CAPTAINS OF INDUSTRY
ROUND TABLE DISCUSSION 2018:

“TO INGRAIN QUALITY IN CONSTRUCTION INDUSTRY CULTURE”

16 AUGUST 2018
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INTRODUCTION

“The Captains of Industry Round Table Discussion 2018 - To Ingrain Quality in Construction Industry Culture” was held on 16 August 2018 at Renaissance Hotel Kuala Lumpur. This was the first round table discussion on Quality in the construction industry following from the success of the round table discussions on Safety that was held during International Construction Week 2017 and 2018.

A total of 48 representatives from the construction industry, including key senior leaders from government agencies, construction and consultant companies, think tanks and academicians attended the discussion. The Round Table provided the opportunity for industry leaders to give their feedback towards improving quality within the construction industry and how a culture of quality could be ingrained in the industry.

Following the welcome remarks by Chief Executive of CIDB Malaysia, Dato’ Ir. Ahmad ‘Asri Abdul Hamid, were three presentations on “Construction Quality Management: Re-Learning The Project Management Process”, “Proposed QLASSIC Contract Documents for QLASSIC Private Development Projects”, and “Quality Assurance and Quality Control”. The round table discussion was held among participants from various government and private entities, moderated by Chief Executive of CIDB Malaysia, Dato’ Ir. Ahmad ‘Asri Abdul Hamid.
The session began with the welcome remarks by the Chief Executive of CIDB Malaysia, Dato’ Ir. Ahmad ‘Asri Abdul Hamid, who expressed his thanks and delight to see many representatives from various construction sectors attending the round table discussion on Quality in Construction.

Dato’ ‘Asri explained that the Quality Round Table discussion was a follow up to the Safety Round Table as these were the two main issues facing the construction industry. Dato’ ‘Asri recapped that the Safety Round Table was held during International Construction Week (ICW) 2017 where a lot of input was received. Another Safety Round Table was held during ICW 2018. These inputs were valuable to guide the CITP to achieve the stated safety targets.

The success of the Safety Round Tables prompted CIDB to hold a Quality Round Table to address quality issues in the construction industry. Dato’ ‘Asri said the Quality Round Table was timely as the Construction Industry Transformation Plan (CITP) was launched in 2015, and the first of the Four Strategic Thrusts of the CITP is Quality, Safety & Professionalism. Since it was now past the halfway mark of the CITP’s implementation, there needs to be a review of what had been done and the progress achieved.
Dato' Asri explained that the CITP’s programmes have been implemented and the achievement of the CITP was about 96% overall. However, he noted that even though this meant that almost all off the initiatives under the CITP had been implemented, it had not been translated into the desired outcomes. He gave the example of the Safety aspect, where the target was to halve the fatality rate 5.5 fatalities per 100,000 workers by 2020, based on the 2015 benchmark of 10.9 fatalities per 100,000 workers. However, the fatality rate had actually increased to 12.8 fatalities in 2016 and 12.9 fatalities in 2017, despite the initiatives implemented in line with the CITP. Therefore, the previous Minister of Works and the Board of CIDB wanted a review to see how these gaps could be reduced and to discover the reason for the disconnect between the initiatives and the desired outcomes.

Dato' Asri went on to explain that the Quality initiative was facing a similar situation. He explained that the construction standard, QLASSIC, and projects have been averaging 72% on the QLASSIC scale since 2015. This meant that the quality of construction has not improved as well, despite the initiatives to encourage quality.

Dato' Asri urged those present to take the opportunity to provide their input regarding quality, since CIDB was doing a mid-term review of the CITP, so that things can be aligned in order to achieve the desired outcome.

However, Dato' Asri also pointed out that although the Quality initiative of the CITP is focused on QLASSIC, quality involves every element of construction such as manpower, materials, technology and capabilities of personnel. Dato' Asri stated that although the CITP is arranged into Four Strategic Thrusts in order to develop the suitable initiatives, the initiatives alone do not truly reflect the desired outcomes. For example, Quality is not dependent on QLASSIC ratings alone, but on many other aspects.

Dato' Asri then invited those present to provide input as to how quality can be ingrained and made a culture in the construction industry. Dato' Asri acknowledged that there were calls to make Quality a mandatory requirement, but he said that mandating quality might be a process towards creating a culture of quality but the desired outcome is to have a culture of quality in the construction industry.

Dato' Asri concluded by calling on all the Captains of Industry present to feel free to give ideas and feedback in order that CIDB could develop the right initiatives to achieve the targets of the CITP.
The session was moderated by Chief Executive of CIDB Malaysia, Dato’ Ir. Ahmad ‘Asri Abdul Hamid. All members of the round table discussion were invited to give their comments or feedback and comments of the issues and proposals raised during the three expert presentations.

Sr. Ahmad Suhaimi Abdul Majid of AS2 Consult Sdn Bhd requested clarification from Mr Joshua Kang about the proposed standard contract documents, whether it was a contract between a main contractor and a developer.

Mr Joshua Kang replied that it was indeed between the main contractor and developer, when awarding the main tender.

Sr. Ahmad Suhaimi replied that he did not see the need for such a contract and suggested to just have a code of practice. The 70% QLASSIC rating requirement could be included in the tender document as an appendix to contract, instead of having a separate contract.
Mr Joshua Kang clarified that the proposed standard document was never intended to be a separate contract or document. The document is meant to be an appendix to main contract document to emphasise that the project was going to implement QLASSIC.

En Hasnan Abdul Hamid, Implementation Coordination Unit, JPM said that the industry needs to think about its existing culture. He cited the current Prime Minister, who had instructed government servants to change their sign off from “saya yang menurut perintah” (I who follow orders) to “saya yang menjalankan amanah” (I who execute the trust). He observed that there is still lack of trust among the industry stakeholders, which is creating the need to mandate or contract to gain honest performance from contractors. He observed that this was heading in the wrong direction, and called on the committee and CIDB to focus on instilling a culture of honesty and trust instead of focusing on technical training.

