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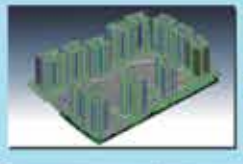


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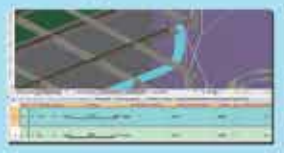
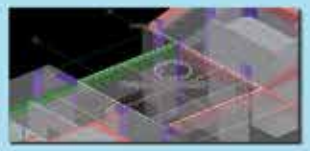

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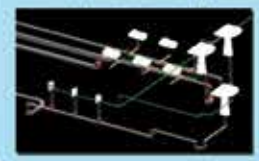


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'Sr' is the abbreviation for surveyors and was first mooted by RISM in 2005 and used by all RISM members since 2006 as a badge of identity for surveying professionals.

The Malaysian Surveyor is a quarterly publication which covers the development of the surveying profession, innovations in the surveying technology and surveyors' contribution towards the property market and building industry.

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Building Occupants' Satisfaction To Facility Management Services: A Case Of Educational Building In Malaysia

In an effort to standardise the evaluation of educational facilities, the evaluative criteria derived from the occupants in educational buildings needed to be measured in terms of quality of building facilities for their general conditions and suitability for education. This paper aims to access the level of satisfaction of building occupants to the FM services delivered to them. A questionnaire study was carried out with selected educational building. From the result that is earned, the average mean of occupants' satisfaction level marked the satisfied level in cleanliness, cafeteria and building maintenance. However, there are parts that need some improvement to ensure the services provided fulfil the customers' expectations and requirements buildings.

Keywords: occupant satisfaction; educational building; Malaysia; survey.

1.0 Introduction

Over the past decade, thousands of higher educational buildings have been planned, designed and constructed in Malaysia and only a small fraction will ever be evaluated against the building facility needs of students and academicians. In an effort to standardise the evaluation of educational facilities, the evaluative criteria derived from the occupants in educational buildings needed to be measured in terms of quality of building facilities for their general conditions and suitability for education. In the current situation where people concern about sustainable environment, building occupants seeks to obtain comfort and efficiency, especially in higher educational buildings (Natasha et. al., 2011).

Malaysia, which is located in tropical climate region, is naturally hot and humid. Because of this situation, the majority of buildings in Malaysia served air-conditioning and mechanical ventilation systems to maintain a thermally comfortable indoor environment.

The rapid development of higher institutional building which is normally located in the suburban or city area incorporates issues in terms of cleanliness, noise and air pollution. Problems in higher educational buildings include lack of design aspects, building elements, inadequate room spaces, facilities, safety aspects, indoor and outdoor environmental problems, noise pollution and many more (Natasha & Abdul Hadi, 2008).

It is possible for the users to successfully complete tasks when they serve with a good service. The overall quality of the service experience is measured by the help of user satisfaction (Heidi and Nils, 2007). Therefore, we need to see or access the satisfaction of the users to ensure the effectiveness of the services provided.

2.0 Customer Satisfaction

Satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfilment of some needs, goals or desire (Hansemark and Albinson, 2004; Jusuf and Biljana, 2011).

Tucker and Pitt (2009) claim that performance measurement studies in FM have tended to focus on how FM organisations can manage performance strategically to achieve added value and more efficient service delivery (Amaratunga and Baldry, 2000, 2002, 2003; Hinks and McNay, 1999; Kincaid, 1994 and Pitt and Tucker, 2008), and the importance of benchmarking, which have arguably lean towards more financially orientated factors (McDougall and Hinks, 2000; Wauters, 2005; Varcoe, 1996). However, Tucker and Pitt (2009) contend that the level of performance measurement research in FM that focuses on customer satisfaction is fairly limited. Moreover, Tucker and Smith (2008) emphasise the importance of gaining customer perceptions through performance measurement to add value to an organisations service delivery, however, methods of gaining customer satisfaction within FM tend to be quantitative in nature (Sarshar and Pitt, 2009), focusing on customer satisfaction surveys and can miss out on important issues.

Customer satisfaction is determined by the customers' perceptions and expectations of the quality of the products and services. In many cases, customer perception is subjective, but it provides some useful insights for organisations to develop their marketing strategies (Kincaid, 1994).

3.0 Research Methodology and Findings

Following a literature review, a quantitative method of data collection is adopted in this study. A total of 400 questionnaires were distributed to the building occupants of Menara UniKL which included the staff and the students answering the questions. Out of 400 questionnaires, 270 questionnaires were answered and returned. The questionnaire comprises

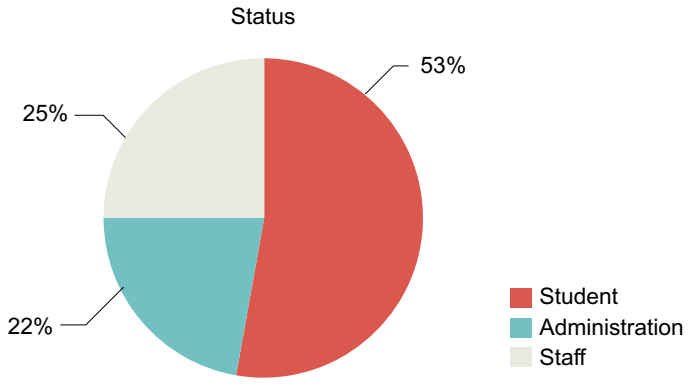

Figure 1: Frequency analysis of the status

of two sections. Section A is more focus on the demographic aspects of the respondents' related information to make the result accurate whereas Section B focus on the occupants' satisfaction level.

From the responds received, most of the respondents who answered the questionnaire are the students which 53% followed by staff (25%) and Administration (22%) as shown in Figure 1. Students are easier to adapt and to get them to answer the survey.

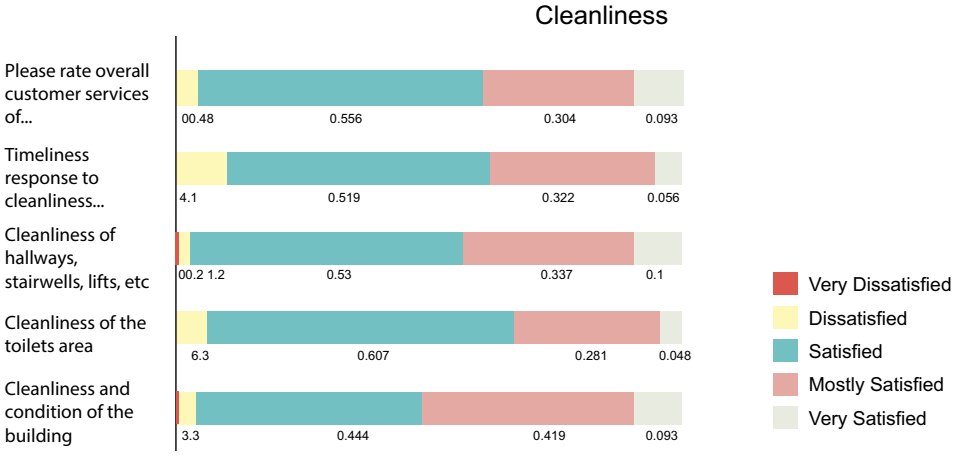

Figure 2: Frequency analysis of cleanliness

Table 1: Test for cleanliness service

ANOVA		Sum of Square	df	Mean Square	F	Sig.
Overall Building	Between Groups	3.186	2	1.593	2.842	.060
	Within Groups	149.688	267	.561		
	Total	152.874	269			
Toilet area	Between Groups	.515	2	.257	.584	.558
	Within Groups	117.726	267	.441		
	Total	118.241	269			
Hallways, stairwells, lifts etc	Between Groups	6.346	2	3.173	5.837	.003
	Within Groups	149.688	267	.561		
	Total	152.874	269			
Timeliness response	Between Groups	1.957	2	.978	1.772	. 172
	Within Groups	138.388	267	.552		
	Total	149.319	269			
Overall rate for cleanliness	Between Groups	4.164	2	2.082	4.017	.019
	Within Groups	138.388	267	.518		
	Total	142.552	269			

The findings from Section B found that majority of the respondents are satisfied with the cleanliness to the overall building. Cleanliness is very important to all people which can give impact on the working progress, during studies in class and so on. During the distribution process, the researcher found that the cleaners are always in their work, for instance mopping, collect rubbish in every dustbin at every staff section, sweeping the floor and do observation if there is any dirt or rubbish everywhere.

From five (5) questions asked for these services, three (3) of them have no significant difference which they have the significant value above 0.05 (p>0.05). Another two (2) questions have significant difference which is cleanliness of hallways, stairwells, lifts etc. (0.000) as well as overall rate for cleanliness (0.019). Post Hoc test is used when there is significant value less than 0.05.

> Cleanliness is very important to all people which can give impact on the working progress during studies in class and so on.

Table 2: Post Hoc Test for Cleanliness of hallways, stairwells, lifts etc.

