Contractor’s understanding towards the implementation of quality assessment system in construction (QLASSIC) in construction industry

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Abstract. The Quality Assessment System in Construction (QLASSIC) developed by CIDB to measure and evaluate the quality of workmanship and finishes of construction works. Unfortunately, QLASSIC is not fully implemented and applied by all contractors in Malaysia as this element is not a compulsory requirement in getting projects. This paper presents the findings of determination on the understanding of contractors towards the implementation of Quality Assessment System in construction (QLASSIC) in construction industry. This objective was achieved based on the literature review and questionnaire survey. The respondents were selected based on the grade of contractor from G5 to G7 construction companies in Klang Valley. Sample of questionnaire would be 200 and the reply from respondents responded is 95. The data was analysed using Reliability Analysis and Descriptive Analysis. The results indicate that the understanding of contractors is only basic understanding on QLASSIC system but the detail implementation of QLASSIC from contractors were still low. On further research, it may able to study on the implementation of QLASSIC in client’s perspective. The research will study on the implementation of QLASSIC but in the others perspective which is look into the understanding of QLASSIC to clients, the challenges and benefit from QLASSIC implementation.

1. Introduction

The construction industry has been in Malaysia as early as 1950s. However, this industry was not as developed as it is today. This is because Malaysia was lagging far behind and lack from the latest technologies. Thus, a statutory body like Construction Industry Development Board (CIDB) is responsible to ensure the contractors produce quality products (CIDB, 2006). CIDB has introduced Quality Assessment System in Construction (QLASSIC) as a standard measure for quality. This means that, the contractors must meet the requirements in order to give full satisfaction to the end users of the products. QLASSIC was also introduced to overcome and reduce the problems related to the quality of workmanship in the construction sector.

2. Literature Review

2.1. Introduction of Quality Assessment System (QLASSIC)
According to CIDB (2006), QLASSIC was introduced by the Construction Industry Development Board (CIDB) since 2006. The aims are to evaluate and improve the quality of the building construction works. Later, a Technical Committee (TC) was formed to upgrade the guideline to industry standard which comprised of Jabatan Kerja Raya (JKR), Jabatan Perumahan Negara (JPN), Pertubuhan Arkitek Malaysia (PAM), Association of Consulting Engineers Malaysian (ACEM), Real Estate and Housing Developers Association (REHDA), Master Builders Association Malaysia (MBAM), Universiti Sains Malaysia (USM), National House Buyers Association (HBA) and others relevant organizations and authorities which give rise to Construction Industry Standard (CIS 7 : 2014).

The programme was adopted from Construction Quality Assessment System (CONQUAS) at Singapore. CONQUAS was introduced by Building Construction Authority (BCA) in Singapore since 1986 (Muhktar, 2014). Besides that, he also has a similar assessment system being practiced by Hong Kong Housing Authority since 1990’s under the name of Performance Assessment Scoring System (PASS).

2.2. The Definition and Objectives of QLASSIC

QLASSIC is stand for Quality Assessment System in Construction. According to CIDB (2009), QLASSIC can be defined as a system or independent method to measure and evaluate the workmanship quality of a building construction work based on Construction Industry Standard (CIS 7: 2014). QLASSIC enables the quality of workmanship between construction projects to be objectively compared through a scoring system (sampling and statistical approach).

Besides, the assessment is designed to enable the contractor to achieve any QLASSIC’s objective set by CIDB. The objectives are as below (CIDB, 2013):

i. To benchmark the level of quality of the construction industry Malaysia

ii. To have a standard quality assessment system for quality of workmanship of building projects

iii. To assess quality of workmanship of a building project based on CIS 7 standard

iv. To evaluate the performance of contractors based on quality of workmanship

v. To compile data for statically analysis

2.3. Scope of QLASSIC

CIDB (2013) explained that QLASSIC has set the standard for the various components for building works and infrastructure works. Building elements are assessed based on the quality of workmanship requirements specified in the standard. QLASSIC assessment is made through site inspections and in accordance with the principle first time.

Among these components are standard for structural works, architectural works, mechanical and electrical works (M & E works) and external works. According to CIDB (2013), the evaluation of the criteria are based on the work and the scores obtained if the workmanship and packaging criteria are met. The marks were collected to obtain total quality score are known as QLASSIC score (%) for projects. However, the assessment is not made to work such as piling, foundation and sub-structure by using heavily-equipment-based.
Besides, according to CIDB (2013), an assessment made on the construction site along the way through field testing and inspection. The tests made on building materials and functional performance installation and services. The goal of this test is to help occupant’s buildings on the issues of safety, comfort and aesthetic value. After an assessment is made, the scores will be made on the construction work for the foremost time. Works that have been filtered after an assessment is made will not be revalued. The aims is to make the contractor “do things right the first time and every time”. Any construction work which corrected after an assessment is being conducted will not be re-evaluated.