He noted that industry players are functioning in silos, taking care of their own interests, and there is a lack of trust among industry players. He mentioned that CIDB needs to put the right culture in place. He gave the example of having worked with JKR for 35 years, where many quality documents have been produced but nothing had come of it. He called for a commitment to a culture of honesty, commitment and trust, otherwise there will not be agreement on what needs to be done.

He called on the industry to take a different approach, instead of arguing among players but to reflect whether they are serious about ensuring quality in construction. He cited the speaker from the session earlier in the day who also touched on culture. He observed that the attitude and culture has not yet developed in society and even in the committee. He suggested that CIDB look into ways of improving the culture among the captains of industry to ensure trust and honesty.

Dato’ Ahmad ‘Asri responded that this was an ideal but made the point that mandatory measures is one way of building a culture. He cited Australia as having no Ministry of Works because there is no need to regulate the building sector as the industry itself regulates its own quality levels. He mentioned that ingraining culture into the industry is a process and mandatory measures is one way to ensure adoption, which would eventually lead to it becoming a culture.
Dato’ Sri Chen Ghee Kheong, Binastra Ablebuild Sdn Bhd noted that there were many procedures and guidelines and a complete team of SO, RE and others, but it is the foreign workers who are doing buildings. He asked who was responsible to assess their skill. He also noted that foreign workers leave at the end of their contract after they had learned a skill and trained to CIDB standards and their replacements are all unskilled and inexperienced builders. He also brought up worker issues such as fair wages, living conditions, and hiring local youths to keep the skillsets within the country. He expressed his opinion that the bigger problem lay with the fact that there is a lack of Malaysians doing construction work.

En. Yeo Cheng Chuan made a point that PKNS had been practising QLASSIC for almost 10 years. He questioned the integrity of the QLASSIC assessors, as most of the time they come only in pairs which involves a lack of accountability and transparency. He cited other government operations which are conducted by groups involving various agencies. He also mentioned customer complaints received even after the project had achieved a high QLASSIC rating, saying that their unit’s quality was much lower than another unit. This was due to assessments being done on random units. He also agreed that there was a need for continuous improvement and awareness of quality, and to involve Malaysians in the construction labour force, to produce a sense of ownership for quality in construction.

Dato’ Ahmad ‘Asri thanked En. Yeo for his input. He highlighted two points that had been brought up by Dr Fadzil in the morning’s talk, which is firstly there no quality issues prior to the 1980s. Quality issues cropped up after unskilled foreign workers were brought into the labour market. The second issue was about cost, and Dr Fadzil had said that QLASSIC implementation would incur about 3% of construction costs because it required hiring higher paid skilled workers.

En Yunos Bin Oon, Elanz Design Build Sdn Bhd mentioned that current labour laws required foreign workers be sent back to their homeland for at least 3 months after 12 years of employment. The cost incurred in training such workers in Malaysian quality standards was high and borne by the employer, and sending them back would be a loss. He hoped that the government could extend the time frame for repatriation, perhaps with an additional condition that the company undertakes to train Malaysian workers.
He also noted that there was a labour problem as Malaysian youths are not being deployed in the construction industry. There are many opportunities available and CIDB itself conducts trainings for youths to attract them to the industry. While most uneducated foreign labourers could be trained to a high level of skill, most local youths are not interested. He also noted that discipline was a major problem among Malaysian youths, and he was the opinion that this could be overcome with compulsory service such as through National Service. He felt that the nation was losing out on the untapped pool of youthful energy which is not being deployed, besides other social problems.

En Yunos also spoke on safety and health. He said that when contractors submit their tender documents, they will stinge on certain work specifications, including QS, in order to provide a competitive price. The situation ends up with the lowest bidder winning the contract, but having to compromise on quantity and quality of materials and workers. He then gave an example of a certain agency who requested all scaffolding workers to have a certificate of skill competency. He agreed that this must be done to ensure quality inspectors and even regulators have safe access to inspect high places such as rooftops.

Dato’ Ahmad ‘Asri commented that many industry players complain that competency of graduates not up to par. He said that CIDB has an apprenticeship programme where new graduates are placed in companies for internships, and CIDB would share salary cost with the company. This arrangement has had some success in ensuring the employability of the graduates. On the issue of scaffolding, CIDB does conduct scaffolding competency training and it is a very popular course.

Ir. Bakri Bin Ishak, Gabung Strategik Sdn Bhd commented that, main contractors needed to secure the job before looking into issues of safety & quality. The perception and understanding on safety vary, even among contractors of similar grade (G7). In comparison, the tender price between a contractor having OHSAS 18000 and contractor not having OHSAS would be different. But if the contractual requirements like specifications and bill of quantities are well spelled out in the preliminaries like what MRT project and LRT 3 project have done, then it would be easier and fairer for the contractors concern to quote.
This will lead to every tendering contractor to quote and price the same items. In these projects the client has also allocated a sum for certain important requirement for the contractor to undertake as a fixed provisional sum. This is further supported with additional safety criteria imposed on the contractor to undertake such as working at height, heavy lifting and others.

In relation to this, similar contractual requirements may be set on quality, for example MRT and LRT projects specify the requirement for a quality manager and an assistant of certain experience in the related field. To inculcate the culture of quality, quality requirements has to be clearly specified in the BoQ. This is to be fair to all contractors who are quoting for a job. This is because there are various levels of quality competencies in the industry and the pricing will be different accordingly. If the BoQ is clearly specified, then it is easier and more transparent for contractors to submit an accurate quote for the requirements. He also suggested that clients specify a fixed provisional sum specifically for quality measures, which can then justify the quality criteria imposed on the contractor. There are currently some quality requirements in contracts, for example, clients might require certain personnel to have a certain level of experience.

