

Nuttapon Prachaseree 2009: Pressurization System Program Development for Elevator Lobby in Case Using for Evacuation. Master of Engineering (Fire Protection Engineering), Major Field: Fire Protection Engineering, Interdisciplinary Graduate Program.  
Thesis Advisor: Mr. Apichart Changbamrung, Ph.D. 121 pages.

This research is Development Program Pressurization System For Elevator Lobby by using popular program of Visual Basic which can calculate flow rate of pressurization system by protecting smoke migration through fireman elevator lobby. Nowadays we know that smoke is the most dangerous in case of during fire. Therefore, the area of refuge are full of many people. Because the calculation of pressurization system is rather complex and may cause an error in calculation so we have to create the program which support the designers in computation. The program grants user's abilities to analyze in every condition of fire stair door and fireman lift lobby door in fire accident situation. When user inputs physical characteristic of fire man lift lobby and the condition of door opening, the program will calculate pressure from piston effect then plot the result in graph and display the air flow needed for each lift lobby in each floor and total air flow.

We have tested the program to calculate volume of air flow that need for fireman life lobby in three different building; Building A has 20 storey, Building B has 40 storey and Building C has 60 storey in different condition

In trial of Program Pressurization System for different 3 buildings. The result of calculation for building A,B,C has shown that airflow rate for the opened door of lower floor is more than the higher floor due to pressure different of the lower floor are more than the higher floor. By the way, if we mention about airflow rate of the first floor found that Building C is more than Building A,B which shown that the height of building has been effected with airflow rate. If we use the simple formula to calculate building A,B,C we will found lot of mistakes such as Building A- the result of simple formula is 27,000 cfm. If Building A has been opened the fire door more than 1 door, airflow can not protect smoke migration.

The calculation of Pressurization System have to analyzes carefully and should have the program to calculate to get the correct and efficiency result.

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Thesis Advisor's signature

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