CONSTRUCTION SAFETY IN JAKARTA, INDONESIA

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CONSTRUCTION SAFETY IN JAKARTA, INDONESIA

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A project report submitted in partial fulfillment of the
requirements for the award of the degree of
Master of Science in Construction Management.

Faculty of Civil Engineering
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For my beloved family

Bapak, Ibu, Mas Adit and Mbak Galuh

Without your love, support and care this study would not have been completed

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ABSTRACT

Construction industry involves activities that can endanger the lives of human being. In Indonesia safety issues are always being neglected by the construction company. It showed by the number of injuries and accidents occurred in Indonesia. Therefore, a study has been conducted to identify the root causes of accident in Jakarta construction site and to find ways of mitigating them. This study was started out by reviewing literature from books, journals and web pages. A set of questionnaire was designed to gain primary data from the respondents about safety in construction. The analysis on safety program reveals that the root causes of accident are result due to many factors and causes. Some of the critical factors are equipment requirement, management and health program, worksite analysis, hazard prevention and control, safety health training and record keeping. Some of the root causes founds are inappropriate using on equipment, out of date on safety policy, seniority on safety program, insufficient PPE stock, inappropriate arrangements to monitor the effectiveness of the inspection and analyze the results of safety inspections, workers negligence, lack of site specific safety training, and poor accident records. However, the management in general is not fully committed to safety and tends to neglect safety and the departments of labor's inspectors do not carry out inspections so that safety issues are not well implemented. Thus, based on the analyzed data each of construction projects have safety program which included health and safety policies, responsibilities of management and employees, risk management, safety work procedures, emergency management and rehabilitation procedures. But, the obvious lack of commitment to health and safety by management has the potential for resulting accidents which make the safety program ineffective. At last, several recommendations have been made to mitigate and prevent accidents in Jakarta construction site.

ABSTRAK

Industri pembinaan melibatkan aktiviti-aktiviti yang boleh membahayakan nyawa manusia. Di Indonesia, isu-isu keselamatan ini sering diabaikan oleh syarikat pembinaan. Ini dapat dilihat daripada jumlah kecederaan dan juga kemalangan yang berlaku di Indonesia. Oleh sebab itu, satu kajian telah dijalankan untuk mengenal pasti punca-punca kemalangan yang berlaku di tapak pembinaan di Indonesia dan juga mencari cara penyelesaian bagi permasalahan tersebut. Kajian ini bermula dengan merujuk kesusasteraan daripada buku-buku, jurnal-jurnal dan juga laman sensawang. Satu set soal kaji selidik telah direka untuk mengumpul data permulaan daripada responden-responden tentang keselamatan di dalam pembinaan. Analisis daripada program keselamatan mendedahkan terdapat banyak faktor dan punca yang menyebabkan kemalangan tersebut. Beberapa faktor kritikal adalah keperluan peralatan, program kesihatan dan pengurusan, analisis di tapak kerja, risiko kawalan dan pencegahan, latihan keselamatan dan kesihatan, dan penyimpanan rekod. Terdapat beberapa sebab utama adalah berpunca daripada penggunaan peralatan yang tidak sesuai, polisi keselamatan yang ketinggalan zaman, kekananan pada polisi keselamatan, stok PPE yang tidak memadai, pengaturan yang tidak sesuai untuk memantau keberkesanan pemeriksaan dan keputusan analisis oleh pemeriksaan keselamatan, kecuaian para pekerja, kekurangan latihan khususnya keselamatan tapak dan rekod-rekod kemalangan yang serba kekurangan. Walaubagaimanapun, pengurusan tidak sepenuhnya komited pada keselamatan yang cenderung mengabaikan keselamatan dan jabatan peperiksa pekerja tidak menjalankan pemeriksaan sehingga isu keselamatan tidak dilaksanakan dengan sempurna. Berdasarkan daripada data analisis projek pembinaan, terdapat program keselamatan termasuk polisi keselamatan dan kesihatan, langkah keselamatan kerja, pengurusan kecemasan dan langkah pemulihan. Akan tetapi, kekurangan komitmen terhadap pengurusan keselamatan dan kesihatan yang ketara mempunyai potensi untuk mengakibatkan kemalangan di mana program keselamatan yang tidak berkesan. Akhir sekali, beberapa cadangan telah dibuat untuk mencari dan mencegah kemalangan di tapak pembinaan di Jakarta.

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LIST OF ABBREVIATIONS

ASEAN	Association South East Asian Nation
ASEAN OSHNET	Asian Pacific Occupational Safety and Health Organization
BPS	Department of Statistic (*Badan Pusat Statistic*)
dBA	Decibel (A-weighted)
DEPNAKER	Department of Manpower and Transmigration (*Departemen Tenaga Kerja dan Transmigrasi*)
GDP	Gross Domestic Product
HSE	Health Safety Executive
HSG	Health and Safety Guidance
ILO	International Labor Organization
JAMSOSTEK	Employees Social Security Program (*Jaminan Sosial Tenaga Kerja*)
OHSAS	Occupational Health and Safety Assessment Series
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Association
OSH-MS	Occupational Safety and Health Management System
PNKK	Superintendent Safety and Health *(Direktorat Pengawasan Norma Keselamatan dan Kesehatan Kerja)*
PPE	Personal Protective Equipment
PVC	Polyvinyl Chloride
UNDP	United Nation Development Programme

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Since 1970s, construction industry in Indonesia has undergone a period of rapid growth. The importance of the construction industry to the economy can be measured by its contribution to the Gross Domestic Product (GDP), its contribution to investment, and the amount of manpower employed (Hillebrandt, 1988).

