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Managing Safety at Work Issues in Construction Works in Malaysia: A Proposal for Legislative Reform

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Abstract

Construction sector, being an important economic driver of the country, has always been regarded as hazardous industry compared to other industries due to the nature of activities involve at the worksites. From excavation works to structural and exterior works, workers are exposed to high risks of accidents mostly involving fall from height, hit by falling objects, lifting operations, and electrocution. Statistics from various agencies have shown considerable increase in the number of industrial accidents reported for the construction industry, including death and permanent disablement cases. This paper proposed to address issues on safety and health at work in construction activities throughout the construction stages, by deliberating how those issues being managed through the use of standard forms of contract for construction projects and adequacy of the legislations pertaining to construction.

Keywords: construction sector, construction contract, construction regulations

1. Introduction

Malaysia is focusing on the 12 NKEAs (National Key Economy Areas) in achieving or realizing a high income status by 2020, and the construction industry is seen to be continuously supported under the 10th Malaysia Plan 2011-2015 (MP10), through the allocation of fund which the construction sector benefits from (The Tenth Malaysia Plan). According to the 20th Productivity Report 2012/2013, productivity growth is highest in the construction sector (15.5%) followed by manufacturing (4.5%) and services (1.8%). The construction sector registered a productivity growth of 15.5% valued at RM21,765 due to the continuous adoption of new designs such as green technology, the Industrialised Building System (IBS) and the modifications made in a number of rules and regulations in the construction industry. Supporting the high productivity growth in construction is the implementation of mega projects under the Government Transformation Programme (GTP) and the Economic Transformation Programme (ETP) as well as the strong demand that has arisen in the non-residential properties segment (Productivity Report 2012/2013, Malaysian Productivity Corporation). A total value of construction works created by the civil engineering and residential activities during the first half of 2013 rose to 13.8% to RM 43.3 billion. Civil engineering contributed the highest share, at 36.1%, followed by non-residential (31.9%) and residential (27.5%) subsectors (The Economic Report 2013/2014).

Construction sector, being an important economic driver of the country, has always been regarded as hazardous industry compared to other industries due to the nature of activities involve at the worksites. From excavation works to structural and exterior works, workers are exposed to high risks of accidents mostly involving fall from height, hit by falling objects, lifting operations, and electrocution. As indicated by Zhou et al. (2013), accident types more prone to occur during construction and the causes for falling accidents were human factors, environment factors, material factors, equipment factors and safety technology factors. Statistics by the Department of Occupational Safety and Health (DOSH) on fatal accidents by sector in 2010 to 2014 showed that construction sector recorded the highest numbers of fatal accidents among other industries in Malaysia (Figure 1) (Annual Report 2012, DOSH).

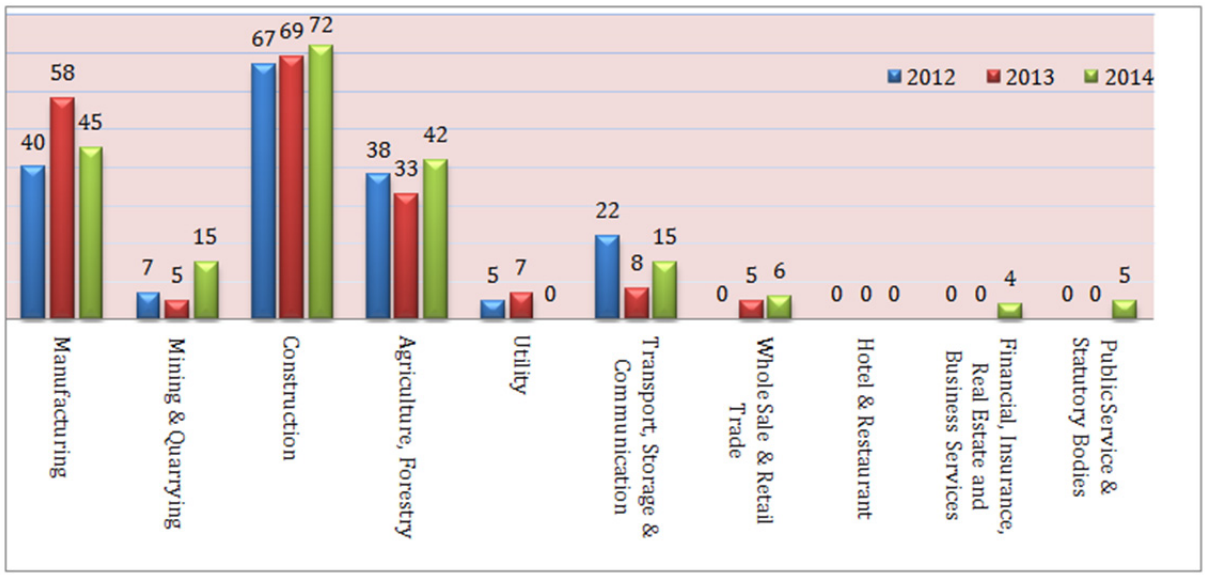

Figure 1. Number of Fatal Accidents (2012-2014)

Source: DOSH Annual Reports.

The number of industrial accidents reported by the Social Security Organization (SOCSO) for the construction industry has also shown an increase from 4,108 in 2009 to 4,665 in 2010 to 4937 in 2011 and further increased to 5177 in 2012. For total permanent disablement paid, from 691 cases in 2009, it has increased to 815 cases in 2010, 1,025 cases in 2011 and further increased to 1,232 in 2012. For total death benefit paid, from 47 cases in 2009, it has increased to 88 cases in 2010, 87 cases in 2011 and further increased to 129 in 2012 (Figure 2)(Annual Reports, SOCSO).

