

**DATE:** March 11, 1998

**FROM:** Minnesota Fatality Assessment and Control Evaluation (MN FACE) Program  
Minnesota Department of Health

**SUBJECT:** MN FACE Investigation 98MN00101  
Construction Employee Dies After Falling From Building Roof

## **SUMMARY**

A 26-year-old male construction worker (victim) died of injuries he sustained when he fell approximately 25 feet from the roof of a building. The victim and three coworkers were preparing to finish installing metal roof panels on an addition to an existing arena. Before they began to install additional panels, they distributed various tools along the roof. The victim carried an impact wrench and a safety harness as he walked to a location near the unfinished portion of the roof. He was not wearing the safety harness at the time. He gently slid his impact wrench down the roof toward the roof's edge. Usually, the wrench would only slide a short distance before coming to a stop on the roof. However, because of frost on the metal roof the wrench did not slow down. One of the coworkers saw the victim dive toward the wrench in an attempt to grab it. The victim slid off the edge of the roof and fell to the paved area along the side of the building. The coworkers descended from the roof of the building and placed a call to emergency personnel who arrived at the scene shortly after being notified. The victim was transported to a local hospital where he died from his injuries the next day. MN FACE investigators concluded that to reduce the likelihood of similar occurrences, the following guidelines should be followed:

- whenever work is performed at an elevation where the potential for a fall exists, fall protection equipment should be used; and
- employers should design, develop, and implement a comprehensive safety program.

## **INTRODUCTION**

On January 6, 1998, MN FACE investigators were notified of a work-related fatality that occurred on

January 3, 1998. A site investigation was conducted by a MN FACE investigator on January 15, 1998. During MN FACE investigations, incident information is obtained from a variety of sources such as law enforcement agencies, county coroners and medical examiners, employers, coworkers and family members.

The employer in this incident was an erector of steel frame buildings that had been in business for 27 years. The company employed about 15 workers and safety responsibilities were assigned to two foremen. Four employees were present at the construction site at the time of the incident.