However, En Bakri noted that one must look at the overall understanding of what constituted quality work. Supervisors and staff need to be trained to recognise quality of work in all aspects of construction. He gave an example that supervisors currently only recognise quality in terms of work processes fulfilled, but they do not know how to recognise the quality of work because they do not have the experience. Supervisors need to be trained to understand what quality entails so that they know what they really need to supervise. En Bakri thinks that this aspect is lacking at the moment, even though supervisors are the contractors’ frontliners who are on site to ensure quality.

Dato’ Ahmad ‘Asri summarised the points made. First, create a level playing field for everyone to submit their costing, otherwise there will be an unfair situation where contractors who price for quality would be at a disadvantage in their tender. Second was the lack of competency in quality supervisors and the need for training.

Tuan Syed Mohamed Adnan, SMHB Engineering Sdn Bhd shared his experience in the construction of MRT lines 1 and 2. He mentioned that he was making the point in reference to En Bakri’s point about clearly specifying the quality requirements for contractors to quote. He noted that there was a big
difference in the drawings between line 1 and line 2. Those for line 2 were very
detailed, and even showed the construction sequence, traffic management
plans, types of cranes to be used, etc. This was parked under reference
drawings so that contractors could refer when preparing their quote.

He also made the point that for the MRT line 2 project, safety was regarded as
a consultant issue, and not just a contractor issue. The supervising consultants
were expected to be aware of safety measures to be adopted by contractors
on top of their technical supervisory work. The line 2 project also had KVMRT
training centres to train contractors, workers and supervising consultants by
in-house professionals, provided free of charge.

Dato' Ir Fauzi Bin Omar, SPA Integrated Sdn Bhd first addressed the issue of
safety requirements. He requested CIDB to require a clear standard provision
sum and for detailed safety requirements to be specified so that G7
contractors could tender fairly and transparently. He said that he had
mentioned it many times during CIDB functions and hopes that it will be looked
into. On the issue of quality, he agreed with En Bakri, that contractors must
secure a project first before implementing safety and quality. An increase in
quality incurs a commensurate increase in cost.

Referring to the presentation by Mr Kang, he was of the opinion that it was
more suitable for private developers, as they are focused on selling their
products at the best margin so they would want to ensure quality to secure
buyers and improve their reputation. In such situations, developers could offer
contractors a good price to ensure quality, as they could then sell for a higher
price in the market. However, in cases where contractors are tendering for
public works, which are not profit-driven, the requirement for quality set by JKR
is as high as private developers, but the budget given is not commensurate.
He noted that a contractor who priced fairly for good quality work would most
likely be disqualified immediately.

As such, he agreed that Mr Kang's presentation was good for profit-driven
projects but much more thought needed to be given before implementing for
public projects as it would create a burden for contractors.

Dato' Ir Fauzi also agreed that the reward and penalty system was a good
concept. He agreed that contractors who achieved QLASSIC score of 70%
and above should be rewarded, those who score below should be penalised.
But he questioned the quantum of the reward, saying that if it was up to 5% of the total cost, contractors would be willing to commit to a 70% QLASSIC score. However, he stated that if the reward was a certificate, he would not be interested as it may not be of any help for him to win contracts. He also said that it was very unfair to contractors if cost for quality is not provided for but penalty is imposed on the contractor for failing to achieve the QLASSIC score.

Dato’ Ir Fauzi also made the point that contractors preferred not to hire unskilled foreign workers, but they had little alternative because very few locals want to take up construction jobs.

On the issue of integrity, he asked how to control an assessor’s integrity, as the current practice left things open for undesirable things to happen.

Dato’ Izz Mikail Abdullah, Portland Arena Sdn Bhd added to Dato’ Ir Fauzi’s point, saying that the real issue that needed to be addressed when it comes to quality is costing. He made the point that all the quality measures being proposed costs money. For a private developer, their ultimate objective is to make money, whereas for government projects, the objective is to save money. As such, the lowest bidder is always preferred regardless of the contractor’s track record. Other factors, including quality, are secondary considerations. He noted that the industry will never grow if this culture continues.

Dato’ Izz also brought up the level of professionalism among consultants, pointing out that there were a lot of discrepancies in the detailed drawings of the various consultant parties. As such, tendering contractors are forced to check the drawings, otherwise they would be penalised for the discrepancies. He questioned why contractors were being penalised for a consultant’s mistakes. He called for a culture change where consultants should be responsible for their own errors or discrepancies, instead of burdening the contractor. He noted that as a developer, his practice is to penalise the consultants for their mistakes.

He called on all consultants in a project to coordinate their work instead working in silos and just passing the job on to the next person down the value chain, with contractors ending up having to identify and solve the discrepancies in the end. The cost incurred by contractors due to these mistakes forces them to cut corners, resulting in quality problems. He urged the industry players to address QA and QC issues at the root.
Dato’ Izz also addressed the issue of honesty brought up by En Hasnan. He pointed out that, Australia had Building Checkers who certifies if a building conforms to the Australian building code. He noted that if industry players are paid fairly, problems with contractors and foreign workers would be solved. He noted that construction workers are severely underpaid because developers are not willing to pay the market price for quality work.

He mentioned that in Australia blue collar workers are paid very well for their labour, and that is why they can self regulate because their level of professionalism ensures quality and they are willing to pay to maintain quality.

En. Yeo came in to explain that PKNS has an in-house monitoring unit comprising 10 technical staff. He noted that the scoring by this team is normally about 10% less than the CIDB assessor’s score. This discrepancy is due to multiple persons doing the assessment, which ensures more transparency. PKNS does not engage CIDB assessors because there is a cost involved.

In projects were QLASSIC is a requirement, En. Yeo explained that PKNS allocates an extra provision for contractors for quality requirements. He called for an industry practise of specifying a provisional fixed sum for the purpose of complying to Construction Safety, Health & Environmental (SHE) requirements, so as to ensure that contractors do not cut corners and compromise on quality when preparing their tenders.