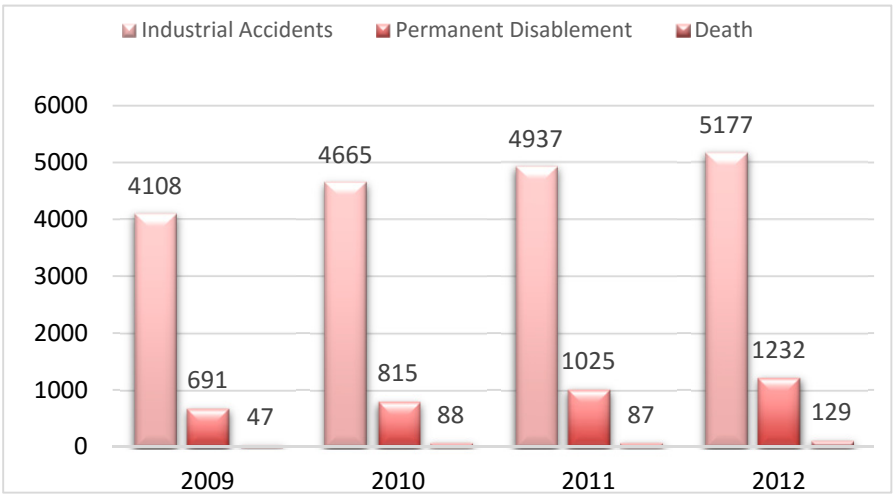

Figure 2. Number of Industrial Accident, Permanent Disablement Paid and Death Benefit Paid in Construction Industry (2009-2012)

Source: SOCSO Annual Reports.

Obviously, the dynamic nature of construction makes it different from other fixed industry in terms of the hazards exposed to all its workers and all people's presence at the construction site. Construction failures during construction activities very much related to construction environment that always need improvement (Yates and Lockley, 2002). The occupational hazards of construction works, including accident risks, heavy physical work,

dusts, noise and vibration, chemicals and many hazardous materials, ergonomic problems and psychological stress has caused the workers' safety at the worksites at stake (Kartam, 2000 and Pomfret, 1994). Adding to that, lack of coordination and communication between contractors and sub contractors is one major cause of accidents in the industry (Siham Ismail, 2003).

During the construction operations, significant numbers of cranes are used for loading and unloading. A research done on the use of cranes showed that the use of cranes with lattice and telescopic booms, truck or crawler mounted, represented over 84% of the fatalities in the use of cranes or derricks. Mobile cranes represented 88.4% of the fatalities (Beavers, et al., 2006). Worst still if the workers do not receive safety training and are not informed of the company's safety programmes or policies (Kartam, 2000).

It is somewhat significant to view that in a study conducted to analyse the relationship between construction safety and quality performance, it was discovered that a project with a poor quality performance had a higher likelihood of injuries (Warnberg, et al., 2013). The result from another study on construction-safety best practices and relationships to safety performance showed that safety performance is improved as the number of safety practices increased (Hinze, 2013). Obviously, it is vital that in order to improve the physical environment, safety risk assessment and employees knowledge, the organization must adopt a holistic strategy that focuses on the above elements. What more important is to foster a strong safety culture in construction through employees' beliefs and attitudes leading to safe behavior (Zou, 2011).

An investigation of the attitudes toward safety in construction was conducted in a pilot study and the finding was that overall participants agreed that safety programs and training had improved safety in their working environment, besides having sound attitude towards safety (McCabe, et al. 2005).

2. Managing Construction Contracts and Activities at the Worksites

Construction projects are generally divided into two categories, building and civil engineering construction. Regardless of the type of structure, the diversity and degree of specialization of work undertaken by the industry involve list of activities which is very diverse, ranging from electrical, plumbing, heating and ventilating, painting, roofing and flooring work to very specialized work such as installing or repairing overhead doors, setting heavy machinery, applying fireproofing, refrigeration work and installing or testing communications systems. Throughout the years of utilizing the buildings or structures, they require maintenance; repair or alteration and eventually they will need to be demolished. Hence, nature of the project determines the safety aspects of work undertaken at the sites and each work activity presents different hazards and solutions, depending on the size of the project as well. In every project there are stages within a project that enable possibility to forecast the principal hazards caused to construction workers (McVittie, 1998).

Main parties to construction contracts are employers and contractors, but construction project involves many other parties who are inter-connected through other contractual arrangements. Commonly the parties involved are the employer, contract administrator, main contractor and sub-contractors. In administering the relationship and works undertaken, there are various types of contract procurement used for construction, either traditional general contracts, design and build contracts, management contracts, construction management contracts, or hybrid contracts. These contracts contain provisions on the obligations of contractors, work progress, completion time of project, insured risk, work supervision, and remedies for fault (Harban, 2005).

It is apparent that every construction phase posts its own hazards during the pre-construction stage, construction stage and post-construction stage.

2.1 Pre-Construction Stage

Architects or civil engineers are the designers who should not be mere producers of drawings but during the designing stage, they are expected to have the ideas on how contractors are likely to work, when putting their design into effect. They must also able to identify the hazards to the contractors. It is important that the designers be able to design out hazards from their design, for the structure to be more buildable as regards health and safety. They should take into consideration during the design stage, the maintenance improvement so that the need for maintenance risk could be reduced. Designers could also give consideration to the use of materials to maintain safety and to provide contractors with hazards information. This would enable the contractors to take into account matters relating to hazards and the necessary safety precautions before tendering projects and during development of their safe work systems (Hinksman, 1998).

2.2 Construction Stage

Construction stage involves excavation, blasting, piling, concrete and formwork, erection of structure and finishing. During excavation, the common hazards found in earthwork or excavation activity are collapse of

excavation or cave-in, toxic gas, workers drown or hit or crushed by machinery, contact with nearby structure and with underground services. Among the common unsafe practices in this activity include superimposed load (from machinery), no access to or egress from the excavation, no side support, working too close with machine and unauthorized passenger at the machine (Hinksman, 1998). Blasting activities and use of explosives has their common hazards of pre-mature collapse of structure and accidental explosion. During piling work, the common hazards found are collapse of piling frame or pile driver, lost of load, workers crushed, noise and contact with underground services (water mains, electrical cables and gas lines).

