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Evaluation of Photoluminescent Way-Guidance Installations for Evacuation of Office Buildings

Objective

To assess the effectiveness of various installations of photoluminescent material (PLM) as way-guidance systems for use during building evacuations, and to develop an installation guide for Canadian federal government high-rise office buildings.

Background

Signs and way-guidance systems made from PLM are becoming accepted in North America as a useful and cost-effective safety measure to assist building evacuations. However, such installations may use paint, stripes, and signs in varying quantities and in different locations in the egress route producing quite different results. Except in New York City (Building Code Reference Standard RS 6-1), PLM installation setups are not yet standardized. In addition, response by building occupants to different PLM installation setups has not yet been tested.

Statement of Work

- Install three photoluminescent way-guidance systems in stairwells of a high-rise federal government office building. A fourth stairway will utilize conventional emergency lighting.
- Invite the building's occupants to participate in an evacuation drill.
- Capture occupant movement using video cameras, and collect occupant appreciation for the different systems using a questionnaire.
- Develop guidelines for the installation of PLM way-guidance systems in federal high-rise buildings based on results from the above tests and from a review of recent research.

Expected Outcomes

- A draft guideline for installation of photoluminescent way-guidance systems based on existing research and standards
- Data on occupant behaviour and movement in stairwells installed with different PLM setups
- A final guide for PLM installation in high-rise office buildings owned or operated by the Government of Canada.

Partner

Public Works and Government Services Canada (PWGSC)

Start/Expected Completion Dates

This project began in 2005 and will be completed in 2008.

Project Manager

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For more information, see http://irc.nrc-cnrc.gc.ca/fr/frhb/wayguidance_e.html

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Photoluminescent exit path marking following Reference Standard 6-1 required by New York City Building Code 2004