Ir Hj Shaari Hashim, TCS Construction Sdn Bhd said that there needed to be a more holistic approach, not just involving the construction sector but also the political and socio-economic spheres.

He mentioned that in Singapore, everyone is willing to pay for quality because it involves cost. The culture is ingrained that if people want a certain level of quality then they need to pay a certain price level. He put forth the point that all parties, including authorities, must be willing to share quality costs.

Dato’ Soam Heng Choon, Real Estate And Housing Developers’ Association Malaysia (REHDA) made the point that QLASSIC is just the end point exam,
but the process in approaching the exam must be comprehensively looked into. He asserted that everyone in the room wanted to deliver high quality and there had been lots of valid input from players covering many issues. He asked CIDB to incorporate all those points into a roadmap to ensure that the desired outcome is reached. He also asserted that everyone in construction value chain has a role to play to ensure the big picture goals are met.

Dato' Soam mentioned that CIDB and DOSH were amending the OSH Act 1997, and OSHCIM 2017 to ensure safety and quality begin as early as at the design stage. In addition, he called on CIDB to also look at the industry in a wholesome manner, including various ‘soft’ aspects of construction and not just the hardware or technical aspects. He summarised that everyone involved wanted to deliver quality at an optimum price point, in order to achieve their ultimate goals. He said that the culture of quality can be inculcated throughout construction value chain but a lot of soul searching is also necessary.

He made the point that all the award recipients in the morning practised giving contractors monetary rewards for achieving quality standards and penalising them for failure. He mentioned that currently, things were being done haphazardly and asked that all inputs received be put into a proper roadmap covering what needs to be done by all parties in the value chain. He also said that Malaysia could import some best practises from other countries to be implemented.

Mr Tommy Pereira, Acasys Technology Sdn Bhd said that the present lack of skilled workers and the over reliance on foreign workers had to be addressed. He asked the question, what is being done to equip these workers to ensure that they are able to deliver according to requirement.

He then related an example of a project done in 1993, before DOSH was formed. The developer requested the contractor to include measures to ensure good safety and quality in his tender. The contractor subsequently requested an extra 2.5% on top of costs for workers quarters, equipment and safety/skills training. The developer pioneered a list of construction technical competency courses at the time. He also said that workers were tasked to deliver quality work and provided with proper living conditions and sufficient training so that they were happy to contribute their best effort to achieve the required standards. The developer was willing to invest in all these because they wanted to be a responsible developer.
He made the point that all parties must commit to ensure quality, especially the two main parties - the project owner and the contractor. The developer must commit to doing whatever it takes to ensure quality. He said that the realities today have to be discussed and overcome while moving towards achieving higher standards.

Dato' Ir. Laxana Naidu, Sysnovate Solutions Sdn Bhd acknowledged that documentation and practices in the industry has improved tremendously over the past 20 years. He mentioned that the bigger problems were on the “software” side, which is the major area that needed improvement. He gave the example of supervision, saying that supervisors now tended to focus more on inspection, finding fault and blame for mistakes already done, particularly blaming the workers.

He called for this to change. Workers need to be properly trained and supervised. He also observed that most supervisors lack knowledge in the technical aspects and work processes. He said there must be a change, where there is responsibility and accountability at every level. He asserted that there must be quality thinking, and human capital development was needed to achieve this goal. He said that the best standards and statements would be unachievable if this reality is not addressed.

He also touched on issues with materials. He made the point that there were varying quality standards of materials in the market, whether produced locally or imported. A lot of quality issues arise from material used, but the contractor, subcontractor or workers are blamed for poor workmanship. He called on a material quality standard as it would help to ensure the good quality of the final product.
CONCLUSION

Without further discussion from the floor, the CE of CIDB, Dato’ Ahmad ‘Asri concluded the round table discussion and thanked all those present for their input. He mentioned that he had made note of 25 points that had been raised, adding that it was excellent input for the industry to move forward. He highlighted a few key concerns heard in the course of discussion and concluded that, in essence, the discussion had been centred around the point that quality and safety required the commitment of all parties. He said that there should be more platforms where industry players can be engaged and their input sought, as it was very beneficial to the work of CIDB. His final reminder was that the construction industry is not owned by CIDB but by all stakeholders, as such it was in its own interest to develop the construction sector.

Dato’ ‘Asri adjourned the meeting after recording his sincere thanks to all the presenters as well as all those who attended the round table.
1. Introduction

“The Captains of Industry Round Table Discussion 2018 - To Ingrain Quality in Construction Industry Culture” was held on 16 August 2018 at Renaissance Hotel Kuala Lumpur. This was the first round table discussion on Quality in the construction industry following from the success of the round table discussions on Safety that was held during International Construction Week 2017 and 2018.

The Round Table provided the opportunity for government agencies, construction and consultant companies, think tanks and academicians discuss issues regarding improving quality within the construction industry and how a culture of quality could be ingrained in the industry.

2. Way Forward

During the discussion, a number of comments, recommendations and suggestions were conveyed and discussed by the participants with the aim of improving the level of quality as well as resolving some of the issues affecting in construction. Some of the key points that were discussed are as follows:
I. There is a lack of skilled workers in the construction industry. Most construction workers are unskilled foreign labourers who come here on short contracts. Although time and resources are spent to train them up to the required level of skill, these workers will return to their homeland at the end of contract period. There are also cases of long term foreign workers who have developed a high level of skill and experience but are required by law to return to their homeland for at least 3 months in their 13th year in Malaysia. These issues disrupt the supply of skilled foreign labour.

II. Industry players prefer to hire local workers, because it keeps the talent pool within the country and there would be a stable supply of skilled labour. However, local youths are not keen to work in the construction industry.