Fall of workers or tools or objects, support failure during false work or temporary work, protruding rebar or the reinforcement bars and cement burnt from wet concrete are common hazards in concrete work. During the erection of structure the common hazards found are collapse of structure, fall of workers or tools or objects and workers crushed. Among the common unsafe practices include no proper working platform, no safe means of access to or egress from the working place and no fall prevention equipment (Proden and Bachofen, 1998).

Finishing stage (interior and exterior) includes plastering, tiling, flooring, painting, coating, and etc. and the common hazards during the finishing stage are fall of workers from height and contact with the materials used in the finishing works (Linder, 1998).

2.3 Post-Construction Stage

For post-construction stage, the common activities involve renovation and demolition. Refurbishment presents the usual hazards to construction workers: falling and falling materials. Demolition is perhaps the most dangerous construction operation, having all hazards related to working at height and being struck by falling materials. Particularly when the demolition work is carried out in a weakened structure as a result of the demolition, or other damaging situation including storms, flood, fire, explosion or wear and tear (Hinksman, 1998).

3. Standard Forms of Contract for Construction

Construction projects are specifically administered by construction contracts entered into by the employer and the contractor. For construction contracts, there are four institutions or organizations in Malaysia that produced Standard Forms of Agreement or Construction Contracts for the industry at large. The institutions are PAM (Malaysian Institute of Architects), PWD (Public Works Department), CIDB (Construction Industry Development Board) and IEM (Institution of Engineers, Malaysia).

PAM has provided the revised version of building contract forms i.e. PAM Form of Contract 2006. Previously, PAM had the building contract form i.e. PAM 98 Form, which was published in two versions. First version was with quantities and the other was without quantities. PAM 98 Standard Agreement was a revised version of PAM 69 Form. It was observed that PAM produced PAM 98 as to update and replace PAM 69 for the use of the industry at large, and the current PAM 2006 contains certain provisions, which were amended or added into PAM 98 and 69 Form. PAM also produced the PAM 1998 Sub Contract Form to cater works undertaken by nominated sub-contractor (with or without quantities).

Meanwhile PWD as governmental body has produced quite a number of standard forms for the construction works in public sector both for building works and civil engineering works. Despite the fact that the standard agreements are meant mainly for public sector, some of the private organization adopts the said template as their main reference. CIDB has produced three standard forms which are as follows: CIDB Standard Form of Contract for Building Works (2000 Edition), CIDB Standard Form of Sub-Contract for Nominated Sub-contractor (2007 Revised Edition) and CIDB Design and Build Contract. IEM standard agreements are significantly hybrid forms or contracts except for the IEM Conditions Contract for Mechanical and Electrical Works, which corresponds with FIDIC Standard Form. The standard forms or agreements produced by IEM are the: IEM Conditions of Contract for Works (Mainly for Civil Engineering Construction / IEM. CE 1/89), IEM Standard Conditions of Sub-Contract for use in Conjunction with IEM.CE 1/89 (IEM. CE 1/90) and IEM Conditions of Contract for Mechanical and Electrical Works (IEM. CE. 1/94) (Oon, 2002).

The most commonly used Forms by the parties in construction projects are the PAM Form for private sector projects and the PWD Form for public sector projects. It is worth looking into the contents of the contracts, to find out whether the safety and health at work requirements exist in these various types of construction contracts applicable for construction industry.

4. Safety and Health Requirements in Construction Contracts in Malaysia

Most construction contracts contain clauses that oblige the contractor to take out and maintain insurance policy to cover the liability of the Contractor in respect of personal injuries or death, arising out of or in the course of or

by reason of the carrying out of the construction works. In addition to the personal injury insurance, Contractor must register all local workmen employed in the execution of the construction works, under the Employee's Social Security Scheme, in accordance with the Employee's Social Security Act, 1969. Local workmen include workmen who are Malaysian citizens and those with permanent resident status.

For all the foreign workers, the Contractor shall take out and maintain the Workmen's Compensation Insurance Policy under the Workmen's Compensation Act, 1952, Workmen's Compensation (Foreign Workers' Compensation Scheme)(Insurance) Order 1988. The insurance policies in the joint names of employer and the contractor and any sub-contractor must be affected and maintained from the Date of Commencement of the projects until the Date of Practical Completion. For that purpose, the policies cover the employer, contractor and any sub-contractor during the Defects Liability Period for any claim arising in the course of the execution of the construction works.

It is material in the contracts that the insurance policy shall include "cross liability" provision i.e. the insurance shall apply to the Principal Contractor and the Employer as separate insurers. The Superintending Officer has the power to approve the insurer referred to in this provision. In brief, third party interest is rightly protected if this insurance provision is implemented effectively. The Principal Contractor is obliged to surrender or deposit an original insurance policy and all related premium receipts to the Superintending Officer. In the event of default by the Principal Contractor (in taking out or maintaining the insurance policy), the Employer may make himself responsible to take out and/or maintain the necessary insurance policy and the premium payable shall be recoverable from the Contractor or deducted from any payment due to the Contractor under the construction contract. This regulation is clearly enunciated in the specimen agreement.

The above requirement to maintain the insurance policy in respect of personal injuries or death arising out of or in the course of or by reason of the carrying out of the construction works is the only provision that relates to the workers protection under the contract. However the provision on insurance would take effect only upon the occurrence of injury or death of the workers, and function as compensation.

