

An Analysis of Accidents Statistics in Malaysian Construction Sector

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Abstract—The construction industry undoubtedly plays a significant role in the development process of a country contributing towards employment and economic growth. However, statistics have proven this field to be a highly hazardous industry due to its fatality rates despite recognition on good safety cultures. This study will examine the statistics reported by the Department of Occupational Safety and Health (DOSH), Social Security Organization (SOCSO) as well as the Construction Industry Development Board (CIDB). The aim of this study is to investigate the frequencies of accidents occurrence in the construction sector in Malaysia. The documentary analysis was used as a method for data collection. Results gathered revealed the seriousness of accidents in construction sector. All parties with full support of Malaysia government should play major roles and responsibilities by making sure that appropriate safety practices are carried out to minimize the accident rates in the construction sites.

Keywords—accidents; construction sector

I. INTRODUCTION

The construction industry plays a big role in the development process of a country where successful development would contribute towards the economic growth generating additional demands for construction activities. It is undeniable that the construction industry is a very active and booming industry worldwide proceeding as one of the highest contributing industries towards the country's economy. However, such achievements have also contributed much towards the safety issues where statistics showed that this industry has earned the reputation of being a highly hazardous industry due to its fatality rates [1]. With that statement in mind, this research will investigate the frequencies of accidents occurrence in the construction sector in Malaysia and explore into the underlying factors causing accidents in the construction sector in Malaysia.

II. ACCIDENTS IN CONSTRUCTION SITES

The number of accidents occurrence in the United Kingdom alone saw a highly dominated figure coming from the construction sectors from the year 1995 to 2000 [2]. In the United States, accidents accounted for alone within the construction industry remains the most worrying and dangerous sector although there was a substantial decrease in the year 1999. However, its statistics remains above the average [3]. In other Asian countries, Hong Kong reported a

significant high level of injuries and fatalities encountered also in the construction industry followed by Japan [4]. Malaysia, recorded a worrying increase in the numbers of accidents occurring at the construction sites by the Social Security Organization (SOCSO) indicating the number of permanent disabilities and fatalities from year 1996 to 2008. Although the construction industry is not the highest contributing industry towards the accident statistics in Malaysia, however, its figures showed a very high rate in the year 2000. With such unpredictable figures reported, accidents in this industry have captured the attention and concerns from both governmental and non-governmental organizations. Summary of major accidents in Malaysia's construction sites is tabled in Table I.

TABLE I. SUMMARY OF MAJOR ACCIDENTS IN MALAYSIA'S CONSTRUCTION SITES

2005	2006	2007	2008
1) Tower crane broke into two and fell onto four Indonesian construction workers at a construction site building apartment located at Batu 14, Puchong.	1) Landslide occurred at a construction site located at Taman Desa, Kuala Lumpur buried; killed a 35 year old Indonesian man at about 3.30pm while he was working on some iron steel beam foundations for the five-block 609 units' condominium complexes.	1) Death of two workers and severe injuries on ten workers at The Pavillion Kuala Lumpur, Jalan Bukit Bintang construction site where the cables of the workmen's lift at the posh condominium and shopping complex project snapped and plummeted 15 metres to the ground.	1) Two Malaysian construction workers were buried alive by excavated sand pile in a 3.6m-deep sewer trench at Taman Merbau phase two construction site in Changlun
2) Iron mould weighing almost two tonnes fell from 20 storey condominiums under construction onto Dr. Liew Boon Horng's	2) Negligence of three construction companies, led to the death of another Indonesian worker on 15 May 2006 located at Lot	2) Death of two Malaysian construction workers, buried alive four meters deep in a landslide while working on the fencing located at	2) Twenty five foreign workers escaped without major injuries when the structure they were

BMW; killed him and severely injured his wife and the driver at Plaza Damas located along Jalan Hartamas.	206, Section 63, Lorong Binjai where a 32-storey of 100 units apartment was to be built.	Taman Merbau 2, Fasa III at Kubang, Pasu.	standing gave way in one of the construction sites in Kuching.
	3) Two sides collapsed of a bridge that was under construction at 3.2 kilometers of the Klang Valley Highway that caused the death of two Bangladesh workers.	3) One foreign construction site worker died; another colleague severely injured at the construction site of the prestigious KK Times Square commercial complex after piles of sand fell on them in Kota Kinabalu.	
		4) Three Indonesian construction workers fell from scaffolding to their deaths when they slipped from the top floor of a 21-storey condominium under construction and landed on the fifth floor at Taman Tampoi Indah.	
		5) Bricks fell from the construction site in Taman Bukit Angkasa, Kerinchi on several cars parked at the nearby flats during a three-hour downpour	
		6) Eight huge concrete beams with a measurement of at least 40m long and 70 tonnes weight of an uncompleted flyover near Nilai collapsed,	

		which narrowly missed a motorist and his aged parents	
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Besides that, the Department of Occupational Safety and Health (DOSH) Ministry of Human Resources most recently recorded a worrying rise of accidents in the Construction Industry having severe and fatal accidents occurring every month in the year 2007 and 2008. Table II list the accidents and incidents recorded by DOSH.

