SECURING IMPROVEMENT IN THE HEALTH & SAFETY PERFORMANCE OF MALAYSIA'S CONSTRUCTION INDUSTRY

CIDB MALAYSIA

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FOREWORD

A HIGH level of safety is crucial and should be a prerequisite for transforming the construction industry into a more responsible and developed industry. In order to significantly improve the safety performance the industry, we must take stock of the existing ecosystem and how it can be improved to so that safety can be ingrained as an industry culture, moving forward.

It is with this objective in mind that the Construction Industry Development Board of Malaysia (CIDB) commissioned the United Kingdom Health & Safety Executive (HSE UK), a national regulator for workplace health and safety in the UK, to undertake this independent study titled ***Securing Improvement in the Health & Safety Performance of Malaysia's Construction Industry***.

The HSE UK has a profound reputation as the global authority in the realm of workplace health, safety and welfare as well as occupational risk research.

Findings and proposals made in this independent study will serve as an invaluable guide for the construction industry players and stakeholders to address the high rate of worksite accidents and fatalities nationwide.

The overall improvement of safety and health in the construction industry in Malaysia will enhance its overall productivity and ultimately uplift the overall image of the industry.

I wish to thank each and every individual and groups who have contributed to the successful completion of this study. May the findings of the study help us to transform the construction industry to be a safe, professional industry which all of us can be proud of.

Dato' Ir. Ahmad 'Asri Abdul Hamid
Chief Executive
CIDB Malaysia

EXECUTIVE SUMMARY

THIS report stems from a request to the UK Health & Safety Executive (HSE) by the Construction Research Institute of Malaysia (CREAM), the research agency of the Construction Industry Development Board of Malaysia (CIDB), to conduct a review on the CIDB's Construction Industry Transformation Programme 2016-2020 (CITP) and the legislative framework relevant to the health and safety performance of the Malaysian construction industry.

In this regard, HSE was asked to propose improvements to further enhance the health and safety performance in Malaysia's construction industry as well as to provide advice on the necessary steps to ensure a successful introduction of its Department of Occupational Safety and Health's (DOSH) Guidelines on Occupational Safety and Health in Construction Industry (Management) 2017 (GOSHCIM) into the Malaysian legislation.

Our main recommendations are listed in Chapter 9 of this report.

This review was undertaken in September 2017 by two of HSE's Principal Inspectors of Health & Safety. It built upon work previously undertaken by HSE at the CIDB's Construction Safety Conference and during a meeting of Malaysian construction industry leaders chaired by the-then Malaysian Minister of Works in Kuala Lumpur in April 2017.

Doubtlessly, the significant growth enjoyed by the Malaysian construction industry over the past few years have benefited both the industry itself and the wider Malaysian economy. Unfortunately, such success has come at a significant cost to the health & safety of the industry's workforce.

The health & safety performance of the Malaysian construction industry is not only poor in relative terms when judged against the UK and some neighbouring countries, but it is currently moving in the wrong direction, especially at a time when other industries in Malaysia are making significant improvement.

Put simply, the Malaysian construction industry is currently killing its workforce at a rate which is approximately 10 times higher than that in the UK, while dragging the health & safety performance of the whole of Malaysian industry down.

The Malaysian Occupational Safety & Health Master Plan 2016-2020 lays out a very clear and well-developed strategic direction for workplace health & safety in the country. That message has been heard across many industrial segments with improving performance level.

However, not every industrial segment has responded to that message given if they had, they would then have taken the necessary action to seek the required improvement. At a glance, the Malaysian construction industry – if viewed as a whole – seems to have fared miserably in the aspect of taking ownership and responsibility for its own poor performance.

The review involved a desktop study of relevant literature, guidance and standards, followed by a five-day working visit to Malaysia which entailed detailed discussions with CIDB, CREAM

and DOSH as well as a series of meetings with representatives from six key stakeholder groups within the Malaysian construction industry.

When asked to describe problems facing the industry – relevant to achieving an improvement in health & safety performance – all the groups were broadly consistent in painting a picture of an industry in which all the risks relating to health and safety are currently borne by the contractors and the workforce, with little ownership of it being taken by developers and designers.

Many developers currently operating in Malaysia would appear to have little interest in shifting from the status quo where the contractor and workforce currently bear all the risk. This is despite the very fact that they have emerged the biggest beneficiaries – and continue to be so – from an industry structure which has achieved significant year-on-year growth and profitability.

This is in part built on cheap, unskilled and largely migrant labour in which they have taken little or no ownership for the risks which they have been largely responsible for creating by their appointment of the principal parties and by the pricing and scheduling decisions which they have taken.

The other significant group which has a considerable influence over the risks relevant to the construction phase of a project are those involved in structural design. It appears that they currently offer insufficient consideration to reducing that risk which then has to be managed by the contractor undertaking the construction work.

Risks which have been eliminated from the construction phase of a project by the designers are clearly risks which no longer have to be managed by the contractor. The more risk that can be eliminated or reduced at source would translate into a smaller quantity of residual risk the contractor has to address.

This concept is fundamental to the proposed GOSHCIM approach to risk reduction in the construction industry.

Indeed, the Malaysian construction industry faces significant skills challenge at many levels. Many of the competencies required for the development and sustainability of an industry performing to a high health & safety standard are not present in sufficient scale.

This ranges from designers to senior site management, and from workplace safety officers to site supervisors and the actual workforce.

Much of the caution expressed about the potential for the construction industry to achieve the improved performance as intended by the CITP resulted not from the view that the industry would be unwilling to make the fundamental change required, but to a belief that the shortage of competent personnel in all of these key areas would be a significant bar to achieving that progress at the required rate.

This skill and competency issue goes deeper than the view that the difficulties and poor safety performance of the industry are due to the unskilled nature of the migrant workforce.

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An industry truly determined to achieve the performance envisaged by CITP would be able to manage the issues associated with a low-skilled, migrant workforce by leveraging improved leadership by the developer, enhanced design and more competent site management & supervision.

There was a consistent message from all parties that DOSH needs to take a stronger inspection role with greater levels of enforcement without which it was felt that little would be achieved.

There was agreement that voluntary guidelines were often ignored by the industry and that the current level of penalty upon conviction – even for fatal accidents – was far too low and did not act as a deterrent to non-compliance.

The CITP promotes and supports the positive notion that Malaysian construction companies will become successful in competing for major construction projects all around the world. As a strategy document, it provides a very useful starting point to spur action towards achieving this goal.

It is very clear on the need and rationale for change in the industry, as well as on the intended outcome of the programme. The CIDB initiatives which are linked to the CITP Quality, Safety & Professionalism (QSP) thrust appear to be well-considered and sensible.

In our opinion, however, the CITP QSP thrust will only impact upon a small proportion of the industry, and is therefore unlikely to achieve the objective of bringing about a significant improvement in the health & safety performance to the whole of the Malaysian construction industry.

We see little in the QSP thrust which we believe has the bandwidth and necessary focus on the key issues necessary to achieve the intended improvement in performance within the very tight 2020 timescale as set out in the CITP.

We are concerned that there is nothing in the CITP which emits the necessary loud enough or crystal clear signal to the industry as a whole that the current situation is unacceptable or that things have to change. It is the responsibility of those who are creating the risks which result in high fatal accident rates who have to take ownership of the current situation and come up with a strategy to address it.

While the CITP target for improvement is rightly ambitious, we do not believe that the programme of initiatives set out in the QSP thrust of the CITP are equally so.

Similarly, while the programme provides a significant step in the right direction, we do not believe that it sufficiently addresses the fundamental issues prevalent within the industry which can be summarised as those with the ultimate responsibility and influence are not demonstrating sufficient ownership of the risks being created under their control.

Likewise, there appears to be an inadequate number of people at all levels in the industry with the appropriate skills and competencies to manage health & safety to the level required to make the desired improvement in performance.

In our opinion, the CITP in the area of health & safety is not sufficiently ambitious or focused on achieving the fundamental change necessary, hence running a significant risk of not achieving its stated objective.

The industry – perhaps due to its success – appears to have grown to a level which is currently overly-stretching its capability to achieve an acceptable level of health & safety performance. The key next step is for the industry to take ownership of this issue.

The overnment must take every opportunity to ensure that it is the industry which takes the lead on owning the issue, and that the industry both develops and implements the solution.

The Malaysian legislative framework with regard to the health & safety of those involved in the construction industry, is potentially confusing and can on the face of it appears to be overly complicated.

If GOSHCIM is introduced into the Malaysian legislation, this will present a fundamental change to the way that a number of the principal parties associated with the construction procurement and construction process is required to undertake their work.

The rationale for imposing these new legal requirements on developers and designers is very clear and has been well-made by those within the Malaysian Government and its agencies.

Both of these parties, through their appointments, decisions and actions, have the potential to exert considerable influence on the subsequent health & safety performance of the project being undertaken on behalf of the developer by the contractor.

The mandating of the GOSHCIM guidelines will not come without significant challenges, none of which should be used as a reason to prevent the change from taking place. In our opinion, it will be critical for Malaysia to achieve its desired improvement in its health & safety performance and being able to compete successfully on the world stage.

Without this change, we believe that the health & safety performance of the Malaysian construction industry may well continue to deteriorate.

In essence, the government must be ambitious, able to lead by example and be an exemplar in all construction activities carried out on its behalf, as well as to demonstrate and provide a lead in the industry with regard to the benefits of improved health & safety performance.

The Malaysian construction industry has a tremendous vitality. That drive must now be harnessed to ensure that all those involved in it are able to share in its success, and in particular, those individuals working on its construction sites are able to go home at the end of their working day.

No industry which hopes to compete on the global stage should set itself any lower expectation that that.

ACKNOWLEDGEMENTS

THE UK-based Health & Safety Executive and the authors wish to express their thanks and gratitude to the following organizations for their support and guidance during the review process which has resulted in the production of this report:

>> The Ministry of Works Malaysia

>> The Construction Industry Development Board Malaysia (CIDB)

>> The Department of Occupational Safety & Health (DOSH)

>> All individuals and organisations who participated in the series of stakeholder meetings and the construction site visits.

CHAPTER 1
INTRODUCTION

THE Construction Industry Development Board of Malaysia (CIDB), through its research agency the Construction Research Institute of Malaysia (CREAM), had requested the UK Health & Safety Executive (HSE) to conduct a review of both the CIDB's Construction Industry Transformation Programme 2016-2020 (CITP) and the Malaysian legislative framework relevant to the health and safety performance of the Malaysian construction industry.

The task accorded to HSE was to propose improvements with regard to the CITP implementation which would further spur the industry to greater heights.

Additionally, HSE was also tasked to provide advice on the necessary steps to ensure a successful introduction of the Department of Occupational Safety and Health's (DOSH) *Guidelines on Occupational Safety and Health in Construction Industry (Management)* 2017 (GOSHCIM) into the Malaysian legislation.

For the record, the UK introduced broadly similar requirements into its health & safety legislation in the form of the Construction (Design & Management) Regulations (CDM) in 1994. It was hoped that the lessons learnt from the UK's experience in introducing such a fundamental change into its legislation could be emulated to assist the transition of the DOSH guidelines into Malaysian law.

This review was undertaken in September 2017 by two of HSE's Principal Inspectors of Health & Safety, namely Mr Nic Rigby and Mr Neil Jamieson.

This project built upon engagement work previously undertaken by Mr Rigby at the CIDB's Construction Safety Conference and at a meeting of Malaysian construction industry leaders, chaired by the-then Malaysian Minister of Works, Dato' Sri Fadillah Yusof, both of which took place in Kuala Lumpur in April 2017.


CAPTAINS OF INDUSTRY
ROUNDTABLE DISCUSSION

CHAPTER 2
BACKGROUND

YOU only have to look round the skyline of Kuala Lumpur to recognise that the Malaysian construction industry is capable of constructing some extremely impressive structures. However, while the industry has significant capability and has enjoyed very significant and positive commercial growth over the last decade, its current health and safety performance is poor relative to international comparison.

In fact, there are little signs of improvement despite the efforts of the Malaysian Government and its agencies to boost its performance.