In PAM Contract 2006 (Without Quantities), the clause that specifies contractors' indemnity against injury or death to person or loss and/or damage of property and indemnity to employer against claims by workmen is clause 18 of the Contract. The contract clause demands the Contractor to be liable for and shall indemnify the Employer against any damage, expense, liability, loss, claim or proceedings:

1. Whether arising at common law or by statute in respect of personal injury to or death of any person; and due to loss and/or damage to any property real or personal;
2. Arising out of or in the course of or caused by the carrying out of the construction works; provided always that it is due to negligence, omission, default and/or breach of contract by the Contractor or any person for whom the Contractor is responsible.
3. Arising out of claims by any workman employed in and for execution of the construction works, and for payment of compensation under the Workmen's Compensation Act 1952 and the Employees' Social Security Act 1969.

Apart from PAM Contract, the construction contract that contains specific safety provisions is the *CIDB Standard Form of Contract for Building Works 2000 Edition.* The contract specimen provided by CIDB includes one major term relating to safety and health requirement in clause 14 under the main heading 'Safety at the Site'. The terms comprised of four sub-clause(s) and begin with the empowerment to the Principal Contractor the obligation to comply and secure safety and health by his appointed safety and health personnel and workmen or through appointment of his Sub-contractor. The assurance must be monitored at all times by the Principal Contractor during the execution of the construction work. The specimen agreement defined Contractor or Principal Contractor as the person or firm or corporation whose Tender has been accepted by the Employer and this includes the Contractor's legal successors or personal representatives and any person to whom the rights of the Contractor have been assigned or transferred with agreement in writing of the Employer. The working site is defined in the specimen agreement as the place or places provided or made available by the Employer where the works are to be executed or carried out and any other places as may be designated in the Construction Contract as forming part of the site.

The contract specimen inserts general clause to cover other source of regulation i.e. 'all other relevant safety at work requirements imposed by law including any subsequent amendments to or re-enactment of the said law' (clause 14.1(c)). The specimen also includes any directive or order made by the relevant authorities and/or the Superintending Officer relating to Safety Requirements (clause 14.1(d)). It is observed that the specimen

endorsed parent legislation of FMA 1967 and OSHA 1994 as part of the compliance to safety requirement.

The specimen further requires the Principal Contractor to submit to the appointed Superintending Officer a safety programme within 14 days of the Letter of Award (clause 14.2). The Letter of Award is defined in the definition clause of the specimen as the formal acceptance by the Employer of such tender. The safety programme is to ensure that all construction works or activities are to be carried out in a safe manner and in compliance with the Safety Requirements. Despite the fact that the safety programme is subject to the approval of the appointed Superintending Officer, such approval shall not relieve the contractor's obligations under the contract.

The contract empowers the Principal Contractor to appoint qualified and experienced safety officer (clause 14.3) and the appointed safety officer shall be responsible to ensure full compliance of Safety Requirements in all safety matters relating to construction works. The Principal Contractor from time to time must provide sufficient resources to other safety personnel in ensuring optimum impact of implementation of the safety programme at the construction site. It is observed that this term further stipulates training programme to be conducted by the Principal Contractor for all workmen and employee including workers of the Sub-contractor for compliance with the Safety Requirements.

Providing safety measures is enunciated in the specific term i.e. clause 14.4(a) which requires the Principal Contractor to ensure that the Construction Plant together with the related tools and equipment during the construction project (inclusive Temporary Works) and other items used during the performance of works are in a safe, sound and good condition. The Principal Contractor owed express duty to ensure full capability of the equipment to function for which it is intended. In furtherance to that, the Principal Contractor must provide at his own expense, necessary safety equipment to all workmen at the construction site, including but not limited to safety boots, safety helmets and protective clothing.

In the *CIDB and CICC Model Terms of Construction Contract Between Contractor and Subcontractor for Subcontract Work 2007 (Revised Version)* i.e., under the Contractor and Subcontractor's General Obligation, the provision states the Contractor and Subcontractor's general obligation is to cooperate with each other and all other related parties in the overall construction project and not to disrupt anyone or cause anyone to incur physical injury to persons or damage to property. It is observed that the Principal Contractor and the Subcontractor must establish mutual understanding to ensure no damage or injury is inflicted during the construction works. The Principal Contractor and the subcontractor owed duty to ensure full compliance with all laws, at the place where the work is done. This general duty is enunciated in clause 1.3.1 (iii) of the standard specimen.

The main term which enunciates the importance of safety and health requirement in subcontract works is stated in clause 5.0 under the main heading i.e. Quality, Safety, Health and Environmental Obligations. Pursuant to clause 5.3 of the standard specimen, both the Principal Contractor and the Subcontractor must keep their part of the project site clean and safe at all times. Apart from those duties, the Principal Contractor and the Subcontractor need to comply with all laws on safety, health and environment as provided in the provisions in this construction contract.

Another type of contract specimen that contain Safety at Work provisions is the Public Works Department's contract, the *Standard Form of Design and Build Contract PWD Form DB (Rev.1/2010)***.** The specific safety clause in clause 69 of this standard contract illustrates in detail about the compliance with the Safety Requirements in design and build contract. The contractor shall comply with all relevant laws, regulations, rules, by-laws, directive or order by the relevant authorities on the requirements of safety-at-work. It is also an obligation for the contractor to ensure all related personnel, workmen and sub-contractors at all times during the execution of works, comply with such Safety Requirement. "Works" in this context of design and build contract includes both permanent and temporary works referred by the contractual parties thereof (as illustrated in clause 1: Definition).

The contractor is required to submit a safety programme, within 14 days from the receipt of the Letter of Acceptance by the Government, to the Project Director (clause 69.2(a)). This is to ensure that all construction activities required for the execution of the works are carried out in a safe manner and in compliance with Safety Requirements. It is further elaborated in clause 69.2(b) that the safety programme shall be subjected to the approval of the Project Director. However, mere submission to the Project Director (or even after the safety programme is approved by the Project Manager) would not negate obligations and liabilities pertaining to the safety requirement under this design and build contract.