2.4. Assessment Approach and Sampling Process

QLASSIC assessment takes place upon project completion with Certificate of Practical Completion but before handing over of project as describe in Figure 1. QLASSIC assessment is using methods of sampling and statistical approach. This is because, in this way, the assessor can assess all the elements in construction projects. Norizam and Abdul Malek (2013) stated that in this system, it takes into consideration the size of the building itself and also the distribution function at each location. Assessors QLASSIC will determine where the sample elements and also location should be assessed. This is because not all places will be assessed. In addition, these samples, must be distributed to all the various construction stages. Moreover, the sample is taken from project plans and drawings. For structural work, the sampling is divided into two or three early stage which start of construction of the main structure until the completion of the structure.

![Figure 1. QLASSIC Assessment Process](Source: CIDB, 2013, pp 27)

There are some elements that assessors can determine the quality standard that can be implemented by the contractor and developer. Therefore, the assessment would be depending on package of assessment is required. The elements of the package are:

a) Structural Works

The assessment for a building is carried out by stages with the number of samples is measured using gross floor area (GFA). The sample must be either a least or largest number.
b) Architectural Works

This assessment was made only after completion of all construction on the building and before the project was handed over to the client. In the architectural work, the sample was determined by using gross floor area (GFA) which is the least and largest number of samples.

c) Mechanical and Electrical Works

Sample used in the M & E work is also measured by gross floor area (GFA). The GFA of the building measured by the number of samples is either minimum or maximum number. The assessment was conducted by conditions of the project itself. For a project that has been completed, an assessment is made after completion of the building project. Whilst, for a project which are in progress, an assessment is made during project construction.

d) External Works

The assessment sample made when the building was completed and before the building is handed over to the client. Then, the number of samples is determined by the length of 10km sections or the location and the number of samples either minimum or maximum.

The scores can be used as a marketing tool to convince potential buyers of their quality of work for future projects where the highest QLASSIC score to-date was 88%. CIDB stated the system had also helped developers identify their contractors’ weaknesses. All developers strive to create a better reputation for themselves. In the QLASSIC report, had specifically state the parts with low scores; for contractors to improve on those areas. CIDB would want a clause in the sales and purchase agreement about the minimum QLASSIC Score required. For example, if there is a clause that states the QLASSIC score should not be less than 70%, and the developer fails to deliver, the buyer has the right to be compensated accordingly. The developers may have second thoughts about adding this clause due to fear of scoring poorly in the QLASSIC assessment.

3. Research Methodology

For this study, a questionnaire-based survey design will be chosen as it allowed the reaching of a relatively large population easily and economically. Numerous questionnaires used by earlier studies were examined in developing a survey instrument for this study. Furthermore, the logged data from medium to large construction companies is collected. Quantitative methods is used to gather data for answering the research questions. The collection of data is based on quantitatively.

There are 12 questions in this section. Respondents are required to answer in two patterns of questions. The respondents were requested to select the answers provided either ‘Yes’ or ‘No’ where the questions are more to general questions on QLASSIC system.

The reliability and understanding of the questionnaire survey were tested by pilot survey. The result from the pilot survey was tested using Cronbach’s coefficient alpha (a) to determine the consistency and reliability of the question.

The collected data obtained from questionnaire survey was analysed using Statistically Procedure for Social Science (SPSS) application. The result is presented either in tabular format, graph or chart and organized accordingly to the research objective.
In this study, the population of respondents is determined by construction companies. These were selected based on the grade of contractor from G5 to G7 construction companies in Klang Valley. Sample of questionnaire would be 200 and the reply from respondents responded is 95 with 47.5% of yield response. The research is focusing on building construction project that are located within Klang Valley as geographically they are within emerging market of development. As a result of this, scope of study these construction companies were selected based on this criterion.

4. Findings

The method of reliability and descriptive analysis are used and the data from questionnaire survey were analyzed using Statistical Package for Social Science (SPSS) and Microsoft Office Excel Worksheet format. The frequency and the mean of each element is compared and ranked. The data collected will then to identify and analyses based on the Table 1 which comprises six simple questions. The results from the findings show majority of respondents are having high understanding on QLASSIC implementation under this section as summarized in Table 1 by ranking.

| No | Understanding contractors towards QLASSIC | Result by Ranking (Understanding) |
|----|----------------------------------------|----------------------------------|
| 1  | Principle “doing first time right”       | 1                                |
| 2  | QLASSIC is good system.                 | 2                                |
| 3  | Category under Architecture Works       | 3                                |
| 4  | Fees QLASSIC to be impose to contractor | 4                                |
| 5  | Know function QLASSIC                   | 5                                |
| 6  | Re-evaluate after assessment            | 5                                |

4.1 Multiple Answer

Respondents to answer the multiple answers for the questions given. These questions are to determine the understanding of contractors towards the implementation of QLASSIC. The questions given to measure on the level of knowledge of the respondents and their understanding on QLASSIC assessment system which already implemented in Malaysia construction industry.