Multiple Comparisons Dependent Variable: Cleanliness of hallways, stairwells, lift etc. Turkey HSD						
(I) Status	(J) Status	Mean Difference (I-J)	Std Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Student	Administration	242	.114	0.87	-0.3	.51
	Staff	.348*	.109	.004	.09	.61
Administration	Student	-242	.114	0.87	-5.1	.03
	Staff	.106	.132	.699	-.20	.42
Staff	Student	-.348*	.109	.004	-.61	-.09
	Administration	-.106	.132	.699	-.42	.20

* . The mean difference is significant at the 0.05 level.

Post hoc comparisons using Tukey HSD test indicate that the difference mean between the three status between student, administration and staff. The comparisons show that between student and administration (p=0.087) and between administration and staff (p=.0699) have no significant difference compared to student and staff with the p-value less than 0.05 which is 0.004, there has significant difference between them.

Table 3: Hoc test for overall rate for cleanliness

Multiple Comparisons Dependent Variable: Overall rate for cleanliness Turkey HSD						
(I) Status	(J) Status	Mean Difference (I-J)	Std Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Student	Administration	.217	.111	.128	-.05	.48
	Staff	.272*	.106	.030	.02	.52
Administration	Student	-.217	.111	.128	-.48	.05
	Staff	.055	.129	.903	-.25	.36
Staff	Student	-.272*	.106	.030	-.52	-.02
	Administration	-.055	.132	.699	-.36	.25

* . The mean difference is significant at the 0.05 level.

By comparing student and administration, it results in p-value equal to 0.128 while administration with the staff got p-value equal to 0.903. This can be concluded that, majority of them are satisfied to overall of cleanliness as mentioned there is significant difference between them and only one comparison that has no significant difference which comes from student and staff (0.030).

With the same mean score with food/menus,

Table 4: Analysis of cafeteria service

QUESTION	RANK										AVE. MEAN
	Very Dissatiesfied		Dissatiesfied		Satiesfied		Mostly Satiesfied		Very Satiesfied		
	f	%	f	%	f	%	f	%	f	%	
Cafeteria enviroment	22	8.1	72	26.7	153	50.7	14	5.2	9	3.3	2.69
Food/menus	6	2.2	77	28.5	155	57.4	27	10.0	5	1.9	2.81
Food/menus	8	3.0	70	25.9	160	59.3	28	10.4	4	1.5	2.81
Overall rate for cafeteria	8	3.0	78	28.9	151	55.9	28	10.4	5	1.9	2.79

service provided at the cafeteria also score 2.81 mean. The highest score between the ranks also come from the satisfied which is 59.3%. Mostly satisfied and very satisfied have the percentage of 10.4% and 1.5%. Moreover, 25.9% comes from dissatisfied and 3.0% are very dissatisfied to the service provide to them. Table 7 shows people who dissatisfied to that service are more compared to satisfied people which exclude moderate level same to the previous service discussed, cafeteria has lower perceive of facility and need further improvement. Cafeteria also one of the main facilities to be served to the occupants of a building in order to ease the occupants to get foods during their breaks.

From Table 5, the range value of overall questions are 0.000 – 0.431. The points that have significant

Table 5: ANOVA test for cafeteria service

ANOVA		Sum of Square	df	Mean Square	F	Sig.
Cafeteria enviroment	Between Groups	15.351	2	7.676	12.161	.000
	Within Groups	168.515	267	.631		
	Total	183.867	269			
Food/menus	Between Groups	4.113	2	2.056	4.101	.018
	Within Groups	133.872	267	.501		
	Total	137.985	269			
Service provided	Between Groups	.945	2	.472	.929	.396
	Within Groups	135.796	267	.509		
	Total	136.741	269			
Overall rate for cafeteria	Between Groups	.921	2	.461	.845	.431
	Within Groups	145.464	267	.545		
	Total	146.385	269			

difference between the statuses of respondents are cafeteria environment (0.000) and food/ menus (0.018) while the rest has no significant difference which are service provided (0.396) as well as overall satisfaction (0.431).

From Table 6, there is significant different in the level of satisfaction to this service. The significant difference mentioned before is between student and administration staff with p-value of 0.000 and also between staff and administration with p-value of 0.019. For food or menus, it is determined that two out of three groups have no significant difference which are between student and administration staff (0.461) and Administration staff and Staff (0.382) whilst another one group indicate the significant difference of p-value 0.013.

Figure 3 shows that more than

Table 6: Post Hoc test for cafeteria

Multiple Comparisons

Turkey HSD Dependent Variable	(I) Status	(J) Status	Mean Difference (I-J)	Std Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Cafeteria enviroment	Student	Administration	.604*	.123	.000	.31	.89
		Staff	.218	.117	.153	-.06	.50
	Administration	Administration	-.604*	.123	.000	-.89	-.31
		Staff	-.386*	.142	.019	-.72	-.05
	Staff	Administration	-.218	.117	.153	-.50	.06
		Staff	.386*	.142	.019	.05	.72
Food/menus	Student	Administration	.130	.109	.461	-.13	.39
		Staff	.298*	.105	.013	.05	.54
	Administration	Administration	-.130*	.109	.461	-.39	.13
		Staff	.168	.126	.382	-.13	.47
	Staff	Administration	-.298*	.105	.013	-.54	-.05
		Staff	-. 168	.126	.382	-.47	.13

* . The mean difference is significant at the 0.05 level.

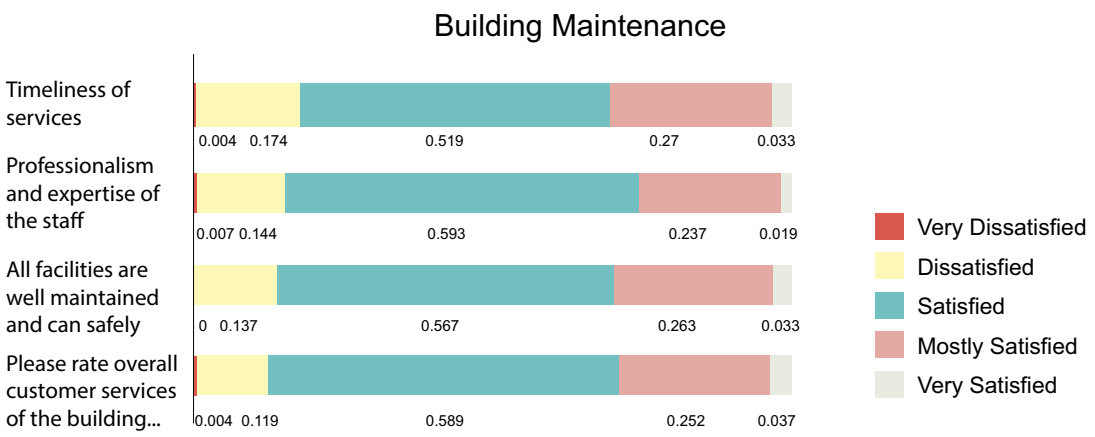

Figure 3: Analysis of building maintenance

Table 7: Test for building maintenance service

ANOVA		Sum of Square	df	Mean Square	F	Sig.
Timeliness of servicess	Between Groups	4.774	2	2.387	4.286	.015
	Within Groups	148.693	267	.557		
	Total	153.467	269			
Professionalism and expertise of staff	Between Groups	5.846	2	2.923	6.418	.002
	Within Groups	121.595	267	.455		
	Total	127.441	269			
All facilities are well maintained and can safely be used	Between Groups	5.082	2	2.541	5.263	.006
	Within Groups	128.903	267	.483		
	Total	133.985	269			
Overall rate for Building maintenance	Between Groups	.003	2	.002	.003	.997
	Within Groups	133. 197	267	.499		
	Total	133.200	269			

half of the total of the respondents rank at scale 3 and at scale 4 and 5, it indicate that more respondents that most satisfied to the building maintenance service rather than the scale 1 and 2. The facility staff must ensure the building maintenance are being maintained according to the respective time so that unexpected problem will not occur such as lift breakdown, blackout, out of electricity, air-conditioning breakdown and others.

From the Table 7 above, it can be described that, most of the points have significant differences because the value is less than 0.05. To see the difference, it has come out with the value that timeliness of services with the p-value of 0.015, professionalism and expertise of the staff with p-value of (0.002), all facilities are well maintained and can safely be used with p-value of 0.006, as well as overall rate for building maintenance with 0.997 p-value.

The results in Table 8 displayed that the group that has no significant difference are between student and administration staff as well as between administration staff and staff where the significant value are 0.309 and 0.515 respectively. The comparison group between student and staff is significantly different with the value 0.013. For professionalism and expertise of the staff, the comparison between student and administration staff has no difference with the value of 0.684 while between administration staff and staff has the value of 0.515. There is significant difference which is between the student and staff where the value is 0.001. All facilities are well maintained and can safely use has only one group that has no significant difference which is between student and administration staff has p-value of 0.466. Another group has significant value of 0.006 and 0.033 which are between administration staff and staff as well as between student and staff.