The contract further empowers the Contractor to appoint a suitable qualified and experienced person as a safety

officer (clause 69.3(a)). The safety officer shall be responsible for compliance with the Safety Requirements and all safety matters relating to the Works. From time to time, the contract is required to provide such other personnel and resources as may be required to ensure the effective implementation of the safety programme on site. In fact, the contractor is obliged to conduct training programmes for all workmen including workmen of its sub-contractors for compliance with the Safety Requirements pursuant to clause 69.3(b) of the standard agreement.

Safety measures are generally required under this design and build contract, profound in clause 69.4 of the standard contract. Clause 69.4(a) requires the Contractor to ensure that the constructional plant together with all other tools and equipment and other item used in the execution of the works are in a safe, sound and good condition and capable of performing the functions for which they are intended. The Contractor is further responsible for instituting a safe method of construction on site for all of the workers and the Contractor must ensure that the appointed sub-contractors (either nominated or otherwise) institute the same method of construction for their workers (clause 69.4(b)). Clause 69.4(c) further expands contractor's responsibility (without limiting general liability owed under the Contract). The Contractor is required to provide all workmen on site with the necessary safety requirement including but not limited to safety boots, safety helmets and protective clothing thereon.

The above elaboration on provisions of contracts that require the Contractors to observe safety requirements for their workers are evidence of the safety issues at sites been given attention by the institutions or organizations in Malaysia that produced Standard Forms of Agreement or Construction Contracts for the industry. These safety clauses are what demanded by the specific legislation on occupational safety and health, whereby the Occupational Safety and Health Act 1994 was enacted as a comprehensive legal framework to control, regulate and manage all issues relating to safety and health of persons at the workplace.

However, an important question that is commonly raised with regards to the construction contract is whether any conduct by the contractor who breaches the safety and health clauses, would cause such contract to be terminated by the employer (owner of project)? As a matter of contract, such safety clauses are the main terms of contract, equal to other enforceable clauses and become Conditions of Contract; and are not mere Warranties. Obviously, if the Contractor neglects to carry out his obligations under the Contract, then the breach becomes event of default and requires remedial action. Failure to remedy the breach would result in termination of the contract.

5. Occupational Safety and Health Act 1994 and Construction Regulations

The cornerstone of the Occupational Safety and Health Act 1994 (OSHA 1994) is the principle of self-regulation, consultation and active participation of workers. Self-regulation is a principle that requires the employer and other duty holders (employee, designer, manufacturer and supplier) under the Act to formulate the best working rules and procedures relating to activities undertaken at the workplace based on the enforced duty provisions (general and specific duties) provided in the Act. Management aspects (basically Plan Do Check and Act), particularly risk management and risk assessment plans are the cardinal principle of self-regulatory philosophy and the relevant matters to be managed by the employer are generally stipulated in section 15 of the OSHA 1994, followed by other specific duties.

As far as the application of the OSHA 1994 to the construction industry is concerned, the scope of the Act (section 1) covers construction as one of the ten industries in Schedule I of the Act. The stipulated provisions under the Act require strict observations by the construction industry, based on the risk management and risk assessment aspects enshrined in the main obligations. The main obligations to observe safety and health provisions are placed on the 'employer' who is defined under the Act as to include 'principal employer' and 'immediate employer'.

'Principal employer" means the owner of an industry or the person with whom an employee has entered into a contract of service and includes:

(a) a manager, agent or person responsible for the payment of salary or wages to an employee;

(b) the occupier of a place of work;

(c) the legal representative of a deceased owner or occupier; and

(d) any government in Malaysia, department of any such government, local authority or statutory body (section 3, OSHA 1994).

"Immediate employer" means in relation to employees employed by or through him, means a person who has undertaken the execution at the place of work where the principal employer is carrying on his trade, business,

profession, vocation, occupation or calling, or under the supervision of the principal employer or his agent, of the whole or any part of any work which is ordinarily part of the work of the trade, business, profession, vocation, occupation or calling of the principal employer or is preliminary to the work carried on in, or incidental to the purpose of, any such trade, business, profession, vocation, occupation or calling, and includes a person by whom the services of an employee who has entered into a contract of service with him are temporarily lent or let on hire to the principal employer (section 3, OSHA 1994).

Looking at the very broad definition, employer in construction industry shall include client/owner of project or employer, contractor, sub-contractor, and occupier of the construction site. In construction projects, the role of the parties include an:

- Employer who undertake the design departmentally (in-house designers), or commission the design from architect or engineer (under contract);
- Contract Administrator who represents employer (being employer's agent) during progress of works who supervises work, transmits information and instructions to contractor and exercises certification and other decision-making powers;
- Principal Contract Administrator who is the engineer or architect or sometimes the quantity surveyor;
- Main Contractor; and
- Sub-contractor who include supplier or nominated sub-contractor.

Hence, the employer has to manage the safety and health aspects of all his employees (including independent contractors engaged by an employer) in accordance with the following duties provided under section 15 of the OSHA 1994:

> *(a)* to provide and maintain plant and systems of work that are safe and without risks to health;
>
> *(b)* to make arrangements for ensuring safety and absence of risks to health in connection with the use or operation, handling, storage and transport of plant and substances;
>
> *(c)* to provide such information, instruction, training and supervision as is necessary to ensure the safety and health at work of his employees;
>
> *(d)* to provide and maintain means of access to and egress from, that are safe and without such risks, as regards any place of work under the control of the employer, and to maintain it in a condition that is safe and without risks to health;
>
> *(e)* to provide and maintain a working environment for his employees that is safe, without risks to health, and adequate as regards facilities for their welfare at work.

