

# The Management of Health and Safety of Construction Sites in Accra

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## Abstract

The study into the Management Health & Safety effective implementation on sites stems out of the fact that accidents and deaths are becoming very endemic and this makes the construction process expensive to the detriment of both the clients and contractors. The aim is to investigate into the management of Health and safety on the construction sites. The objectives are to identify the major kinds of injury on construction site; to identify some of the management health and safety principles used by contractors and to determine the relationship of management of health and safety principles improves project time delivery. In view of this, a review of available relevant literature was carried out to have theoretical and first hand information on the subject matter after which questionnaire were distributed, field survey carried out and practicability of the literature in relation to the companies concerned. Convenience sampling technique was adopted to select three (3) companies out of which two (2) responded in Greater Accra Region-Ghana to be representative of both medium and large-scale contractors. The research was able to establish five kinds of injury on construction sites and these are Falling; Being struck by a falling/moving object; Collapse; Being hit by a moving vehicle and Electricity. The research was able to conclude that that most contractors under price their bill when it comes to safety issues, and this goes a long way to affect their project time delivery.

**Keywords:** Management; Health, Safety; Construction; Site

## Introduction

Occupational health and safety according to the Wikipedia dictionary is a cross disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment. The construction sector in developing countries is dominated by small and medium sized contractors, which operate mainly the domestic market. According to kheni et al (2006).

According to Hämäläinen, Takala and Saarela 2006, they argue that occupational health and safety performance in developing countries is poorer than developed countries.

Mitullah and Wachira (2003) acknowledge that many construction operatives are employed on temporary and casual basis and therefore the employment conditions are not properly defined thus offering little protection on workers health and safety.

## Problem Statement

Effective Management health and safety principles has been a tough battle and a plague for most contractors as they do the initial planning on paper and win contracts but integrating this comprehensive Management health and safety principles into construction process becomes difficult because of tradition.

Due to this, most contractors take ad hoc Management health and safety control measures on site. This affects the output of their work and works are not generally Completed on schedule leading to loss of confidence in them, poor Quality work and huge financial losses. This is given assertion by Peurifoy and Ledbetter (1985), who say that the further a project delays. Due to improper planning and control, the more expensive the project become This research study will make a critical analysis of the need to implement Management health and safety principles on site and the immeasurable impact it has on the future of contracting firms.

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## Literature

Effective safety and health management is about knowing how to identify and control hazards and applying key managerial principles so that employees work safely everyday they're on the job.

The development and embedment of health and safety management in industry is all about creating continual improvements of the working environment.

According to Health and Safety Executives (2013) notes that 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. Although it accounts for only about 5% of the employees in Britain it still accounts for 22% of fatal injuries to employees and 10% of reported major injuries.

The latest results in construction show:

- 49 fatal injuries to workers. 23 of these fatalities were to the self-employed. This compares with an average of 59 over the previous five years – including an average of 19 to the self-employed (RIDDOR)
- over 5 000 occupational cancer cases are estimated to arise each year as a result of past exposures in the construction sector (Research report 931 "The burden of occupational cancer in Great Britain")
- there were an estimated 74 000 total cases and 31 000 new cases of work-related ill health (LFS)
- an estimated 1.7 million working days were lost due to work-related ill health and a further 0.6 million due to workplace injuries. This equates to 0.87 and 0.34 days per worker (LFS) (Health and Safety, 2013)

According to Statistics for Construction published by Work Safe BC from 2006 to 2008, among the accident type that is most common on construction sites is Fall accounting for 25% followed by Overexertion and Struck By with 23% and 22% respectively.

Falls are the most frequently occurring and costly accidents across the construction sector. *Falls* represent 25 percent of all claim volumes and 36 percent of all claim costs. The other dominant accident categories in construction are *overexertion* and *struck by*. These three mechanisms of injury account for about 70 percent of all claim volumes and 71 percent of all costs. (Work Safe BC, 2013)

### **The Code of Practice on the Provision of Health and Safety Items on Construction Sites (ILO 1992)**

The ILO's Code of Practice on Health and Safety on Construction site provides guidelines in the implementation of the Health and Safety practice on construction sites for all workers. The following sections of the code were considered.

