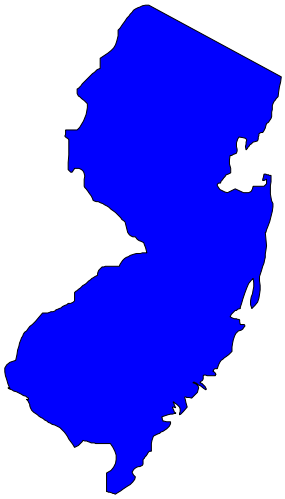
F.A.C.E.
INVESTIGATION REPORT

Fatality Assessment and Control Evaluation Project

FACE #97-NJ-069-01
Worker Killed by 90 Foot Fall from Roof Canopy



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TO: Division of Safety Research
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FROM: Fatality Assessment and Control Evaluation (FACE) Project
New Jersey Department of Health and Senior Services (NJDHSS)

SUBJECT: FACE Investigation # 97 NJ 069-01
Worker Killed by 90 Foot Fall from Roof Canopy

DATE: February 27, 1998

SUMMARY

On August 7, 1997, a 45 year-old waterproofer died from injuries sustained in a 90 foot fall from a concrete roof canopy at a large apartment building. Although he used fall protection while working on a scaffold, he was using none when he stood on the roof canopy to move a cable guard. New Jersey FACE investigators concluded that, in order to prevent similar incidents, the following safety guidelines should be followed:

- **o** Workers should use fall protection whenever in danger of falling further than six feet.

- **o** A job hazard evaluation should be completed; policies and worker training should be implemented based upon the findings of the hazard evaluation.

INTRODUCTION

On September 8, 1997, the NJDHSS FACE staff was informed of this fatal work-related fall by an OSHA compliance officer. The employer consented to participate in the FACE project and a site visit was conducted on September 16. The employer, the victim's co-worker, and staff employed at the incident site were interviewed. Further information was received from the medical examiner, police report, and federal OSHA.

The employer was a company that specialized in water-proofing and masonry repair of multi-story buildings. The company had been in business for 13 years: four with the present owner and nine in which the owner was in a partnership. Some workers were employed through both ownerships and the owner reported little turnover of staff. The company employed 21 workers. There was no written safety program or written procedures. Training was verbal and on-the-job. New employees worked under the supervision of foremen until the foremen judged them to be competent at using scaffolds and equipment, a process that took from 2 to 6 months. Each worker had his own safety harness and rope grabber, purchased by the company. The workers were not unionized.

The company owner estimated each potential job for cost and it then became the responsibility of the foremen to determine how the job would be done.

The deceased worked for the company as a water proofer for 1 ½ years. His initial training period was reported to be approximately two months long. His previous employment is unknown.

INVESTIGATION

The site of this incident was a large eight story apartment building in a suburban area. The company was contracted to reseal window jams, air conditioning units, asphalt parking areas, and to perform masonry repairs of concrete on the eight year-old building. They had been on the job for two months and work was 80% completed.

The work crew started their day at the company office at 6 a.m. and arrived at the work site at 8 a.m.. Usually there were five men who worked at the site but this day there were three. The day was sunny and dry with no wind. By the afternoon, temperatures reached 90°. From 8 a.m. to 10 a.m., they set up two two-point suspended (swing stage) scaffolds and completed one "drop" (work done with one descent of the scaffold). The scaffolds, raised and lowered by motors, were attached by hooks to the roof parapet that is four feet higher than the roof surface. The 5/16 inch wire rope cables and the workers' 3/4 inch nylon rope lifelines were secured to the air conditioning units and ventilation hoods on the roof. One worker, who functioned as a foreman, worked on the roof, checking for spots on the roof that needed waterproofing. The deceased and another employee worked on the scaffolds. While working on scaffolds, the workers wore body harnesses and were tied off with lifelines separate from the scaffold. They removed their harnesses when not working on scaffolds.