4.0 Discussion

From the finding, the Post Hoc analysis conclude that there is significant difference that most of them satisfied with the cleanliness at the hallways, stairwells, lifts and other areas even though there exist only one comparison with no significant difference. The cleaners have done their responsibilities to clean up the building according to the instructions and contract given to them.

Table 8: Post Hoc test for building maintenance

Turkey HSD	Multiple Comparisons						
Dependent Variable	(I) Status	(J) Status	Mean Difference (I-J)	Std Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Timeliness of services	Student	Administration	.169*	.115	.309	-.10	.44
		Staff	.316*	.110	.013	-.06	.58
	Administration	Administration	-.169*	.115	.309	-.44	-.10
	Staff	Staff	.146	.133	.515	-.17	.46
		Student	-.316*	.110	.013	-.58	-.06
		Administration	.146	.133	.515	-.46	.17
Professionalism and expertise of the staff	Student	Administration	.087	.104	.684	-.16	.33
		Staff	.357*	.100	.001	.12	.59
	Administration	Student	-.087	.104	.684	-.33	.16
		Staff	.270	.120	.066	-.01	.55
	Staff	Student	-.357*	.100	.001	-.59	-.12
		Administration	-. 270	.120	.066	-.55	.01
All facilities are well maintained and can safely be used	Student	Administration	-.127*	.107	.466	.38	.13
		Staff	.259	.103	.033	-.02	.50
	Administration	Administration	.127	.107	.466	-.13	-.38
		Staff	.386*	.124	.006	.09	.68
	Staff	Student	-.259*	.103	.033	-.50	.02
		Administration	.386*	.124	.006	-.68	-.09

* . The mean difference is significant at the 0.05 level.

For the cafeteria services, there is a significant difference caused by the cafeteria environment. The cafeteria owner is keen to utilise the cafeteria space to make business but less concern to improve the area in order to provide the user an attractive and comfortable ambience. The respondents also mention about the limited choice on menus. They proposed to add on the items like breads, biscuits and so on. They also commented on the operation period and suggested that the cafeteria shall extend their operation hour for the customer's convenience.

For building maintenance aspect, the reason of significant difference is because of the response of the maintenance workers who are sometimes a bit late. When the lift is broken down, the response to the report was late. Respondents mentioned about their experience stuck in the lift; they spent about 15 minutes waiting in the lift while waiting for help. The building maintenance individual need to be on standby all the time to ensure the problem can be settled immediately so that it will not affect the safety of the building users. The lifts in the building are the main vertical transport for a high rise building; therefore occupants will prefer to use lifts rather than using the stairs to reach the higher level. If the lift is breaking down, it will affect the time of the occupants too.

5.0 Conclusion

In the long run, the researcher has collected the information in literature review on the scope of facility management (FM) that explained the services involved in FM. FM involved in many type of organisation for any buildings and services that support their business. FM helps to ease and simplify the business in an organisation. FM also covers wider range of activities than just for the business purpose only. Thus, in this research, the researcher wants to find the expectation and perceptions of the building occupants of Menara UniKL which is a high rise building located in the urban area.

The results showed that, majority of questions have the highest score at moderate level which is the third scale. After taken into consideration, the ANOVA test and Post Hoc test are done in order to determine the significant difference of all results.

There are parts that need some improvement especially the parts that have significant difference during the ANOVA test. Top management should made some changing to ensure the services provided fulfil the customers' expectations and requirements as the students are the main customers to the education building.

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Research Into Bills Of Quantities (BQ): Where Can It Be Focused?

There are concerns reported on the uses of the Bills of Quantities (BQ). This calls for a review to be conducted with an aim to suggest a gap for further research to be steered in the area. Accordingly, the objectives of this paper are: (1) to critically review the literatures in order to identify the issues on the application of the BQ in the construction industry, and (2) to synthesise the outcome of the review process in order to identify relevant research focus. The study which had essentially employed an extensive literature review had synthesised three categories of issues related to: (1) information; (2) format; and (3) working methods. Solutions were identified to focus on improving the BQ format alone hence not entirely parallel with the categories of issues synthesised from the literature. This represents the gap that need to be expedited further through research. For this reason, this paper had suggested that research should be focused at determining the BQ information contents and the issues impeding the uses of the BQ. Research into this aspect is expected to contribute by

offering substantial improvement to the uses of the BQ and is of significant value in identifying the gap in the previous researches is the presence of deposited dirt around the RWDP area, reaching a height of 35 mm. Cleaning the dirt in these areas ensures the smooth flow of rainwater into the drainage system. However, routine inspection of flat roofs is difficult to implement, especially for the purpose of detecting the presence of water ponding at any real point of time. Theoretically, this paper suggests the use of automatic sensor technology as one of the best approaches to achieve real-time detection of water ponding on a flat roof.

Keywords: Bills of Quantities, construction industry, research, quantity surveying

1.0 Introduction

The Bills of Quantities (BQ) itemise information collected from the process of measurement and provides the descriptions, quantities and information of items required in a contract (Kwakye, 1997). The BQ is unique to the Quantity Surveyor and could be used for many purposes. Among its main purpose is to provide the necessary information to the construction participants which according to Hughes (1978), Wilcox and Snape (1980) and Ashworth (2004) imperative to arrive at the following: (1) obtaining competitive tender; (2) serving as a contractual document; (3) uniform basis for tendering; (4) the basis for interim certificates and valuing of variations; (5) assisting the contractor in organizing his works; (6) facilitating financial control by the employer; (7) a basis for feedback of information for the contractor and (8) a data source for the Quantity Surveyor's future estimating. Hence, due to the purposes it serves, the BQ should be regarded as an indispensable tool for the management of a construction project and an important source of information in the process of construction.

In relation to the Malaysian construction industry, the BQ has been recognised as an important component in the overall process of construction. This was largely caused by the extensive domination of the traditional lump sum system of construction procurement (Khairuddin, 2002, Khairuddin and Samer, 2014) which fundamentally placed the BQ as an integral element in its process (Jaggar et al., 2001, Seeley, 1997). As far the Malaysian construction industry is concerned, data from the Construction Industry Development Board (CIDB) shown in Table 1 indicates that the adoption of the traditional lump sum system (TLS) of construction procurement has been consistently strong. Hence, the data reaffirmed the representativeness of the BQ in the Malaysian construction industry.

In the context of the Malaysian construction industry, the BQ is generally used for the purpose of tendering and contracting (Rosli et al., 2006, Rosli et al., 2008). Besides this general use, the BQ could also be used

Table 1:The frequencies on the use of TLS as compared to other types of procurement (2011 – March 2015)

Procurement types	Years/ Percentage									
	2011	%	2012	%	2013	%	2014	%	2015*	%
TLS	7324	96	7450	94	7685	96	6963	97	601	98
Others	281	4	442	6	355	4	217	3	13	2
Total:	7605	*100*	7892	*100*	8040	*100*	7180	*100*	614	*100*

Source: Adapted from CIDB Quarterly Statistical Bulletin (CIDB, 2013, CIDB, 2014, CIDB, 2015).
***Data as at March 2015.**

to serve the industry in a variety of other purposes. According to Rosli et al. (2006), the use of the BQ could essentially be viewed from the perspective of the contractors, clients and consultants. To the author, the BQ in essence, is used to provide the parties with necessary information that enable them to manage the project effectively and pivotal as the base for making an informed decision. The facts thus situate the BQ as important and indispensable component in the process of construction.

Despite these uses, there have been concerns identified from the literature on the inadequacy of the BQ for utilisation by the contractors (Baccarini and Davis, 2002). These as contractors, being the main user of the BQ (Seeley, 1997, Teo, 2008, Towey, 2012, Marsden, 1996), are constantly baffling to relate the BQ to the project development process (Rosli et al., 2008) thus resulting to the great loss of its utility during the construction process (Jaggar et al., 2001). In the midst of these concerns, information has been perceived to characterise issues concerning its use to the contracting organisations. Wood and Kenley (2004) have pointed out that the information provided had failed to address the needs of the contractors while Hamimah et al. (2011) argued that details supporting the information would be of great assistance should these were included in the BQ.

Following the concerns, a study has been conducted with an aim to explore the issues pertaining to the uses of the BQ with emphasis given to identify the gap to proliferate research in the area. In order to achieve the aim outlined in this paper, two objectives were proposed: (1) to critically review the literatures in order to identify the issues on the application of the BQ in the construction industry, and (2) to synthesise the outcome of the review process in order to identify relevant research focus. The fulfilment of the objectives outlined in this paper has enabled substantial information to be gathered which allowed critical inferences to be made as the basis to suggest the gap for current research concerning the BQ.

The paper is structured to firstly provide brief explanation on the methodology used in exploring the issues. This was then followed by detail discussions on the issues which have been identified from the review process before suggestion on the relevant research focus was given. The paper ends by highlighting the significance of the research focus suggested and concludes by emphasising on the result gained from the study.

