AVOIDING UNFORESEEN LIABILITY IN THE DESIGN AND RECOMMENDATIONS OF FALL PROTECTION SYSTEMS ON BUILDINGS

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Abstract

It is common practice these days for building owners to reach out to designers and roofing consultants for recommendations for fall protection. The need and requirements for fall protection on a building are specifically addressed in various standards and regulations. The responsibility for the identification of the need for a fall protection system commences with the building owner. This presenter will describe the inherent liabilities of a building owner and how these liabilities can unknowingly be passed on to consultants.

Speaker

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ABSTRACT

It is common practice these days for owners of buildings to seek recommendations for the potential need for fall protection. They typically reach out to designers and roofing consultants for direction. The need and requirements for fall protection on a building are specifically addressed in various standards and regulations. The responsibility for the identification of a the need for a fall protection system commences with the building owner. This paper describes and provides examples of the inherent liabilities imposed on a building owner, and how they can unknowingly be passed on to the consultant. The paper is based upon the experience gained by the author performing building assessments, design, installation, and the forensic review of fall protection applications for over 30 years. The objective of this paper is to help potential designers and consultants to: 1) understand a building owner’s responsibility in developing a fall protection program, 2) understand what elements of the fall protection plan are being taken on by the designer/consultant, 3) recognize the industry applications available to address various fall protection hazards, and 4) develop methods to convey recommendations to the building owner without absorbing any of the additional liability belonging to the building owner.

INTRODUCTION

Awareness of the requirement for fall protection and unique structural designs do not drive the need for fall protection. The necessity for employees to access various areas where inherent features of the structure expose them to a fall hazard drive the requirements for fall protection. As a licensed professional engineer and licensed contractor with over 38 years in the construction industry, I have been exposed to fall protection issues from multiple perspectives. The solicitation for input on a fall protection issue can originate at different times during the design or construction of a structure. The level of information provided by the employer (building owner) can also vary widely, as can what designers are requested to do. The underlying fact is that the initial responsibility for determining the need for a fall protection system and the process of selection are clearly prescribed in the regulations and standards. The responsible party initiates the assessment and documents its findings. These findings will become the basis for fall protection system design and implementation.

RESPONSIBILITIES

The original responsibility to determine the need for a fall protection system resides with the employer or building owner. The responsibility to assess the workplace and to determine the presence of any fall protection hazards is required through the Occupational Safety and Health Administration (OSHA) General Industry regulations.

OSHA 1910.132 (d) (1): “The employer shall assess the workplace to determine if hazards are present, or likely to be present...”

The employer (building owner) is also required to produce the assessment through a written certification.

OSHA 1910.132 (d) (2): “The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.”

DOCUMENTATION

As stated above, OSHA 1910.132 (d) (2) requires a written certification of the workplace hazard assessment, but does not provide any details as to the procedure or elements to be included in the assessment. ANSI/ASSE Z359.2 provides the guidelines for the assessment of a fall protection hazard. ANSI/ASSE Z359.2 4.2 Fall Hazard Survey Report provides a listing of the elements that should be included in hazard survey. A separate hazard survey should be performed for each fall hazard exposure identified.

DESIGN

When providing a design to or consulting with a building owner on a fall arrest system, the American National Standards Institute (ANSI) standard provides guidance as to the responsibilities and the selection process for choosing the appropriate fall protection control measure.

ANSI/ASSE Z359.2 5.3.2: “When planning and designing new buildings or facilities, architects, planners, engineers, and designers, including the owner and managers of such facility, shall provide a safe design and shall protect all authorized persons who will be exposed to fall hazards during performance of their work including maintenance and normal workplace operation. Selection of a control measure shall be in accordance with the fall protection hierarchy of this standard.”

The fall hazards identified in the Fall Hazard Survey(s) can then be assessed. The “Fall Protection Hierarchy” provides a method by which to eliminate or control potential fall hazards. ANSI/ASSE Z359.2 5.1: “The following hierarchy or preferred order of control shall be used to choose methods to eliminate or control fall hazards. The fall protection hierarchy shall be considered when designing fall protection solutions for both existing and new facilities. The methods listed below are in decreasing order of preference.”

5.1.1 Elimination or Substitution

The elimination or substitution is the preferred method to address a fall hazard. Elimination can be achieved by redesign or layout of the features creating the fall hazard. An HVAC unit could be provided with an architectural enclosure, which could also function as a barrier to the hazard. An HVAC unit could be
relocated to an area providing a safe distance to the hazard. An HVAC unit could be designed or selected such that the maintenance requirements for the unit can be performed from an alternative safe location. The objective is to remove the exposure to the hazard or hazardous work practices.