All the above general duties are qualified by the phrase 'so far as is practicable' which means the employers shall carry out their duties practicably, having regards to *(a)* the severity of the hazard or risk in question; *(b)* the state of knowledge about the hazard or risk and any way of removing or mitigating the hazard or risk; *(c)* the availability and suitability of ways to remove or mitigate the hazard or risk; and *(d)* the cost of removing or mitigating the hazard or risk (section 3, OSHA 1994). Failure to comply with the above duties would make the employer liable for a fine not exceeding RM50,000 or to imprisonment not exceeding 2 years or both (section 19, OSHA 1994).

Obviously, the duties of the parties involve in construction projects, so long as they are employer by definition under the Act, extend to specific duties to protect other persons (visitors, suppliers, vendors, consultants) other than his employees and contractors' employees at site. Other duties are to appoint safety and health officer and establish a safety and health committee at the workplace, subject to the requirements provided in those respective Regulations made by the Minister. If the parties involve in the construction projects are designer, manufacturer and supplier, then the duties that are demanded from these parties are spelled out in the Act (sections 20 to 23, OSHA 1994).

Despite the general and specific duties elaborated above, there are currently no specific regulations made under the OSHA 1994 that regulate construction activities in the industry. Therefore, the relevant question would be, in absence of any specific Regulations made under the OSHA 1994 to regulate construction activities in the industry, are those provisions under the OSHA 1994 *per se*, adequate to manage safety and health of workers in construction?

In absence of these Regulations, the philosophy attached to OSHA 1994 is self- regulation and requires full awareness, understanding and commitment from the employer and employee and all persons having duties under the Act. As highlighted, management aspects are the cardinal principle of self-regulatory philosophy and the

relevant matters to be managed by the employer are generally stipulated in section 15 of the OSHA 1994, followed by other specific duties. Apart from the employer, there are other persons under the Act who are also the duty holders (employee, designer, manufacturer and supplier). Since the OSHA 1994 was formulated to move from prescriptive Factories and Machinery Act 1967 (FMA 1967) to self-regulatory commitment, we believe there is a need to formulate specific Regulations for construction under the OSHA 1994. As stipulated by one of the objectives of OSHA 1994, the Act is to provide means whereby associated OSH legislations may be progressively replaced by a system of regulations and approved industry codes of practice operating in combination with the provisions of the Act. This objective indicates the intention of replacing any outdated legislation with formulation of specific Regulations and Approved Code of Practice under the OSHA 1994, which will operate in combination to support the full implementation of the OSHA 1994.

6. Proposal for Legislative Reform

In light of the latest development of migrating the FMA 1967 into the OSHA 1994 or merging both statutes, it is worth analyzing and appraising what form of Regulations needed for the construction industry that regulates construction work, from the design to the demolition stage. Specific Regulations under the OSHA 1994 are critically needed for construction works. A new set of Regulations to replace the BOWECS Regulations under the FMA 1967 is worth a proposal. These proposed updated Regulations would cater not only the use of technology advances in construction, but to enforce compliance to the Regulations through the concept of duty holders. Eventually, the whole initiatives should central around managing safety and health at the workplace through prevention of accident and reducing risk, and the duty holders must take ownership of the outcome of the safety and health initiatives. Nevertheless, a complete legal framework is obviously necessary, in order to cater for the prevalent and alarming safety and health issues in the industry.

The new proposed Regulations made for construction shall contain provisions that provide specific duties or obligations of the duty holders involved in construction, who include the employer, occupier, manufacturer, supplier, installer or erector of machinery, employee, self-employed person, designer, coordinator, contractor, sub-contractor, client and owner of projects. The Regulations should also contain general and specific provisions that oblige the employers to manage their working environment that is safe and without risk to health to all workers and other persons during whole construction project, and to contain specific provisions on critical activities carried out during the construction stages, particularly working at height and lifting operations.

Currently, the only Regulations that govern work activities and spelled out provisions for construction are the Factories and Machinery (Building Operations and Works of Engineering Construction)(Safety) Regulations 1986 (BOWECS Regulations), made by the Minister under the power conferred in the FMA 1967. Under the Regulations, the provisions that stipulate the duties of the employer and employee and governed the activities involved in the construction works are found under the following parts of the Regulations:

1. Part III - Concrete Work
2. Part IV - Structural Steel and Precast Concrete Assembly
3. Part V - Cleaning, Repairing and Maintenance of Roof, Gutters, Windows, Louvres and Ventilators
4. Part XI - Demolition
5. Part XII - Excavation Work
6. Part XIII - Material Handling and Storage, Use and Disposal
7. Part XIV - Piling
8. Part XV - Blasting and Use of Explosives

For plants and safety equipment used at work, the relevant provisions are found under the following Parts of the Regulations:

1. Part VI - Catch Platforms
2. Part VII - Chutes, Safety Belts and Nets
3. Part VIII - Runways and Ramps
4. Part IX - Ladders and Step-Ladders
5. Part X - Scaffolds
6. Part XVI - Hand and Power Tools

However, these Regulations were found to have shortcomings in managing construction safety and health at work because of the development and changes of technologies taken place in the industry since 1986. The shortcomings of the BOWECS Regulations 1986 have been identified as too prescriptive and rigid; contain provisions which emphasize more on the physical state of plants and equipment, rather than addressing the process of risk management or risk assessment; inadequate provisions which regulate high-risk related activities, particularly working at height and lifting operations; and the present provisions do not regulate management of work safety at the construction sites (Rozanah, 2006b). It is crucial that the Regulations relating to construction be brought up to date with modern procurement and contracting customs and practice to replace its outdated and obsolete versions.