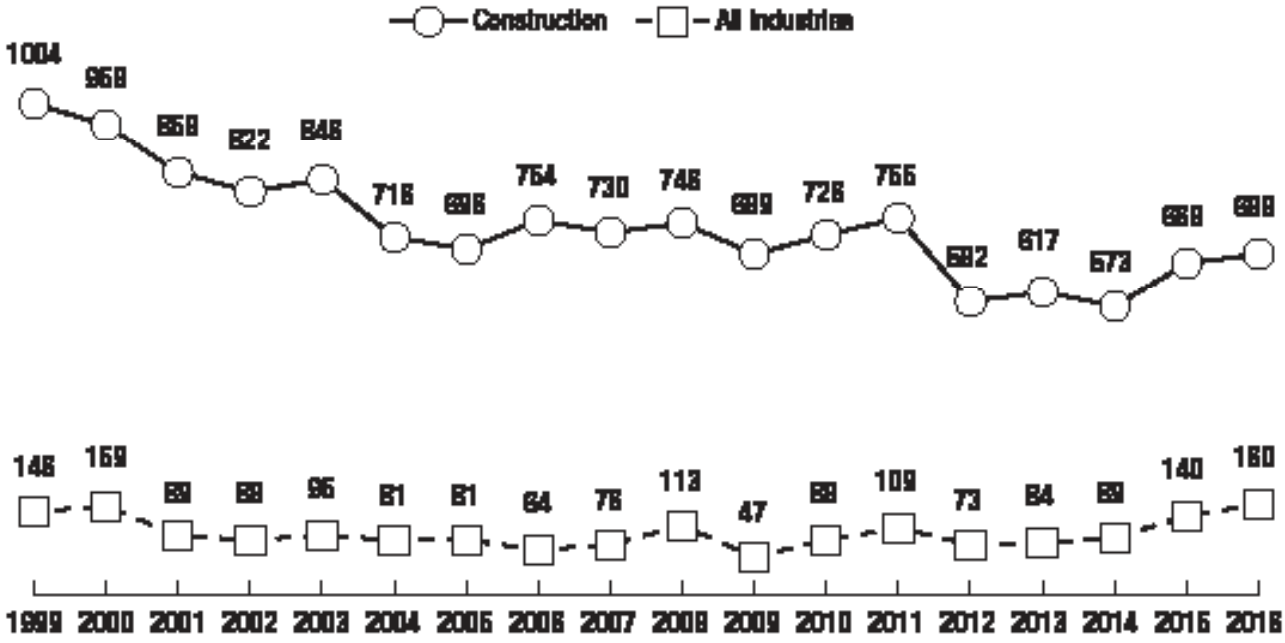
The industry employs an estimated 1.2 million registered workers or approximately 9.5% of Malaysia's total workforce. However, in 2016 the industry was responsible for more than 23% of workplace fatalities across all industries *(see Table 1).*

There were 160 reported fatal accidents in the Malaysian construction industry, a 340% increase from the lowest recorded figure this century – 47 reported fatal accidents in 2009.

Over the same seven-year period, the number of reported fatal workplace accidents across all industries (which includes construction) remained unchanged. If the number of fatal accidents in construction is discounted from the

TABLE 1

Number of workplace fatal accidents in Malaysia from 1999 to 2016



Source: DOSH

all-industry figures, then the number of fatalities in all other industries actually fell over the same period by 18%.

It appears, however, that Malaysia experienced an exceptionally low number of fatal accidents in the construction industry in 2009, hence this may not be a useful baseline year for comparison purposes.

When considered across the whole of the period from 1999 to 2016, the number of fatalities in the construction industry increased by 10% from 146 to 160.

In the same period, the number of reported fatal workplace accidents across all industries (which includes construction) fell by 31%. If the number of fatal accidents in construction is discounted from the all-industry figures, then the number of fatalities in all other industries fell over the same period by 39%.

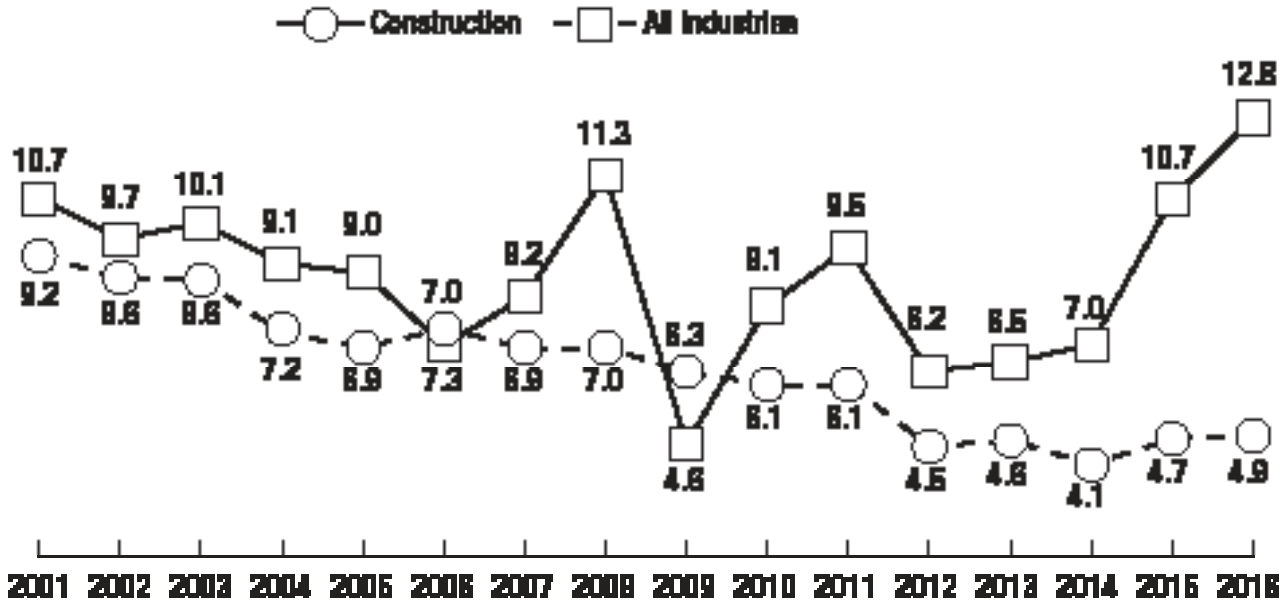
Between 2001 and 2016 the Fatal Accident Rate in the Malaysian construction industry increased from 10.7 to 12.8, a rise of 20%. By comparison, the Fatal Accident Rate in the UK construction industry over the same period fell by 70% (from 4.9 to 1.3).

Over the same period, the Fatal Accident Rate across all Malaysian industries (including construction with its 20% increase) also fell from 9.2 to 4.9, a decrease of 47%.

The consideration of the fatal accident data above

TABLE 2

Workplace Fatal Accident Rate (FAR) in Malaysia from 2001 to 2016



Source: DOSH

Note: *The Fatal Accident Rate (FAR) is a measure of the number of fatalities per 100,000 workers. It is often used for comparative purposes to demonstrate changes in health & safety performance over time within an industrial sector or between sectors or countries. It is normally considered to be a more useful indicator than the actual number of fatalities as it takes into account the number of workers in the particular industry under consideration and therefore allows for statistical comparison over time or between industrial sectors or countries.*

is predicated on the basis that the collection of such data in Malaysia is reliable. Many of the organisations spoken to during the review commented that they believed there was very significant under-reporting of non-fatal injuries in the construction industry.

Clearly when establishing a programme of work targeted on the quantitative reduction of accidents, it is important that the data is sufficiently reliable to allow conclusions to be drawn about the success or otherwise of the programme.

It is very apparent that the health & safety performance of the Malaysian construction industry is not only poor in relative terms when judged against the UK and other countries, but what is even more appalling is that it is moving at considerable pace in the wrong direction at a time when other industries in Malaysia are making significant improvement.

Put simply, the construction industry in Malaysia is currently killing its workforce at a rate which is approximately 10 times higher than that in the UK, while at the same time, drags down the health & safety performance across that of a wide-ranging industries in Malaysia.

CHAPTER 3
METHODOLOGY

THE review involved an initial desktop study of relevant literature, guidance and standards provided to the UK Health & Safety Executive (HSE) by the CIDB & Construction Research Institute of Malaysia (CREAM). A schedule of the documents provided to HSE can be found at Annex 1.

This was followed by a five-day working visit to Malaysia which included detailed discussions with CIDB, CREAM and the Department of Occupational Safety & Health (DOSH). The visit also included a series of meetings with representatives from six key stakeholder groups in the Malaysian construction industry. The stakeholder groups were selected by HSE, while those individual organisations which attended the meetings were selected by CREAM.

The stakeholder groups and the organisations represented are detailed in Annex 2.

The purpose of the stakeholder meetings was to seek the views of these key sectors of the Malaysian construction industry in respect of three pertinent questions:

1> Why does the Malaysian construction industry have such relatively poor health & safety performance?

2> What are the positive and negative aspects of CIDB's Construction Industry Transformation Programme 2016-2020 (CITP)? In particular, what are the obstacles to the CITP achieving its stated aim of reducing the number of fatal and other accidents in the construction industry by 50% by 2020?

3> With regard to the introduction of the DOSH Guidelines on Occupational Safety & Health in Construction Industry (Management) 2017 (GOSHCIM) guidelines into Malaysian legislation:
a. How would your sector of the industry respond?
b. What issues would prevent GOSHCIM from working in Malaysia, if mandated?

Each of the stakeholder meeting was conducted in a similar way, with a brief introductory presentation by HSE of the issues to be discussed, an explanation of the effects from the introduction of UK's Construction (Design and Management) Regulations (CDM Regulations) and an open discussion of the three questions listed above.

The discussions were wide-reaching, and all parties were forthcoming with their views which greatly assisted HSE's understanding of the current situation in the Malaysian construction industry.

Although the numbers attending each meeting were relatively small and unlikely therefore to meet any statistical standard, there was sufficient consistency in the responses received within each group. Such feedback exuded confidence that the wider industry sectors represented by each group would have responded in a similar fashion.

During the review, a visit was made to a live construction site whereby a discussion with the site management team and representatives from the architect and designers involved in the project was staged along similar lines to the discussions held during meetings with the six stakeholders earlier.

Further reference material was subsequently provided to HSE by CREAM and DOSH post-visit. This material is included in Annex 1.

CHAPTER 4
STAKEHOLDER GROUP FEEDBACK

4.1 FEEDBACK SUMMARY

BELOW is a summary of opinions from the six stakeholder groups as well as those involved in the site visit discussion (separated by common themes).

1 Why does the Malaysian construction industry have such relatively poor H&S performance?

Industry Structure

>> The construction industry has outgrown its capabilities;
>> The industry is happy with the 'old way' of doing things – developers and designers don't have to worry about risks and the consequences of things going wrong but are happy to take little ownership for the risks they create;
>> The whole industry is built around and dependent on cheap, unskilled labour;
>> There is no appetite for improvement in smaller projects – happy to keep doing it 'the same old way';
>> Very poor cultural mind-set of the industry – a general acceptance that accidents and deaths will occur in construction;
>> Widespread view that safety provision is an optional extra;
>> Limited appreciation of the need for safety provision on low level developments (<4 storeys);
>> Insufficient number of skilled workers;
>> Malaysian sites are used as training grounds for unskilled migrant workers;
>> Insufficient number of trained & competent supervisors;
>> Senior management of contractors have insufficient knowledge of what 'good' health & safety performance is all about;
>> Insufficient number of trained workplace safety officers and site safety supervisors;
>> Long subcontract chains where responsibility for safety is passed down to the lowest level;
>> Contractors won't do anything until told to do so by DOSH;
>> Very little innovation in the industry – low-cost labour solutions are preferred;
>> Contractors are routinely squeezed by developers on the margin available for spending on safety;
>> Developers play no active role in safety on their developments, and
>> Smaller projects do not report accidents.

Developers

>> Developers set unrealistically short build schedules;
>> Developers are only interested in the finished structure – they have no interest in safety during the construction phase, and
>> Developers are largely unaware of the potential commercial benefits of CDM/ GOSHCIM.

Designers

>> Designers are only interested in the finished structure;
>> Designers work too remotely from contractors;
>> Designers have a poor understanding of the construction process;
>> Poor design quality of temporary works;
>> Designers give little or no consideration to buildability;

- >> Little thought is ever given to designing risk out of the construction process – construction phase safety is not important to designers, and
- >> Design and engineering profession work in isolation from each other and from the contractors.

The Site Workforce

- >> Workforce has no significant representation and no voice;
- >> There is no impetus to upskill a workforce which then becomes more expensive and leaves Malaysia to work elsewhere;
- >> Low-skilled migrant workforce forms too high a proportion of the workforce;
- >> Too fast a rotation of the migrant workforce (due to work visa requirements and prospect of pay hike when they become more skilled);
- >> Workforce of bottom tier subcontractor doesn't receive briefings suitable for them (at the appropriate level, in their language etc), and
- >> Too much reliance on work agencies who take no responsibility for the safety of the workers they assigned.

