CONSTRUCTION HEALTH AND SAFETY RISK MANAGEMENT

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Abstract

Millions of people in the European Union (EU) are injured at work, or have their health seriously harmed in the workplace every year. This incident calls for a risk assessment because it is the key component to healthy workplaces. Risk assessment is a dynamic process that allows enterprises and organisations to put in place a proactive policy of managing workplace risks. Hence, the present objective of the current study is to outline how occupational health and safety (OHS) risk management is carried out to minimize risk in construction sites. The approach to OHS prevention is through risk assessment. The study is conducted with reference to existing theoretical literature, published and unpublished research. The study is mainly a literature review survey on OHS risk management. Findings from the study reveal that proper risk assessment requires employers to ensure that all the relevant risks are taken into account. They should also check the efficiency of the safety measures adopted, document on the outcomes and review the assessment regularly to keep it updated. Five approaches to risk assessment were found to be identification of hazards and those at risk, evaluation and prioritising risks, deciding on preventive action, taking action and monitoring, and reviewing of the assessment. Engineering and administrative control measures as well as the use of personal protective equipment (PPE) were found to be the methods of hazard control. The study explores OHS risk management. Steps are taken in risk assessment to protect the H&S of employees who may be adversely affected by the activities in the construction industry. It presents a robust background on OHS risk management.

Keywords: Construction; Health and safety; Risk management

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1.0 INTRODUCTION

The construction industry in Britain accounts for only about 5% of the employees but contributes 27% of fatal injuries to employees and 10% of reported major injuries (Health and Safety Executive (HSE), 2013). 2010 Statistics show that most fatal falls occurred in the construction industry. There were 1913 reported major injuries to employees in 2012/13p, as compared to an average of 2 815 over the previous five years. The corresponding rates of major injury per 100 000 employees were 156 in 2012/13p and an average of 192 (HSE, 2013). There have been significant reductions in the number and rate of injury over the last 20 years or more. Nevertheless, construction remains a high risk industry. Occupational health is often overlooked in the construction industry as it concentrates on accident prevention. The construction industry has a high incidence of occupational ill health which can have a devastating effect on individuals (Construction Development Management (CDM), 2007). According to CDM (2007) efforts have focused more on safety hazards rather than on workplace hazards resulting in ill health issues. A hazard is anything, including work practices or procedures that have the potential to harm the health or safety (H&S) of a person or to cause damage to property (Home and Community Care (HCC), n. d.). Accidents and ill health can ruin lives and affect employer’s construction work if output is lost, machinery is damaged, insurance costs increase or employers have to go to court (HSE, 2011). Employers are legally required to assess the risks in their workplace, so that they can put in place a plan to control the risks (HSE, 2011). Risk is the chance of the injury or damage happening, and how severe the injury or damage might be (HCC, n. d.). Employees have a right to be protected from harm caused by a failure to take reasonable control measures by their employers (HSE, 2011). In risk assessment, steps are taken in this process to protect the H&S of employees who may be adversely affected by works, process and or events being undertaken at the construction sites. It is mandatory for all employers to conduct assessment to control risk in their workplaces and comply with H&S. A risk assessment is simply a careful examination of what, in your work, could cause harm to people, so that you can weigh up whether you have taken enough precautions or should do more to prevent harm (HSE, 2011). Risk assessment is also defined as making a judgement about how dangerous a risk associated with a hazard is. This must be done in consultation with the people who may be exposed to the risk (HCC, n. d.). An occupational health and safety management system (OHSMS) provides a framework for managing your occupational health and safety responsibilities so they become more efficient and more integrated into overall construction operations (Health and Safety Management Systems (HSMS), 2004). The appropriate preventive measures of risk assessment are not likely to be identified or put in place if H&S management approach is not carried out well or not done at all (European Agency for Health and Safety at Work (EAHS), n. d.). This paper presents an outline of how OHS risk management is carried out to minimize risk in the construction industry. It begins with a discussion with the typical OHS issues in the construction industry and duties of the employer, followed by risk assessment and methods of hazard control, and finally, management of occupational health risk in the construction industry.
2.0 CONSTRUCTION INDUSTRY AND OCCUPATIONAL HEALTH AND SAFETY