2.0 Methodology

This paper has essentially employed an extensive literature review and applied techniques which are common in content analysis. According to Bowen (2009), the technique involves skimming, reading and interpreting the documents which according to Bryman (2008), necessary in searching-out underlying themes and omission in the materials being analysed. In this paper, relevant literatures were reviewed in order to identify the themes in the form of issues before detail categorisation is established to represent the aggregated information. The process was considered crucial in identifying the omission or gaps in the existing literature and act as the foundation which links the previous researches which were discrete in nature, into a single interwoven framework for the purpose of suggesting the research focus aimed in this paper.

3.0 Issues Concerning The Uses Of The BQ In The Construction Industry

Twenty-nine issues impeding the uses of the BQ were identified from various sources of literature as showed in Table 2. To facilitate interpretation, the distinct concepts that underlie the issues were defined, accentuated and reincorporated back in the list of issues identified from various sources of literature (Shamsulhadi and Fadhlin, 2014). In the process, the variables of 'concept identified', 'concern identified' and 'categories of issues' were featured to explicate the identified issues. This process helps in disclosing the gist of the issues and provides a preliminary appreciation on the category of issues embodied in the literature (Bryman, 2008). The process consequently allows the general topography of the issues to be viewed and highlight the pertinent concerns conveyed through the literature.

> BQ should be regarded as an indispensable tool for the management of a construction project and an important source of information in the process of construction.

Table 2: The literature review outcome – issues impeding the uses of the BQ

No	Issues identified from the literature review	Authors	Concept identified	Concern identified	Category of issues
1	BQ ***does not provide*** **(*information)** on the **(time)** and quantity schedule for the on-site delivery of materials required for the works.	Hamimah et al. (2011), Smith and Hoong (1985)	Time/duration	Insufficient	Issues related to information
2	BQ **(*information)** provide ***no assistance*** to anyone drawing up a pre tender programme **(*time)**.	Contributed (1964)	Time/duration	Insufficient	Issues related to information
3	BQ **(*information)** only represent cost breakdown structure with ***no link*** to actual project schedule **(*time)**.	Mohd Hisham and Azman (2008)	Time/duration	Insufficient	Issues related to information
4	SMM based BQ **(*information)** ***unable to provide*** a useful basis for contractor's work programme **(*time)**.	Mohd Hisham and Azman (2008)	Time/duration	Insufficient	Issues related to information
5	***Preliminaries bill and specification*** **ormation) *documents contain many unnecessary*** ***insufficient/ inadequate)** items as a result of direct copy and standardised' document.	Hamimah et al. (2011), Smith and Hoong (1985)	Preliminaries/ specification	Insufficient/ Inadequate	Issues related to information
6	***BQ quantities and descriptions*** **(*information)** do not accurately provide information on work sequence and ***contractor's methods*** of operation **(*working methods and planning)**.	Hamimah et al. (2011), Leon (1966)	Quantities/descriptions/ working methods	Inaccurate/wrong quantities/Inaccurate description/ Insufficient	Issues related to information/ Issues related to contractor's work planning
7	The specialist trades contractors consider that the ***tasks of planning*** **(*time)** ***could not be achieved*** by using the bills **(*information)**.	Morledge and Kings (2006)	Time/duration	Insufficient	Issues related to information
8	BQ **(*information)** is ***unnecessary for compiling*** **(*format)** sub-contractor's quotations and is ***inadequate*** for reviewing materials quotations from potential supplier as ***quality of materials*** **(*specification)** are not clearly stated.	Hamimah et al. (2011), Kinlay (1984b	Specification/Unsuitable format	Inadequate/ Unsuitable	Issues related to information/format
9	**(*Information)** in ***BQ are uncoordinated, aggregation on similar materials rather than operation*** **(*format and working methods)**.	Kodikara et al. (1993)	Unsuitable format	Unsuitable	Issues related to format
10	BQ **(*format)** ***is not in final forms*** for direct use by site personnel.	Kodikara and McCaffer (1993), Kodikara et al. (1993)	Unsuitable format	Unsuitable	Issues related to format
11	BQ **(*information)** ***requires sub-processes*** as the information are not ***presented*** in a standardised **(*format)**.	Cornick and Osbon (1994)	Unsuitable format	Unsuitable	Issues related to format
12	BQ ***fail to become a mechanism*** to determine construction processes **(*working methods)**. It does ***not consider input*** **(*information)** to the construction process **(*working methods)** but only identifies the end result or product of construction.	Holes (1990), Jaggar et al. (2001)	Working methods	Insufficient	Issues related to contractor's work planning
13	BQ ***only present*** **(*information)** ***that have been processed and in final form*** **(*format)**. Detail **(*information)** such as supporting details on ***quantities measured, work location and types of operations*** **(*working methods)** the contractors have to employ are of use by estimators should access is given.	Hamimah et al. (2011), Turner (1983), Wood and Kenley (2004)	Inflexible format/Quantities location	Inflexible/ Insufficient	Issues related to information
14	BQ **(*information)** had ***inadequacies for utilisation*** by contractors. **(*Quantities)** ***Location of quantified information*** was ***not adequate*** for its purpose.	Baccarini and Davis (2002), Wood and Kenley (2004)	Quantities location	Insufficient	Issues related to information
15	BQ do ***not indicate*** **(*information)** as ***where the quantity*** is ***located*** **(*location)** and therefore ***difficult to get a feel*** for the projects from the bill.	Slattery (1994)	Quantities location	Insufficient	Issues related to information
16	BQ ***disregard potential*** further value of reanalysing the **(*information)** into activities, operations or elements **(*format)**.	Kinlay (1984a)	Inflexible format	Inflexible	Issues related to format
17	BQ **(*format)** is ***not adequate*** as it ***hinder effective use*** of **(*information)** contained.	Rosli et al. (2006), Smith and Hoong (1985)	Unsuitable format	Unsuitable	Issues related to format
18	BQ ***fails to convey*** details **(*information)** of materials **(*specification)**, ***plants*** and ***temporary works*** required for ***proper work execution*** **(*working methods and planning)** and to enable those resources to be identified, quantified and valued by contractor's estimator.	Ahenkorah (1993), Hamimah et al. (2011), Holes (1990)	Specification/Working methods/Temporary works	Inadequate/ Insufficient	Issues related to information/ Issues related to contractor's work planning
19	BQ only useful for tendering and financial control but ***not used extensively*** for ***contractor's site operation*** **(*working methods and planning)**.	Smith and Hoong (1985)	Working methods	Insufficient	Issues related to contractor's work planning
20	BQ ***do not support*** contractor's management function. BQ **(*information)** ***disregard*** resource requirements and only measures **(*quantity and units)** ***fixed in place measurement.***	Baccarini and Davis (2002)	Quantities/ Quantity units	Inaccurate/wrong quantities/ Inappropriate	Issues related to information
21	***Nett quantities*** and ***inaccurate quantities*** **(*information)** are ***major dissatisfaction*** among contractors in the way **(*quantities)** are provided in BQ.	Hamimah et al. (2011)	Quantities	Inaccurate/wrong	Issues related to information
22	**BQ (*format)** other than trade ***fails to facilitate*** contractor's pricing **(*unsuitable format)**.	The BOQ Working Group (1995)	Unsuitable format	Unsuitable	Issues related to format
23	**BQ (*format)** ***do not indicate*** project's buildability, work sequence and control of work **(*inflexible format)**.	Skoyles (1968a)	Inflexible format	Inflexible	Issues related to format
24	**BQ (*format)** ***do not adequately reflect the interaction*** **(*inflexible format)** between the design of a building and the production process **(*working methods and planning)**.	Skoyles (1964)	Inflexible format	Inflexible	Issues related to format
25	**BQ (*format)** is ***not adequate*** to fulfil its maximum functions **(*unsuitable format)**.	Hughes (1978)	Unsuitable format	Unsuitable	Issues related to format
26	**BQ (*format)** and ***data presentation*** **(*unsuitable format)** are the ***major cause*** for inefficient flow of estimating data.	Kodikara and McCaffer (1993)	Unsuitable format	Unsuitable	Issues related to format
27	BQ data **(*information)** ***fail to provide*** contractors with information they need for ***proper planning, organising and managing*** of their work **(*working methods and planning)**.	Contributed (1964), Holes (1990), Leon (1966), Waterworth and Weddle (1978)	Working methods	Insufficient	Issues related to contractor's work planning/ Issues related to information
28	BQ **(*information)** requires sub-processes by site QS as the information ***are not presented*** in a standardised format **(*unsuitable format)**.	Cornick and Osbon (1994)	Unsuitable format	Unsuitable	Issues related to format
29	BQ **(*information)** produced is inaccurate in terms of its ***quantities*** and ***descriptions***. Inaccuracy is caused from an omission of important cost items, disparity between drawing details and quantity list and over and under measurement of cost items.	Abdul Rashid and Normah (2004), Rosli et al. (2008)	Description/ Quantities	Inaccurate/wrong quantities	Issues related to information