Regulatory Framework & the Regulator

- >> Most requirements are not law, hence why should contractors be bothered;
- >> Too many regulatory obstacles and too much unnecessary bureaucracy with no obvious safety benefit;
- >> Too few DOSH inspectors;
- >> Too little enforcement;
- >> Too little inspection & enforcement on smaller sites;
- >> Penalties are far too low to be a deterrent, and
- >> Confusion over the role of the different regulators.

2 What are the positive & negative aspects of CIDB's CITP and in particular what are the obstacles to the CITP achieving the stated aim of reducing the number of fatal accidents in the construction industry by 50% come 2020?

Positive

- >> CITP sets a positive goal;
- >> CIDB is recognised as being a positive influence on safety;
- >> CITP provides a very positive and overdue focus on workers' amenities;
- >> The industry has to start from somewhere and this looks about right, and
- >> Big industry players need to lead from the front for it to succeed.

Negative

- >> How can CITP achieve anything if contractors are unaware of it?;
- >> A 50% reduction is not achievable;
- >> A very challenging target;
- >> Many sectors of the industry will simply ignore it, and
- >> Not achievable by 2020 – too soon.

3 Introduction of the DOSH GOSHCIM guidelines into Malaysian legislation

- >> The industry is broadly supportive, but this is a big task;

- >> Is the industry ready for such a fundamental change?;
- >> The cost of compliance will rise – will that be accepted by developers?;
- >> How will the government get developers on their side?;
- >> Big industry players can positively influence very large supply chains;
- >> The government has to lead by example;
- >> 'Champion' companies are needed to lead the way;
- >> Case studies are needed to help sell the benefits;
- >> It will not work if not enshrined in legislation;
- >> Needs strong enforcement by DOSH;
- >> Penalties for non-compliance need to be increased – the current maximum is not a deterrent;
- >> Insufficient number of competent designers in Malaysia;
- >> Designers currently have little appreciation of the construction process, and
- >> Mechanisms are needed for sharing good design practice.

4.2 COMMENT ON THE STAKEHOLDER GROUP MEETINGS

The very useful range of views presented by participants at the respective stakeholder meetings could be broadly characterised as being predictable, coming from the segments of the Malaysian construction industry they were there to represent.

Perhaps not surprisingly, they tended to support the role of their own segment of the industry while seeking to lay responsibility for industry failings on other segments.

When asked to describe problems facing the industry – relevant to achieving an improvement in health & safety performance – all the groups were broadly consistent in painting a picture of an industry in which all the risk relating to health and safety is currently borne by the contactors and the workforce, with little ownership of it being taken by developers and designers.

In setting the overall tone for a construction project by having clear and firm expectations for health & safety performance and by taking the risk-critical costing and timing decisions, the developer has an extremely large and potential influence over everything that happens on their construction site during both the design and construction phases.

This potential developer influence is being largely ignored in Malaysia at the moment, except for an extremely small number of developers who have recognised the moral and commercial benefits of adopting such an approach voluntarily. It is unlikely that many other developers will follow their lead without a legislation making them do so.

It should come as no surprise that many developers currently operating in Malaysia have little interest in changing from the status quo where the contractor and workforce take on all the risk.

They have clearly benefited – and continue to do so – from an industry structure which has

achieved significant year-on-year growth and profitability, built in part on cheap, unskilled, largely migrant labour, and in which they have taken little or no ownership for the risks which they have been largely responsible for creating, by their appointment of the principal parties and by the pricing and scheduling decisions which they have taken.

The GOSHCIM guidelines are unlikely to make any significant difference to this situation as long as they remain voluntary and not legislative requirements.

Driven principally by commercial considerations, developers are very unlikely to welcome with open arms any move towards introducing the current GOSHCIM guidelines into legislation, largely because they are unlikely to appreciate the potential benefits to themselves and the wider industry.

They may well put up strong opposition to such a change and the Malaysian Government could reasonably expect significant challenge from such an economically influential group within the Malaysian economy.

However, that challenge should not be used as a reason to avoid proceeding with the move to legislate the guidelines. It will be very difficult to achieve the levels of improvement intended in the health & safety performance of the construction industry without harnessing this influence which developers clearly have.

There was a wide acceptance that the other significant group which has a considerable influence over the risks relevant to the construction phase of a project in Malaysia – those involved in the design of the structure – currently give very little consideration to reducing that risk which then has to be managed by the contractor undertaking the work.

Experience in the UK since the introduction of CDM in 1994 has highlighted the very significant reduction of risk at source which can be achieved by a design team who fully understands the various risks which have to be managed by a contractor during the construction phase.

Perhaps it may appear too obvious to state here, but those risks which have been eliminated by the designers, are risks which no longer have to be managed by the contractor. The more they can eliminate, or reduce that risk at source, then the smaller the quantity of residual risk the contractor has to address. This concept is fundamental to the CDM/GOSHCIM approach to risk reduction in the construction industry.

We can state with confidence based on the UK experience that a sizable proportion of the risks which currently result in death or severe injury at construction sites throughout Malaysia could have been eliminated at source by a competent design team tasked or legislated to do so.

In a study undertaken by HSE before the introduction of the CDM Regulations in 1994, a number of randomly selected fatal accidents which had occurred in the UK construction industry were re-examined with a view to establishing whether the risks which led to the accidents could have been designed out

in their entirety or in significant part based on foreseeable knowledge at that time.

The study found that approximately two thirds of those deaths might well not have occurred had the designers associated with those projects applied the design elimination and reduction principles which were subsequently introduced into the CDM regulations in UK legislation.

It was clear from the widespread views expressed in the respective meetings that the Malaysian construction industry faces a significant skills challenge at many levels. Put simply, many of the competencies required for the development and sustainability of an industry performing to a high health & safety standard are not present in sufficient scale.

This ranges from designers to senior site management, from workplace safety officers to site supervisors, and the actual workforce. Much of the caution expressed about the potential for the construction industry to achieve the improved performance as intended by the CITP, came down not to a view that the industry would be unwilling to make the fundamental change required, but to a belief that the shortage of competent personnel in all of these key areas would be a significant bar to making that progress.

This skills and competence issue goes far beyond the view that the difficulties and poor safety performance of the industry are due to the unskilled nature of the migrant workforce. An industry determined to achieve the performance envisaged by CITP would be able to manage the issues associated with a low-skilled, migrant workforce by improved leadership by the developer, enhanced design, and more competent site management and supervision.

As the industry itself chooses to employ its existing workforce; it shouldn't blame those same workers for its poor performance. The same applies to its failure to adequately train its designers and senior managers to understand and manage construction health and safety risk.

It is very easy for the industry to pin the blame on those on the lowest rung of the ladder – individuals who have no voice and who are less able to answer back. In so doing, it not only ignores its own failings to manage the situation which it created in the first place, but more importantly closes the door on the measures which it needs to initiate to address those skills shortcomings.

There was a widely shared view that the legislative framework was confusing with too many requirements detailed as voluntary guidelines rather than being enshrined in legislation.

Encouragingly, however, there was wide support from groups which were largely representing commercial and private sector bodies for the work of DOSH and CIDB with broad agreement that both played a key role.

CIDB's safety promotion work was clearly acknowledged with most delegates recognising the distinct roles each regulator played, although

this was not universal given several parties did not recognise the difference between both bodies. On this account, they even suggested that both bodies be consolidated as one single entity to assist industry recognition of who the regulator actually was.

One consistent aspect of all the discussions held during the review was the absence of any meaningful thought or action on issues relating to occupational health risk, other than the peripheral benefit which may be achieved by an improvement in the standard of amenities and living conditions of construction workers.

This is likely to be a massive issue affecting the health of a sizable proportion of the workforce in the industry and needs to be addressed on an equal footing to safety issues.

One very strong and consistent theme from all parties was the need for DOSH to take on a stronger inspection role with greater levels of enforcement, without which it was felt that little progress would be achieved.

Nevertheless, there was agreement that voluntary guidelines were often ignored by industry and that the current level of penalty upon conviction – even for fatal accidents – was far too low and did not act as a deterrent to non-compliance. In this regard, companies would simply write them off as a business expense rather than addressing issues which caused the prosecution in the first place.

All-in-all, the views presented to us at the stakeholder meetings as well as the site meeting, offered us a very clear and perhaps stark view of the principal issues facing the Malaysian construction industry at this time. These views were fully taken into account by the authors of this report while carrying out this review.

CHAPTER 5
REVIEW OF THE CONSTRUCTION INDUSTRY TRANSFORMATION PROGRAMME

5.1 CITP DESCRIPTION

THE Construction Industry Transformation Programme 2016-2020 (CITP) is designed to prepare Malaysia's construction industry for competition at the global level while supporting the 11th Malaysia Plan (11MP) and the Malaysian Economic Transformation Programme (ETP).

It falls within the remit of the Ministry of Works, was prepared by the CIDB and is endorsed by the-then Prime Minister of Malaysia, Dato' Sri Mohd Najib bin Tun Abdul Razak. In essence, CITP promotes and supports the aspiration for Malaysian construction companies to become successful in competing for major construction projects all around the globe.

It also openly recognises the challenges encountered by the local construction industry to overcome various pitfalls which include limited emphasis on quality of workmanship; limited levels of safety awareness and enforcement; poor environmental management; high administrative and regulatory burden, and a negative public perception of the industry as a whole.

All of the above are set against a commercial environment where Malaysian companies are experiencing increased competition from overseas.

Very broadly, CITP is presented as a multi-layered strategy as described below. Those aspects specifically related to improving health and safety performance are highlighted in bold text.

LAYER 1

Four 'Strategic Thrusts' *(see Table 3)* have been identified to guide the transformation and continued development of the construction industry as well as to address the issues mentioned above:

A> Quality, Safety & Professionalism (QSP);
B> Environmental Sustainability;
C> Productivity, and
D> Internationalisation.

The QSP strategic thrust headlines the current situation as being one characterised by *"limited emphasis on quality and assessments; with limited safety awareness as well as added regulatory constraints within the industry".*

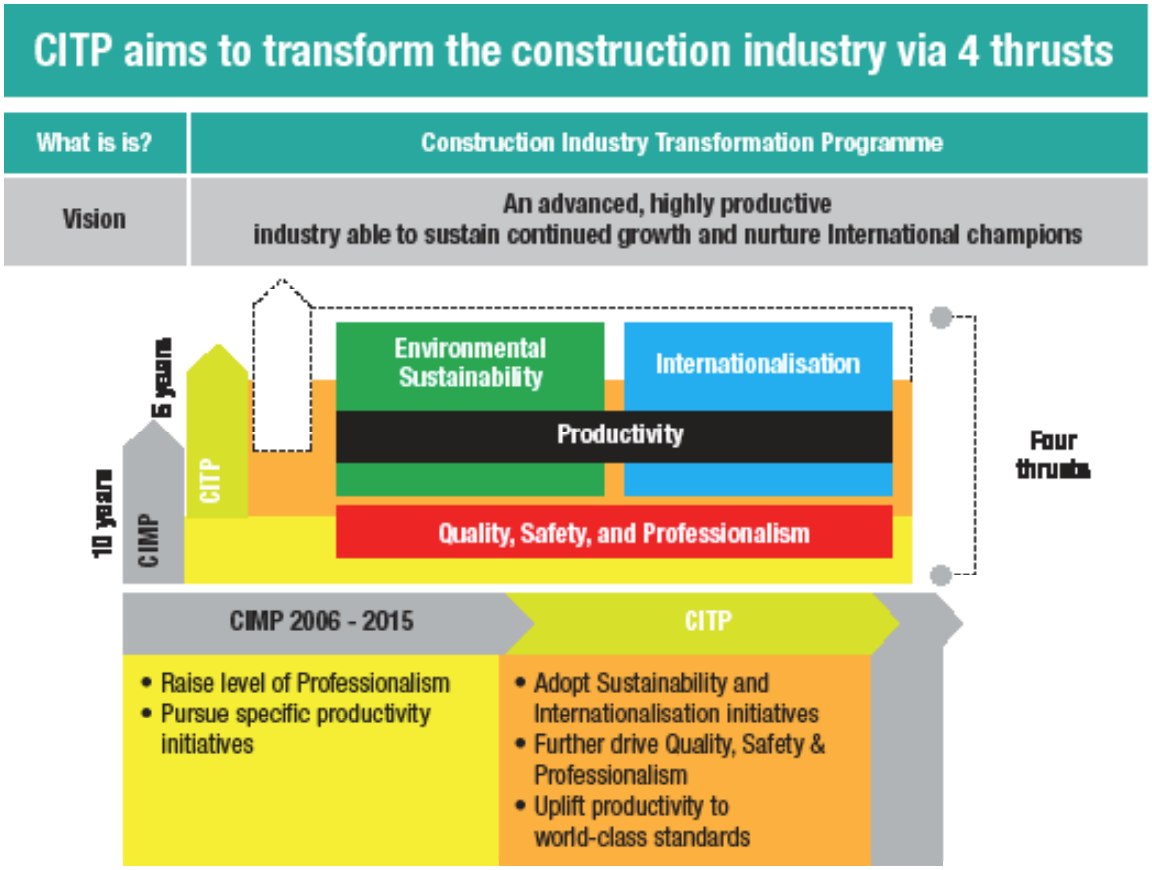
On the same note, it describes the aspiration to reach a situation where *"quality, safety and professionalism becomes ingrained within the industry culture".*

Related to – but separate from the QSP – the 'Productivity' strategic thrust includes consideration of the largely low-skilled construction workforce which is highly dependent on foreign workers.