A risk assessment is an important step in protecting construction workers as well as complying with the law. It helps employers to focus on the risks that really matter in their workplace mostly beginning with the ones with the potential to cause real harm (HSE, 2011). The law does not expect employers to eliminate all risk, but are required to protect people as far as reasonably practicable (HSE, 2011). Managing occupational health goes beyond undertaking pre-start health checks, providing first aid and site welfare facilities. It involves organisations and employers having effective system of managing occupational health risks as well as compliance with H&S legislation (CDM 2007). Occupational Health and Safety (OHS) legislation requires that all foreseeable hazards are identified and the risks arising from these hazards are eliminated or controlled, Australian business consulting and solutions (ABCS, n. d.). The OHS objectives include:

- To secure the health, safety and welfare of employees and other persons at work;
- To eliminate, at the source, risks to the health, safety or welfare of employees and other persons at work;
- To ensure that the H&S of members of the public is not placed at risk by the conduct of undertakings by employers and self-employed persons; and
- To provide for the involvement of employees and organisations representing those persons, in the formulation and implementation of health, safety and welfare standards (Capital Development Guidelines (CDG), 2011).

2.1 Typical health issues in the construction industry

Occupational health issues are not always and immediately visible but can have the same devastating impact as accidents and injuries, sometimes causing prolonged and long term health problems. Some of the health problems associated with work in the construction and building industry include (CDM, 2007):

- Musculoskeletal disorders including back pain usually from manual handling;
- Noise- induced hearing loss;
- Respiratory and breathing problems including asthma from exposure to asbestos, dust, silica and other hazardous substances;
- Skin diseases including dermatitis from exposure to chemicals, paint, cement, bitumen, asphalt and other hazardous chemicals used in the industry;
- Hand arm vibration syndrome resulting from frequent operation of hand held power tools; and
- Occupational stress due factors such as work pressures, work load, the risky nature of the job, job insecurity.
2.2 Duties of the Employer

The duty of the employer is to provide and maintain for employees a working environment that is safe and without risks to health as reasonably practicable.

- Provide or maintain plant or systems of work that are, so far as is reasonably practicable, safe and without risks to health;
- Make arrangements for ensuring, so far as is reasonably practicable, safety and the absence of risks to health in connection with the use, handling, storage or transport of plant or substances;
- Maintain, so far as is reasonably practicable, each workplace under the employer's management and control in a condition that is safe and without risks to health;
- Provide, so far as is reasonably practicable, adequate facilities for the welfare of employees at any workplace under the management and control of the employer; and
- Provide such information, instruction, training or supervision to employees of the employer as is necessary to enable those persons to perform their work in a way that is safe and without risks to health (CDG, 2011).

The employer must ensure that employees are not exposed to risks to their health or safety arising from the conduct of the undertaking.

- Monitor the health of employees;
- Monitor conditions at any workplace under the employer's management and control;
- Provide information to employees (in such other languages as appropriate) concerning H&S at the workplace, including the names of persons to whom an employee may make an enquiry or complaint about H&S;
- Keep information and records relating to the H&S of employees; and
- Employ or engage persons who are suitably qualified in relation to OHS to provide advice on H&S issues to employees (CDG, 2011).

3.0 RISK ASSESSMENT

In practical terms, a risk assessment is a thorough look at your workplace to identify those things, situations, processes, etc. that may cause harm, particularly to people. After identification is made, the employer evaluates how likely and severe the risk is, and then decides what measures should be in place to effectively prevent or control the harm from happening (Canadian Centre for Occupational Health and Safety (CCOHS), 2009). The following should be followed:

- Identification of hazards;
- Analyzing or evaluating the risk associated with that hazard; and
• Determining appropriate ways to eliminate or control the hazard (CCOHS, 2009; (ABCS, n. d.).
• The following are the time when a risk assessment should be carried out:
• When there is uncertainty about how a hazard may result in injury or illness;
• When the work activity involves a number of different hazards and there is a lack of understanding about how the hazards may interact with each other to produce new or greater risks; and
• When changes at the workplace occur that may impact on the effectiveness of control measures, New Wales government (NSW Government, 2011).

3.1 Importance of risk assessment

Risk assessments are very important because they form an integral part of a good OHS management plan. They help to:

• Create awareness of hazards and risks;
• Identify who may be at risk (employees, cleaners, visitors, contractors, the public, etc.);
• Determine if existing control measures are adequate or if more should be done;
• Prevent injuries or illnesses when done at the design or planning stage; and
• Prioritize hazards and control measures (CCOHS, 2009).

