

Verica Milanko¹
Slobodan Šupić²
Sanja Milanko³
Suzana Draganić⁴
Mila Golić⁵

Preliminary Notes

APPLICATION OF SOFTWARE EVACUATION MODELING FOR BUILDINGS WITH A LARGE NUMBER OF OCCUPANTS

Abstract: Estimation of the time required for evacuation is particularly important for buildings with the large number of occupants, such as large residential, commercial and public buildings. In our engineering practice, calculation model is usually applied for determination of the evacuation time. On the other hand, modeling and simulation are useful modern tools for the development of virtual scenarios and prediction and are very important in obtaining the dynamic information during the evacuation and identification of the critical points along evacuation road. A case study was carried out for the the building within the Faculty of Technical Sciences and the results of experimental simulation of evacuation represent a basis for the assessment of safety in case of fire in public buildings with the large number of occupants.

Key words: software evacuation modeling, determination of evacuation time, buildings fire safety assessment

PRIMENA SOFTVERSKOG MODELA SIMULACIJE ZA ZGRADE SA VELIKIM BROJEM KORISNIKA

Sažetak: Procena vremena potrebnog za evakuaciju je naročito važna za objekte gde boravi ili se okuplja veći broj ljudi, kao što su veliki stambeni, poslovni i javni objekti. U inženjerskoj praksi se primenjuje proračunski model određivanja vremena potrebnog za evakuaciju. S druge strane, modelovanje i simulacija su korisni savremeni alati za razvoj virtuelnih scenarija i predikciju, i imaju značajnu ulogu u dobijanju dinamičkih informacija o toku evakuacije, kritičnom putu i kritičnim tačkama puta evakuacije. Studija slučaja je urađena za zgradu Nastavnog bloka Fakulteta tehničkih nauka i rezultati eksperimentalne simulacije evakuacije mogu poslužiti kao polazna osnova za procenu bezbednosti korisnika u slučaju požara u javnim zgradama u kojima se okuplja veliki broj ljudi.

Ključne riječi: software evacuation modeling, determination of evacuation time, buildings fire safety assessment

¹ Prof. dr, Higher Technical Scholl of Professional Studies in Novi Sad, Školska br.1, Novi Sad, Serbia, milanko@vtsns.edu.rs

² Ass. MSci, ssupic@uns.ac.rs

³ Student, Disaster Risk Management and Fire Safety Engineering BSc,

⁴ Ass. MSci, suzanav@uns.ac.rs

⁵ Dipl.ing., Master Student, Disaster Risk Management and Fire Safety Engineering

^{2,3,4,5} University of Novi Sad, Faculty of Technical Sciences, Department for Civil Engineering and Geodesy, Trg Dositeja Obradovića 6, Novi Sad, Serbia