5.1.2 Passive Fall Protection
Passive fall protection is achieved by isolating or separating the hazard from the employees. Several methods can be considered, such as the installation of a rail, a cover, netting, or a physical separation. All of these measures would function as a barrier between the employee and the hazard.

5.1.3 Fall Restraint
Fall restraint is a method of protection where a system is designed to restrict an employee from reaching the hazard. This is typically achieved by connecting an employee to an anchorage with a lanyard of a predetermined length that prevents the employee from reaching the hazard.

5.1.4 Fall Arrest
Fall arrest is a method of protection where a system is designed to stop an employee after a fall has begun. This is typically achieved by connecting an employee to an anchorage with a lanyard that stops the employee’s fall after they reach the hazard and a fall has begun.

5.1.5 Administrative Controls
Administrative controls provide signals and/or warnings intended to inform the employee to avoid an approaching fall hazard.

CONTRACT CONTROLS
Once the hazard assessment has been completed, the potential hazards identified, and the control method selected, the task shifts to the design and installation of the fall protection system. The standards for the design of a fall arrest system are detailed in ANSI/ASSE Z359.6, Specifications and Design Requirements for Active Fall Protection Systems. This standard provides the detailed design requirements to address the potential hazards identified in the Certification of Hazard Assessment. It has been this author’s experience that many of the contractual fall arrest designs are performed through a performance specification incorporated within a contract. In this case, one’s responsibility as the owner’s representative is how to ensure that the entity proposing to perform the design and installation is qualified to perform the task.

Qualifications
A key measure of a firm’s qualifications is its experience. However, to simply state that the firm must have experience is not effective. In order to assess the experience of a firm, a list of simple qualifiers must be used to quantify the ability of the firm to complete the task for the client. Some simple but effective qualifiers should include:

- **Licensure of the firm**—This ensures that a third party assessment has been performed on the technical qualifications of the firm in general.
- **History of the firm**—This shows qualification of the experience of the firm.
- **Full-time engagement**—This is to ensure that the firm has specialized knowledge and work practice in this area. There are vendors of products that will provide additional services from time to time—primarily to promote their specific products.
- **History working with the product**—This captures the firm’s historical experience specific to the products being considered.
- **Recent history with the product**—This considers if the firm is current with the recent issues or new design features of the products being considered.
- **Insurance**—In addition to specified limits of coverage, this can also function as a third-party assessment of the qualifications of the firm. If the insurance carrier states on the policy that the coverages provided are specific to fall protection products, then they acknowledge their recognition of the firm’s specific business practice.

Documentation
The documentation requirements for a fall arrest system are a critical component in addressing the issues of liability. The documentation records the development and implementation of the system. This should include:

- The written identification of a fall hazard assessment through the selection of the controls to be provided
- The designer/installer’s certification of the system’s compliance with the regulations and standards, including inspections and training
- Fall protection system ongoing requirements, including future inspections and recertifications

The goal is to document in writing all of the steps taken to develop and implement the fall arrest system. This should include a listing of the responsible parties and their roles in the development of the system. The documentation should conclude with any future requirements of the fall arrest systems. This will address any future actions required by the owner of the fall arrest system and document that notice of these requirements has been provided.

LIABILITY CONTROLS
Hazard Assessment
The responsibility to produce a written hazard assessment initiates with the employer (owner) of the building. The document and the transaction use many formats, but the absence of any documentation presents an unclear situation as to who performed the assessment. If the owner can then demonstrate that responsibility was assigned through a contract or some form of agreement with the consultant, then some, if not all, of the liability with the thoroughness of the hazard identification may have shifted. This takes place when an owner solicits a consultant’s services to assess a project’s fall arrest needs, but provides the consultant with little or no information as to the hazards that may be present.

The information on the form must, at a minimum, satisfy the written hazard assessment required by OSHA and should provide the information needed as directed in ANSI. We have developed a form based on the ANSI guidelines (Figure 1). All of the questions suggested in the ANSI standard have been incorporated into a single-page questionnaire. The form, when completed, is used to satisfy the OSHA requirement for a written certification.

A fall hazard survey will provide detailed
information for each hazard to be reviewed. This information will then become the basis for the fall protection control selection. We have developed a single-page form for assessing each fall hazard. This captures the information needed to develop the appropriate control measure. The combined collection of the hazard surveys is then combined with the Certification of Hazard Assessment. The Fall Hazard Survey is shown in Figure 2.