The data from BPS (Statistical Indonesia) shows that the construction industry's contribution to the GDP has increased from 3.9% in 1973 to just above 8% in 1997. During 1998 until 2002, Indonesia faced financial crisis that makes the contribution to the GDP declined gradually to just above 6%. Since 2003 the construction industry's contribution to the GDP has increased, reaching 7.5% in 2006. With its ability to generate growth in economic sectors, it is important for the construction industry to be effectively developed.

In general, any construction project is filled with hazardous tasks and activities. Each year a substantial number of construction workers lose their lives, countless others are injured. In the past decade, the need for safety awareness among construction companies has greatly increased. Inadequate task planning, poor safety training, lack of safety incentives, and insufficient incident investigation, i.e. poor construction safety management, become a reason to cause an accidents (Singh *et al.,* 1999). To provide a safe work environment, protect the welfare of employees and control construction costs, safety issues is a critical item that need to be implemented in every construction company. The process of preventing accident will makes the contractor more efficient and effective with projects.

Zero accident rates and Zero losses rate basically are construction company main objective to ensure the sustainability of business activities. Every accident happen is going to be considered as a failure. According to (BPS,2005) the number accidents at construction site in Indonesia is still high. Recently, Four people were killed and at least 13 others were injured when an extended structure of the shopping center collapsed in Tanah Abang shopping center, Jakarta, Indonesia. (Jakarta Post, 23 December 2009).

1.2 Problem Statement

The number of injuries and accidents reported in Indonesia construction industry counted as the highest in ASEAN country. Almost 32% working accident cases in Indonesia occurred in construction industry (Sinar Harapan, 14 January 2010).

International Labor Organization (ILO) studied the standard of working accident in Indonesia, Indonesia placed in 152 from 153 countries that has been studied. It also estimated that 1.2 million workers death on accident every year, work related injury occurred 160 million workers per year. The cost of accidents was estimated 2.4% from Gross Domestic Product (ILO, 2006).

According to Social Security Organization of Indonesia (PT. JAMSOSTEK) the number of working accidents reported is still high. PT. JAMSOSTEK had received 94,418 cases in 2004, 99,023 cases in 2005, 95,624 cases in 2006, 83,714 cases in 2007 and 93,823 cases in 2008 (Erwan Maryulu,2009). In the last three years between 2007 and 2008, the data showed that the working accident had increased to 10,109 cases. In addition, the fatality rate has increased from 13,251 cases in 2007 become 14,451 cases in 2008.

The data of accidents and fatality rate showed that the working accident in Indonesia has become a serious problem that need to be solved. Not only hundreds of billion rupiah must be paid by PT. JAMSOSTEK to compensate the insurance of accident and death but also, thousand of peoples potentially to be poor due to of physical defect.

According to the Ministry of Manpower and Transmigration of Indonesia the number of construction accidents in Jakarta on 2008, can be seen as follow :

Table 1.1 : Construction Accidents in Jakarta 2008

(Source: Ministry of Manpower and Transmigration Indonesia, modified)

Struck by falling object	1.491
Hit by moving object	1
Contact with electricity	153
Trapped by something collapsing or overtuning	4
Falls from same level	47
Falls from height	11
Slips	79
Exposed to/contact with extreme temperature	15
Exposed to/contact with harmful materials	3
Other types	1.093
Total	**2.897**

Safety issues are always being neglected by the construction company. Many of construction companies have not concern about accident prevention and safety practices. They just think on maximizing profit without noticing the cost of an accident until it occurs. Improving safety practices in Indonesia will not be achieved without the government involvement. Ardan (1997) stated that although workers were covered with insurance as provided by the contractor, safety has become a personal risk without providing other safety standards. Lack of safety control and sanction will make the worker careless on implementing safety procedures.

Public Works Department as one element of the government has made various efforts in implementing government policies include the publication of technical guidelines, such as Ministry Decree of Public Works 08/SE/M/2006 about Construction Service Procurement. Unfortunately, there has not been a significant research to identify the best safety practices that can be implemented in Indonesia. According to Hartono (1991), an appropriate research emphasizing on safety in Indonesia has never been conducted seriously.

1.3 Aim and objective of the Study

The aim of the study is to identify the root causes of accidents in Jakarta construction site and to find ways of mitigating them.

To achieve the above aims the following objectives have been identified:

i. To identify the root causes of construction accidents in Jakarta.
ii. To evaluate the implementation and effectiveness of safety program.
iii. To propose ways of mitigating accidents on construction site.

1.4 Scope of the Study

The scope of the study are as follows :

i. The study is limited on construction projects in Jakarta
ii. The respondents of the study will be the Class A contractor in Jakarta.