Most of the questions in this section to identify the technical knowledge and understanding of respondents on QLASSIC assessment system. The respondents need to choose the multiple answers given to get interest of respondents towards the QLASSIC implementation and the depth questions for them to answer with requirements of knowledge and experience of respondents.

The data collected to identify and analyse based on the Table 2 which comprises 6 depth questions.

- Sources about QLASSIC to contractor
- QLASSIC assessment
- Involvement of QLASSIC in construction
- Implementation of QLASSIC in project
- Element checked by the assessor
• Biggest allocation for components to be assess

Table 2. Understanding contractors towards QLASSIC

| No | Understanding contractors towards QLASSIC | Ranking |
|----|------------------------------------------|---------|
| 1  | B.1 Sources about QLASSIC to contractor   | 6       |
| 2  | B.6 QLASSIC assessment                    | 1       |
| 3  | B.8 QLASSIC involved in construction at stage | 5       |
| 4  | B.9 Implementation QLASSIC in project     | 2       |
| 5  | B.10 Element checked by the assessor      | 4       |
| 6  | B.11 Biggest allocation for components to be assess | 3       |

This is resulted to low awareness of the implementation of QLASSIC in construction industry and CIDB as the regulator of QLASSIC to consider in promoting the QLASSIC through newspaper, TV, radio and internet and so on so that the contractors and others construction players will be familiar with the QLASSIC assessment system.

In overall, most of the respondents were showing their understanding towards QLASSIC by QLASSIC assessment which under Rank 1 with 83.16% and Rank 2 with 69.47% on willingness on important of quality. This can be concluded that the understanding of contractors is only basic understanding on QLASSIC system but the implementation of QLASSIC from contractors were still low. This is because of this study showed that some of the contractors get the information on QLASSIC through the project handled and not from the media social, TV, radio, internet and others.

The results from the findings show majority of respondents are having low understanding on QLASSIC implementation as summarised in Table 3 where most of the answers was wrong compared to right answer.

Table 3. Summary of result on understanding of contractor towards QLASSIC

| No | Understanding contractors towards QLASSIC | Right answer | Wrong answer | Result (Understanding) |
|----|------------------------------------------|--------------|--------------|------------------------|
| 1  | Sources about QLASSIC to contractor      | -            | -            | -                      |
| 2  | QLASSIC assessment                       | 79           | 16           | High                   |
| 3  | Involvement of QLASSIC in construction   | 29           | 66           | Low                    |
| 4  | Implementation of QLASSIC in project     | 66           | 29           | High                   |
| 5  | Element checked by the assessor          | 31           | 64           | Low                    |
| 6  | Biggest allocation for components to be assess | 36           | 59           | Low                    |
5. Conclusion

The aim of this research is to promote the implementation of Quality Assessment System in Construction (QLASSIC) in construction industry. This is because QLASSIC is not fully implemented and applied by all developers and contractors in Malaysia. Most of the developers and contractors are still not familiar with QLASSIC assessment system. This becoming barriers to the implementation of QLASSIC where the developers and contractor refused to comply with QLASSIC because they are not familiar with QLASSIC system.

Based on the literature review, it is summarized that the understanding of contractors towards the implementation of QLASSIC in construction project through their awareness and familiarity of QLASSIC system. Hence, to improvise QLASSIC to the next level to become continual improvement tool for quality. A set of question pertaining QLASSIC has been distributed to respondents to test the knowledge and understanding of respondents towards the QLASSIC. The result shows that good understanding of contractors towards QLASSIC implementation for the basic knowledge but when it comes to the details of QLASSIC, the results show the contractors still not capable to answer well and this resulted to more training of QLASSIC to be provided.

From the analysis done through questionnaire survey, most of the respondents are understanding the implementation of QLASSIC but there are still a few numbers of respondents that are not familiar with the QLASSIC. Nevertheless, still not many project that use the QLASSIC system.

Most of them are not really know and understand of the QLASSIC system. This will require more technical training to the contractor’s grade G5, G6 and G7 so that they will familiar and understand the QLASSIC assessment system and they can increase and improve the quality performance in the construction projects.

This is resulted to low awareness of the implementation of QLASSIC in construction industry and CIDB as the regulator of QLASSIC to consider in promoting the QLASSIC through newspaper, TV, radio and internet and so on so that the contractors and others construction players will be familiar with the QLASSIC assessment system.

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