Fall Protection System Selection

The next step is the selection of a control measure to address each one of the fall hazards identified. This process is performed by applying the Fall Protection Hierarchy and assigning one or more of the five controls to each fall hazard. This selection should once again be performed by or with the employer (owner) and documented. After a specific control measure is assigned to each of the fall hazards, the implementation of the controls can then proceed. The control measure selected will then direct the next action step to be taken.

- Elimination or substitution—Once the fall hazards have been eliminated, the exposure to the worker has been removed.
- Administrative controls—Administrative controls should be left as much as possible to the control of the employer (owner). The establishment of the control, its effectiveness, availability, visibility, and longevity, are all issues outside of the consultant’s control. If this control measure is selected, it is important to identify the responsible party going forward.
- Passive fall protection/fall restraint/fall arrest—All of these controls need to be designed and installed. Special considerations should be applied to ensure that these controls are designed and installed in compliance with the applicable OSHA and ANSI standards.

I have now addressed the responsibilities of the Certification of Hazard Assessment, the Fall Hazard Survey(s), and the Selection of Control Measures. It should be noted that the responsibility for each of these initiatives with the employer (owner) as presented in the chart in Figure 3. The consultant, by providing assistance to the owner, often plays a key role in this phase of the process. It is critical during this phase to document the owner’s role and decisions. This will assist in keeping the responsibilities where they originate. As the consultant takes on some of these responsibilities, the consultant may also be unknowingly taking on some of the liability.

Fall Protection System Design

The design of a fall arrest system must be in compliance with OSHA regulations and ANSI standards. It is important to ensure that the designer of the fall arrest system is qualified and competent. The best way to qualify the competency of the selected designer is to specify minimum requirements for the design firm. The following are several minimum requirements to assess a designer’s qualifications:

- The design engineer be licensed in the state of the project—This utilizes a third-party licensing process to validate the design firm’s engineering competency in the state.
where the project is to be designed and installed.

- **Specific ten-year fall arrest system design experience**—This provides a history of the design firm’s experience specific to the design of fall arrest systems.

- **Engaged full time in the design of fall arrest systems**—This engages a design firm with specialized design capabilities solely in the practice of fall arrest systems.

- **Specific listing of five similar successful designs within the last five years**—There are a multitude of fall arrest systems available to the designer. This will ensure the designer’s competency in the specific system proposed for the project.

- **Excess liability insurance of $5,000,000 with the business description of “Install/Design Fall Protection Equipment”**—This provides not only sufficient coverage limits, but more importantly, gives notice that the insurance provider has vetted the specific work task for which the insurance coverage is being provided. This uses the third-party insurance carrier to assess the capabilities of the contractor.

This phase reviews the implementation of the fall protection design and fall protection installation. As noted in the chart in Figure 5, the responsibility originates with the designer and the installer. However, the consultant may play a significant role in the qualification and selection of the designer and installer. As the consultant takes on some of these responsibilities, the consultant may again be unknowingly taking on some of the liability.

**Documentation**

The contract specification may require a collective gathering of critical documentation, including some of the items listed earlier. The submission of these documents may be required as “close-out documents” with the contract. As part of this contract compliance, the fall arrest system designer/installer is typically responsible for supply-
ing specific closeout documents. However, in addition to the required closeout documents required by the contract, the submission of an owner’s manual is highly recommended. The owner’s manual, if properly organized, provides all of the history and documentation relating to the fall protection system. It will trace the responsibility of the parties throughout the process. It will conclude by putting the responsible parties on notice of any future requirements associated with the system. The manual must be provided to the owner. The Owner’s Manual should include the following items as a minimum:

- Certification of Hazard Assessment
- Fall Hazard Survey(s)
- Component details
- Record drawings
- Installation certification
- Warranty
- Instructions for use
- User training certification
- Inspection record

**SUMMARY**

The process of assessment, design, and installation of a fall arrest system has inherent liabilities. Various parties to the process will carry the responsibilities at different phases of the process. The chart in Figure 5 represents the findings of those responsibilities as presented in this article. It should be noted that the responsibilities in the chart presented do not reside with the architect/designer or consultant. This article identifies the steps of the process and where the responsibilities originate. Proper advice and documentation of the process as discussed in this paper will retain the responsibilities where they originate. The key factor is to recognize the responsibilities associated with a fall arrest system. As we provide guidance to our client(s), it is important to be aware of the tasks we are involved with and be sure to provide the best advice possible without unknowingly inheriting additional liability.

*Figure 5 – Chart showing responsible parties in hazard assessment, fall hazard surveys, selection of control measures, and fall protection design, installation, and training/reinspection.*