TABLE II. ACCIDENTS AND INCIDENTS RECORDED BY DOSH

No	Date	Case	Location
Year 2008			
1	28 Aug 2008	Fall from roof	Construction site, Kedah
2	26 Aug 2008	Struck by concrete bank	Construction site, Penang
3	25 Aug 2008	Struck by scaffolding	Construction site, Kuala Lumpur
4	23 Aug 2008	Slip from roof	Construction site, Kedah
5	01 Aug 2008	Death due to fall from 6 th floor	Construction site, Penang
6	28 Jul 2008	Slip from platform	Construction site, Johor
7	28 Jun 2008	Fall from 9 th floor	Construction site, Johor
8	05 May 2008	Struck by scaffolding frame	Construction site, Selangor
9	23 Apr 2008	Struck against water tank of concrete mixer lorry	Construction site, Sarawak
10	14 Apr 2008	Death due to collapsed tower	Construction site, Selangor
11	05 Apr 2008	Death due to overturned lorry	Construction site, Terengganu
12	25 Feb 2008	Struck by concrete	Construction site, Kuala Lumpur
Year 2007			
1	04 Dec 2007	Struck by wall formwork	Construction site, Penang
2	24 Sep 2007	Struck by pile	Construction site, Sarawak
3	20 Aug 2007	Fall from scaffolding	Construction site, Negeri Sembilan
4	19 Jul 2007	Transformer room explosion	Construction site, Johor
No	Date	Case	Location
Year 2007			
5	01 Jun 2007	Fall from 1 st floor	Construction site, Selangor
6	14 Apr 2007	Fall from 6 th floor	Construction site, Selangor
7	04 Apr 2007	Overturning of excavator into mine	Construction site, Pahang

8	02 Apr 2007	Fall from height	Construction site, Selangor
9	12 Mar 2007	Fall from 7 th to 2 nd floor	Construction site, Kuala Lumpur
10	07 Mar 2007	Fall from 9 th floor to 4 th floor	Construction site, Kuala Lumpur
11	06 Mar 2007	Fall from 16 th floor	Construction site, Selangor
12	06 Mar 2007	Fall from 4 th floor to 1 st floor	Construction site, Kuala Lumpur
13	27 Feb 2007	Fall from roof	Construction site, Negeri Sembilan
14	31 Jan 2007	Fall from 23 rd floor	Construction site, Kuala Lumpur
15	21 Jan 2007	Fall to the first floor	Construction site, Penang
16	11 Jan 2007	Scaffolding collapse	Construction site, Kuala Lumpur
17	02 Jan 2007	Struck by brick wall	Construction site, Johor

Source: Department of Occupational Safety and Health, Ministry of Human Resources (2009)

These reports on accidents merely only describe the cases of accidents, but do not mention the factors that lead to those accidents. According to Monk [5], the common factors causing increased risks of injury to workers are when they are involved in repetitive bending of their backs while lifting a weight causing twisting, working above their shoulder height or prolonged static postures, absorbing excessive vibration while handling equipments as well as poor site conditions without proper housekeeping.

Davis and Tomasin's study [6] stated that workers on site are usually exposed to the risk of physical injury or physical injury hazard in which some of the agents to these hazards are normally in the usage of equipments such as conditions of scaffolds, power access equipments, ladder, excavation and so forth. Top five categories of fatalities in the construction industry namely falls, electrocutions, vehicle rollover, personnel run over by vehicle and excavation cave-ins [7]. During a study conducted by Perttula, Merjama, Kiurula and Laitinen in the context of Finland, they discovered the highest recorded type of accident is over-exertion followed by falling or collapsing objects, falling from height, injury caused by equipments and so forth [8].

