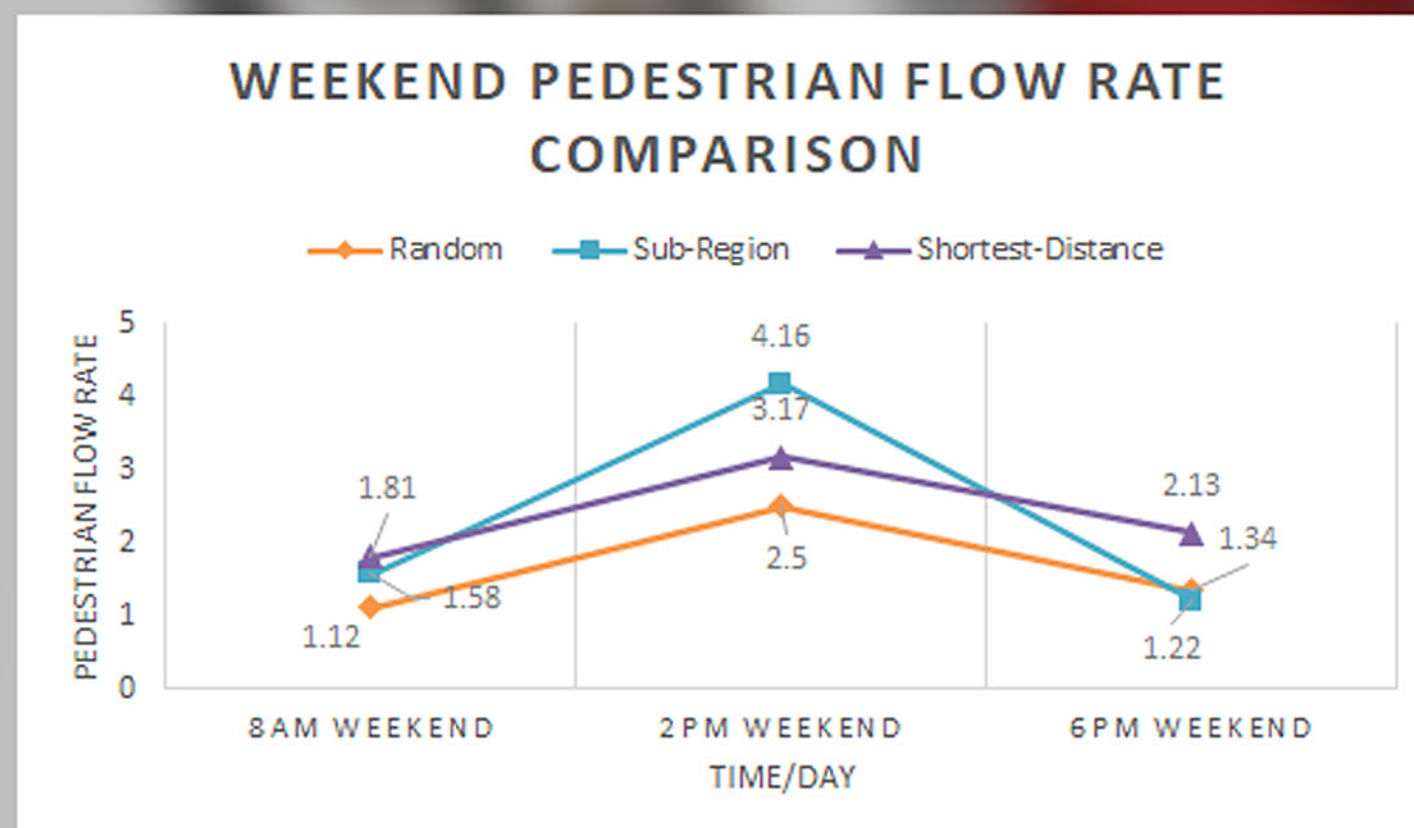
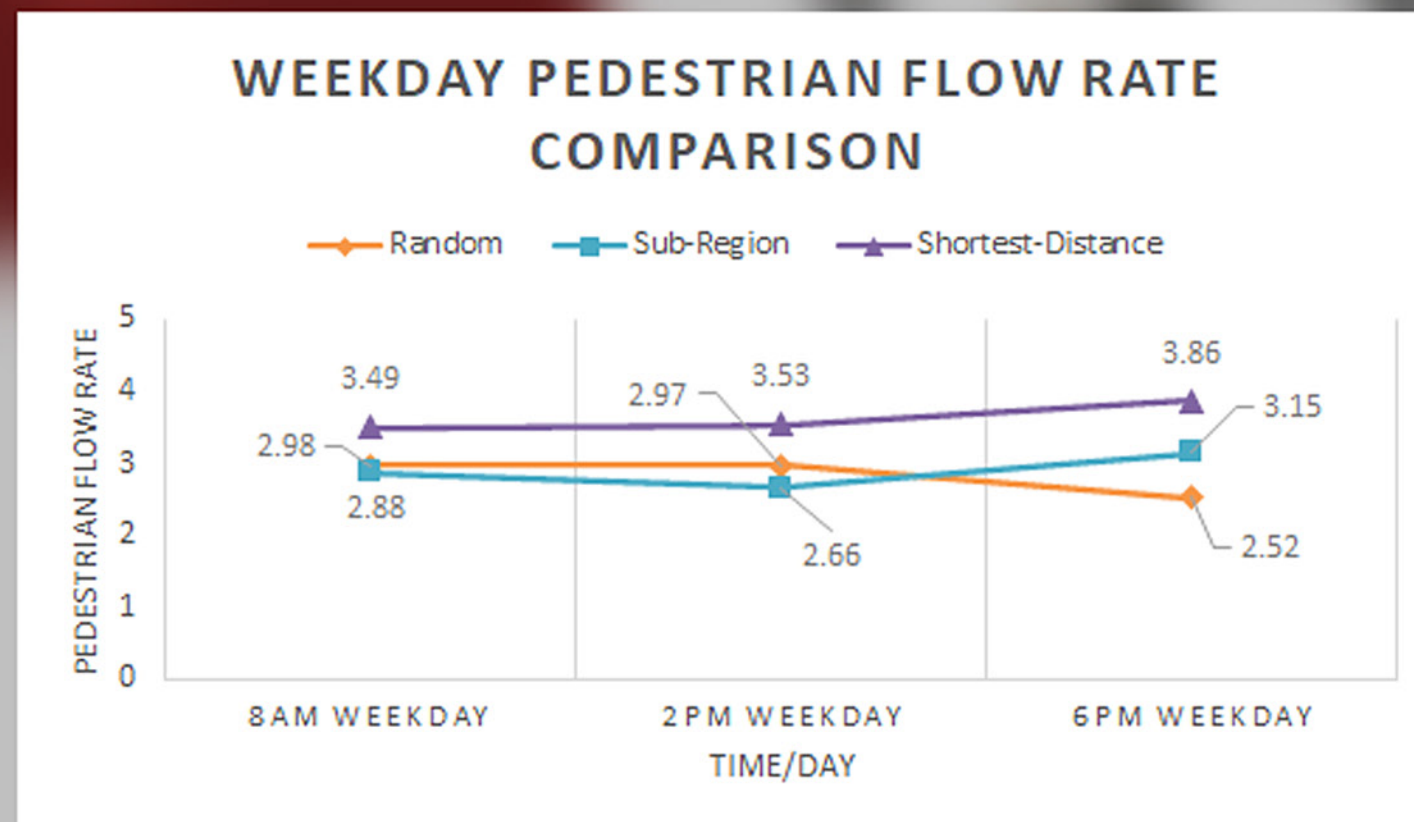
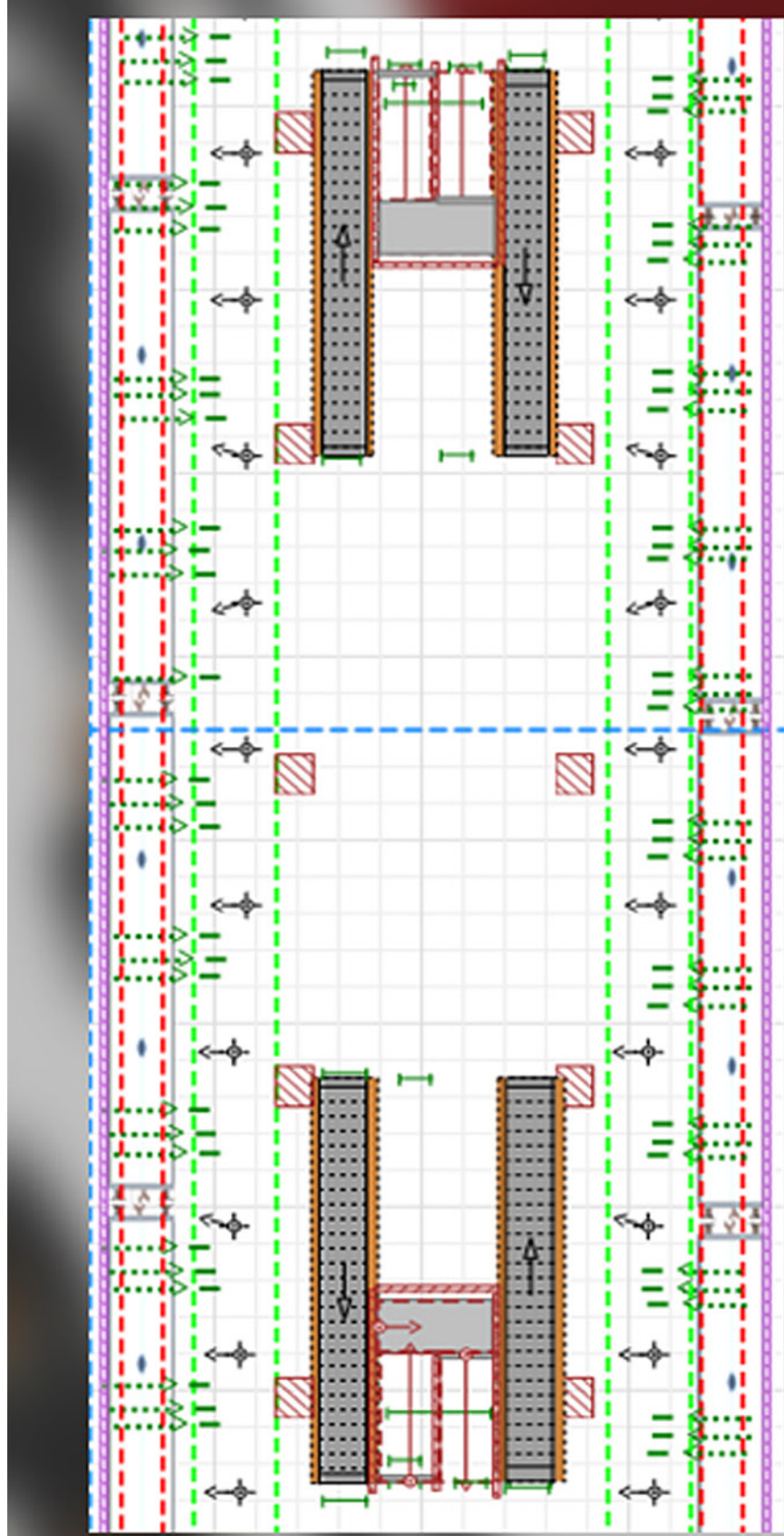
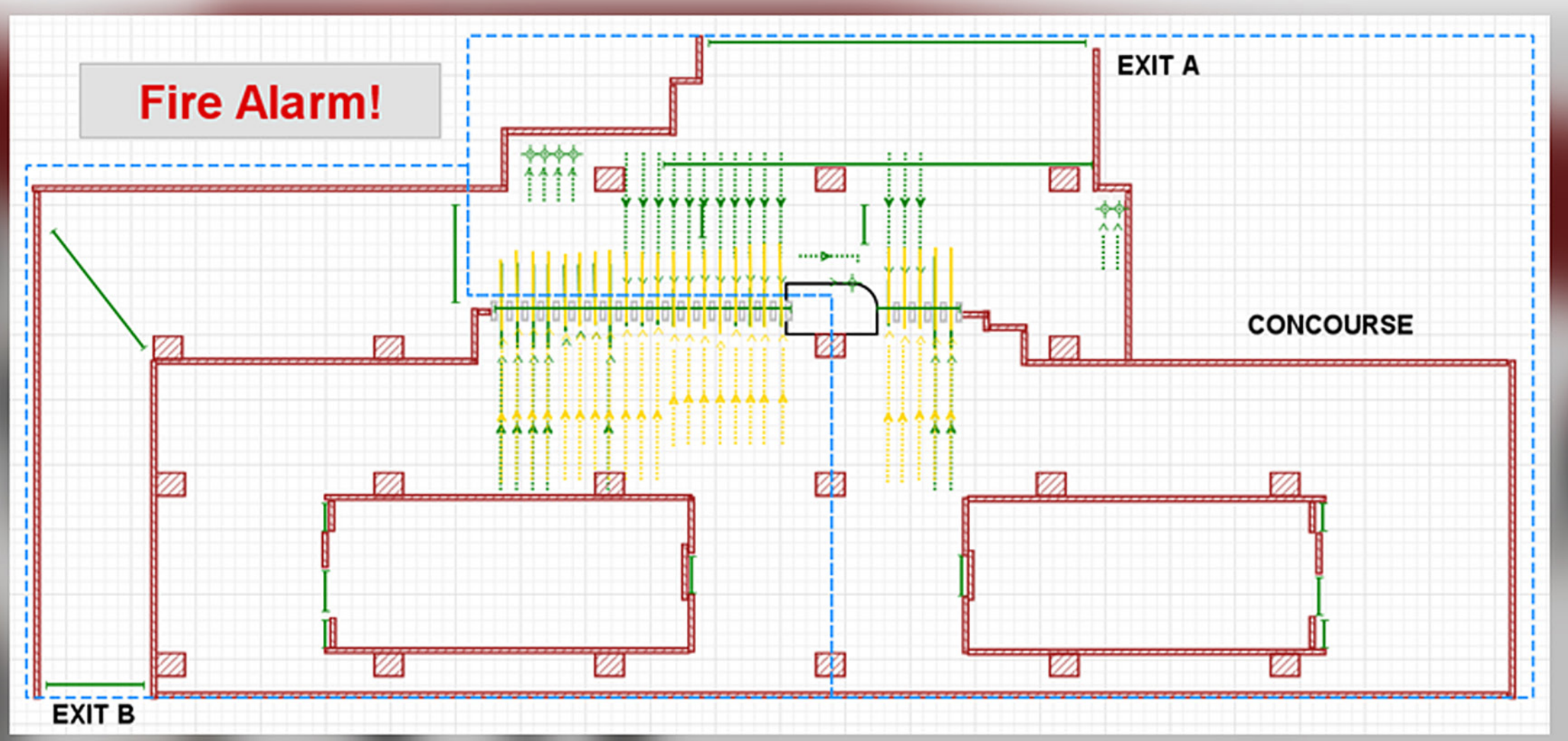
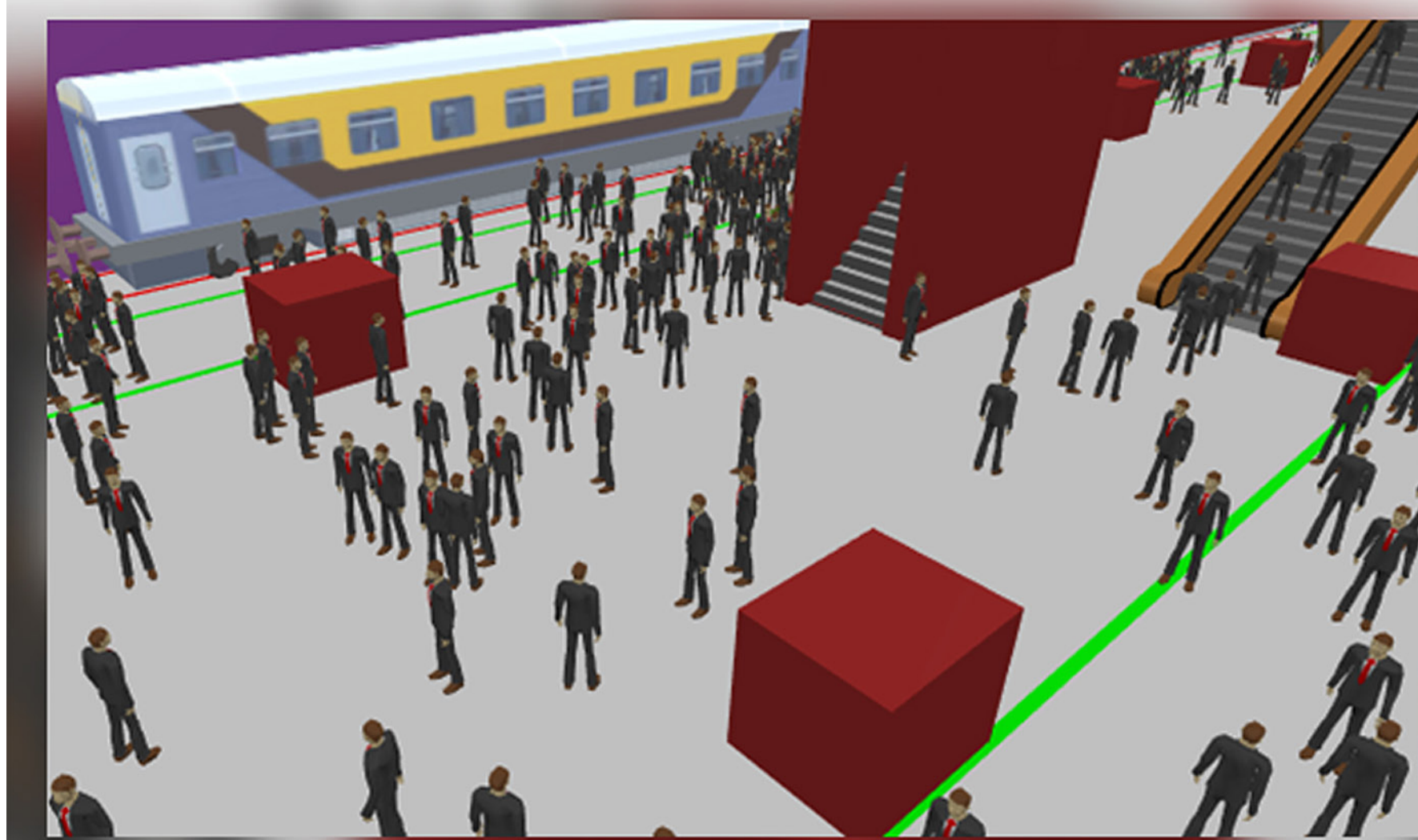


Agent-Based Crowd Simulation Framework For Evacuation Planning

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The objective of this research is to develop an agent-based simulation framework and identify the most efficient evacuation strategy for the City Hall MRT Station in Singapore. The simulation framework is built with AnyLogic Software to simulate the movements and behaviours of pedestrians on a day-to-day basis. In addition, this study also evaluated the impact of social distancing on pedestrian traffic flow in the City Hall MRT Station, given the social distancing measures are implemented due to COVID-19.

Results suggest that pedestrians exiting via the nearest immediate exit would produce the lowest evacuation time and highest pedestrian flow. The simulation results also suggested that, to enable pedestrians to keep the social distance, pedestrian traffic needs to be reduced by 10 times from the pre-COVID pedestrian traffic.