With regard to QSP, the CITP states that *"Quality, safety & professionalism are prerequisites for transforming the construction industry into a responsible, developed*

TABLE 3

Strategic Thrusts



Source: CIDB

industry. Today, high accident and fatality rates, limited integration of safety into the work culture, poor quality construction work and collapsing infrastructure, and delays in obtaining approvals for construction permits are some major issues that still persist in the industry today".

The programme puts forward a number of initiatives to raise safety levels in the industry, including the introduction of more stringent requirements on occupational safety and health as well as improved standards in relation to workers' amenities.

It also details a plan to strengthen the requirement for occupational safety & health certification, supported by a stronger enforcement team of occupational safety and health officers/inspectors and the introduction of further standards and codes of practice governing construction safety and health.

Elsewhere, it proposes to remove regulatory obstacles in an effort to raise the overall levels of professionalism while improving the ease of doing business in the construction industry, although it is unclear how the proposed changes would achieve the first of these objectives other than by simplifying the contractor registration process.

LAYER 2

Under the QSP strategic thrust, the CITP details three headline 'Key Outcomes' which it aims to achieve by 2020:

A> More than 50% of public projects exceed acceptable QLASSIC's (Quality Assessment in Construction) score;
B> More than 50% reduction in worksite fatalities and injuries, and
C> Ease of doing business indicator in dealing with construction permits improved by 5% points.

LAYER 3

It sets out four specific initiatives to help achieve the three 'Key Outcomes' listed above:

Q1> Increase emphasis on quality and implement quality assessments;
Q2> Improve workplace safety and workers' amenities;
Q2A> Regulate minimum level of construction workers' amenities;
Q2B> Improve level of occupational safety & health at construction sites;
Q3> Improve ease of business by addressing regulatory constraints;
Q3A> Streamline and enhance contractor registration;
Q3B> Strengthen one-stop-centre for all construction permits/approvals;
Q3C> Considering the setting up of tribunal for construction permit dispute resolution;
Q3D> Enhance culture and practice by learning from decided construction cases;
Q4> Promote and raise awareness of CITP initiatives.

Initiatives Q2a and Q2b are those most relevant to workplace health & safety performance. Regarding Q2a and Q2b, the CITP states:

>> Place greater emphasis on occupational safety and health (OSH) certifications;
>> Develop construction-specific safety training curricula and roll out training courses to increase the quality and quantity of certified safety officers (SHO) and third-party OSH inspectors;
>> Elevate the profile of safety by requiring G8 contractors to demonstrate internationally-recognised safety certifications (e.g. MS1722/OHSAS 180010) (Note: G8 is a proposed new category of high performing 'construction player' to be introduced by Initiative Q3 to recognise flagship Malaysian players capable of being champions and leaders in the construction industry);
>> Encourage disclosure of occupational safety

and health management performance in the annual reporting of public-listed companies;

>> Increase the adoption of OSH Safety & Health Assessment System in Construction (SHASSIC) (Note: SHASSIC is a Malaysian independent assessment system managed by CIDB to assess the safety and health performance of a construction contractor);

>> Introduce more stringent requirements on occupational safety & health;

>> Extend the provisions of Act 446 concerning workers' minimum standards of housing and amenities to include workers in the construction sector.

LAYER 4

CIDB through its Industry Working Group (IWG) has developed a five-year plan to deliver the objectives described above.

The document details 11 specific projects against the five-year time-scale of the CITP to deliver the Q2 objectives set out above (three in Q2a and eight in Q2b). Each individual project plan details specific Key Performance Indicators (KPI) expected to be achieved by each year of the programme, as detailed in Table 4 below:

TABLE 4

KPIs of CIDB's Initiative Working Group (IWG)

TITLE	YEAR OF COMPLETION	PRINCIPAL KPIs
Q2A-008 Malaysian standards for temporary construction workers' amenities and accommodation Code of Practice published.	Q1 2016	MS2593:2015 on construction workers' amenities published.
Q2A-009 Act 446 on workers' minimum standard of housing and amenities for all sectors including construction sector tabled in parliament.	Q4 2018	>> Act 446 tabled in Parliament; >> Promotion activities to enhance awareness on amended Act 446 for construction conducted.
Q2A-010 Minimum eight centralised workers' accommodation models constructed.	Q4 2018	>> Pilot projects constructed by identified clients; >> Reports on implementation of MS2593:2015 compliant worker dormitories published.

Q2B-012 Safety and health officers (SHO)/ site safety supervisors (SSS) trained increased by 10% per year from 2015 baseline.	Q4 2020	>> 1,238 SHOs trained; >> 762 SSSs trained.
Q2B-014 50% of 100 contractors trained in Occupational Safety & Health Management System certified.	Q4 2020	>> 100 contractors trained; >> 50% of them certified.
Q2B-015 Recommendations to improve the legal and regulatory framework related to OSH submitted to government.	Q2 2018	Recommendations to government based on findings of study report into adequateness of relevant laws and regulations on safety.
Q2B-016 Cost of OSH to be provided as a provisional sum in all government tenders and contracts.	Q4 2018	OSH to be incorporated into government tender documentation.
Q2B-114 More than 50% of public projects completed annually to achieve minimum SHASSIC assessment score of 3-Star.	Q4 2020	>> 50% of qualifying projects achieved 3-Star SHASSIC rating; >> 500 projects assessed using SHASSIC; >> Five promotional SHASSIC events conducted.
Q2B-115 GOSHCIM implemented.	Q4 2020	>> Draft of the new regulations; >> Guideline on OSH in construction industry management implemented.
Q2B-116 Four strategic guidelines on Safety in Construction published.	Q4 2020	>> Pilot project executed; >> Safe Design of Building & Structure Site Supervision; >> Temporary/Falsework; >> Risk Management.
Q2B-117 10 pilot projects assessed using Safety Culture Tools achieve acceptable score.	Q4 2020	10 pilot projects assessed for using safety culture tools.

5.2 COMMENTS ON THE CITP

As a strategy document, the CITP provides a useful starting point for action. It is very clear on the need and rationale for change in the industry as well as on the intended outcomes of the programme.

No-one reading the CITP could fail to recognise the intention and determination of those behind its development to fundamentally improve the performance of the construction industry. In all fairness, the CIDB initiatives which are linked to the CITP Quality, Safety & Professionalism (QSP) thrust appear to be well considered and sensible.

A large part of the CITP QSP thrust is focused on improving the quality of the structures being constructed while reducing the administrative obstacles facing the industry such as streamlining of the contractor registration procedures.

These are areas which are of clear importance in the quest to increase productivity of the industry and in ensuring that risk to those subsequently using the constructed structures is better controlled, for example, by reducing the risk of unintended collapse.

However, we do not believe that these initiatives aimed at addressing the building quality and removing administrative burdens will themselves help to achieve any improvement in terms of the fatal accident and injury rates of those involved in the construction process.
This is not surprising given they were not designed to address the deficiencies within the health & safety management systems currently operated by many in the contractor fraternity.

The specific work streams aimed at improving health & safety performance are divided between Q2a and Q2b as detailed in Table 4 above. The Q2a initiatives which are aimed at improving amenities of construction workers should be viewed as extremely positive.

If successfully implemented, they should bring about a major improvement in respect of the welfare and appalling conditions in which much of the industry's workforce, particularly the migrant proportion of it, currently has to live in.

Above all else, the aforementioned initiatives are very well-focused on one specific problem topic in that it is able to present a cogent argument in addition to a well-structured plan on how to achieve the intended improvement.

We are also confident that the more general health & safety initiatives detailed in Q2b of the CITP – if the stated KPI's were to be achieved – will indeed move the industry forward in the right direction, particularly for those relatively few companies which will be directly affected by the initiatives.

However, the main – those parts of the CITP which directly affect individual companies – is likely to only impact upon a very small proportion of the industry, thus very unlikely to help bring about the stated objective of achieving a significant improvement in the health & safety performance

of the Malaysian construction industry as a whole.

We see little in Q2b of the QSP thrust which we believe has the bandwidth and necessary focus on the key issues necessary to achieve the intended improvement in performance within the very tight 2020 timescale as set out in the CITP.

Our overriding concern is that there is nothing in the CITP which sends out the necessary, very loud and very clear signal to the industry as a whole, that the current situation is unacceptable; that things have to change, and that it is their responsibility as the ones who are creating the risks which are causing the high fatal and accident rates, to take ownership of the current situation and come up with a strategy to address it.

It would be very easy for the majority of construction companies operating in Malaysia to see the CITP QSP thrust as simply 'Government doing something'. That view would fail to address the fundamental issue of the industry taking ownership and responsibility for the risks which it creates.

If that is indeed the case, then our opinion is such that a very large proportion of the industry will simply choose to do nothing different regardless of the clear and positive intention behind the development of the CITP QSP thrust.

Nevertheless, there are a lot of positive aspects to be welcomed in the QSP thrust. However, and put simply, we do not believe that it will significantly change the health & safety performance of the Malaysian construction industry, much of which will see very little difference to the current situation in relation to health & safety, other than perhaps in the one area of worker welfare in relation to the quality of the amenity and living conditions provided to the workforce.

In our opinion, the CITP in the area of health & safety is not sufficiently ambitious or focused on achieving the fundamental change necessary, hence running a significant risk of not achieving its stated objective.

5.3 COMMENT ABOUT SPECIFIC Q2B INITIATIVES

Q2B-012

While it is clearly to be applauded that approximately 2,000 safety and health officers (SHO)/site safety supervisors (SSS) will be trained by 2020, our concerns are two-fold.

Firstly, has the effectiveness of these officers been assessed? Has any research been carried out to determine whether training these people and putting them out into the industry actually influences health & safety performance?

Are they actually making a difference out there on the ground? Have they, for example, actually allowed the time and given sufficient authority to fulfil their duties in such roles? Without such knowledge about their effectiveness, the true benefits of the considerable investment in their training and the resulting impact on the CITP QSP target remain unknown.

Secondly, we were provided with the opinion that the construction industry finds it very difficult to retain these people and that once trained, there is a tendency for them to move into other industries.

On that basis, how will the additional 2,000 trained officers affect the overall net numbers of officers in the industry? If the expressed opinion is indeed correct, has any research been done to establish why these officers leave the industry and what would need to happen for them to be persuaded to remain in it?

Q2B-014

This initiative clearly has some merit in that those contractors directly involved in it will presumably have to adopt safety management systems which meet internationally-recognised standard.

One question this raises would be how these contractors are selected for inclusion in the programme? If this is purely a voluntary scheme, then our concern would be that those contractors currently operating at the higher end of the performance scale may be more likely to put themselves forward for inclusion.

What is intriguing about this is that with or without the programme, they would likely be the ones who would operate in such a manner anyway. If this is the case, then the impact of the initiative towards achieving the QSP target may be significantly reduced.

The key is to ensure that this initiative does not simply become an administrative exercise to achieve a certain standard on paper, while nothing changes on the construction sites operated by these companies.

Will there be an on-going programme of checks to ensure that those companies who achieve the required standard will not only maintain that standard, but more importantly ensure that their on-site operations reflect their adoption of such safety management systems?

If nothing actually changes on their sites, or their sites continue to operate in a manner no better than every other site around them, then there is a danger that the initiative will become devalued, thus losing its value.

Q2B-015

This topic will be discussed in Chapter 6 of this report. It is a very important initiative which in our opinion must be undertaken to ensure that the most effective legislative framework and supporting guidance, etc is in place.

Q2B-016

This initiative is to be welcomed as it supports one of the principal recommendations which appears later in this report (which is the government has to lead by example).

That part of the industry which undertakes work in the public sector will look very carefully

at this initiative and in particular at the precise amount which will be provided in government tenders/contracts.