3.2 Goal of risk assessment

The aim of the risk assessment process is to remove a hazard or reduce the level of its risk by adding precautions or control measures, as necessary. By doing so, the employer has created a safer and healthier workplace (CCOHS, 2009).

3.3 Rank or prioritization of risks

There is no one simple or single way to determine the level of risk. Ranking hazards requires the knowledge of the workplace activities, urgency of situations, and most importantly, objective judgment (CCOHS, 2009). Ranking or prioritizing hazards is one way to help determine which hazard is the most serious and thus which hazard to control first. Priority is usually established by taking into account the employee exposure and the potential for accident, injury or illness. By assigning a priority to the hazards, the employer is creating a ranking or an action list (CCOHS, 2009). The following factors play an important role:

• Percentage of workforce exposed;
• Frequency of exposure;
• Degree of harm likely to result from the exposure; and
• Probability of occurrence (CCOHS, 2009).
3.4 Documentation for risk assessment

There is the need for documentation or record keeping depending on level of risk involved, legislated requirements, and or requirements of any management systems that may be in place (CCOHS, n. d.; HCC, n. d.).

3.5 Approach to risk assessment

Assessments should be done by a competent team of individuals who have a good working knowledge of the workplace. Employees should be involved always include supervisors and employees who work with the process under review as they are the most familiar with the operation (CCOHS, 2009). Proper risk assessment process includes:

- Employers should ensure that all the relevant risks are taken into account (not only the immediate or obvious ones);
- They should also check the efficiency of the safety measures adopted; and
- There should also be documentation of the outcomes of the assessment and review the assessment regularly to keep it updated (EAHS, n. d.).
- The approaches to risk assessment include:

Step 1: Identify of hazards and those at risk;

It is the responsibility of the employer to work out how people could be harmed. When an employee works in a place every day it is easy to overlook some hazards. Employees are supposed to look at what could reasonably be expected to cause harm. This can be discussed with the employers or their representatives. They may have noticed things that are not immediately obvious. There is the need to have a look at accident and ill-health records which often help to identify the less obvious hazards.

Step 2: Evaluate and prioritize risks;

The employer needs to be clear about who might be harmed in each hazard. This will assist the employer to identify the best way of managing the risk by identifying groups of people working in a particular location. The employer needs to identify the type of injury or ill health that might occur. New and young employees or expectant mothers and people with disabilities may be at particular risk. Therefore, they need some particular requirements. Extra care will be needed for some hazards; cleaners, visitors, contractors, maintenance workers etc., who may not be in the workplace all the time; members of the public, if they could be hurt by the construction activities. The employer needs to think about how the construction activities affect his employees and other people present at the workplace.

Step 3: Decide on preventive action;
The employer will decide on what action to be taken when the hazards have been identified. The OHS law requires the employer to do everything ‘reasonably practicable’ to protect employees from harm. It is the responsibility of the employer to look at what he is already doing, have a second thought about what control measures he has in place and how the work is organised. Finally, this will be compared with the good practice and see if there is more that need to be done to bring the employer up to standard.

The employer should also consider the following two factors:

Can the hazard be eliminated completely? How can hazards be put under control so that harm is unlikely to occur to any employee?

Improving H&S needs not cost a lot but failure to take simple precautions can cost an employer a lot more if an accident does happen. Employees should be involved so that an employer can be sure that what he proposes to do will work in practice and will not introduce any new hazards.

Step 4: Take action;

The employer should put the results of the risk assessment conducted into practice by writing down the results in relation to OHS and share them with his employees. Risk assessment of OHS must be suitable and sufficient to show that a proper check has been carried out. Therefore, the employer must involve the employees or their representatives in the process and ask who may be affected so that significant hazards will be dealt with. By taking into account the number of employees who may be involved and give reasonable precautions to minimize the risk.

There is the need for the employer to take a good plan of action and must prioritize and tackle the most important risk first.

This includes a mixture of different actions such as:

- Easy improvements that can be done quickly, perhaps as a temporary solution until more reliable control measures are put in place; long-term solutions to those risks most likely to cause accidents or ill health; long-term solutions to those risks with the worst potential consequences;
- arrangements for training of employees on the main risks that remain and how they are to be controlled; regular checks to make sure that the control measures stay in place; and clear responsibilities – who will lead on what action to be taken and when?

