

Workshop on Building Occupant Movement During Fire Emergencies, June 10-11, 2004

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1 Introduction

Both before and since the World Trade Center tower collapses, there have been far too frequent events in which there was extensive life loss because the time needed for safe evacuation from a threatened building was not available – it was less than the time available for escape. There is a broad range of emergency scenarios for which there is an alarming gap between the public expectation of safety and the ability to provide it. These include man-made threats, natural disasters, and the more common system failures (e.g., gas leaks and power outages). The urgency of response to knowing something is very wrong within a building is now being accentuated and perhaps even changed, as the old paradigms of "orderly movement will get you out in time" and "find a safe part of the building and wait for rescue" are open to question. Thus, the need for accurate, quantitative assessment of people movement in emergencies has never been greater than it is today.

To this end, the Building and Fire Research Laboratory (BFRL) at the National Institute of Standards and Technology (NIST), in cooperation with the United Technologies Research Center, hosted a two-day workshop focusing on needed research on occupant behavior and movement during building emergencies. This workshop was motivated by a renewed interest in how buildings should be evacuated during fire emergencies and by the desire to provide a forum for the exchange of experiences among the fire and non-fire communities working on emergency egress. Organized into several sessions with specific topics areas, several presentations were included in each session, with an extended period for discussion at the end of each session. Papers highlighting each session are included in this report. For each workshop session, the session moderator prepared a summary of key points of research interest from the presentations and discussion. Additional details, including presentation visuals, are available on the NIST website at <http://fire.nist.gov>.

The workshop sessions were:

- Codes and Standards Requirements for Building Evacuation
- Building Egress Strategies
- Data Needs for Predictive Building Movement Models

Each of these sessions is presented below with abstracts for all the presentations, papers highlighting each session, and a session summary.