Most importantly, the formulation of the new Regulations should be made under the OSHA 1994. Effort should be taken towards strengthening the OSHA 1994 and not to retain the FMA and the OSHA side by side as what believed by the authority and the industry to be necessary ten years ago. The reason for the need to retain the implementation of the FMA 1967 side by side with the OSHA 1994 at that time was that a full implementation of the OSHA 1994 without the FMA 1967 was yet to be realized because there was still a need of time to change the mindset and attitude, and the whole working culture of the people in the industry. The old regime of the FMA 1967 has to be retained until the industry was fully committed and ready to move towards the self-regulatory philosophy enshrined in the new regime of the OSHA 1994. Hence, the prescriptive 'tell them what to do' approach under the FMA 1967 was still needed while the industry fully adopts the new goal setting methods as proposed under the OSHA 1994, in which the employers and employees know what they must achieve; and then to achieve compliance through competence (Rozanah, 2006a).

Furthermore, the OSHA 1994 was not supported and clarified by adequate Regulations and Approved Code of Practice, particularly for construction and that justified the need for the regime of the FMA 1967 to be retained; although there was already urgency at that time for the existing BOWECS Regulations 1986 to be reviewed to cater for the problems in construction. The industry was also of the opinion that they must really understand the spirit of the new regime of the OSHA 1994 in order to realize its full implementation. Otherwise, if the concept of self-regulatory were to be practiced without full understanding of the philosophy, it would lead to inconsistency in practice on safety related matters in the industry (Rozanah, 2006a).

In concurrent with the need to replace the old and prescriptive BOWECS Regulations 1986, the two parent legislations i.e. the FMA 1967 and the OSHA 1994 should undergo process of migration or merger of the two Acts. It is no longer appropriate for both legislations to exist side by side, particularly when there were also amendments made to the FMA in 2006 and enforced in 2007 that strengthen the provisions in the FMA 1967, including increase in the amount of penalty (Rozanah, 2009). Instead of taking the effort to move away from the prescriptive FMA 1967, towards achieving the self-regulation philosophy enshrined in the OSHA 1994, the action taken to amend and update the FMA 1967 was seen as moving backward to the prescriptive 'tell them what to do' approach under the FMA 1967. Purportedly, effort should be taken to expedite the formulation of the Regulations and Approved Code of Practice under the OSHA 1994, particularly for construction activities, in order to clarify and explain the general safety duty laid down in the OSHA 1994.

The need for the FMA 1967 to migrate to or merge with the OSHA 1994 is also significant when many of the provisions relating to enforcement found in both legislations are similar. Despite the similar powers for enforcement given to the occupational safety and health officers in both Acts, the penalty for non-compliance are different. The amendment to the FMA in 2006 had increased all penalties including any failure to comply with the improvement or prohibition notices issued by the enforcement officers under the Act, to five times higher than the OSHA 1994. Furthermore, in absence of the specific Order made under the OSHA 1994 for compoundable offences, currently the power to compound offences can only be made under the FMA 1967. These had made the FMA 1967 surpasses the OSHA 1994 when it was amended in 2006. The following explanations elucidate the relevant provisions in both Acts that justify its merging.

7. Power to Issue Notice, Compound and Prosecution under the Legislation

Throughout the years, the Inspectors of the Department of Occupational Safety and Health carry out enforcement of the Act through issuance of Notices (Notice of Improvement or Notice of Prohibition)(section 48, OSHA 1994) to employers and companies who fail to comply with the safety and health requirements demanded by the legislation; or bring prosecution cases against the employers and other duty holders prescribed in the OSHA 1994 for failure to comply with Notices, which carry the penalty of a fine not exceeding fifty thousand (RM50,000) ringgit or to imprisonment for a term not exceeding five years or to both, and to a further fine of five hundred ringgit for each day during which the offence continues (section 49, OSHA 1994).

In 2010, DOSH issued 3881 Notices under the OSHA 1994 and for 2012, there were 4022 Notices issued to the industry violating the statutory requirements. Notices under the FMA 1967 were also issued by DOSH. In 2010 and 2011, 1954 and 2239 Notices were issued respectively for non-compliance cases under the FMA 1967. For prosecution cases, there were 170 cases handled by the Investigation Prosecution Section of DOSH in 2010, and 183 cases in 2011 (Department of Occupational Safety and Health).

7.1 Improvement Notice and Prohibition Notice

Since both OSHA 1994 and FMA 1967 are enforceable to the industry, we shall see that both legislations contain provisions on Notice of Improvement and Notice of Prohibition.

7.1.1 Occupational Safety and Health Act 1994

Under section 48 of the OSHA 1994, the enforcement officer is empowered to serve an Improvement Notice (section 48(1)) on the employer or the occupier or the person under whose control the place of work, plant, substance or process lie, if the officer is of the opinion that a place of work, plant, substance or process is likely to be a danger, or is likely to cause bodily injury or is a serious risk to the health of any person, or is likely to cause damage to any property.

The notice issued shall require the person to take measures to remove the danger or rectify any defect within the specified period given by the officer. Importantly, the place of work, plant, substance or process shall not be used or operated even after the period of expiry of the notice if the danger has not been removed or the defect has not been made good to the satisfaction of the officer.

However, if the enforcement is of the opinion that the defect above is likely to cause immediate danger to life or property, he shall serve a Prohibition Notice prohibiting the use or operation of the place of work, plant, substance or process until such time that any danger posed is removed and the defect made good to the satisfaction of the officer (section 48(2)).

Other actions that can be exercised by the enforcement officer include:

- Inserting in the Improvement Notice or Prohibition Notice, directions as to the measures to be taken to remove any danger, likely danger, risk, matter or activity to which the notice relates. The directions may refer to any approved industry code of practice (ACOP).
- Proceed to render inoperative the place of work, plant, substance or process by any means he may deem best suited for the purpose (section 48(5)), and he may, if he deems fit, recover the cost of the action from the occupier or person having responsibility or control of the place of work, plant, substance or process (section 48(6)).