Step 5: Monitor and review;

The employer needs to review the OHS risk assessment on regularly basis to make sure there is no draw backs, whether there has been any change or an improvement on the previous assessment that need to be made (HSE, 2011; CCOHS, 2009; HCC, n. d.; EAHS, n. d.).
3.6 Communication during risk assessment

Key stakeholders in the risk assessment process should be informed on the following:

- What the hazard and the risk is;
- What a risk assessment is and the purpose of doing one;
- Who will do the assessment;
- Who else will be present;
- When it will occur;
- What it will involve; and
- Potential outcomes of the assessment (HCC, n. d.).

3.7 Management of occupational health risk in the construction industry

Managing occupational health risks is placed on the employer under the management of H&S at Work Regulations 1999. To meet these legal requirements as well as improving the organisation’s H&S performance and ultimately reduce risks and costs. The employers should have the following in place:

- H&S policies and procedures with practical arrangements for managing occupational health risks;
- Provision of employee awareness training on manual handling, control of substances hazardous to health, noise at work and hand arm vibration;
- Manual handling risk assessments and safe handling techniques for manual handling activities;
- Health surveillance, sickness absence management, return to work policy and stress management strategy;
- Arrangements for managing subcontractors, including procedures for managing their occupational health risks; and
- Employers understanding their duties under the Construction (Design and Management) Regulations 2007 (CDM 2007).

- System concepts can help the employer to improve on his organisation’s H&S planning, policies, and procedures and to minimise risks in construction industry (CDM 2007).

3.8 Hierarchy of risk control

According to HSE (2011) OHS hierarchy of controls identifies controls to be implemented prior to operation and or commencement of any undertaking.

- Design or reorganise to eliminate the hazard from the workplace;
- Remove or substitute the hazard;
• Enclose or isolate the hazard;
• Minimize through engineering controls;
• Minimize the risk by adopting administrative controls;
• Personal Protective Equipment; and
• A combination of two or more controls need be used to minimize the risk to the lowest level that is reasonably practicable, if there is no single control appropriate (HSE, 2011; ABCS, n.d.).

3.9 Benefits of managing occupational health

The benefits of having a robust system for controlling and managing occupational health risks in construction organisations include;

• Reduced absenteeism;
• Reduced staff turnover;
• Retention of key staff;
• Lower healthcare costs;
• Reduced insurance premiums and compensation claims;
• Fewer work related ill health cases; and
• Improved productivity and staff morale (CDM 2007).

4.0 METHODOLOGY

The study is mainly a literature review survey on OHS risk management. The study is conducted with reference to existing theoretical literature, published and unpublished research.

5.0 FINDINGS

Findings from the study have shown that the construction industry has a high incidence of occupational ill health which can have a devastating effect on individuals. Efforts have focused more on safety hazards rather than on workplace hazards resulting in ill health issues. Managing occupational health goes beyond undertaking pre- start health checks, providing first aid and site welfare facilities. It involves organisations and employers having effective system of managing occupational health risks as well as compliance with health and safety legislation. Occupational health issues are not always immediately visible but can have the same devastating impact as accidents and injuries, sometimes causing prolonged and long term health problems. The appropriate preventive measures of risk assessment are not likely to be identified or put in place if H&S management approach is not carried out well or not done at all. Therefore, the employer must provide and maintain for employees a working environment that is safe and without risks to health as reasonably practicable. He must also ensure that employees are not exposed to risks to their health or safety arising from the conduct of the undertaking. Risk assessments are very important because they form an integral part of a good OHS
management plan. Ranking or prioritizing hazards is one way to help determine which hazard is the most serious and thus which hazard to control first. Assessments should be done by a competent team of individuals who have a good working knowledge of the workplace. Five approaches to risk assessment have been found to identify hazards and those at risk, valuate and prioritise risks, decide on preventive action, take action, and monitor and review. Methods of hazard control have also been identified as engineering and administrative controls, and the use of PPE.

6.0 CONCLUSION

It can be concluded from the findings that the appropriate preventive measures of risk assessment is not likely to be identified or put in place if H&S management approach is not carried out well or not done at all. Therefore, there is the need for stringent measures to be put in place to handle OHS devastating impact. The approaches to risk assessment and methods of hazard control will lead to safe work environment and minimize the health impact on employees.

References


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