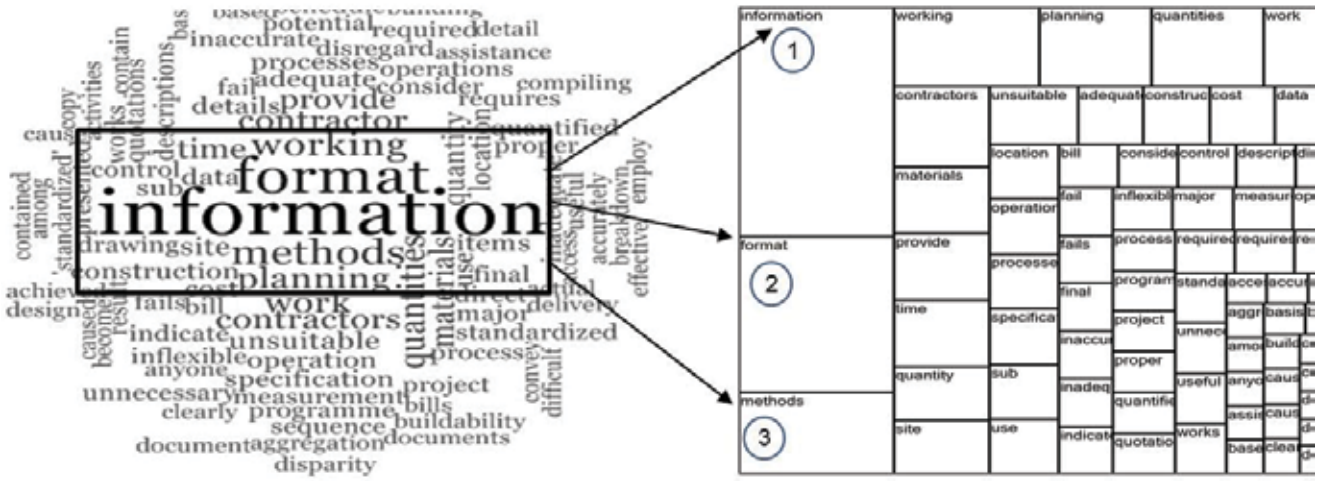

Figure 1: The main concepts underlying the issues identified from the literature

Following this, a thematic analysis is carried out by enumerating the frequency which certain accentuated concepts have occurred (Bryman, 2008). This is to reveal the predilections that have exaggerated certain number of concepts and disclosing any considerable weightage from the concepts. To assist with the thematic analysis, a word cloud as showed in Figure 1 is used to demonstrate the weight of the identified concepts. Accordingly, it shows that 'information', 'format' and 'methods' are the three most occurring concepts from the issues identified and presumably are the three main concepts by which the issues can be categorised. In relation to weightage, it is clear that 'information' contain the most number of issues followed by 'format' and 'methods' respectively. The analysis implies that issues concerning 'information' pose a considerable concern with the uses of the BQ, hence suggesting a focus for consideration.

To relate the main concepts identified in Figure 1 with the array of issues concerning the BQ, the issues presented in Table 1 are restated to correspond with 'information',

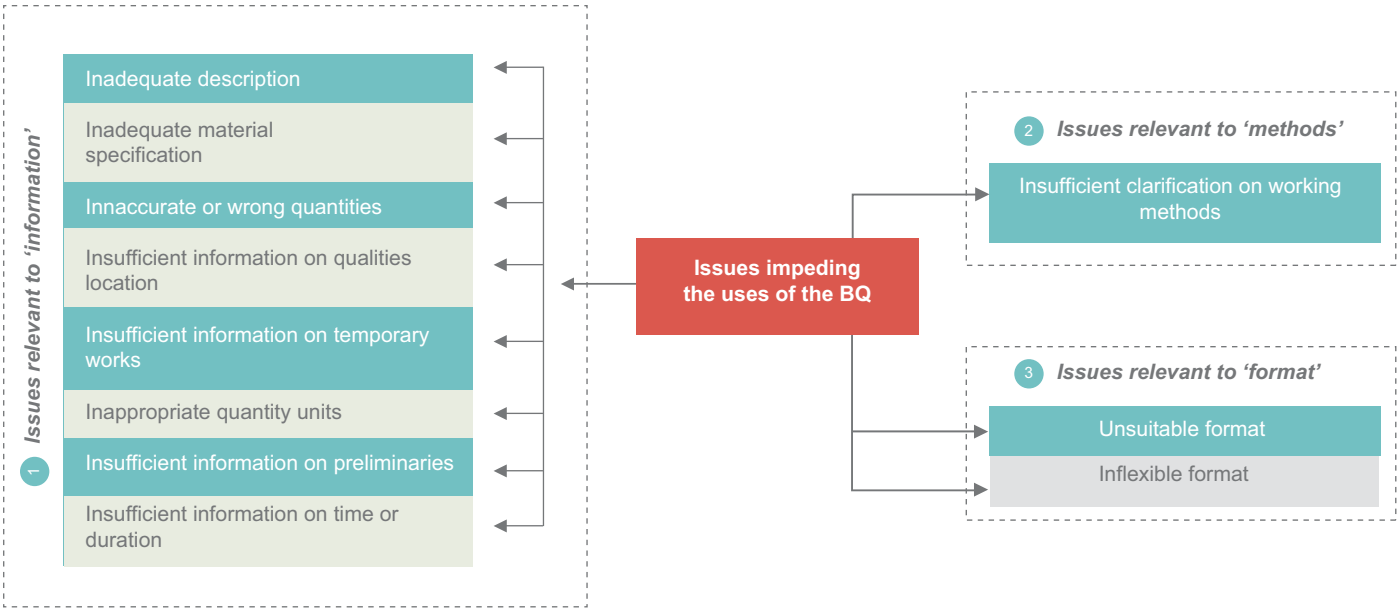

Figure 2: The theoretical framework on the issues impeding the uses of the BQ

'format' and 'methods'. This is conducted within an interpretative context and aim to provide details that can describe the categories developed from the thematic analysis (Hart, 1998, Booth et al., 2012, Shamsulhadi and Fadhlin, 2014). The final result from the process is presented in Figure 2. In this respect, pertinent matters related to quantities/quantities location/quantity units, BQ descriptions, material specifications, time, preliminaries and temporary works have described the concern related to 'information'. The weightage implores that 'information' related issues have underlie much concern on the uses of the BQ. This in relation to two other categories prompted from the analysis. The analysis and synthesis carried out provided an insight to understand the issues hence denotes the theoretical framework on the issues impeding the uses of the BQ.

4.0 Identifying Relevant Research Focus

The issues identified have prompted several solutions to be proposed in an attempt to improve the situation. It has centred on suggesting various forms of new BQ format and has concentrated on this aspect to improve its uses to the contracting organisations. Accordingly, the solutions identified are:

(1) Elemental Bill (Rose, 1956);

(2) Sectionalised Trades Bill (Nott, 1963);

(3) Operational Bill (Forbes and Skoyles, 1963, Skoyles, 1964);

(4) Bills of Quantities (Operational Format) (Skoyles, 1969, Skoyles,1968a, Skoyles, 1968b);

(5) Activity Bill (Lear, 1966);

(6) BPF System (schedule of activities) (British Property Federation, (1983);

(7) Builder's Quantities (Pasquire and McCaffer, 1985); and

(8) Abridged bill (Davis et al., 2009, Slattery, 1994).

Aspect on format has been the focus of past researches and was proposed to ameliorate concerns over the uses of the BQ (RICS, 1965). It posed to restore confidence over its presence in the construction industry (Mohd Hisham and Azman, 2008).

Apparently, it implies that the solutions had placed much focus in developing new BQ formats. This despite the call made by the Quantity Surveying Techniques Working Party of the Cost Research Panel to focus on improving the usefulness of the BQ data (RICS, 1962). To add, further researches by Skoyles and Fletcher (1970), Turner (1983), Kodikara (1990); Jaggar et al. (2001) and Ramus et al. (2006) have concluded that improving the BQ format seemed not in the best interest of the industry. Within the context of this paper, the solutions proposed show that only a fraction of issues concerning the BQ format had actually been considered. This does not seem entirely parallel with the array of issues synthesised from the literature. Besides, as there was too much focus in developing new BQ format, little is known whether the information contain in BQ has truly accorded with the requirements of its main user. This similarly goes to the array of issues synthesised, whether it possess significant impact on the uses of the BQ to the contracting organisations. For this reason, a research that considers information requirements and significant issues to improve the uses of the BQ is considered timely. It is based on the fact that BQ is a compilation of varying construction information and the issues associated will provide factual inputs to improve its presence in the industry. Hence, this complies with the evidence synthesised from the literature and stood as the gap for current research concerning the BQ.

Following the gap identified from the past researches, pertinent questions need to be asked which should centre on the contracting organisations which have been identified as the primary user of the BQ. Accordingly, the questions that could be asked concerning the gap are as follow. Answering these critical questions in return will provide the critical input as the basis to improve the uses of the BQ in the construction industry.

(1) What are the uses of the BQ to the contracting organisations?

(2) What is the BQ information required by the contracting organisations in order to achieve the uses of the BQ?

(3) What are the significant issues impeding the uses of the BQ to the contracting organisations?