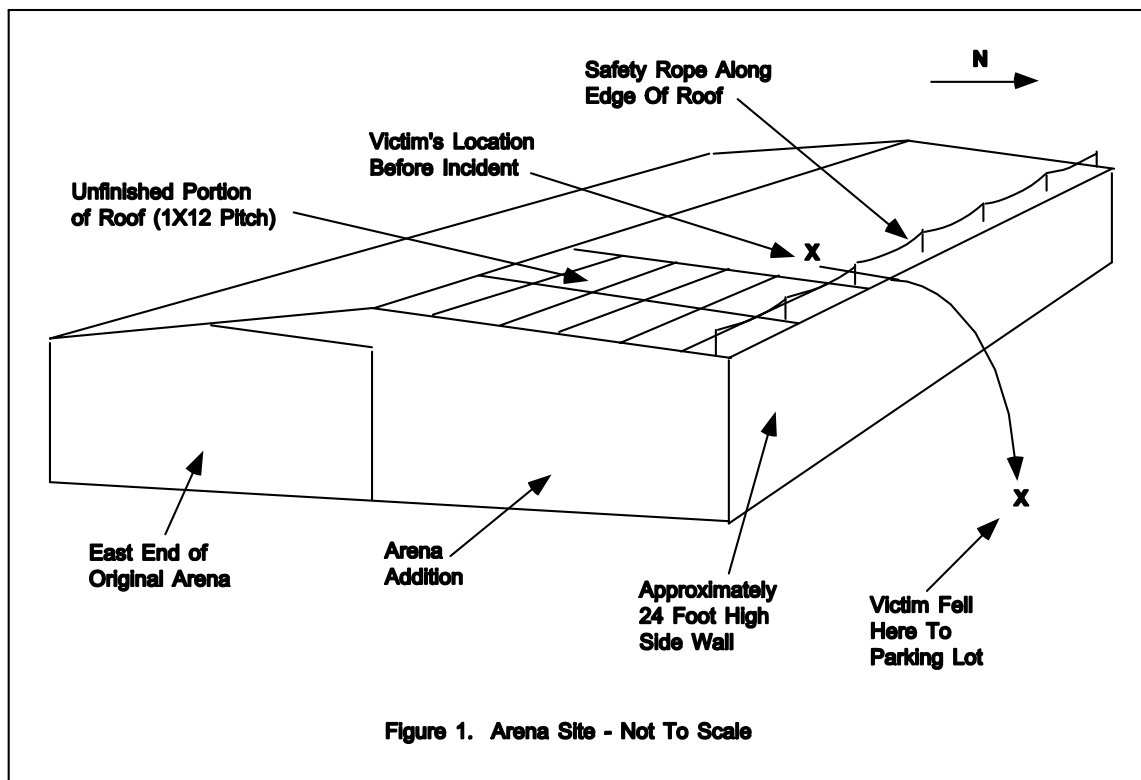
## **INVESTIGATION**

On the morning of the incident, the victim and three coworkers were preparing to finish installing metal roof panels on an addition to an existing city owned arena. The original building was approximately 70 feet wide and nearly 300 feet long. The building was being enlarged to approximately twice its original size by the construction of an addition along its north side (Figure 1). The distance from the ground to the edge of the roof on the sides of the building was approximately 24 feet. The building exterior was metal and the roof had a 1-12 pitch<sup>1</sup> or slope and was also covered with metal panels. The roof of the building was covered with a thin layer of frost at the time of the incident. The workers used cordless battery operated impact wrenches to secure the roof panels in place with screws. A safety rope was in place on the roof and was located about six feet from the roof's edge.

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<sup>1</sup> Pitch: The specified downward slant of a roof. A roof with a 1-12 pitch has 1 foot of vertical drop for every 12 feet of horizontal measurement.

The victim and his coworkers had been on the roof of the building for about fifteen minutes and were getting ready to begin working for the day. Before they began to install additional roof panels, they distributed various tools and equipment along the roof near the unfinished portion of it. The victim carried an impact wrench and a safety harness as he walked to a location near the unfinished portion of the roof. He was not wearing the safety harness at the time. He gently slid his impact wrench down the relatively flat roof toward the roof's edge. Apparently the workers had done this on previous occasions to position tools where they would be need along the roof. Typically, the wrenches would only slide a short distance before coming to a stop on the roof. However, because of frost on the metal roof the wrench did not slow down and the victim may have realized that it was going to slide off the roof. One of the coworkers saw the victim run and then dive toward the wrench in an attempt to grab it. The victim slid under the safety rope and off the edge of the roof. He fell to the paved area along



the side of the building. The coworkers descended from the roof of the building and rushed to the victim. A call was placed to emergency medical personnel who arrived at the scene shortly after being notified. The victim was transported to a local hospital where he died from his injuries the next day.

## CAUSE OF DEATH

The cause of death from the death certificate was not available when this report was completed.

## **RECOMMENDATIONS/DISCUSSION**

**Recommendation #1:** Whenever work is performed at an elevation where the potential for a fall exists, fall protection equipment should be used.

**Discussion:** Whenever work is performed at an elevation where the potential for a fall exists, workers should use appropriate fall protection equipment. The victim was working at an elevation where the potential for a fall that would result in serious injury existed. OSHA Standard 29 CFR 1926.28 (a) states that "the employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions." Adequate fall protection equipment, such as lifelines, safety belts and lanyards, should always be used whenever the potential for a fall exists. In addition, in situations where the use of a traditional safety belt/lanyard combination is impractical, an alternate form of fall protection (e.g., safety nets as specified in OSHA Standard 29 CFR 1926.105) should be used. If the victim had been using fall protection equipment (i.e., lifeline, safety belt, and lanyard), this fatality probably would have been prevented.

**Recommendation #2:** Employers should design, develop, and implement a comprehensive safety program.

**Discussion:** Employers should ensure that all employees are trained to recognize and avoid hazardous work conditions. A comprehensive safety program should address all aspects of safety related to specific tasks that employees are required to perform. OSHA Standard 1926.21 (b) (2) requires employers to "instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury." Safety rules, regulations, and procedures should include the recognition and elimination of hazards associated with tasks performed by employees.

## **REFERENCES**

1. Office of the Federal Register: Code of Federal Regulations, Labor, 29 CFR Part 1926.21 (b) (2), 29 CFR 1926.28 (a) and 29 CFR 1926.105 (a) U.S. Department of Labor, Occupational Safety and Health Administration, Washington, D.C., July 1, 1997.

George Wahl, M.S.  
Principal Safety Investigator  
MN FACE

David L. Parker, M.D., M.P.H.  
Principal Investigator  
MN FACE

GW/DLP/ey