According to section of the code 3.1.1. All appropriate precautions should be taken:

- (a) To ensure that all workplaces are safe and without risk of injury to the safety and health of workers;
- (b) To protect persons present at or in the vicinity of a construction site from all risks which may arise from such site.

3.1.2. All openings and other areas likely to pose danger to workers should be clearly indicated.

At section 2.6. of the code it stipulates the General duties of designers, engineers, architects.

Section 2.6.1. requires those concerned with the design and planning of a construction project should receive training in safety and health and should integrate the safety and health of the construction workers into the design and planning process in accordance with national laws, regulations and practice.

Section 2.6.2. of the code notes that care should be exercised by engineers, architects and other professional persons, not to include anything in the design which would necessitate the use of dangerous structural or other procedures or materials hazardous to health or safety which could be avoided by design modifications or by substitute materials.

2.6.3. stressed that those designing buildings, structures or other construction projects should take into account the safety problems associated with subsequent maintenance and upkeep where maintenance and upkeep would involve special hazards.

Section 2.6.4. states that facilities should be included in the design for such work to be performed with the minimum risk.

## 2.7. General duties of clients

The code provides some duties of the client in relation of ensuring safety. Section 2.7.1 describes that Clients should:

- (a) co-ordinate or nominate a competent person to co-ordinate all activities relating to safety and health on their construction projects;
- (b) inform all contractors on the project of special risks to health and safety of which the clients are or should be aware;
- (c) require those submitting tenders to make provision for the cost of safety and health measures during the construction process.

Section 2.7.2.acknowledge the project time delivery in relation to health and safety measures put in place, in estimating the periods for completion of work stages and overall completion of the project, clients should take account of safety and health requirements during the construction process.

### **Health hazards, first aid and occupational health services**

Section 17.1.1. ensures that for works which by their very nature expose workers to hazards arising from the use or presence of chemical, physical or biological agents and climatic conditions, appropriate preventive measures should be taken to avoid any danger to the safety and health of workers.

Section 17.1.2. looks at the preventive measures referred to in section 17.1.1 should place emphasis on the need to eliminate or reduce the hazard at the source and in particular should require:

- (a) the replacement of hazardous substances, equipment or processes with substances, equipment or processes less harmful or hazardous to workers' safety and health;
- (b) the reduction of noise and vibration caused by equipment, machinery, installations and tools;
- (c) control of the release of harmful agents or chemicals into the working environment;
- (d) training in manual lifting;
- (e) proper working postures when workers are required to work in fixed working positions or when they are carrying out repetitive work;
- (f) appropriate protection against climatic conditions likely to jeopardise health;
- (g) where the foregoing measures are inappropriate:
  - i) instituting work practices which will eliminate or minimise danger to safety and health;
  - ii) supplying and requiring the use of personal protective equipment and clothing.

Section 17.1.3 notes that the employer should make arrangements for the identification and assessments by competent persons of health hazards presented by the use of different operations, plant, machinery, equipment, substances and radiations at the construction site and take appropriate preventive or control measures against the identified health risks in conformity with the national laws and regulations.

Occupational health services are stressed on section 17.2.1. The employer should provide for the setting up of or access to an occupational health service consistent with the objectives and principles of the Occupational Health Services Convention, 1985 (No. 161) and Recommendation (No. 171).

Section 17.2.2. of the ILO Code of practice says that all workers should be subject to health surveillance.

Section 17.2.3. encourages that monitoring and control of the working environment and planning of safety and health precautions should be performed as prescribed by national laws and regulations.

17.2.4. A multiplicity of health hazards are present in construction work and every effort should be made to promote awareness of this fact and of the need to safeguard health.

Section 17.2.5. looks at the training of the workers or operatives of the equipment to be used on site. Whenever new products, equipment and working methods are introduced, special attention should be paid to informing and training workers with respect to the implications for safety and health.

### Research Methodology

The paper comprises the textual analysis of ILO health and safety Code 1992 and an in-depth study into the operations of contractors in ensuring health and safety standards are maintained.

#### Population

There are Thirty-five (35) registered contractors with the Accra Metropolitan Assembly.