As the step to answer the questions which will ultimately lead to satisfy the focus, this paper is suggesting the following approach:

(1) To determine the uses of the BQ to the contracting organisations;

(2) To determine the important BQ information requirements for the purpose of achieving the uses of the BQ to the contracting organisations;

(3) To determine the significant issues impeding the uses of the BQ to the contracting organisations.

By following the suggested approach, it is expected that the research could be able to gather evidences which indicates the important BQ information requirements and the significant issues to be considered for improving the uses of the BQ. Hence, the evidences collected could serve as the basis to ameliorate improvements

to the uses of the BQ and in line with the gap identified from the synthesis carried out.

5.0 Discussion On The Contribution Of The Proposed Research

Narrowing the gap conceptualised in this paper will be of significant value in addressing the current and the future needs of the industry. It will extend the current knowledge on the BQ by placing the actual requirements of the contracting organisations as the main focus for improvement which imperative at re-extending the BQ usage to wider groups in a project. This effort is considered timely given the lack of attention currently given to this aspect of research although concerns were reported through the literature. This research is posed to contribute to the contracting organisations in at least one of the following:

(1) Determining the uses of the BQ;

(2) Determining the BQ information requirements; and

(3) Determining the impeding issues concerning the uses of the BQ.

Although been focused at the contracting organisations, the outcome of the research is also expected to benefit other parties in a project; hence improving the current construction environment which the industry is currently operates.

Besides focusing the gain to the current needs of the industry, the outcome of the research could also be useful in relation to the development and advancement of the Building Information Modelling or BIM. According to Azhar (2011); Lee et al. (2014), Porwal and Hewage (2013), Succar et al. (2013) and Love et al. (2014), the BIM technology which is still at its formative stage would require much research input before total deployment could be achieved. Following the requirements, several attempts have been identified from the literatures which aim at helping the technology to advance. The work of Taylor and Bailey (2011) for instance, have stressed the need to establish a standard coding structure to streamline construction processes in BIM environment while Jung and Joo (2011) have been acknowledged in developing the BIM practical framework for deployment. Though works which revolve around the requirements are currently underway, its development is also found to bear some challenges. According to Becerik-Gerber and Kensek (2010); Keat (2012) and Monteiro and Martins (2013), in order to enable the BIM technology to advance, the industry must first address the issues of interoperability and software integration while letting the technology to evolve as it respond to user's specific need. Although the outcome would be far from addressing the major issues related to BIM deployment, yet this research is fundamental and posed to contribute by providing input to the coding structure which was poised as the most important aspect of its development. Accordingly, it is in this regard that the research proposed in this paper would come in to contribute in order to advance the BIM technology for deployment. This contribution however, is still small in comparison with the actual requirement of the technology. Regardless, it is a fundamental attempt that will situate BQ related research with the need of the BIM and hence, justifying its appropriateness with the current need of the construction environment.

6.0 Conclusion

The identified research gap has been substantiated with rigorous synthesis of the past researches. This is conducted in an attempt to propose current research focus in the area concerning the BQ. Following the analysis conducted to the works of past researchers, the incapacity of the BQ to address the information need of its main user has been elevated as the primary concern and is considered as the gap that need to be filled and focused. This is in addition to the identification of issues impeding the uses of the BQ to the contracting organisations. It is proposed that a research concerning the aspects outlined is imperious and currently in need. This is also in line with the categories of issues synthesised from the literature. It is expected that the findings from focusing to the aspect highlighted offers benefit, not only to the immediate need of the construction industry, but also to the emerging concern over the BIM which is envisaged to elevate the quantity surveying profession higher with the need of the current construction environment.

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Causes of Building Defects from the Perspective of Building Management: A Descriptive Survey

Building defects are a serious threat to building occupants or users; they also cause discomfort to building users and reduce building performance and property value. Therefore, eliminating building defects through proper building management is important, and the best way to do this task is through preventive maintenance. Proper identification of the causes of building defects ensures the success of preventive maintenance. This study aims to reveal the causes of building defects and related issues from the perspective of building management staff. Required data were collected through a questionnaire-based survey with 27 participants. These participants were involved in managing buildings with 10 to 20 years of experience among them.

Respondents were asked about their opinion and experience on the common causes of building defects, typical types of defects and their effects on buildings, and the possibility of eliminating defects during construction. The data were statistically analysed using SPSS. Results show that "human factors" comprise the main source of building defects, and includes poor workmanship, lack of knowledge, and managerial errors. In addition, common types of defects during and after construction show different patterns. Finally, majority of the respondents believe that building defects can be eliminated during the construction stage. quality, teamwork, information and communication technology (ICT), as well as basic skills and resource skills.

Keywords: cause of defects, building defects, building management, questionnaire, survey

1.0 Introduction

Building defects reduce property value, causing tremendous losses to the owners. In addition, defects cause discomfort and threaten the safety of building users. Therefore, buildings should be maintained properly to ensure the safety of the users (Reese, 2004; Encon, 2005; Ho et al., 2006). In this regard, the best approach is through preventive maintenance, which is regularly performed while the building is still in good condition. This approach operates on the principle that prevention is better than cure.

Preventive maintenance works can be enhanced by identifying the causes of building defects. Every defect has its own factors, such as human, environment, and building materials. This paper discusses the causes of building defects from the perspective of building management. The result is based on a preliminary survey of a sample comprising building management staff.

2.0 Literature Review

A building defect is defined as the weaknesses or the malfunction of a building component (Georgiou, 2010). Defective building components need repair and corrective maintenance works, which are costly (Evans, 2005). Building performance will decrease with time if it is not properly maintained (Yau, 2011). In addition, because of poor construction, buildings may not be maintained properly when they are operational, eventually resulting in defects and reduced real estate values (Yiu, 2007). The decline of real estate values is often associated with conditions of buildings that are not fully functional (Yiu, 2007).

Dhillon and Liu (2006) stated that human errors (i.e., operational, installation, design, inspection, and maintenance errors) are among the largest contributors of building defects. This is supported by Zuriani (2003), who asserted that human errors are the main factors of building defects during the design, construction, and post-construction stages.

In the construction industry, the customer is the reason behind the industry's existence (Boyd and Chinyio, 2006). Thus, the construction industry should always strive to understand and meet the needs of the customers (Boyd and Chinyio, 2006). Real estate is one of the highest investments a customer can make (Georgiou, 2010); hence, building management must aim to provide a comfortable environment and living space for its occupants (Ho et al., 2006). In relation to this, building defects should be eliminated or minimized by resolving the common causes of defects.

3.0 Methodology

Data were collected through a questionnaire survey involving 27 participants from building management teams. The respondents were participants of a building maintenance seminar held in Perak in October 2014. Respondents were required to answer a

Building defects reduce property value, causing tremendous losses to the owners

questionnaire survey form during the seminar. They were involved in managing health care of buildings, with experience of between 10–20 years among them.

The questionnaire survey form asked about the respondents' opinions and experiences on the common causes of building defects, typical types of defects and their effects on buildings, and the possibility of eliminating defects during construction. Data were analysed using SPSS to obtain a descriptive statistical output. The results of the analysis are presented in table form.

4.0 Result and Discussion

The questionnaire survey reveals valuable information on the causes of defects from the perspective of building management. This section discusses the common causes of building defects, the types of defects observed during and after construction, their effects on buildings, and the possibility of eliminating defects during building construction.

4.1 Result and Discussion

Any building defect has its own possible causes, which may include factors stemming from humans, the environment, and the construction materials used. Table 1 lists the possible causes of defects in descending order of frequency.

Table 1 shows a list of the possible causes of defects as ranked by the respondents. Based on the table, 11 causes of defects have been identified. Poor workmanship, lack of knowledge, managerial errors, and unskilled craftsmen were selected as the top four possible causes of defects. These four factors can be categorized as "human factors," which are closely related to incompetent workers. This result is in line with that of Dhillon and Liu (2006) and Zuraini (2003). From this result, human factor is proven to be the most possible cause of defects, and serious attention must be provided to improve all of these weaknesses.

The causes of defects listed in Table 2 are ranked based on the most to the least common defects in a building. The most common cause of defects ranked by respondents is low quality of the constructed building, followed by weakness in contractors' organisation, and human negligence. All three causes of defects are classified as

Table 1: Possible causes of defects

Rank	Items
1	Poor workmanship
2	Lack of knowledge
3	Managerial errors
4	Unskilled craftsmen
5	Defective construction materials
6	Omission in completed designs
7	Civil engineering design issues
8	Poorly worded specification
9	Lack of motivation
10	Error in construction drawings
11	Architectural designs problems

Table 2: Causes of the most common defects in buildings

Rank	Items
1	Low quality of constructed buildings
2	Weakness in contractors organization
3	Human negligence
4	Design failure
5	Lack of reinforcement cover/rusty steel bars
6	Natural deterioration of the concrete structure
7	Environment factors
8	Soil movement
9	Natural disaster

Table 3: Most common causes of building defects

Causes of building defects	Percentage
Skill level of personnel or workmanship	72.0
Material Quality	24.0
Errors in design	4.0
Total	100.0

"human factors." Meanwhile, natural disaster, soil movement, and environmental factors are the least common causes of defects in buildings.