As industry hopefully moves towards an environment where such provision by the developer becomes the norm, it will be looking to the government for direction on the benchmark figure or % which should be included to cover the costs of OHS provision. To that extent, it is important to recognise that the selection of that figure will have a wide-reaching effect and will signal to the industry what the government expects under a GOSHCIM-type regime. It is important to get that figure right from the outset.

A comment which was received during the stakeholder meetings was that there was a risk with such an approach, that the main contractor would simply pocket the additional money, and not provide any additional OHS provision beyond the minimum which would have been provided previously.

Also, the additional provision is not expected to filter down through the subcontract chain from the main contractor to those undertaking the actual work.

Whilst not directly related to this particular initiative, which is focussed on getting that amount incorporated into tenders and contracts, it will clearly be important to ensure that the additional money produces a real benefit to health & safety performance and does not simply become a financial addition to the margin for contractors who work on government contracts.

Q2B-114

The Safety & Health Assessment System in Construction (SHASSIC) scheme which is developed under the Master Plan for Occupational Safety & Health in the Construction Industry is designed to benchmark health & safety performance and to provide a standardised system for assessing the health & safety management system operated by a company.

To date, a large number of construction companies have been assessed via this system which commenced operation in 2008.

In principle, this is an extremely positive process in that companies can be assessed and able to achieve a * rating which can assist in guiding them to where they need to make further improvements. The programme is increasingly been seen as a pre-requisite particularly for companies wishing to tender for government contracts.

In a similar vein to our comments about initiative Q2b-014 – and without prejudging in any way the answer – we would ask whether there is any evidence that this considerable investment is producing an actual difference in site performance.

We understand that the SHASSIC programme has not been subject to fundamental review or scrutiny since its initial development, to assess

whether those companies which achieve a certain * rating actually achieve a higher standard of health & safety performance than those who either score a lower rating or who do not participate in the programme at all.

Logic would suggest that this would indeed be the case but without a clear understanding of the actual improved health & safety performance which comes from a contractor achieving a higher SHASSIC * rating, it is difficult to assess to what extent this particular initiative is likely to help deliver the ambitious accident and fatality reduction target set out in the CITP.

While broadly supportive of this initiative, we are of the view that it appears to lack some ambition and industry challenge. If the government really believes in the programme being a key driver for improving contractor performance and wishes to send a very clear signal of its intentions to that part of the industry which is awarded contracts to deliver its public projects, then we are surprised at the relatively low target for SHASSIC achievement set out in the initiative (of only 50% of qualifying public projects to achieve a 3* SHASSIC rating by 2020).

Given that this target remains the same for each of the CITP year, we are surprised that CIDB has not taken the opportunity to at least raise the target over the period to 2020 to ensure that by that date, 100% of qualifying public projects will achieve that score.

That would send a very clear signal that the government was committed to fundamental change and improvement. By leaving the target unchanged over the whole of the CITP period, there is a danger that it sends a signal to the industry that the status quo is acceptable.

Q2B-115

This topic will be addressed separately in Chapter 7 of this report.

Q2B-116

The issue of the legislative framework being already heavily dependent on non-mandatory guidelines rather than legislative requirement will be addressed in Chapter 6 of this report.

Clearly, the provision of any decent quality information on how to better eliminate and control risk in work areas responsible for a sizable proportion of construction accidents and fatalities (i.e. temporary works) will always be welcomed.

The issue of course is to what extent that provision of new guidelines actually changes behaviours while achieving an improvement in the particular areas of construction work relevant to that guidance. For example, the proposed Guidelines on the Design of Temporary/Falsework may be an extremely useful document.

However, if it is not adopted by a design and contractor industry – for whatever reason – whether it be out of ignorance or simply because

it is not mandatory to do so, then it will not achieve any reduction in the number of accidents and fatalities, thus the opportunity would have been missed.

Q2B-117

The use of a tool to measure and benchmark safety culture within an organisation can be very valuable to it. In itself, however, its importance should not be overstated. It is simply a device to measure where a business stands at a particular point in time based upon which information the business may (or indeed may not) choose to do something differently in the future to improve its performance.

The often-used analogy is that a tape measure is extremely useful when building a house, but you don't build the house with it alone.

This initiative may well be appropriate for the small number of companies proposed to be involved. That will depend on how considerable is the extent of the maturity of their safety management systems. For many poorer performing companies, this is an approach which they would simply not be ready for as their safety management systems are simply not developed enough – or sufficiently implemented – to benefit from such exercise.

Consequently, the small number of companies likely to be involved in the initiative will probably be performing at the better end of the industry already, hence any immediate benefit to the accident and fatality numbers for the industry as a whole may well be very small.

The possible exception to that cautionary note is if it were to involve the whole of a supply chain of a large contractor, in which case there could well be spin-off benefits for their subcontractors who may presumably be working for many other contractors also.

This can similarly be applied to one-off large contracts such as occurred with the London Olympics 2012 where all the main contractors were required by the developer to apply the UK Health & Safety Executive's (HSE) Safety Climate Tool to the whole of their supply chains.

In that instance, it is possible to extend the potential benefits much further than simply to the main contractor itself, thus a greater benefit to the wider industry can potentially be achieved.

In essence, recommendations for improving the health & safety strategy within the CITP cannot be considered in isolation from the wider context of the Malaysian construction industry and the other topics which HSE was asked to consider as part of this review.

HSE's overall recommendations are therefore elaborated in Chapter 9 of this report.

CHAPTER 6
HEALTH & SAFETY LEGISLATIVE FRAMEWORK

6.1 LEGISLATION

As it applies specifically to the health & safety of those involved in the construction industry, the Malaysian legislative framework is potentially confusing and can on the face of it appear to be overly complicated.

There are three principal Acts which are directly relevant to workplace health & safety in the construction industry:

A> The Occupational Safety and Health Act (Act 514);
B> Factories and Machinery Act (Act 139), and
C> CIDB Act (Act 520).

There are fundamental differences between the respective form and impact of these pieces of legislation.

The Occupational Safety & Health Act (Act 514) is fundamentally a risk-based, 'goal-setting' legislation, very similar in design, nature and scope to the Health & Safety at Work etc. Act 1974 in the UK.

The term 'goal-setting' when used in this context means that the legislation does not set out to tell those who have duties to perform what they must do to achieve compliance, but simply the goals or end result which they must achieve.

This principle was adopted into the UK law as a result of a wide-reaching review into health & safety legislation undertaken on behalf of the British Government by Lord Alfred Robens in the early 1970s.

For example, Section 17(1) of the Act simply states that *"It shall be the duty of every employer and every self-employed person to conduct his undertaking in such a manner as to ensure, so far as is practicable, that he and other persons, not being his employees, who may be affected thereby are not thereby exposed to risks to their safety or health".*

The Act has not told the duty holder how compliance should be achieved, but simply what the end result or the goal must be, i.e. that they must not expose persons to risk associated with their work activity.

As such, this legislative approach allows for different duty holders to take different routes in addressing a very similar risk, providing that the end result or the goal is achieved.

The implications of this type of legislative approach is that duty holders have to look at their own specific circumstances, make an assessment of the risks which they are creating through their work activities, and decide for themselves what precautions or control measures they need to implement to ensure that the goal is achieved.

This approach puts the onus for owning and managing risk in the workplace, fairly and squarely on the shoulders of those who create those risks.

It encourages innovation and risk reduction strategies which are directly applicable to – and designed for – each individual workplace. Workplaces next door to each other may well

adopt different strategies in addressing the same risk to achieve the same end result.

The key is that it is the end result which matters most, and not how a duty holder chooses to get there.

Most developed countries now take this risk-based, goal-setting approach when developing their health & safety legislative framework for the principal reason that it forces those who create the risks to take ownership of them. That in turn encourages behaviours more likely to reduce the risk in the workplace, hence accident rates should fall.

By contrast, the Factories and Machinery Act (Act 139) which looks very similar in form and content to the now revoked UK Factories Act 1961 takes a very different and much more prescriptive approach to workplace risk through the various regulations introduced under it.

It sets out in prescriptive detail precisely what a duty holder faced with a particular situation must do. For example, under the Factories and Machinery (Building Operations and Works of Engineering Construction) (Safety) Regulations 1986, it states in Regulation 62 that *"Every ladder and step-ladder shall be of good construction, sound material and adequate strength for the purpose for which it is used".*

This approach takes away the responsibility on a duty holder to carry out a risk assessment and adopt an approach which meets the 'goal' of Act 514. Instead, it simply tells a duty holder what to do. In effect, the state has taken on the ownership of the decision about how to address a particular risk and issued an instruction to industry to do what it is told to do.

That part of industry which is not keen to take on the responsibility for owning the risk which it has created, normally the one at the poorer performance end of the scale, often prefers the prescriptive legislative approach.

Effectively, it does not then have to give any thought to the issue of risk; it simply has to do what the government has told it to do. The danger is that health & safety can then become something which is the government's responsibility rather than the organisation which actually creates that risk.

There can be a conflict when these two legislative approaches operate simultaneously side-by-side. On one hand, the government is telling duty holders to own the risk and decide for themselves based on risk assessment what precautions to adopt, yet on the other, it is telling them precisely what they have to do.

The more risk-mature and sophisticated an industry becomes, normally the easier it is able to adapt to the modern, goal-based approach.

The UK took the decision around 1992 to move as far as possible away from the prescriptive approach and to force the industry to take ownership in full for the risks it was creating. In reality, the UK still has topic-specific regulations which have been introduced under

its Health & Safety at Work etc. Act, but they are structured in a way which requires that the risk assessment, goal-based approach is to be used.

The additional complication in the Malaysian law is that introduced by the Construction Industry Development Board Malaysia Act 1994 (Act 520), otherwise referred to as the CIDB Act. While much of this Act is designed to address issues of building material quality and contractor registration, it does contain specific Sections which have clear overlap with other health & safety legislation relevant to the construction industry.

For example, Section 34B(1)(c), of the Act states that *"A contractor undertaking any construction works shall ensure the safety of the building and the construction works whether during or post construction works".*

In our opinion – and as echoed by several representatives who attended the stakeholder meetings – there is significant potential for confusion in relation to the legislative framework caused by the fact that there are several pieces of sometimes competing, sometimes complementary primary legislation, each of which appears seeking to achieve the same ends but in very different ways.

This potential for confusion is reinforced by the fact that some of this legislation is enforced by different regulators – be it DOSH or CIDB – even when effectively, they are both acting to regulate and achieve health & safety compliance in the same construction industry.

In our opinion, a legislation normally works best when the requirements it imposes can be easily understood by those who have the duty to comply with it.

Strategic Goal No. 3-4 of the DOSH *Construction Safety Strategic Plan 2018-2020 r*efers to an intention to *"Ensure legislation and guidance are effective, address contemporary issues and reflect best practices for promoting workplace safety and health"* and includes a programme of review, updating and revision of existing legislation.

This may be an opportunity to conduct a fundamental review of the nature and form of the whole of the legislative framework as it currently applies to health & safety in the construction industry.

6.2 NON-MANDATORY GUIDANCE

The issue of the non-mandatory status of the numerous guidelines relating to health & safety in the construction industry was raised on many occasions by the stakeholders spoken to during the various meetings.

The clearly expressed view was that if the intention of the guidelines was to seek voluntary duty holder compliance with them, then their non-mandatory status would actually result in them being largely ignored by the industry.

It was difficult to gauge whether that view was simply an expression of frustration from the higher performing end of the industry about

those who appear to ignore 'the rules' lower down the scale, or whether it represented a genuine opinion that much of the Malaysian construction industry will choose to ignore anything which is not directly embodied in legislation, particularly if there is a significant cost associated with compliance.

We are unclear about the rationale for the decision to include so much guidance in this non-mandatory guideline format. Where the guidelines relate to safety critical areas of construction work, for example, the design of temporary works which is known to contribute to a considerable number of multiple accidents and fatalities, there may be an opportunity as part of the DOSH review of legislation and guidance to consider the potentially negative effect of choosing to publish the guidance as non-mandatory guidelines instead of as direct regulation.

Other legislative options are also available. In the UK, the Approved Codes of Practice (ACoP) which contain guidance of a similar nature to that contained in many of the Malaysian guidelines, possess statutory force to the extent that they represent the minimum standard expected to be achieved by duty holders.

The ACoPs are not legislative instruments themselves but they do have a statutory mandate and therefore is legally enforceable. Duty holders may choose to adopt alternative measures to those described in the ACoPs but if they do so, then those measures must be equally as effective at controlling the risk in question.

6.3 OVERLAPPING JURISDICTIONS OF REGULATORY AGENCIES

The issue of both CIDB and DOSH regulations being in very similar legislative spaces was raised as a potential issue by several stakeholders who claimed it caused confusion to their respective roles.