#### Sampling design

Convenience sampling technique was adopted to select three (3) companies out of which two (2) responded in Greater Accra Region-Ghana to be representative of both medium and large-scale contractors.

#### Sampling Procedure

Adequate measures were taken to minimize bias as a prelude to the sample selection process. For instance, the study ensured that the respondents were within the research area.

The techniques was adopted because it is the most trustworthy method of securing a truly representative of a population it also ensures that all forms of researcher biases are eliminated.

#### Research instrument

Questionnaire was the main data collection instrument used for the study. Two formats of opinion questions were used to collect the data and these were the checklist and rating scale. The checklist question format was used because it is specially designed for a group of respondents who have accurate information and can answer the questions with a high degree of certainty.

The rating scale also reflect the intensity of the particular judgment involved hence the research wanted to find out on the major kind of injury.

Questionnaire facilitated the collection of data that ensured the best matching of concepts with reality; it provided the same responses from a given set of respondents and helped reduce inconvenience caused by unfavourable interview times and busy schedules.

#### Validity and reliability of procedures

Questionnaire and interview items were peer reviewed and cross validated by people with research experience to ensure scale consistency, reliability, and content validity. The use of question items and scales from previous research questionnaires was another way of obtaining quality data for the study. Preliminary findings were also rechecked for accuracy and consistency.

#### Data processing and analysis

Descriptive statistics method was used to analyse the data. A measure of central tendency was applied to find the most typical value for the major kind of injury on construction sites.

### Findings and Discussion

Table 10: Major Injury on Construction Sites

Item	Injury Kind	Ratings based on the respondents experience over time					Total	Mean
		Least Influential ←		Most Influential →				
		1	2	3	4	5		
1	Falls	0 (0)	2 (4)	3(9)	10 (40)	35 (175)	228	4.56
2	Being struck by a falling/moving object	2 (2)	3(6)	10 (30)	7 (28)	28 (140)	206	4.12
3	A collapse	16 (16)	10 (20)	12 (36)	7(28)	10(50)	150	3.00
4	Being hit by a moving vehicle	18(18)	17(34)	10(30)	3 (12)	2 (10)	104	2.08
5	Electricity	15 (15)	19 (38)	13 (39)	2(8)	1(5)	105	2.1

Among the five kinds of injury that took place on the sites visited “FALLS” ; “STRUCK BY A FALLING OBJECT” and “COLLAPSE” were identified as the major kinds of injury on sites with mean scores of 4.56 and 4.12 and 3.00 respectively.

Most of the respondents are in strong agreement that health and safety equipment/facilities stated are to be provided to them, but helmet, safety boot and protection cloth are the very important needs of the workers. Therefore contractors must provide it on site to avoid them from accident, injuries and ill health.

Some of the respondents mentioned some of the causes of accidents and ill health on construction site as lack of supervision, lack of protection of hazardous materials, lack of workers training, lack of provision of personal protection equipment, incompetent workers, lack of welfare facilities, inadequate of quality tools.

It was also realised that the contractors that this research was conducted did not factor a realistic price on Health and Safety during the preparation of their bids due to the perception that Health and Safety constitutes 2-3% of the contract sum, consequently when it comes to the provision and implementation of health and safety issue on sites they are unable to achieve due to the under pricing of it.

Inadequate implementation of Health safety requirement had adverse effect on the project time delivery due to accidents that occurred on the sites.

### **Conclusion**

The International Labour Organization's Code of Practice of Health and Safety 1992 stressed at Section 2.7.2. that the project time delivery in relation to health and safety measures put in place, in estimating the periods for completion of work stages and overall completion of the project, clients should take account of safety and health requirements during the construction process.

The research was able to establish five kinds of injury on construction sites and these are Fall; Being struck by a falling/moving object; Collapse; Being hit by a moving vehicle and Electricity.

The research was able to conclude that that most contractors under price their bill when it comes to safety issues, and this goes a long way to affect their project time delivery.

### **Recommendation**

Health and Safety Inspectors for the construction industry should be established to ensure the implementation of health and safety issues.

Contractors and clients should put a high premium on Health and safety during preparation of their Bill of Quantities.

A further study should be carried out to establish the cost of implementing Health and Safety on construction sites based on the contract sum.

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