Next, the respondents were asked again about their opinion on the most common causes of defects in general. The results are shown in Table 3. As can be seen, skill level of personnel or workmanship is the main cause of building defects, as cited by 72% of respondents. This is followed by quality of materials (24%) and errors in design (4%). These results indicate that "human factors" are the main contributing factors that cause building defects, thus lending support to the findings of Dhillon and Liu (2006) and Zuraini (2003).

4.2 Types of defects

Ramly (2004) reported 14 causes of defects. However, in the current study, respondents were only asked about six possible causes, which are often observed during and after construction. Table 4 shows the respondents' feedback on the typical defects observed during and after construction.

Table 4 lists the descriptions of six defects commonly observed during and after construction. Based on respondents' feedback, structural cracks in walls and leaking roofs are the most observed defects during construction, as cited by 80% of respondents, followed by exposed reinforcement and peeling paint (64%). The least observed defect during construction is foundation settlement (44%). These results indicate that the roofs and walls are the most defect-prone building components during the construction. After construction, most observed defects lie in structural crack in walls (84%), followed by leaking roofs (80%). Peeling paint (64%) and exposed reinforcement (36%) are the least observed defects after construction

A comparison of percentages among defects reveals that some defects become more serious after building completion. For example, the percentages of foundation settlement and structural crack in walls increase once construction is completed; the same situation is true for leaning walls. However, those defects may be caused by different factors, such as soil movement, quality of material, and workmanship. For leaking roofs, both phases (during and after construction) have higher percentages, indicating that roofs are the most defect-prone structures because they serve as the the main protection of buildings since the construction phase.

Table 4: Typical defects observed during and after construction

No	Defect description	Percentage(%)	
		During construction	After construction
1	Foundation settlement	44.0	56.0
2	Structural crack in walls	80.0	84.0
3	Exposed reinforcement	64.0	36.0
4	Leaning walls	56.0	60.0
5	Peeling painting	64.0	64.0
6	Leaking roofs	80.0	80.0

Table 5: Defects that need remedial works during and after construction as observed by clients

No	Defect description	Percentage(%)
1	Structural defects	56
2	Superficial defects and finishes	68
3	Plumbing and electrical	80
4	Leaking roofs	88

Table 6: Impacts of defects on constructed buildings

Rank	Items
1	Low quality of finished products/buildings
2	High cost of completed works
3	Customer dissatisfaction
4	Delayed completion
5	Structural failure
6	Litigation

Table 7: Respondents' agreements

Agreements	Frequency	Percent
Yes	15	60.0
No	5	20.0
Not Sure	5	20.0
Total	25	100.0

Table 5 shows the types of defects that need remedial works, as observed by clients during and after construction. Based on the feedback, leaking roofs (88%) is most in need of remedial work, followed by plumbing and electrical (80%), superficial defects and finishes (68%), and structural defects (56%). The overall result indicates that all defect types listed in the table need immediate remedial works because the percentages are all greater than 50%. This result is in line with typical defects observed during and after the construction.

4.3 The impacts of defects on buildings

Building defects can have bad impacts on buildings and be detrimental to the owners. The detrimental impacts can be evaluated from the aspects of comfort, safety, and finance. Minor defects, which can be treated as cosmetic defects, can cause discomfort to occupants or users. However, if those defects are ignored, they will eventually manifest and become severe defects that can be harmful to building users. The costs required to maintain and repair those defects are often expensive. Table 6 shows the impacts of defects on constructed buildings from the perspective of building maintenance.

The ranking in Table 6 shows the impact of defects on constructed buildings based on respondents' experiences. The ranking indicates that the greatest impact of defects on constructed building lies in the low quality of the finished product, followed by the impact on the high cost of completed works, and customer dissatisfaction in the third place. Meanwhile, litigation, structural failure, and delayed completion have less impact on constructed buildings.

The low quality of the finished product is closely related to poor workmanship and unskilled labor. If the defects occur before the completion of a building, they will need repair work and thus increase construction cost. Consequently, the defective buildings will lead to customer dissatisfaction because, as they pay a lot of money to acquire the properties, they expect that the building would be defect-free. Therefore, the main cause of defects, namely, poor skill level of personnel or workmanship, must be addressed.

4.4 Eliminating defects during building construction

The main causes of defects identified from the survey are categorised into "human factors." These causes of defects happen during the construction phase. Therefore, they can still be eliminated while building construction is ongoing. Table 7 shows the respondents' opinions on the possibility of eliminating defects during the construction phase.

Table 7 shows that majority (60%) of the respondents believe that defects can be eliminated during building construction. Meanwhile, 20% are unsure and 20% disagree. Based on the highest agreement shown above, it can be assumed that defects can be eliminated during the construction phase by overcoming the so-called "human factors."

5.0 Conclusion

Building defe cts have a significant impact on the impairment of assets, apart from causing discomfort and threatening the safety of users. The causes of defects must be correctly identified to ensure the success of preventive maintenance works. Through the literature review, we find that human errors (e.g., poor workmanship, lack of knowledge, and managerial errors) comprise the main cause of building defects. This finding is also reflected in the result of the questionnaire survey. In addition, the patterns of the types of defects during and after construction vary. Leaking roofs comprise the most frequently observed type of defect occurring in both phases. The main impact of building defects is the low quality of finished products or buildings. Meanwhile, 60% of the respondents believe that defects can be eliminated during building construction. This can be achieved by the participation of competent professionals during the design stage.

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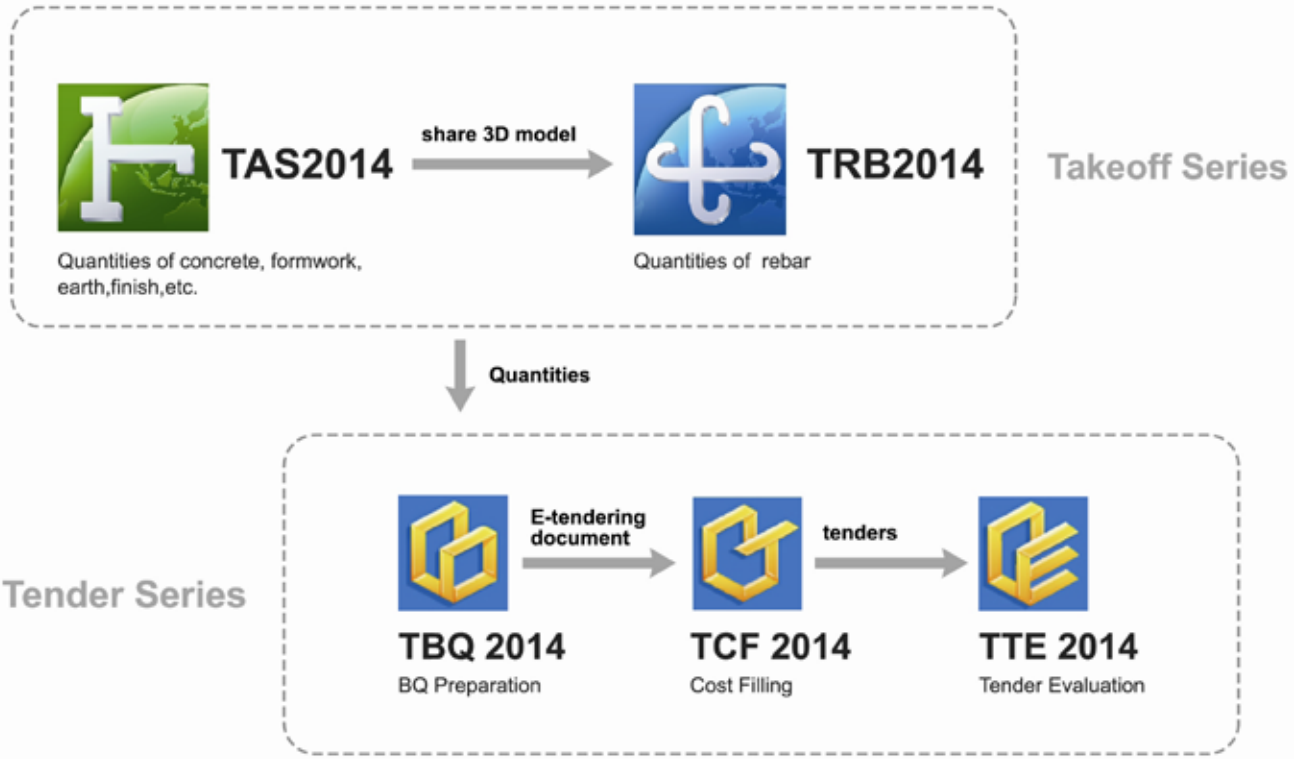

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Chow Wen Yan

Universiti Sains Malaysia

Malaysian Public Listed Companies Diversifying Into Property Development – Rationale and Challenges