1.5 Methodology

1.5.1 First stage: Identification of problems and scope of the study

This chapter is outlined to give the basis to develop the research. The main contents of this chapter are problem statement, aim and objectives, as well as scope and limitation of the study. Literature reviews are done on previous studies, journals, statistics, books, newspapers and regulation on safety requirement.

1.5.2 Second stage: Data collections

The data and information will be collected using the following methods:

i. Documents study from collected resources.

ii. Interviews with the safety experts were performed to review data collection document study, to gain information related to the accidents and to consult in improving questionnaires.

iii. Questionnaire for this study was developed based on the objective of the study and divided into four sections. The first section was designed to determine the background of the respondents and their ongoing project. The second section was designed to know the level of severity on each type of accidents in construction site. The third section was designed to know the most frequently occurring accidents in construction site. The fourth section was designed to find the root causes and implementation of the regulation on construction site.

1.5.3 Third stage: Results and data analysis

The result obtained will be presented in tables, graphs and charts. Likert Scalling method will be used to obtain the data of accidents.

1.5.4 Final stage: Conclusion and Recommendation

The conclusion and the recommendation will be based from data analysis.

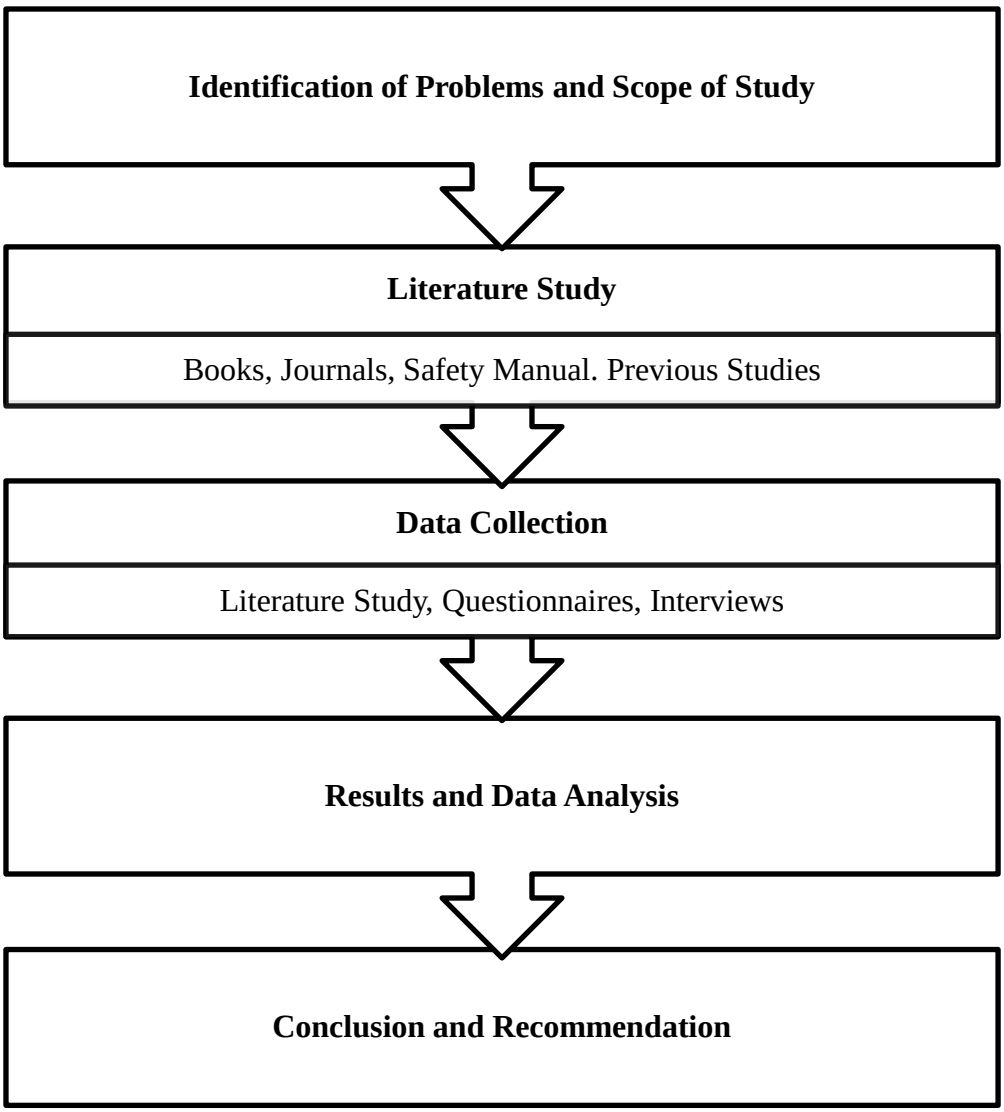

Figure 1.1: Flow Chart of Research Methodology

1.6 Expected Findings

The expected results will be as follow:

i. Success to identify the root causes of construction accident in Jakarta.
ii. Success to evaluate the implementation and effectiveness of the regulation in Jakarta construction site.
iii. Able to recommend the management to mitigate the accident from happening.