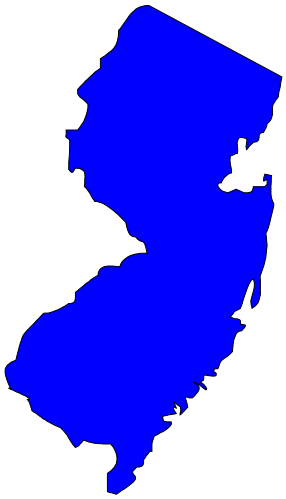
F.A.C.E.
INVESTIGATION REPORT

Fatality Assessment and Control Evaluation Project

FACE #95-NJ-031-01
Demolition Laborer Dies After Falling 23 Feet Through a Skylight



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TO: Division of Safety Research
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FROM: Fatal Accident Circumstances and Epidemiology (FACE) Project
New Jersey Department of Health (NJDOH)

SUBJECT: FACE Investigation #95-NJ-031-01
Demolition Laborer Dies After Falling 23 Feet Through a Skylight

DATE: September 27, 1995

SUMMARY

On March 11, 1995, a 38 year-old demolition laborer was killed after falling 23 feet through a skylight while working on a warehouse roof. The victim was returning from a coffee break and was last seen walking across the roof toward his work area. A few moments later, his co-workers heard a crash and found him on the cement warehouse floor under the broken skylight. NJDOH FACE investigators concluded that, in order to prevent similar incidents in the future, these safety guidelines should be followed:

o Follow the OSHA standard 29 CFR 1926 .500(b)(4) which requires that skylights be protected with railings or covers.

o Conduct a hazard assessment of the work site during the planning stages of the project.

o Develop, implement, and enforce a comprehensive employee safety program.

INTRODUCTION

On March 13, 1995, an area OSHA compliance officer and the county medical examiner's office notified FACE personnel of a work-related fatal fall that occurred two days earlier. A FACE investigator arranged to meet with the OSHA compliance officer and accompany him during the OSHA investigation that was still in progress. The FACE investigator arrived at the incident site and was introduced to the company owner, general contractor, site owner, and other involved parties. FACE was granted permission by the company owner to observe the OSHA interview of three employees and to examine and photograph the incident site.

The employer was a building demolition company that employed 20 workers. The victim was a 38-year-old male demolition laborer who had worked on and off for the company for the past six years. This was his first day of working on this project.

INVESTIGATION

The incident occurred outdoors at a large warehouse located in an urban industrial area. The warehouse had been recently sold after the previous owner went out of business. The new owner planned a major renovation of the structure, including the complete removal of the old roof and reinforcement of the walls. The project was awarded to a general contractor, who subcontracted the construction work to another company. This contractor in turn subcontracted the roof demolition to the victim's company, that specialized in this type of work.

The warehouse was a single story, 400,000 square foot structure with 30 loading bays. The roof of the warehouse was constructed of corrugated steel decking supported by steel beams

and trusses. A layer of insulation was placed over the decking and covered with asphalt tarpaper and gravel. Seventy-four 6 by 5 foot domed plastic skylights were built into the roof and were spaced approximately 30 feet apart. Access to the roof was gained through two permanant ladders in the warehouse that led to hatchways on the roof. The victim's company had started work at the site on March 7, 1995, beginning with worker safety training in the use of the fall protection equipment. Demolition proceeded with the removal of a 3 foot wide strip of roofing material from the edge of the roof. A laborer used a rotary power saw to cut away sections of the asphalt and insulation, which was pulled back to expose the corroded steel decking underneath. At the time of the incident, several hundred feet of asphalt had been pulled away from the roof edge.

The incident occurred on a sunny Tuesday morning with temperatures in the 60's. A crew of four laborers met at the site at about 7:30 a.m. and went to work on the roof. The company owner was also on site but was not on the roof when the incident occurred. Wearing safety belts, lanyards, and hard hats, the laborers climbed to the roof through an access hatch and walked to the roof edge where they attached their safety belts to a static line. Most of the cutting had already been completed and the workers were involved in removing the roofing material. At about 9:00 a.m., the crew stopped work to take a coffee break. All four workers left the roof and went to a coffee truck on the ground. The crew returned to the roof after a short time, with the victim being the last to return.