III. Currently, most supervisors only check construction work processes and technical compliance, and not on workmanship quality.

IV. Quality always involves cost, as it requires better materials, processes and labour. However, the current culture in the market is that people expect high quality but are not willing to pay the cost for quality. This culture must change.

V. The BoQ is not detailed enough to cost in quality to submit a tender. There is also a perception that clients choose the lowest quotation most of the time. As such, to keep prices as low as possible in their tenders, contractors do not factor in safety and quality costs or cut corners in other areas which may compromise quality workmanship.

VI. There is a perception that the CIDB QLASSIC assessment is not balanced and transparent enough. Quality assessors were seen as evaluating a project at their own discretion and only based on random sampling.

VII. Contractors generally agreed to a reward and penalty system to encourage adoption of QLASSIC. However, contractors are not interested in non-monetary reward systems. Rewards must be commensurate to the efforts put in to ensure quality targets are achieved. A figure of 5% of contract value was suggested.
VIII. Quality culture needs to be ingrained in the mindset of workers at all levels. From clients, to consultants, to contractors, to all their staff and even site workers. There must be sufficient human capital development for all parties, including at tertiary or vocational education level.

IX. Quality and safety need the commitment of all stakeholders, especially the two main parties - the project owner and the contractor. Quality mindset starts right at the design and conception stage, so the developer must commit to doing whatever it takes to ensure quality. However, this expectation is often not specified clearly in the contract but contractors are still expected to deliver.

X. Consultants must ensure that detailed drawings are consistent and finalised so that contractors can focus on construction. Currently, contractors often have to spend their own time and costs to check the detailed drawings of consultants which often contain discrepancies with each other. This is not the responsibility of contractors, but they are penalised if the finished product is of lower quality because of such discrepancies.

XI. Private developers benefit from the QLASSIC score as this can be used as a marketing advantage. The profit motive provides the incentive for private developers to pay contractors to comply with quality requirements. However, there is no profit motive in public sector projects, where the focus is responsible budgeting and expenditure. As such, there is a perception that quality requirements raise the cost for contractors and cuts into their profit margin.

XII. All parties, including property buyers, must be willing to share the cost of quality and not expect the contractor to shoulder the entire cost out of their own pocket.

XIII. Industry players are working in silos, and there is a lack of trust. There must be commitment to a culture of honesty, collaboration and trust, otherwise there will not be agreement among industry players on what needs to be done.
3. Conclusion

Since year 2007 till end of year 2017, data from CIDB shows slow increase to the annual national average QLASSIC Score which remains at around 70% starting in year 2009 (lowest at 68% in year 2014 from 272 projects being assessed and highest at 72.5% in year 2015 from 270 projects being assessed). On these grounds, it is essential that the industry undertakes quality improvement initiatives at both organizational and project management level in relation to:

1. Quality Management Policy
2. Quality Champion
3. Training and Sharing of Best Practices
4. Quality Project Monitoring or Supervision
Prof Fadzil began his presentation “Construction Quality Management: Re-Learning The Project Management Process” by saying that it served to set the context for the round table discussion to follow. He said that by understanding the context the industry in operating in, blind spots could be identified and addressed in the effort to promote QLASSIC.

Prof Fadzil spoke on the following three points:

**Content**

- The construction QLASSIC initiative
- QLASSIC in the project management process
- Critical components of quality management
- Discussions
Prof Fadzil began by highlighting the statistics obtained from CIDB, that only 449 projects had been assessed with QLASSIC, commenting that it is a very poor uptake rate as QLASSIC was first introduced on 2007.

From research, it was found that different groups of people had differences to the QLASSIC initiative. From the feedback, some had embraced it, as the earlier award winners had shown, some were puzzled by how to implement it, some were resistant as they considered it an extra burden, and some were even angry that there was another requirement to adhere to, some are trying to comply, and some have given up trying.

Prof Fadzil suggested that in implementing QLASSIC, perhaps it was better to also listen to the problems of all stakeholders, including those who found it difficult or undesirable to implement this initiative in order to get feedback and ascertain the reasons for the lethargy in embracing QLASSIC. These would include the stakeholders whose voices are not normally heard, such as smaller players or government departments or ministries who have projects of their own.

Prof Fadzil called out certain assumptions regarding quality in the construction industry that need to be re-examined. From research, some common comments are:
However, Prof Fadzil questioned the validity of these assumptions, e.g. how good is the quality of detailed drawings. He mentioned that the quality of drawing in the industry has declined and specifications for quality are highly ambiguous, emphasising the need to be more prescriptive of the quality standards required.

He also mentioned a few issues, such as contractors not being aware of contract terms, the questionable competency of Safety Officers, and whether the consultants had the staff capability to ensure quality.

Prof Fadzil went on to say that in the study he conducted over the past 2 years, covering all university curricula of all the disciplines related to construction such as Quantity Surveying, Engineering and Architecture, there is no module to train students on quality or about other aspects of construction that contribute to quality.

Prof Fadzil then asked if contractors and tradesmen actually knew what quality involved. He mentioned that it was very difficult to get workers to deliver to the required standards of quality. He also asked if project managers competent to ensure quality or if they were delegating the responsibility to others. He also questioned how many contractors had quality management systems in place, saying that it was just a very small percentage.

As such, the first question Prof Fadzil presented to the floor was: Are the key people responsible for ensuring quality competent to do so?

Prof Fadzil went on to make the point that quality does not only involve better technology, but also ensuring that the right people and processes are in place. He found that in his studies, there is an over emphasis on developing the tools to measure quality and not enough emphasis to developing people and processes.
Prof Fadzil then went through the typical project lifecycle, and explained that the understanding of the various project management roles in the process is unclear. Many assume to know the responsibilities involved, but Prof Fadzil maintained that each stage in the project lifecycle requires a different set of competencies. This is demonstrated in the following chart:

In breaking down the competencies required and the time frame when it is required, the various stages of costing can also be identified. In linking it to QLASSIC, one can then identify where implementation would impact the costing.

