



## TRAINING VISIT PROGRAMME

**Lund University, Faculty of Engineering, Department of Building and Environmental Technology, Division of Fire Safety Engineering**

**February 18<sup>th</sup> – March 1<sup>st</sup>, 2019**

### **PART 1 – Key concepts of human behaviour in fire**

A selection of readings on selected subjects in the area of fire evacuation safety will be given to the trainee and this would be followed by a discussion with supervisor. Then trainee will be asked to prepare teaching material that will be reviewed and discussed with supervisor.

#### *1) Mass Psychology on disasters / Panic misconception*

Readings for the trainee are the following:

- Fahy, R. F., Proulx, G., & Aiman, L. (2012). Panic or not in fire: Clarifying the misconception. *Fire and Materials*, 36(5–6), 328–338. <https://doi.org/10.1002/fam.1083>
- Sime, J. D. (1980). The concept of panic. *Fires and Human Behaviour*, 1, 5.
- Drury, J., & Cocking, C. (2007). The mass psychology of disasters and emergency evacuations: A research report and implications for practice. University of Sussex, UK.

#### *2) Cognitive biases in fire evacuation / behavioural statements*

Readings for the trainee are the following:

- Kinsey, M. J., Gwynne, S. M. V., Kuligowski, E. D., & Kinatader, M. (2018). Cognitive Biases Within Decision Making During Fire Evacuations. *Fire Technology*. <https://doi.org/10.1007/s10694-018-0708-0>
- Kuligowski, E. D., Gwynne, S. M., Kinsey, M. J., & Hulse, L. (2017). Guidance for the model user on representing human behavior in egress models. *Fire Technology*, 53(2), 649–672.

#### *3) Models for toxicity assessment from smoke products. Fractional effective Dose model, Irritants from smoke*

Reading for the trainee is the following:

- Purser, D. A. (2008). Assessment of Hazards to Occupants from smoke, toxic gases and heat. In *SFPE Handbook of Fire Protection Engineering (4th Edition)* (pp. 2-96–2–193). Quincy, MA (USA): Di Nenno P. J.



## PART 2 – Evacuation simulations, the example of route choice

This part of training will include training on the use of evacuation models. A computer tutorial will be given by the supervisor Dr. Enrico Ronchi, followed by a discussion with the trainee. The trainee will be asked to prepare new tutorials on specific areas and to discuss this along with supervisor.

Trainee will perform the following:

- Read material relevant to route choice in evacuation modeling:  
Bladström, K. (2017). Route choice modelling in fire evacuation simulators. *LUTVDG/TVBB*.
- Run general tutorial on evacuation modelling (instructions given)
- Run tests on route choice in the computer labs with the evacuation model Pathfinder (given by supervisor)
- Develop her own case study. Set up a labyrinth-type scenario in a CAD environment and observe pathfinding. Record and discuss results with supervisor. From this example, trainee will understand how to design computer lab tutorial with the scope of teaching the assumptions and limitations of evacuation models.