No one directly witnessed the incident. A co-worker stated that he last saw the victim walking across the roof, carrying a cup of coffee in his hand. After a few moments, the worker heard the sound of plastic breaking and looked towards the sound. When he did not see the victim, the co-worker went back and found a broken skylight and the victim lying on the concrete, 23 feet, 3 inches below. The company owner was the first to reach the victim and found him unresponsive. He immediately called for help on his cellular phone. The police quickly arrived followed by the EMS. The EMS examined the victim and called for the medical examiner, who pronounced the victim dead at the scene.

CAUSE OF DEATH

The county medical examiner determined the cause of death to be from multiple blunt force trauma.

RECOMMENDATIONS/DISCUSSIONS

Recommendation #1 Employers should follow the OSHA standard 29 CFR 1926 .500(b)(4) which requires that skylights be protected with railings or covers.

Discussion: With the exception of a few skylights that had built-in metal bars, none of the skylights on the roof were protected with railings or covers. The OSHA standard 29 CFR 1926.500(b)(4) states that if there is a danger of falling through a skylight, then the skylight must be guarded with a standard railing or with a cover strong enough to sustain the weight of a person.

Recommendation #2: Employers should conduct a hazard assessment of the work site during the planning stages of the project.

Discussion: In this situation, the employer apparently did not recognize the hazard of the unprotected skylights. To prevent this, FACE recommends that employers conduct a hazard assessment of the work site during the planning stages of the project. This should include an examination of the work area

for potential hazards and planning on how to correct them. This assessment should be followed up by a job hazard analysis, where the employer and employees examine the site before starting work. This is to identify any fall hazards, loose debris, electrical, or other hazards the workers may encounter. After identifying the hazards, the workers should be instructed on how to correct or avoid them.

Recommendation #3: Employers should develop, implement, and enforce a comprehensive employee safety program.

Discussion: Employers should emphasize worker safety by developing, implementing, and enforcing a comprehensive safety program to reduce or eliminate hazardous situations. The safety program should include, but not be limited to, the recognition and avoidance of fall hazards and include appropriate worker training.

It is extremely important that employers obtain accurate and up-to-date information about ensuring safe working conditions and adhering to all OSHA standards. The following sources of information may be helpful:

U.S. Department of Labor, OSHA

On request, OSHA will provide information on safety standards and requirements for fall protection. OSHA has several offices in New Jersey which cover the following areas:

Hunterdon, Middlesex, Somerset, Union, and Warren counties...(908) 750-4737
Essex, Hudson, Morris, and Sussex counties.....(201) 263-1003
Bergen and Passaic counties.....(201) 288-1700
Atlantic, Burlington, Cape May, Camden, Cumberland,
Gloucester, Mercer, Monmouth, Ocean, and Salem counties.....(609) 757-5181

NJDOL OSHA Consultative Services

This organization, located in the New Jersey Department of Labor, will provide free advice for business owners on methods of improving health and safety in the workplace and complying with OSHA standards. The telephone number is (609) 292-3922.

New Jersey State Safety Council

The NJ Safety Council provides a variety of courses on work-related safety. There is a charge for the seminars. The address and telephone number is:

NJ State Safety Council
6 Commerce Drive
Cranford, New Jersey 07016
Telephone (908) 272-7712

ATTACHMENTS

NIOSH ALERT: Preventing Worker Deaths and Injuries from Falls Through Skylights and Roof Openings. DHHS (NIOSH) Publication 90-100, National Institute for Occupational Safety and Health, Cincinnati OH (513) 533-8287.

REFERENCES

Code of Federal Regulations 29 CFR 1926, 1991 edition. U.S. Government Printing Office, Office of the Federal Register, Washington DC. pg 188