Prof Fadzil then further elaborated that the project life cycle could be broken down into 5 phases, with the common core competencies needed by the project manager in each phase to manage a project effectively, as follows:
Prof Fadzil explained that using this framework, bottlenecks and gaps could be identified and addressed. He then went on to say that for QLASSIC to work, it has to start from the feasibility and need statement stage, which comes from the clients themselves. Besides hiring the right project manager, QLASSIC needs to be included as one of the project objectives, the project budget and the specifications contained in the detailed design. He emphasised that quality cannot be assumed, but has to be made explicit from the outset, and be an integral part of consideration in every activity identified above in the construction lifecycle, otherwise it would be difficult to implement.

Prof Fadzil said that perhaps the stakeholders in the pre-contract stage need help to manage their competencies in order to achieve the desired QLASSIC score. In the construction stage, works must be closely monitored to ensure they comply with QLASSIC standards. QLASSIC finally comes in to measure quality at the project handover period. Prof Fadzil reiterated that these findings were derived from the research done and needed to be implemented to ensure compliance with QLASSIC.
Prof Fadzil also said that this framework is applicable to the design and build process, to ensure that QLASSIC can be achieved by managing processes, whatever iteration it is in, as follows:
Using the Ishikawa fishbone diagram, Prof Fadzil demonstrated that QLASSIC needed to be implemented at every stage of the project life cycle in order for it to work, as shown in the following:

It also depended on the competency of the stakeholders involved in each stage to incorporate, monitor, and implement QLASSIC in a project.
Dr Fadzil concluded by highlighting the critical QLASSIC success factors as follows:

- Quality Management Plan (QMP)
- Quality Director/Manager/Champion
- Project Quality Audit/QLASSIC
- Project Quality Steering Committee
- Project Quality Monitoring/Supervision
- Project Quality Training/Sharing: Best Practices

Dr Fadzil emphasised that both the client and contractors must have a Quality Management Plan and commit to it. Quality Champions are necessary for every project to ensure that all quality processes and systems are in place and are being implemented properly. Dr Fadzil highlighted that normal practice in the industry was that contracts would contain a clause requiring contractors to achieve a certain QLASSIC score, with appropriate bonuses or penalties commensurate to success or failure to do so. However, he emphasised that it did not work, and that every party in all the project processes must be actively involved to ensure quality, including clients, consultants, the project manager and staff and contractors.

In conclusion, Dr Fadzil said that quality needed to be seen at the organisational as well as the project level. The organisation must believe and embrace quality as a primary objective. At the project level, activities at each stage of the project must be evaluated through the lens of QLASSIC, and ensure that every activity is in line with QLASSIC objectives.
En. Mohd Nazri presented on the topic of “Quality Assurance and Quality Control in Construction” with the focus on three key points, as follows:

**Scope of Presentation**

- Research Findings on QA & QC Implementation
- QA & QC Guideline
- The Future of Quality in Construction

En. Mohd Nazri began by highlighting a study from 2016 where the question was asked of contractors, “have you implemented QA and QC
measurements?” and 61% responded “Yes”, while 39% indicated “No” or “Not sure”. Which means that only 61% of respondents are aware of QA and QC requirements, while the rest are not sure what it entails, even though they may have some QA and QC measures. A follow-up question was asked, which was, “have you referred to any adopted standards of QA/QC measurements?” 67% responded “Yes”, while 32% indicated “No” or “Not sure” En Mohd Nazri concluded that the respondents who said they were implementing QA/QC measures were genuinely doing so.

When responding to a statement “without QA/QC measurement, quality cannot be guaranteed”, only 41% agreed. 36% responded “Not sure”, and 23% gave no response. En Mohd Nazri concluded that this meant that only 41% of the contractors in the industry were the “true believers” who really knew how to implement QA & QC measures.

En Mohd Nazri went on to highlight the issue of financing QA & QC measures, which is quite costly, estimated to take 7% to 10% of the total project cost. Currently in the industry, only 12% of projects is financed by clients. 48% is jointly financed, with contractors claiming from clients after implementation. Only 40% of developers finance the QA & QC costs, and ensure that it is an uncompromisable component of the BoQ.

To a question of whether quality of work will improve with QA & QC systems in place, almost 75% of respondents said “Yes”. En Mohd Nazri concluded then that, based on the responses, good quality often happens by “accident”, noting that quality has to be planned.

To a question whether there are obstacles to implementing QA & QC systems, meaning to say that if QA & QC systems were to be mandated by CIDB, 78% of respondents said that it would not be a problem. 13% replied “Not sure”, whereas 9% indicated that it would be a problem.
En Mohd Nazri then went on to highlight the 5 recommendations arising from the study, which are as follows:

**Recommended Action Plan - QA & QC**

<table>
<thead>
<tr>
<th>No</th>
<th>CONCERN</th>
<th>ACTION PLAN</th>
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<tbody>
<tr>
<td>01</td>
<td>IMPLEMENTATION AWARENESS</td>
<td>Awareness on accurate Techniques and Method on QA &amp; QC Implementation through out levels of organisation</td>
</tr>
<tr>
<td>02</td>
<td>QA &amp; QC MEASUREMENT FORMAT</td>
<td>Designed to be accurate and ease of use to provide indicator rather than load of works (short &amp; simple)</td>
</tr>
<tr>
<td>03</td>
<td>EFFECTIVENESS ON MEASUREMENT</td>
<td>QA &amp; QC to become ONE Performance Indicator for the success of the project</td>
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En Mohd Nazri then went on to highlight key points of the proposed QA & QC implementation guidelines for contractors undertaking public and private projects.
For the public sector, the Public Works Department (JKR) had already set the benchmark for QA & QC requirements, and provided a lot of input for the proposed guidelines. In 2006, the DG of JKR had issued a circular addressing this issue of construction quality. The Quality Assurance Plan contained three main points:

1. The provision for the Quality Assurance Plan has to be part of the contract documents, that is to say, the client has to allocate provision for QA & QC.