We are of the opinion that both regulatory agencies are primarily working in sufficiently different topic areas, and that any move to consolidate their roles into a single agency in order to address this potential risk is not necessary.

While the CIDB-enforced Act 520 does contain some legislative requirements which overlap with those enforced by DOSH under Acts 514 & 139, we are satisfied that both agencies understand that the primary lead on occupational safety and health rests with DOSH while that on construction quality rests with CIDB.

Both agencies have demonstrated a mature and sensible approach to this issue of potential overlap of regulatory authority. In May 2016, the two regulatory agencies signed a memorandum of understanding which detailed the respective roles of each and outlined areas for closer working and collaboration.

We very much welcome this collaborative approach and see considerable potential for better use of shared intelligence between the two agencies to help achieve improved performance in the construction industry.

6.4 POTENTIAL FOR CONFLICT OF INTEREST

We were surprised to learn that DOSH carries out statutory inspection of cranes (and possibly also of other lifting equipment and pressure vessels) on behalf of industry.

Our concern is that this raises an issue of significant potential for conflict of interest where the state is carrying out a safety critical inspection on behalf of industry, and may therefore have to be subject to investigation, possibly by itself unless other arrangements are in place, in the event of an incident involving that equipment.

We are not aware of the reasoning behind this decision, but it appears to take responsibility away from the owners of the risk by placing it on the government's shoulders. This appears contrary to the inherent principles detailed in the Malaysian Occupational Safety & Health Master Plan 2016-2020 as to where responsibility for the ownership of risk should lie.

CHAPTER 7
INTRODUCTION OF GOSHCIM INTO MALAYSIAN LEGISLATION

INITIATIVE Q2b-115 of the Quality, Safety & Professionalism (QSP) thrust of the Construction Industry Transformation Programme 2016-2020 (CITP) details how the Department of Occupational Safety and Health (DOSH) will seek to introduce the current Guidelines on Occupational Safety and Health in Construction Industry (Management) 2017 (GOSHCIM) fully into Malaysian legislation by 2020.

If successfully introduced, this will present a fundamental change to the way that a number of the principal parties associated with the construction procurement and construction process will be required to undertake their work.

The UK underwent a similar process in the early 1990s which resulted in the introduction of the Construction (Design & Management) (CDM) Regulations 1994 into its health and safety law as a statutory instrument made under the Health & Safety at Work etc. Act 1974.

Having been revised twice since their introduction, the HSE is satisfied that the CDM Regulations now provide an extremely valuable legislative vehicle for harnessing the considerable influence of both the developers and designers involved in a construction project in order to further improve the health & safety performance of the UK construction industry.

Without harnessing that influence, we do not believe that the UK would be enjoying its current reputation as a top performer of the world's leading construction health & safety performance.

The UK is not alone in taking this approach. For example, Singapore introduced its Design for Safety (DfS) legislation on August 1, 2016 which closely reflected the UK's CDM Regulations. Australia has also adopted a similar but not

identical approach relating specifically to those responsible for the design of structures.

The rationale for imposing legal requirements on these two principal parties is very clear. Both developers and designers – through their appointments, decisions and actions – have the potential to exert considerable influence on the subsequent health & safety performance of the project being undertaken on behalf of the developer by the contractor.

The case for the move of GOSHCIM from voluntary guidelines to mandatory legislation would appear to have already been made in Malaysia as evidenced by the inclusion of Q2b-115 in the QSP thrust of the CITP and the inclusion of GOSHCIM in the DOSH Construction Safety Strategic Plan 2018-2020.

Current discussion therefore needs to focus on those steps necessary to make its introduction into Malaysian legislation as smooth as possible in order to ensure that maximum benefit is gained in the shortest possible timescale.

The lead author of this report, Mr Nic Rigby, has spent a considerable proportion of his time talking with government and construction industry representatives in many different countries about the CDM approach.

He is experienced in helping governments and their agencies formulate strategies and roadmaps for successful implementation, and in overcoming the (highly predictable) challenges made by the parties most affected by the change. The biggest obstacle to successful implementation is often an instant reaction to the prospect of change.

Not surprisingly, people who are very used to things being done in a certain way for a very long time don't always react favourably when change is suggested, particularly when they have been enjoying much benefits from the industry's success without being exposed to the legislative risk which comes with having legal duties placed upon them.

The reality is that developers and designers have become very comfortable with the current position where the contractor takes substantial health & safety risk associated with a project.

People often view a move to a CDM/GOSHCIM approach as something of great magnitude. The reality is that it isn't. It is simply about harnessing the power of law, the considerable influence that the developers and designers can contribute to ensuring that construction sites can be safe and healthy places to work.

In fact, they are the ones, through the commercial and technical decisions they make, who create the risk environment which the contractors are left behind to deal with.

It seems only fair and equitable, therefore, that they take their share of the ownership with regard to the risk environment which they have created. Unfortunately, we know that asking them to do so on a purely voluntary

basis is very unlikely to be successful, hence the need to legislate to effect that change.

The principal obstacles to a successful introduction of GOSHCIM into legislation reflect much of the feedback received in the stakeholder meetings – detailed above in Section 4.1 – and come down to three principal areas.

Any effective roadmap to help deliver a successful transition into legislation should address these areas. They include:

1 How to achieve buy-in to the GOSHCIM concept by commercial developers

The first question which developers will invariably ask is how much such change will cost them. It can be a difficult argument to persuade a developer who is driven solely by commercial motives that GOSHCIM – if properly implemented – can actually make them more money than the traditional approach.

Few commercial developers respond positively to solely the moral argument about workers being able to spend time with their families at the end of their working day. This is clearly and perhaps unfortunately, insufficient justification for change for many developers.

If the intention of the roadmap strategy is to get the developers onside and wedded to the benefits of GOSHCIM – in the hope that they will be more likely to embrace its philosophy and implement its requirements – then the principal aim of the 'sell' to the developer community must be to provide them with sufficient evidence to recognise the commercial sense in doing so.

This is not only entirely reasonable, but also provides a fantastic opportunity for the government to lead by example by undertaking fully-costed public sector projects as case studies, applying the GOSHCIM principles in full, and to produce real-world examples of the benefits of the GOSHCIM approach to both the developer and designer communities.

National flagship projects such as construction works associated with the UK hosting the London Olympic Games in 2012, do provide wonderful opportunities for nations to demonstrate the benefits of GOSHCIM to the wider construction community.

They present an ideal opportunity for the upskilling and capability building of the design industry and also the regulator, for whom CDM/GOSHCIM is often a new concept that requires an extended skillset and wider technical expertise.

We recognise that there are developers operating in Malaysia who have already adopted the GOSHCIM approach, having identified for themselves the benefits which can accrue to them by doing so.

It will be essential that the influence which these 'champions' can bring is fully harnessed to help demonstrate to the wider and probably more sceptical developer community of the benefits of

doing so. If these champions can be encouraged to develop their own case study projects to demonstrate and provide empirical evidence of the commercial benefit to them as developers, then this will greatly assist the 'selling' process to that community.

2 How to ensure adequate capability and competence of the design industry to work within a GOSHCIM framework

A construction design industry which has operated in the traditional way for many decades will face a different set of challenges to that faced by the developers. Many designers simply do not understand the concept of designing risk out of the construction process, not only because they have not done so previously, but also because of their limited knowledge of the construction process.

They may have some experience of designing risk out of the maintenance activities associated with the operation of the finished structure over its lifetime, but even that may have had a focus on cost savings associated with such maintenance-related design decisions, rather than on the risks faced by those who must undertake that maintenance work.

A simple example could be the design of the lighting in a tall room likely to be obstructed at ground level by fixed equipment or seating. The designer may well have considered the specification of the light fitting and specified one which has a long-life bulb for purely cost reasons, but may never have considered the actual risks associated with accessing that light fitting to effect the change of the bulb.

Designers are normally individuals who are well-educated and often possess a technical mind-set. There should be no difficulty in getting them to understand the simple principle that decisions which they take early in the design process can very quickly become fixed elements of the design and become increasingly more difficult and more expensive to amend as the design develops over time.

They should also very easily understand what is essentially a very straightforward concept that given sufficient knowledge about the construction process, the decisions which they take can eliminate or significantly reduce the residual risk burden which subsequently must be faced by the contractor who has to construct to their design. The issue is that most of them have never had to work in this way previously.

The principal issue with designers, therefore, is one of education and upskilling. For new designers coming fresh out of university, it will be applaudable if institutions offering technical degree courses can enhance their content to ensure that their students are able to recognise and eliminate design risks from the construction and building maintenance processes as a norm in their new professions.

The more experienced designers who have been designing in the traditional way for several decades may well require information and education about what their new extended role

will encompass. When CDM was first introduced in the UK, certain sectors within the design community were somewhat resistant to the change, often citing that it was not for them to tell a contractor how to construct their design.

There was a basic misunderstanding from the outset about their role. It is not that designers have to tell a contractor how to construct, but simply that in carrying out their part of the construction process, they should have sufficient understanding about the entire process to allow them to recognise and act upon opportunities to reduce risks which the contractor will subsequently have to encounter.

Consideration should be given to the development of training courses for existing designers to help equip them with the skills and knowledge necessary to take on this new approach to their design work. In the UK, HSE took the decision through its own external training arm to develop and offer a training course specifically for construction designers who are subject to the requirements of the CDM Regulations.

HSE continues to run this course in the UK and has even delivered it overseas in countries keen to adopt the CDM/GOSHCIM approach.

Unfortunately, the design industry can often work in total isolation from the rest of the construction industry, and from other designers and contractors. This approach to working needs to be broken down to allow the design team on a project to become – and be seen as – an integral part of the construction process rather than merely a bolt-on extra for the sharing of good design practice.

One advantage which Malaysia has in this regard over the UK experience in the 1990s is that much of the knowledge over the benefits of the CDM/GOSHCIM approach from a design perspective has already taken place. It is no longer the completely blank canvas like it was back then in the UK.

The international design community can and does talk to each other. Professional associations such as those representing architects or civil or structural engineers are perfectly able to disseminate information gained about risk reduction to their peers working in different countries.

There are no obstacles to sharing experience gained on a project in London with the designers associated with a project being undertaken in Kuala Lumpur. The construction industry at the top end of the scale has become increasingly international in nature with many of the design houses now routinely operate internationally.

One other important sector within the industry which is fundamental to the success of the introduction of GOSHCIM into legislation – and one which can positively influence the response of the design industry – will be the contractors themselves.

They should welcome this new approach with open arms as for the first time, the responsibility for owning and dealing with the risks created in

the early stages of the construction process will be shared across all the relevant parties and not just by them alone.

Consequently, contractors are a very influential lot to drive the message to developers. But particularly to designers, GOSHCIM represents a great opportunity to professionalise and better integrate what has become over time a very disjointed industry.

The more integrated the approach to a project – involving competent designers more actively speaking to the contractors – the more likely that the design decisions made will be the right decisions.

The days of isolated working by the design industry should hopefully be consigned to the history books by GOSHCIM. They always have been an integral part of the industry. Unfortunately, it hasn't always appeared that way, caused in part by the isolation in which they have often worked.

It is important that information about good design practice is shared widely so that designers do not have to reinvent the wheel on every project. If a designer is able to make a significant contribution to the elimination or reduction of risk on a project, then there needs to be a mechanism in place for that knowledge to be shared among the wider design community who will undoubtedly be facing that same situation somewhere for themselves.

In the UK, numerous websites were developed to allow designers to post examples of successful risk reduction designs. That information is available on the internet, but the professional associations may want to look at how best to establish similar mechanisms in the Malaysian context.

The more enlightened designers will need no persuasion at all that GOSHCIM represents the professional face of construction design in the future. Others may take longer to recognise the need for change and will require more effort to bring them fully on board.

It is essential that the influence of their professional associations is effectively harnessed on the run up to GOSHCIM becoming legislation to ensure that the design industry is prepared. There is nothing which prevents good design from happening now; even without legislation, there is no doubt that the good design organisations are already doing so, at least in part.

In the same way, developer 'champions' should help promote the GOSHCIM approach within that community as it is important to recognise and use the very real influence that leaders of the respective parts of the professional design industry are able to contribute.

An investment of time with those people now to harness their influence and develop them as 'design champions' will be seen as time extremely well spent in the long run.

3 GOSHCIM's regulatory arrangements

The financial power of the construction industry – particularly with developers operating at the

G7 end of the contractor scale – is considerable while the sum of money involved in individual projects can be eye-wateringly high.

The issue which was raised by every single stakeholder group of the relatively low penalties open to the courts to impose in cases of non-compliance is real, which if not properly addressed, will undermine the potential for the benefits of GOSHCIM to be realised.

