

Montip Jankaew 2007: Influences of Shop houses Blockade to Ventilation of Carbon Monoxide under Bangkok Mass Transit System Route. Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Assistant Professor Surat Bualert, Ph.D. 205 pages.

Influences of shop houses blockade was studied by comparing carbon monoxide concentrations between different road tunnels under Bangkok Public Transport system's station. For the ventilation of the air under the structure, Box model was used to explain movement of the air under the station.

Siam station, Saladaeng station and Saphan Kwai station were selected as sampling sites for studying the carbon monoxide ventilation under tube-like BTS route. The results showed that averaged carbon monoxide concentrations of Saladaeng station and Saphan Kwai station under stations were higher than outside the stations but the averaged wind speed was low. Only Siam station, the carbon monoxide concentrations outside the station were higher than under the station. Because the location of the monitoring station was not located at the central under the station. Therefore, there was some influences of the nearby source affected the concentration. For other stations, carbon monoxide concentrations were decreased when wind speed was increased. Wind speed was a major factor to dilute carbon monoxide concentration that was emitted from sources. Traffic volume was not only major factor that was affected to carbon monoxide concentration. The results showed that wind speed was directly influenced to ventilation of the air under the stations, wind speed was decreased and ventilation was low. Therefore, the carbon monoxide concentrations under the stations were higher than the outside the stations. That was supported by using box model to explain the effects of wind speed conditions on carbon monoxide concentration. The result showed that Box model gave a good agreement to the absolutely stable condition and trend to give over-prediction on unstable condition. Because mechanical turbulent was generated by car movement but the ventilation still be low due to the station's structure.

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