Any person who without reasonable excuse fails to comply with any improvement or prohibition notice issued under section 48 shall be guilty of an offence and shall, on conviction, be liable to a fine not exceeding fifty thousand ringgit (RM50,000) or to imprisonment for a term not exceeding five years or to both, and to a further fine of five hundred ringgit (RM500) for each day during which the offence continues (section 49(2)).

7.1.2 Factories and Machinery Act 1967

For moving, alteration of or addition to machinery, section 39(3) of the FMA 1967 provides that if the machinery does not comply with the requirements of this Act, the Inspector shall serve on the occupier a notice in writing, requiring such defects to be made good or removed within the period specified in the notice and the machinery shall not be operated after the expiry of that period unless the defects have been made good or removed to the satisfaction of the Inspector. On payment of the prescribed fee, the Inspector shall permit its use and where applicable endorse the certificate of fitness.

If the Inspector is of the opinion that the defect is likely to cause immediate danger to life or property, he shall serve notice, prohibiting the operation of the machinery until the defect is made good or removed, and in that case the machinery shall not be operated so long as the prohibition remains unrevoked.

However when the amendment to the FMA was made in 2006, the penalty under the FMA 1967 has been increased to five times higher than the OSHA 1994, with regards to failure to comply with any improvement or prohibition notice issued under the Act. Section 51(4) of the FMA 1967 provides that “any person who without reasonable excuse fails to comply with any written order or notice issued under subsection 39(3) or 40(4) shall be guilty of an offence and shall on conviction be liable to a fine not exceeding two hundred and fifty thousand ringgit (RM250,000) or to imprisonment for a term not exceeding five years or to both and to a further fine not exceeding two thousand ringgit (RM2,000) for each day or part of a day during which the offence continues after the first day in respect of which the conviction is recorded”.

Another provision that empowers the Inspector to issue Improvement Notice or Prohibition Notice with regards to safe factory and machinery is section 40(4) of the FMA 1967 which states, "if the Inspector is of the opinion that the use of any part of the ways or works in a factory, or machinery is likely to cause bodily injury to any person or damage to any property, he shall by notice in writing served on the occupier, require the defect to be made good or removed within the stipulated period. That part of the ways or works in that factory shall not be used or the machinery shall not be operated after the expiry of that period unless the defect has been made good or removed to the satisfaction of the Inspector expressed in writing. Provided that if the Inspector is of the opinion that the defect is likely to cause immediate danger to life or property, he shall by notice served, prohibit the operation and use of the said machinery until the defect is made good or removed to the satisfaction of the Inspector expressed in writing. The Inspector may also render the machinery inoperative by any means he may deem best suited for the purpose".

7.2 Compounding Offences

Both legislations, the OSHA 1994 and the FMA 1967 provide provisions for compounding offences.

7.2.1 Occupational Safety and Health Act 1994

Under section 62 of the Act, the Minister may by order in the *Gazette,* prescribe any offence under this Act or any regulation made thereunder as an offence, which may be compounded. Currently, under the OSHA 1994, there are no compoundable offences, as section 62 requires an Order be made by the Minister and gazetted to prescribe the type of offences that may be compounded. There is yet any Order made by the Minister under the provision. If there is, then any offence may be compounded by the DOSH before conviction, by collecting from the person reasonably suspected of having committed the offence, a sum of money not exceeding the amount of the maximum fine to which the person would have been liable to if he had been convicted of the offence. The Director General however, shall allow compound only if the person suspected admits in writing that he has committed the offence and requests the Director General to deal with the offence under this section.

7.2.2 Factories and Machinery Act 1967

Under the FMA 1967, the power to compound offences committed by any person which is punishable under the Act is given to the Chief Inspector or his Deputy or other Senior Inspector, with the consent in writing of the Public Prosecutor (section 52A(1)). Currently, all compoundable offences are exercised under the FMA 1967. Compounding of the offence is by making a written offer to the person who has committed the offence, to compound the offence on the payment to the Chief Inspector or the Deputy Chief Inspector or the Senior Inspector, within such time and such sum of money specified in the offer. The sum of money offered shall not exceed fifty per centum (50%) of the amount of the maximum fine (including the daily fine, if any, in the case of a continuing offence) to which the person would have been liable if he had been convicted of the offence (section 52A(2)). Any offence that has been compounded shall not be brought for prosecution (section 52A(4)).

7.3 Prosecutions

Any compounding of an offence may be made at any time after the offence has been committed, but before any prosecution is instituted, and where the amount specified in the offer is not paid within the time specified in the offer, or within such extended period as the Chief Inspector or the Deputy Chief Inspector or the Senior Inspector may grant, prosecution for the offence may be instituted at any time thereafter against the person to whom the offer was made (section 52A(3), FMA 1967). For both legislations, prosecution shall only be instituted and conducted by the enforcement officers after obtaining prior written consent of the Public Prosecutor (section 52, FMA 1967 and section 61, OSHA 1994).

8. Conclusion

Summarily, there is a need to have specific Regulations made for construction under the OSHA 1994, as the current BOWECS Regulations under the FMA 1967 were found to have shortcomings in managing construction safety and health at work due to the development and changes of technologies taken place in the industry. Most importantly, the formulation of the new Construction Regulations under the OSHA 1994 is timely, with the need to merge the two main legislations, i.e., the FMA 1967 and the OSHA 1994. It is no longer appropriate for both legislations to exist side by side when the objective of formulating the OSHA 1994 is to move away from the prescriptive legislation, towards enabling legal framework that foster the self-regulatory principle in ensuring safe and healthy working environment at the workplace. These proposed updated Regulations must cater not only the use of technology advances in construction, but to enforce compliance to the Regulations through the concept of duty holders. Eventually, the whole initiatives should central around managing safety and health at the workplace through prevention of accident and reducing risk; and the duty holders must take ownership of the

outcome of the safety and health initiatives shouldered by them, including the contractual liability agreed upon in their contracts sealed for construction projects.

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