Unless the maximum penalties are increased to a level considered to act as a meaningful deterrent to developers, then they may take the view that the risks associated with non-compliance are insignificant in relative terms.

Changing the behaviours and mind-set of a community of developers whose motive is principally financial, invariably requires the 'carrot & stick' approach to have a sufficiently powerful 'stick' in the form of financial penalties upon conviction, otherwise such aim is unlikely to be realised.

In the UK, fines meted out by the courts for non-compliance with health & safety legislation have been increased significantly in recent times to levels which now act as a significant deterrent for non-compliance.

There is no upper limit to the fines as they are based not only on the culpability of the defendant, but also the turnover of their organisation. Prosecutions which only five years ago would have attracted fines of say £10,000 (RM53,000) are now resulting in penalties 10 times that amount and more.

For example, a recent HSE prosecution of a theme park where a serious non-fatal accident occurred, attracted a fine equivalent to over RM27 million. At that level, companies certainly recognise the financial benefit of compliance.

We understand that the penalties open to the courts for those convicted of health & safety offences in Malaysia is currently being reviewed and is likely to be increased to RM500,000 with up to three years imprisonment. That financial penalty, while significant, remains relatively low compared to the contract value associated with many large construction projects.

In fact, the imprisonment option for individuals – if actually applied to those directors and senior managers in positions of real authority in a company – may well boost a deterrent effect.

In the UK, there is a widespread use of the power to prosecute individuals, not necessarily in isolation from the prosecution of companies involved in an incident. This particularly includes the personal prosecution of company directors who, as part of the penalty, can also be disqualified from acting as a company director in any company for a specified number of years (in addition to imprisonment).

All prosecutions and enforcement notices served by the UK Health & Safety Executive (HSE) are openly publicised on HSE's website. The naming and shaming of companies for

poor health & safety performance may have an effect on the public and industry perception of an organisation which can ultimately affect their financial performance, a critical lever which any regulator should use fully to their advantage.

In the UK, companies with previous prosecution record are normally required to disclose such information when tendering for future construction-related works, more so for projects in the public sector.

Many public sector organisations will simply exclude companies with poor health & safety record from the tender process, again an extremely effective use of the powerful financial lever to achieve improved performance.

The transition from guidelines to legislation is something that will require careful consideration. One particular question which needs to be determined is how much of the construction industry should be captured by the legislation upon its introduction.

In the UK, the Construction (Design & Management) Regulations apply to all commercial construction work, regardless of the project's scale. Other countries have taken different approaches to this, for example, Singapore's Design for Safety legislation only applies to projects with a contract sum of S$10 million (RM29.5 million) or more.

Transitional arrangements will also need to be considered in relation to projects for which the design work may well have started long before the introduction of the legislation into law.

This decision regarding how to introduce the legislation and which projects will immediately be affected should take into account the structure of the Malaysian construction industry and its accident profile.

As such, this could potentially result in the legislation being phased in over a number of years with the largest projects as well as those involving a government or public sector client taking on new duties immediately, followed by a gradual phasing in of smaller projects to follow later, based perhaps on a reducing qualifying contract value over time.

The capability of DOSH inspectors to enforce the new GOSHCIM legislation will also be an essential feature in the introduction of the legislation. Based on the UK experience, regulatory inspectors tend to have very little experience in the inspection and investigation of design aspects of a construction project.

Investigation of the root cause of an accident which may involve design decisions that would take possibly many months or even years before the accident occurred, can be particularly difficult and will require technical knowledge of the design industry as well as an appreciation of the design options which were available to the designer at that time.

This will invariably require a capability building programme to be developed for those DOSH

inspectors who will be undertaking this inspection and investigation work in the future. Inspectors who are experienced only in dealing with contractors and the immediacy of issues presented to them on a live construction site may require some time to become confident and competent in dealing with two whole new groups of duty holders who normally think about issues in a completely different way to contractors.

The DOSH Construction Safety Strategic Plan 2018-2020 already includes in its Action Plan for its Strategic Goal No. 2 the need to develop a plan to increase DOSH inspector's skills and abilities in relation to GOSHCIM.

This forward-thinking measure is applauded. Even in the UK, a similar capability building programme for HSE's inspectors associated with the introduction of the CDM Regulations took several years to be fully realised.

Such time frame should be factored into DOSH's considerations when developing its training programme.

CHAPTER 8
CONCLUSIONS

DOUBTLESSLY, the significant growth enjoyed by the construction industry in Malaysia over the past few years has benefited both the industry itself and the wider Malaysian economy. Unfortunately, this success has come at a significant cost to the health & safety of the industry's workforce.

The health & safety performance of the Malaysian construction industry is thus far both poor and worsening. Its Fatal Accident Rate (FAR) is not only 10 times worse than that of the UK, but has in fact, deteriorated by 20% since the turn of the century.

Such evidence suggests that the overwhelming majority of industry players in the Malaysian construction sector has clearly failed to take ownership and responsibility for the poor performance.

Towards this end, CIDB has unveiled a five-year Construction Industry Transformation Programme (CITP) in 2016 with the aim of addressing many of the fundamental weaknesses of the industry in the quest to make Malaysia a competitive player on the world stage.

One aspect of that programme relates to the health & safety of the construction industry workforce. It lays down an ambitious target to achieve a 50% reduction in the number of accidents and fatalities in the industry between 2016 and 2020.

While the target itself is rightly ambitious, we do not believe that the initiatives set out in the programme's Quality, Safety & Professionalism (QSP) thrust QSP are equally so. They do not sufficiently challenge the Malaysian construction industry to take ownership of deficiencies which the industry is responsible for and to make the necessary improvement in its performance to achieve the stated target.

Occupational health issues do not appear to be being approached with the same level of attention that safety related issues are within

the CITP. Indeed, the headline target itself has no direct relevance to the prevalence of occupational ill health within the industry.

While the programme provides a step in the right direction – and may indeed promote some improvement in a limited number of industry players – we do not believe that it sufficiently addresses the fundamental issues prevalent within the industry.

At the current juncture, those with the ultimate responsibility and influence are not demonstrating sufficient ownership of the risks being created under their control, while there is an inadequate number of people with appropriate skills and competencies at all levels in the industry to manage health & safety issues to the level required to make the desired improvement in performance.

As such, there is a significant risk that the CITP will do little to achieve progress towards the CITP target.

In part due to its success, the construction industry, too, appears to have grown to a level which is overly-stretching its current capability to achieve an acceptable level of health & safety performance. Whether this is a deliberate industry policy, effectively turning a blind eye to the issue while it is benefiting commercially from its success – or simply the unintended consequence of it – is not really of importance.

What is important now is that the industry has to take ownership of this issue. The government must take every opportunity to ensure that it is the industry which takes the lead in owning the issue while developing and implementing the solution. The alternative is that the government ends up carrying the burden for the industry's clear failings which is simply unacceptable and untenable.

The regulatory framework is confusing and presents a barrier to compliance. Good law is normally simple law. The numerous layers of guidance and legislation – some of which approach the same issues from different and possibly competing regulatory directions – do not assist the industry to achieve compliance.

The planned review of health & safety legislation and associated guidance is most welcomed. It should include construction industry representation to ensure that the outcome of the review provides a clearer regulatory framework that combines both legislation and guidance in a form which will encourage greater industry compliance.

The current regulatory arrangements whereby DOSH takes the lead for occupational safety & health matters and CIDB leads on construction quality issues, has potential for overlap and confusion.

However, with the development of the 2016 memorandum of understanding on matters of collaboration between both agencies – and their clearly stated intention to work more closely together in the future – we see no rationale for simplification or consolidation of their functions at this time.

The move to legislate the current voluntary Guidelines on Occupational Safety and Health in Construction Industry (Management) 2017 (GOSHCIM) come 2020 is a step in the right direction.

The two principal parties with the greatest potential influence over the future health & safety performance of the construction industry, namely developers and designers, are currently failing to take their share of ownership and responsibility for the safety critical decisions they make, partly as a result of the failure for their potential influence to be recognised in legislation.

The mandating of the GOSHCIM guidelines will come with significant challenges, none of which should be used as a reason to prevent the change from taking place. Our opinion is such that it will be fundamental to Malaysia in its quest to achieve the desired improvement in its health & safety performance and being able to compete successfully on the world stage.

Without this positive change, we believe that the health & safety performance of the Malaysian construction industry may well deteriorate further. After all, a significant part of the Malaysian construction industry has yet to have sufficient maturity and expertise in the management of health & safety issues to cope with the upgrading of the GOSHCIM guidelines into legislation within a three-year period as currently envisaged.

However, those operating at the top end of the construction project scale, including all those parties involved in projects undertaken by G7 registered contractors, would probably be capable of achieving compliance with a legislated form of GOSHCIM within that timescale.

In essence, the government must be ambitious, and always led by example as well as be an exemplar in all of its own construction undertakings, to demonstrate and provide a lead to the rest of the industry on the benefits of improving health & safety performance.

The Malaysian construction industry has a tremendous vitality. That drive must now be harnessed to ensure that all those involved in the industry are able to share its success, and particularly so to ensure that those working at project sites are able to return home safely at the end of their working day. No industry which hopes to compete on the global stage should set itself any lower expectation than that.

CHAPTER 9
RECOMMENDATIONS

9.1 GENERAL

R1> That a special task force be established, led jointly by the Ministry of Works and the Ministry of Human Resources, to include all relevant parties across the Malaysian Government (and their agencies), to identify ways of providing a cross-departmental and coordinated challenge to the construction industry to come up with an immediate Action Plan for its own improvement.

The government must take every opportunity to ensure that it is the industry which takes the lead on issue ownership as well as developing and implementing the solution.

The Malaysian Occupational Safety & Health Master Plan 2016-2020 is to be applauded. It lays out a clear framework for the direction of workplace health & safety in the country as well as the roles which both the government and industry must play if the intended success is to be achieved.

However, the current cross-government approach appears somewhat piecemeal and may fail to take adequate account of the effect which work undertaken by other government departments can have on the overall health & safety situation (for example, in the areas of skills training and migrant labour visa requirements).

The scale of this problem in the construction industry requires coordinated cross-government strategies to ensure that all departments understand the scale of the issues and the role which they can play.

R2> That government holds a high-level summit for leaders of the Malaysian construction industry leaders and demands that they take ownership of the problems which they have created. A similar approach was taken in the UK which resulted in the industry developing an Action Plan for short- and medium-term improvement which achieved a real and tangible improvement in health & safety performance.

The sole purpose of the summit should be for the government to lay down very clearly its expectations of the industry to achieve a significant and immediate improvement in its performance, coupled with a clear message of the consequences should it fail to do so.

The industry has had every opportunity, building upon its recent success to get its own house in order. But it has clearly failed to do so. It is now time for government to act by requiring the industry to make that commitment.

R3> That CIDB undertakes a fundamental review within the industry of the critical skills shortage situation faced by the industry and develops a medium-term strategy for the implementation of a Skills Development Programme to address this critical issue.

This wide-reaching review should include consideration of how the current administrative and industry arrangements in Malaysia may be working against the industry to achieve a stable and suitably skilled workforce.

It should include the issues associated with the apparent conveyor-belt flow of often unskilled migrant labour into Malaysia who, having attained some degree of skill upscaling often leave the country, either due to work visa restrictions or because they become more expensive to employ.

R4> That CIDB and the Department of Occupational Safety and Health (DOSH) jointly review how to more effectively challenge the construction industry in the remaining years of the CITP by ensuring that initiatives – whether undertaken jointly or separately – are focused more sharply on achieving the target reduction in accidents and fatalities across the construction industry.

If any progress is to be made towards achieving the 2020 target which in our opinion thus far looks unlikely, it will require that the activity of both agencies is jointly and tightly focused on that single objective.

R5> That CIDB and DOSH develop an even closer working relationship by building further on their 2016 Memorandum of Understanding to ensure that every opportunity is taken to work in partnership.

An example is through the wider sharing of intelligence (in accordance with Programme 4: OSH Data and Research of the Malaysia Occupational Safety & Health Master Plan 2016-2020) by carrying out jointly-beneficial research and joint undertaking of activities which are focused on achieving the CITP target.

DOSH and CIDB have similar and in some cases overlapping remits. It is essential that they use such opportunity to gain synergistic benefit when deploying their obvious expertise and commitment in a not dissimilar way to that achieved in the UK by the work of its Health & Safety Executive (HSE) and its Health & Safety Laboratory's Science Division.