There are many studies conducted that identify the main accident types within the construction industry ranging from falls, falling objects and buried under the excavated sand or soil in the context of Malaysia. Could it be possible these occurrences are due to the poor management of the sites or simply just the behaviour and common practices or cultures of the workers passed down at work? Through the statistics and theories drawn down on accidents causation, all these supporting evidence reflects on the needs to investigate what are the factors that affect the occurrence of accidents and its frequencies in the Malaysian. Based on the methods and ways these accidents occurred, it is undeniable that most communities would conclude that employers are at fault and that the welfare of these workers is at risks. Others believe it

is the attitudes of the workers themselves that caused these accidents

III. RECOMMENDATION

Most recently CIDB in order to complement the efforts of DOSH initiated and drawn out a comprehensive Master Plan for Occupational Safety and Health in Construction Industry 2005-2010 [9]. The effort has been fully supported by the Malaysian Government where all parties realized the importance to further minimize the accident rates. This master plan serves to guide all construction stakeholders to strengthen their occupational safety and health activities within the industry where it focuses on six (6) areas identified by the National Occupational Safety and Health Committee for Construction Industry. These areas are namely Enforcement & Legislation, Education and Training, Promotions, Incentives & Disincentive, Standard and Research & Development and Technology. Table III summarizes the Master Plan Action Plan for safety in the construction industry.

TABLE III. SUMMARY OF MASTER PLAN ACTION PLAN FOR SAFETY IN THE CONSTRUCTION INDUSTRY

Action Plan	Recommended Actions
Safety & Health – Enforcement & Legislation	Enhancement of Capabilities of Enforcement Agencies
	Review of Existing Regulations
Safety & Health Training & Education	Training for Safety & Health Personnel
	Senior Management's Training
	OSH Competency to be Pre-Requisite for Registration of Professional Architects, Engineers and Quantity Surveyors and other related professionals
	Workers' Training
	Safety Induction for Construction Personnel
	Seminars
	Other Trainings
	Training Providers/Individual Trainers
	Training on "DO IT YOURSELF" (D.I.Y) OSH Management System for Construction Industry & its Certification
	Construction (Design & Management) Course for Professionals
	Role of Trade Associations in Training
	Role of Workers Organizations
	Integration of Occupational Safety and Health Content into the Curriculum of Trade Schools, Local Colleges and Universities
Capacity Building of Enforcement Agencies Officers	
Safety & Health Promotions	Promotion through electronic media
	Stakeholders role in promoting MS-OSHMS through 'DO IT YOURSELF' program
	Formation of Malaysian Construction Safety and Health Association – MCSHA
	Promoting Safe Work Practices
	Special Certificate of Achievement for Best Practice In Occupational Safety & Health
Safety & Health on	Publication of Safety & Health Prosecutions
	Incentives for Construction Safety & Health

Incentive & Disincentive	Officer Course and Site Safety Supervisor Course
	Incentives by SOCSO
	Incentives from Insurers for Good Risk Management
	Itemization of Safety and Health item in Preliminary
	Tax-Exemption for PPE, all tools and equipment related to safety and health used in the Construction Industry
	Reduction of fee for Occupational Safety & Health Management System
	Certification Incentives for Courses to be Organized by the Proposed Malaysia Construction Safety and Health Association
	Incentives From Employers
Safety & Health Standards	Malaysian Standards
	Guidelines on MS Construction Occupational Health and Safety Management System (MS COSHMS)
	Guidelines for Safe Construction Works
Action Plan	Recommended Actions
	Standards for Scaffolding material and jointing method, workers housing and amenities
	Guidelines on Construction (Design & Management) Regulations (CDM)
	Code of Practice on Construction at Highly Hazardous Workplace
	Hand Book on Good Practice – Occupational Safety and Health at Construction Sites
	Department of Standard Malaysia To Accredited Certification Body For MS COSHMS
	Green Lane Approval for Standard Design and Drawings – Scaffolding, Workers Quarters and Temporary Sanitary System
	Revision to Codes of Practice & Guidelines to Incorporate Latest Legislation & Technology
Safety & Health R & D and Technology	Construction Accident Reporting Mechanism
	New Methods For Preventing Fall From Height
	Research and Development on Project Safety and Health
	Improving the Signal System for Site Traffic Management
	E-Portal for Construction Occupational Safety & Health and On-Line Accident Reporting
	Personal Protective Equipment, Safety tools and Equipment for Working at Height
	Tools and Equipment for Working in Confined Spaces
	Standard Drawings for Temporary Works Implemented by BEM and PAM
	Industrialized Building System (IBS)
	Study on the Suitability and Practicability of Personal Protective Equipment and Safety

	and Health Tools and Equipments for use in Construction Industry in Malaysia
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Source: CIDB Portal-OSH Master Plan

With these implementations enforced by authorities and governmental bodies, construction stakeholders are already given the guide to adapt these strategies into their construction activities while observing strict adherences to the safety of everyone involved in the construction sites.

IV. CONCLUSION

Through the data gathered from this study, it can be concluded that proactive actions are required to overcome the safety issue in construction sector. All parties with full support of Malaysia government should play their major roles by making sure that they practice an appropriate and safe working attitude to minimize the accident rates in the construction sites.

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