2. Quality Assurance Plan has to be part of the contract terms.

3. The project has to be delivered according to the Quality Assurance Plan specifications, and not ad hoc specifications.
En Mohd Nazri then briefly went through the contents of the proposed guidelines, which is as follows:

### Guideline Content

1. **Introduction**
   - Overview
   - Purpose of Guideline
   - Scope of Application
   - Process for Updating

2. **Organizational Structure**
   - Role, Responsibility, Accountability and Authority of QA & QC

3. **Construction’s Project QA & QC Plan**
   3.1 **Quality Assurance Plan**
      - Integrated Construction QA & QC System
      - Performance Specifications
      - System-Based Acceptance Process – Approval Flow
      - Risk-Based Acceptance Criteria – Published Standard, Internal Standard

En Mohd Nazri highlighted section 3, emphasising that QA and QC systems had to be integrated into the construction process. He also noted that the specifications needed to be clearly spelled out so that one can have a clear picture of whether the requirements had been met. He went on to say that a system of acceptance, such as requiring signatures of approvals, be in place to ensure compliance. He also called for clear risk-based criteria as a point of reference.

### Guideline Content

3.2 **Sampling Plan**
   - Sampling Plan
   - Sample Size
   - Sampling Procedure – Methodology

3.3 **Inspection and Test Plan (ITP)**
   - Specification & Code
   - Drawing, Method Statement & Material Submittal
   - QC Activity Description
   - Test or Inspection to be Performed
   - Stage or Frequency
   - Acceptance Criteria
   - Inspection or Verification
En Mohd Nazri emphasised that QA & QC inspections needed to have proper sampling procedures in place, as well as comprehensive detailed documentation as references, to ensure conclusiveness of the QA & QC outcomes. En Mohd Nazri noted that this was where QLASSIC should be included as part of the CITP, where it can then be ingrained as part of the construction industry culture.

<table>
<thead>
<tr>
<th>Guideline Content</th>
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<tbody>
<tr>
<td>4. Documentation</td>
</tr>
<tr>
<td>• QA &amp; QC Plan</td>
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<tr>
<td>• QA &amp; QC Report</td>
</tr>
<tr>
<td>• QA &amp; QC Form/Checklist</td>
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En Mohd Nazri noted that in his extensive experience auditing construction sites, one problem that most have is with documentation. En Mohd Nazri suggested that the industry move into paperless documentation. This received good response, and JKR is also moving towards this.

En Mohd Nazri then highlighted the proposed accountability structure in the guidelines, calling for a system of accountability to ensure that good decisions are made. En Mohd Nazri said that currently there is some confusion about who has the final say in ensuring quality, as there is no clear accountability structure involving the various parties in a project. He then showed a proposed accountability structure that has been accepted.
This structure shows that the client has overarching authority in decisions on QA & QC, but the SO is in charge of all execution measures. This is already being practised by JKR. The RE will be in charge of the site works.

En Mohd Nazri then called for the industry to separate the QA & QC functions from the project management functions as it will be difficult to have both functional authorities in the same position, as conflicts of interest may arise. This is illustrated in the following diagram:
En Mohd Nazri then gave a brief summary of what the QA & QC scope and function would be as a separate entity from the project management function. This is summarised in the diagram below:

En Mohd Nazri then went on to say that the QA & QC processes needed to be clearly specified and differentiated, even though the functions may be performed by the same person. He then presented a summary of what the implementation of the guidelines would entail, as the following tables show:
### Content of QA & QC Guideline

#### 3.2 Rationality of Sampling Plan

<table>
<thead>
<tr>
<th>Topic</th>
<th>Elaboration</th>
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<tbody>
<tr>
<td>3.2.1 Sampling Plan – need for sampling</td>
<td>Feasibility of 100% checking OR Need for Sampling? - Sampling According to Industry’s Criteria</td>
</tr>
<tr>
<td>3.2.2 Sample Size</td>
<td>Statistical Reference for Accuracy and Acceptance</td>
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<tr>
<td>3.2.3 Sampling Procedure – Method</td>
<td>Management of Sampling Procedure</td>
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#### 3.3 Constructing Inspection and Test Plan

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<th>Topic</th>
<th>Elaboration</th>
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<tbody>
<tr>
<td>3.3.1 Specification &amp; Code</td>
<td>Conforming to Standards and Compliance to Code &amp; Act</td>
</tr>
<tr>
<td>3.3.2 Drawing, Method Statement &amp; Material Submittal</td>
<td>Approval Flow - Request for Information (RFI), Plan, Method and Timely Management</td>
</tr>
<tr>
<td>3.3.3 QC Activity Description</td>
<td>QC Activities Management According to Sampling Plan</td>
</tr>
</tbody>
</table>
En Mohd Nazri then highlighted two “must have” features in the construction industry. The first is a Mock-Up, and the other is the Request For Inspection and the entailing roles, responsibilities, requirements and workflow, as the following diagrams show:
En Mohd Nazri concluded by saying that there are many quality issues in the construction industry. He said that after talking to many SO, many of them remarked that they should have the power to issue notice of non-conformity for any issue if they think there is a risk of non-conformity. He then went on to show a non-conformance flowchart, which specifies the roles and responsibilities of the parties involved.
En Mohd Nazri concluded by reiterating that the survey indicated that only 40% of contractors surveyed were really committed to implementing QA & QC systems. Looking to the future, he said that if QC is implemented with confidence, and QA is done with good verification methodology, it will develop into quality performance.