9.2 CIDB & THE CONSTRUCTION INDUSTRY TRANSFORMATION PROGRAMME

R6> That the Quality, Safety & Professionalism (QSP) (one of the four CITP strategic thrusts) Q2 approach is reviewed to ensure that it provides sufficient challenge, particularly to the poorer performing end of the industry. In our opinion, much of what it currently seeks to achieve will influence that part of the industry which has the least need and the greatest capability to resolve its own issues regardless of the CITP.

While a more difficult group to influence, securing an improvement in performance of the large number operating at the

lower end of the industry may actually achieve a much greater overall effect on the accident and fatality rate which is the QSP target and which should be the sole focus of the QSP initiatives.

R7> That QSP Q2b more tightly focuses its initiatives on topics likely to achieve an immediate improvement in the health & safety performance of the industry. Although the current initiatives are all worthy and well-founded, they probably lack impact and industry challenge.

In our opinion, they are unlikely on their own to make a sufficient difference to site performance or to actually achieve any tangible improvement in the accident and fatality rates by 2020.

When an industry is performing so relatively poorly, it is not normally difficult to identify safety critical, single-issue topics – which if tackled in a very focused way – can actually achieve significant results very quickly. This could leverage the expertise of both CIDB and DOSH to present a very effective and robust challenge for the industry to embark on rapid improvement.

As an example, work at high-rise structures is the biggest single cause of fatal and non-fatal accidents in the industry. Relatively low falls will contribute significantly to these statistics and we identified during our visit the very poor standard of tower scaffolds being widely used on most sites which we saw.

If a zero-tolerance initiative was designed to specifically target and eliminate the on-site use of poorly constructed tower scaffolds and by promoting its benefits alongside guard rails to prevent falls of presumably more than two metres (rather than four metres which appear to be the current Malaysian industry norm), then this could influence a much greater proportion of the industry than is likely to be affected by some of the current initiatives.

Moreover, this is far more likely to achieve an actual reduction in accidents. An ambitious, challenging and very focused initiative such as this could influence behaviours and performance on virtually every construction site in Malaysia.

When doing something which affects so many sites, it becomes much easier to achieve real improvement which gets demonstrated very quickly in the reported accident statistics.

HSE has routinely used this approach in the UK to target safety critical, single-issue topics, to very good effect. A specific example related to the use on sites of damaged or poorly maintained ladders. Working with the industry and the trade suppliers of ladders, a scheme was rolled out whereby contractors could claim a very significant discount on the

cost of a new ladder by handing in an old, damaged or unsafe ladder (which were then immediately destroyed).

Fully funded by industry, such initiative has removed an extremely high number of unsafe ladders from various construction sites in the UK within a single year. Without the scheme, unsafe ladders would have continued to be used, thus would have undoubtedly sparked numerous accidents.

That single initiative changed the perception in the industry of what a ladder should look like and the condition in which it needs to be maintained so much so it is now extremely unusual to see a damaged or unsafe ladder in use at a UK construction site.

A similar approach to unsuitable and damaged tower scaffolds could be rolled out in Malaysia which would be likely to have a very immediate impact.

While unlikely to have a direct effect on progress towards achieving the CITP QSP target, it may be sensible to include a health topic within any programme of single-issue targeted campaigns in order to raise the profile of occupational health issues within the industry.

R8> That the QSP Q2b initiatives are reviewed by CIDB to assess whether their focus can be extended to influence a wider proportion of the industry than currently proposed.

R9> That the design of the Q2b initiatives more closely reflect that of the Q2a initiative on improving workers' amenities which focuses on a single important issue, presents a cogent argument for doing so, and has a well-developed plan for how it will achieve its objective.

R10> That the QSP Q2a initiatives to improve workers' amenities are fully implemented as soon as practicable.

R11> That CIDB commission an independent review of the impact of the SHASSIC programme to establish whether its use by companies produces any improvement in health & safety performance and if so, by how much.

R12> That CIDB reviews its approach to occupational ill health to ensure that adequate emphasis is given to such area when programmes of work are being developed.

9.3 HEALTH & SAFETY REGULATORY FRAMEWORK

R13> That the planned review of legislation and guidance to be undertaken by DOSH under Strategic Goal No. 3-4 of its Construction Safety Strategic Plan 2018-2020 includes consideration of the potential for confusion to industry caused by the current concurrent use of both goal-setting and prescriptive primary legislation.

R14> That the planned review of legislation and guidance to be undertaken by DOSH under Strategic Goal No. 3-4 of its Construction Safety Strategic Plan 2018-2020 includes consideration of the role of non-mandatory guidelines and industry compliance with them.

We are concerned that a substantial portion of the construction industry does not currently choose to recognise the guidelines as standards for the industry to comply with or take cognisance of, hence consequently much of the very detailed and safety critical guidance contained within them is being ignored.

R15> That the separate status of CIDB and DOSH be maintained. While recognising the potential for confusion within industry by having two regulators who have similar and overlapping responsibilities in some areas, we are of the opinion that they are primarily working in sufficiently different topic areas, hence any move to consolidate their roles into a single agency in order to address this potential risk is not necessary.

R16> That DOSH reviews its position in relation to its undertaking of the statutory inspection of cranes and possibly other lifting and pressure equipment to ensure that conflict of interest is avoided or – if unavoidable – that adequate firewall processes are in place within DOSH to mitigate that risk.

9.4 INTRODUCTION OF GOSHCIM INTO MALAYSIAN LEGISLATION

R17> That the current DOSH plan to transition GOSHCIM into Malaysian legislation be maintained. This will be a fundamental step to securing longer term improvement in the health & safety performance of the Malaysian construction industry. Without such a move to harness the influence of the developers and designers, we see little likelihood of such an improvement being made.

R18> That CIDB provides assistance to DOSH in the development of its GOSHCIM implementation plan to ensure that the necessary steps to inform and prepare themselves vis-à-vis wider feedback from the government and construction industry has been taken prior to implementation, and that its promotional and industry support capability is employed to the fullest extent.

R19> That a DOSH-led joint government and construction industry GOSHCIM working group be set up to develop an industry implementation plan (which will form part of the wider DOSH Implementation Plan).

R20> That DOSH considers the most appropriate implementation strategy taking into account the maturity and relative competence of the Malaysian construction industry to adopt such a fundamental legislative change.

RECOMMENDATIONS

Our current opinion is that the Malaysian construction industry as whole would not be ready or able to fully comply with this new legislation by 2020.

Our specific recommendation, therefore, would be to initially only bring projects into scope of the new legislation based either on the contract sum value of the project (such as the system in Singapore) or alternatively on the grade of main contractor appointed to undertake the works, probably only G7 contractors initially (this could be more complicated but would reflect the current widely-understood 'G' grading system adopted for contractors in Malaysia).

Over time, as the benefits and understanding of the GOSHCIM approach increases, it may be advisable to amend the application criteria to require projects or companies lower down the scale to become subject to the legislation. If based on contract sum value, then natural inflation in the economy will automatically have this effect to some extent.

R21> That DOSH commit to a fundamental review of the performance of the GOSHCIM legislation within three years of its implementation.

R22> That the government (in its widest sense) provides a lead to the industry by committing to act as a GOSHCIM exemplar developer on all public-sector projects where it commissions construction work, including in respect of any forthcoming national flagship projects.

R23> That the government develops case study projects at the earliest possible opportunity (i.e. prior to implementation of the legislation) under GOSHCIM principles to provide evidence to assist in the 'sell' of the approach to the wider industry.

R24> That DOSH and its construction industry GOSHCIM working group identifies and supports 'champion' companies from all three principal strands of the industry (developers, designers and contractors) as soon as possible to assist in the demonstration of the 'sell' approach to the wider industry.

R25> That DOSH and its construction industry GOSHCIM working group establish early links to the professional associations representing the construction design industry in order to develop a designer-specific implementation plan to include consideration of designer training, competence and the means of sharing best practice both from overseas and within Malaysia.

R26> That CIDB develops a designer training course on GOSHCIM principles.

R27> That CIDB/CREAM (the Construction Research Institute of Malaysia) review the potential to further develop the Building Information Modelling (BIM)

system by including the GOSHCIM design information.

R28> That DOSH, when developing the draft GOSHCIM legislation, takes into account the need for the penalties upon conviction to be large enough to act as a meaningful deterrent to non-compliance.

R29> That DOSH and CIDB develop comprehensive training plans for their own staff to ensure that they are prepared to meet the requirement of new areas of inspection, investigation and enforcement.

The DOSH Construction Safety Strategic Plan 2018-2020 already includes in its Action Plan (for its Strategic Goal No. 2) the need to develop a plan to increase DOSH inspector's skills and abilities in relation to GOSHCIM. This plan should be reviewed to ensure that it fully addresses the skills and competence needs of its inspectors.

APPENDICES
GLOSSARY

11MP	11th Malaysia Plan
ACoP	Approved Codes of Practice
BIM	Building Information Modelling
CDM	*refers* to UK's Construction (Design & Management) Regulations
CIDB	Construction Industry Development Board
CITP	Construction Industry Transformation Programme 2016-2020
CREAM	Construction Research Institute of Malaysia
DfS	*refers* to the Design for Safety (DfS) legislation implemented by Singapore
DOSH	Department of Occupational Safety & Health
ETP	Malaysian Economic Transformation Programme
FAR	Fatal Accident Rate
GOSHCIM	Guidelines on Occupational Safety & Health in Construction Industry (Management) 2017
HSE	UK Health & Safety Executive
IWG	CIDB's Industry Working Group
MBAM	Master Builders Association Malaysia
MOW	Ministry of Works
OSH	Occupational Safety & Health
QLASSIC	Quality Assessment in Construction
QSP	*refers* to Quality, Safety & Professionalism (one of the four CITP strategic thrusts)
SHASSIC	Safety & Health Assessment System in Construction (an independent assessment system managed by CIDB to assess the safety and health performance of a construction contractor)
SHO	Safety & Health Officer
SSS	Site Safety Supervisor

ANNEX 1

List of documents and relevant materials made available to the UK Health & Safety Executive (HSE) by CIDB/CREAM (the Construction Research Institute of Malaysia) & the Department of Occupational Safety and Health (DOSH)

- CIDB Construction Industry Transformation Programme 2016-2020
- DOSH Construction Safety Strategic Plan 2018-2020
- Malaysia Occupational Safety & Health Master Plan 2016-2020
- Expert Panel Report 2013 (Following collapse of the Penang Second Bridge in June 2013)
- CIDB/DOSH Memorandum of Understanding 2016
- CIDB CITP Q2a and Q2b Initiatives
- DOSH Guidelines on Occupational Safety & Health in Construction Industry (Management) 2017
- Malaysian Standard MS 2593:2015 – Temporary construction site workers' amenities and accommodation (Code of Practice)
- Government of Malaysia Standard form of contract to be used for contract based on drawings and specifications PWD Form 203 (Rev 10/83)
- Government of Malaysia Conditions of contract to be used where bills of quantities form part of the contract PWD Form 203A (Rev 10/83)
- CIDB Construction Industry Standard CIS 10:2008 – Safety & Health Assessment System in Construction (SHASSIC)
- CIDB / DOSH / MBAM – Handbook for Hazard Identification, Risk Assessment & Risk Control (HIRARC)
- CIDB Guideline for Occupational Safety & Health (OSH) Specification & OSH Schedule of Prices
- Construction Industry Development Board Act (CIDB) Act 1994 – Act 520
- Occupational Safety & Health Act & Regulations – Act 514
- Factories and Machinery Act (with Regulations) – Act 139

ANNEX 2

Below are the organisations represented in the stakeholder groups and during the site visit:

Developers

>> Real Estate & Housing Developer's Association Malaysia (REHDA)
>> Project Implementation and Building Maintenance Department of the Kuala Lumpur City Hall
>> Putrajaya Holdings Sdn Bhd

Designers

>> Board of Architects Malaysia
>> Pertubuhan Arkitek Malaysia (PAM)
>> Association of Consulting Engineers Malaysia (ACEM)

Contractors

>> Master Builders Association of Malaysia (MBAM)
>> Persatuan Kontraktor Melayu Malaysia (PKMM)
>> Sunway Construction Sdn Bhd

Worker representation

>> Malayan Technical Services Union / Congress of Unions of Employees in the Public and Civil Services

Training organisations

>> National Institute of Occupational Safety & Health (NIOSH)
>> CIDB Holdings Sdn Bhd
>> KLIA Professional & Management College
>> Akademi Binaan Malaysia Wilayah Tengah

Health & safety professionals

>> The Malaysian Society for Occupational Safety & Health (MSOSH)
>> KLIA Professional & Management College
>> Mass Rapid Transit Corporation Sdn Bhd

Site Visit

>> Ekovest Construction Sdn Bhd

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