Around 11 a.m., the workers started to move the scaffolds to adjacent work areas. They moved the first scaffold. Still attached by hooks and cables to the building roof, they lowered the second scaffold to the ground. The victim climbed over the four foot roof parapet to stand on a flat, concrete canopy that measured three feet by fifteen feet. The canopy served as a roof to the eighth floor balcony. He planned to remove the rubber guard that had been placed under a cable to decrease friction from the concrete surface, and was holding on to the parapet. He was not wearing his safety harness. His co-worker, who was standing on the roof of the building, heard him call his name, turned, and saw him falling backward off the edge of the canopy. He fell 90 feet, through evergreen trees, to the ground.

After being alerted by an apartment resident, who saw the victim as he fell past her unit, an employee of the apartment building was the first to reach the injured worker, followed by the victim's co-workers. Police and emergency personnel arrived at the scene very quickly. The victim was taken by rescue squad to the regional trauma center, in a nearby city. In spite of surgery and treatment, he died at 1:35 p.m..

CAUSE OF DEATH: The medical examiner determined that death was caused by "multiple blunt impact injuries."

RECOMMENDATIONS/DISCUSSIONS

Recommendation # 1: *Workers should use fall protection whenever in danger of falling further than six feet.*

Discussion: Although the company policy required that workers wear safety harnesses and tie off when working on scaffolding, there was no policy for fall protection when working in other hazardous situations. If the fall hazard cannot be eliminated, Federal OSHA regulation 29 CFR 1926.500 mandates that fall protection must be used to prevent falls of greater than six feet. Methods of fall protection should be chosen according to the specific hazard and situation.

Recommendation #2: *A job hazard evaluation should be completed; policies and training should be implemented based upon the findings of the hazard evaluation*.

Discussion: Under direction of the employer, the employer and supervisors should conduct a job hazard evaluation/risk assessment. The analysis should examine all work areas and tasks for hazards that may be encountered. Considerations should include the the frequency of exposure, probability of injury, and severity of potential injury. After determining the hazards, procedures should be implemented to eliminate them or protect the workers against them. This should be part of the pre-job planning and re-evaluated with any changes in the site, equipment, environment or other factors. The evaluation will be more effective if done with input from the workers.

A safety and health training program should be established and procedures put in writing. Although workers may be experienced in their trade, periodic re-training and updates on new procedures and equipment are necessary. Safety policies and equipment should be incorporated in new employee orientation and training. Training should include recognition of fall hazards, use of fall arrest systems, and rescue procedures in event of a fall. Any applicable regulations should be available as resources. Training also functions to emphasize safe work practices and fosters an atmosphere of safety. Often when workers are familiar with situations that are inherently hazardous and are comfortable working in those areas, they fail to perceive the situations as dangerous. The workers apparently did not regard standing on the roof canopy as a fall hazard. Periodic training emphasizes the risks and reviews methods to prevent or avoid them. Training should be complemented with periodic job site inspections.

ATTACHMENTS

Job Hazard Analysis, U.S. Department of Labor, OSHA, 1988, Publication 3071.

REFERENCES

Code of Federal Regulations, 1926, U.S. Government Printing Office, Washington D.C.

Construction Safety News, Training Tidbits. Construction Safety News, Volume 8, Number 2, Summer, 1997.

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FATALITY ASSESSMENT AND CONTROL EVALUATION (FACE) PROJECT
Investigation # 97-NJ-069-01

Staff members of the New Jersey Department of Health and Senior Services, Occupational Disease and Injury Services, perform FACE investigations when there is a report of a work-related fatal fall or machine-related incident. The goal of the FACE Program is to prevent future incidents by studying and identifying the risk factors that contribute to workplace fatalities, by recommending intervention strategies, and by disseminating information to employers and employees. All NJ FACE data are reported to NIOSH for trend analysis on a national basis. All identifiers are removed from the FACE reports and other data to protect the confidentiality of those who participate in the program.

NIOSH funded state-based FACE Programs include: Alaska, California, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Texas, Washington, West Virginia, and Wisconsin.

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