He also mentioned that innovation in construction should not only be in terms of technology but also in improved processes. In addition, he mentioned several ideas for the future, including LEAN in processes which can ensure more savings, green construction and zero-defect construction.
Mr Kang presented on the topic of “Proposed QLASSIC Contract Documents for QLASSIC Private Development Projects”. He began by reminding those present that QLASSIC has already existed in the construction industry for about 12 years, in the form of the CIS7. Although in that time many developers and contractors had been implementing it, there exists many different documents for it. The Proposed QLASSIC Contract Documents that he would be presenting on that day was based on feedback from various private sector developers from their contract documents.

He then went on to highlight the objectives of proposing a set of standard contract documents for QLASSIC. However, he reminded those present that this was still just a proposal and the participants could give their comments about the documents during the round table discussion to further improve.
The objectives and content of the proposed contract documents are as follows:

**OBJECTIVES**

- To establish a standard QLASSIC specification in contract Document as a reference and standard template for private building projects
- To standardise the format and content of QLASSIC specification and requirements in implementing the QLASSIC
- To develop a QLASSIC tender document that meeting the requirements and fulfil the needs of the private developments in the industry

**Content**

I. Introduction
II. Laws and regulation
III. QLASSIC’s Requirements
   a. Application for QLASSIC registration
   b. CIS7 and Scope of Assessments
   c. Contractor’s Responsibilities
   d. Target QLASSIC Rating
   e. Reward and Penalty (Optional)

The contents of the proposed contract documents were arrived at after consultation with various developers.

The Introduction section will highlight the commitments expected of the developer to adopt QLASSIC for the project and embed it into the contract requirements. Therefore, QLASSIC will be one of the assessment methods to measure quality of work. This is shown in the following figure:
Introduction

As part of the commitment toward the quality workmanship, the employer is desirous of engaging the Construction Industry Development Board Malaysia (CIDB) to conduct an independent quality assessment on the Works in accordance with the sampling and scoring evaluation method set up Quality Assessment System in Construction (QLASSIC) (which may be amended or revised from time to time by CIDB for the entire contract period).

The Main Contractor shall incorporate the QLASSIC requirement as a component and a yard stick for measuring construction quality of completed buildings.

The second section of the proposed contract document outlines the relevant laws and regulations in force. Mr Kang reminded that under CIS7, QLASSIC was never intended to overshadow or overtake the original contract document. It is meant to be a complementary document to the contract. In addition, the contractor is obliged to follow all other statutory and regulatory laws governing the industry. This is reflected as the following figures show:

Law & Regulations

QLASSIC for building construction works is intended to complement the normal contractual drawings and specification in a project. Unless specified in the building contract, Superintending Officer(SO) should not use QLASSIC to decide whether the building or parts of the building projects is accordance with the relevant by Laws. It is still the responsibility of the QP to ensure that the quality of the construction works are conforms to approved standards, practices, specifications and drawings.

The contractor is drawn to the agreement and schedule of condition of building contract issued under the Pertubuhan Arkitek Malaysia (PAM), Royal Institution of Surveyors Malaysia (RISM), Jabatan Kerja Raya (JKR) or any other government agencies or professional bodies.
The third section of the proposed standard contract document talks about the QLASSIC requirements. To avoid any doubts as to which party shall be responsible for QLASSIC registration, this section specifies clearly that the contractor shall bear full responsibility for it. This means the contractor will submit the application to CIDB for QLASSIC assessment when the project is ready, as can be seen in the figure below:

Mr Kang then explained that CS7 is the industry standard while QLASSIC is the assessment tool. Therefore, in order to implement QLASSIC in the contract, the standard used must be specified in the contract as well. This is reflected in the terms of the proposed standard contract document, as per below:
Mr Kang explained that the specification is required because the fill CIS7 assessment covers 4 areas: structural works, M&E fittings, architectural works and external works. However, currently the QLASSIC tool’s capability only covers only architectural works, external works and basic M&E fittings. Therefore, the proposed standard contract documents need to clearly reflect this.

In the third section, the contractor undertakes to comply with all standards listed under QLASSIC. The contractor further commits to submit all necessary records to CIDB for assessment and extend full cooperation to CIDB for the same.
To avoid any cases of manipulation of results by influencing the CIDB assessors, it is also in the proposed standard contract documents that the contractors and all their sub-contractors shall not induce assessors in any way, but shall train their staff on QLASSIC assessment and compliance competencies. This is to ensure independence and transparency in the assessment process.

Further proposed measures to be included in the standard contract document to ensure compliance with QLASSIC are prescribed as follows:
QLASSIC Requirements
Contractor’s Responsibilities

- The Main Contractor shall appoint an experience and certified coordinator or consultant to advise and liaise with CIDB implementing the QLASSIC for the project throughout the construction period.
- The Main Contractor shall responsible to the non-compliance report issued by the Quality Assurance (QA) Personnel or QLASSIC Consultant to ensure the compliance and achievement of the QLASSIC requirements.
- The quality and workmanship shall be evaluated based on the scoring chart established by CIDB. The Main Contractor shall submit to the Employer and Architect the scoring chart, assessment forms and result issued by the QLASSIC Assessor.
The final requirement shared by Mr Kang was that contractors were obliged to achieve a target QLASSIC score of 70% under the proposed standard contract documents. This was to ensure that clients who are committed to achieving QLASSIC standards in their projects would be working with contractors who are similarly committed.

Finally, Mr Kang mentioned the reward and penalty scheme, although it is regarded as an optional item in the proposed standard contract documents, subject to mutual agreement between the contractor and developer. However, he recommended that the reward and penalty scheme is implemented, so that a contractor who spent the effort to achieve the QLASSIC rating will receive just rewards, and vice versa.

However, Mr Kang emphasised that none of the terms of these provisions shall affect the contractor’s obligations in the main contract.

Mr Kang concluded by summarising his presentation and reiterating that the proposed standard contract documents for QLASSIC was drafted with reference to various existing contracts already being used in the industry.