Property development remains a lucrative industry gauging from the increase in the number of non-property related public listed companies diversifying out of their core businesses and venturing into property development. The fact remains that property appears to be an attractive proposition considering its low entry level with minimum obstacles and a good sector to venture into provided the companies are able to seize the available opportunities and optimistically view this as a good strategy to move into. However, there will always be risks in a new venture. A slowdown may just have an adverse effect on new players and are likely to be the most affected. Thus this study is aimed at identifying the rationale and challenges faced by non-property related listed companies diversifying into property development. By way of a qualitative analysis approach, in-depth interviewing techniques were applied entailing the collection of data from five separate respondents which were later transcribed verbatim. It was observed that market growth, decision of top executives and entering into a new market territory were the main reasons behind the diversification move. Findings obtained from the interviews also revealed that the acquisition of prime land in mature locations remains

the main challenge for new property players as the location of land may affect the viability, value of the assets as well as future transactions of properties. The outcome provides good insights to new property players in assessing the property industry and to enhance their participation in the property development business by tackling the challenges

Key words: Diversification, property development, non-property related, public listed companies, rationale, challengesindustry, infrastructure

1.0 Introduction

S P Setia Bhd, Mah Sing Group Bhd and IOI Properties Bhd have one thing in common – besides being the biggest property players in the country, they were previously not involved in property development but diversified into the sector. S P Setia Bhd was first established as a construction company, Mah Sing Group Bhd began as a plastic manufacturer while IOI Corp Bhd started off as a plantation Company and later converted their available land for the purpose of property development (Risen et al., 2013). Diversification is seen as a good strategy as it would be an advantage in terms of the types of businesses; sometimes a slowdown of a particular industry may occur and the other industry diversified into would be unaffected over various economic cycles and changes in market conditions. However, diversification is not a good move if the diversification strategy fails and ends up with bad investments (Liew, 2013).

As a topic of research, diversification has been widely studied in the management literature over the past decades (Rumelt, 1974, 1982; Hoskisson and Hitt, 1990; Wan and Hoskisson, 2003). Despite the breadth of its scope, no comprehensive review of this literature related to property is available. The research topic focuses on the explicit relationship between diversification and property development, a field considered scarce and therefore definitely valuable to be researched.

This paper seeks to identify the factors or reasons governing non-related companies in the industry to focus or diversify into property development on a full scale basis although they may already have several other contributing divisions besides property development under their core business operations. Moreover, this paper also aims to find out the challenges the companies endured from the start up point up to the current scenario with regards to the property division. The objectives of this study are outlined as (1) to review the reasons the company venture into property development and (2) to access and get to know the challenges faced by a company going into property division. The findings from this study will be useful in developing better understanding on the relationship between the diversification and property development that a company would have taken over the years.

2.0 Literature Review

2.1 Property diversification trend in Malaysia

The expanding property markets in Malaysia have indeed caught the eye of many more than just buyers and sellers but also developers who have not been in the property line before (Property Report, 2010). In early 2010, several non-core property players, several non-core property players such as Fitters Diversified Bhd, Caely Holdings Bhd, Sanichi Technology Bhd (details as per Table 1) made their foray into the property sector, a sign that the property cycle is at its peak when too many non-property related public listed companies jumped on the property bandwagon (Liew, 2013). It is a fact that registered property developers already number more than 1,000 comprising listed township developers, boutique ones including small and medium enterprises (SME) (Sharen, 2014). However, industry experts say the trend of non-core property players for example construction firms turning to property development is not a new phenomenon (Asiabuilders, 2011). As the competition in their respective core businesses intensifies, more non-property related companies could be pushed to venture into property development. Over time, some of these companies could even turn into pure property developers as its core activities are phased out to focus on growing its more lucrative property division where the profit margin is good and not be distracted by core activities. For example, Encorp Bhd is seeking to slow down their construction unit and move to a full-fledged property development in line with the attractive property prospects and the available opportunities to leverage on a sizeable land bank

Table 1: List of companies diversifying into property development for the last 5 years

Company	Core Business	Year of entry into property development	Maiden peroperty project
Fitters Diversified Bhd	Fire-fighter equipment	2008	Zetapark, Setapak
Caely Holdings Bhd	Lingerie products	2011	Gombak, Selangor
Digistar Corp Bhd	Information technology provider	2012	The Heritage Apartments, Melaka
Sanichi Technology Bhd	Information technology provider	2014	Marina Point, Klebang Malacca

located in prime areas (Gurmeet, 2015). However, certain public listed companies has no intention to be a full-fledged property player, as their own respective core business remain the mainstay of the group with property as its new income stream (Cecilia, 2013, Yvonne, 2015).

Significantly, the nature of the property business gives plantation and construction companies an advantage to diversify into property development. As reported by a MIDF analyst, many plantations owned companies possess cheap land secured over the years strategically located near to town and prime areas (Liew, 2013). The options available for these firms are to convert their land for the purpose of property development. By doing so the land could be put to good use while generating better revenues from development than putting up for outright sale of the land or for cultivation activities (Liew, 2013). In the 1990s many of the country's largest plantation companies diversified into property development, thus opening more agriculture lands for conversion into housing development due to the government policy to promote home ownership (Syafiee, 2008). For example, Sime UEP Properties Berhad and IOI Properties Berhad over the years have placed their interest and focus in residential development and making full use of their available land bank located in many prime areas in the Klang Valley as provided by their parent companies. These were readily available through originally plantation land in nature and later converted for residential purposes. Indeed, these companies provide the example of the benefits in having a steady supply of development land (Ting, 2002).

2.2 The Motives of Diversification into Property Development

Diversification may lead a company through hard and challenging times but has never disappeared from a group director's agenda to drive a company's plan to expand the group's earnings base and also to strengthen its financial position (Daniel, 2009). According to Chua (2010), no matter the conditions of the property industry among the big major property players, there remains a place for smaller ones to fill certain market sections still available or yet to be filled by the former. Many non-property players share the view that the business of property development and the related investments do offer steady growth coupled with an alternative source of revenue. The perception is reinforced and extended to realise the fact that this would be the sector needed to be added to its existing core business. This explain why non-property players jumped on the property bandwagon and started off as small property developers (Kobay, 2013). Furthermore, diversification is always good because funds are not restricted into one single industry unless the company create an over-diversified portfolio (Liew, 2013). When one sector is doing badly, especially if a company's long-established business is considered a sunset industry, it may want to seek new business opportunities that would provide a more robust growth (The Edge, 2014). Going into the property sector is one of the options that they have (Liew, 2013). Moreover, driven by external requirements from investors such as the pressure to grow or to invest idle cash on the

one hand and internal motives on the other, many corporations seek their fortune in diversification and show that there is no favouritism towards the sector they are most adept at (Knop, 2007, Welge& Al-Laham, 2007).

Malaysia as a growing nation means demand for housing will increase over time and with the stricter regulations imposed by the Government and related authorities, the housing industry should continue to improve over time (Risen, 2013). According to the demographics, Malaysia has a high number of young adults aged between 25 and 35 who are starting families and will need a place to stay and those who are having children will become upgraders (Chai, 2015). This clear demand is one of the reasons why many non-properties related companies diversify into the lucrative property development. From the buyers' view, "a property is a person's biggest wealth creation asset" and property ownership in Malaysia reflects personal achievement; hence, such sentiments should spur people to buy houses regardless of what the nation's economic climate may be (Liz Lee, 2014; Chong, 2007).

Besides the favourable demographics, a sustained rate of urbanisation is expected to continue for a long time, increasing demand for modern housing as well as migration to urban cities (HLIB Research, 2012). Since the early 1990s, Malaysia has undergone rapid urbanisation due to the nation's unabated economic growth (Syafiee Shuid, 2010). Significant changes in economies, transformation in the property/housing sector and increasing urbanisation rates have both increased the demand for housing and created potential opportunities for property developers. The property sector will invariably remain a long term and sustainable industry. Unsurprisingly, this has resulted in many businesses turning their attention towards this industry, so as to not be left behind in a sector considered lucrative and financially rewarding.

The residential property for many years has been the money-making portfolio for most investors surveyed (Ibrahim et al., 2005). Anwar (2014) reported the sharp rise in house prices and developers producing properties to meet the demand were observed during the boom period of 2011 and 2013. The house demand was supported by the various government incentives then had drawn non-property related companies to diversify their business into property development (Anwar, 2014). The diversification trend is further supported based on Liew's (2013) study that revealed the uptrend in local house prices had partly contributed to the sudden surge in diversification among the new players. The residential property in Malaysia during the property boom period between 2011 and 2013 stand out to be a major contributor to the property market registering more than 50 per cent of the recorded property transactions.

> Diversification is always good because funds are not restricted into one single industry unless the company create an over-diversified portfolio

As reported, property development can be a highly lucrative business and the available opportunities and desire to be part of the success story simply not to be missed by many (Realedge, 2006). Upon the crystallisation of the company's intention to diversify their business into property development barring any unforeseen circumstances, property development business is expected to contribute more than 25% of the net profit of the company moving forward (Anggi, 2014).

2.3 Risk Factors In Relation to the Diversification Move

Building a career as a housing developer is not as easy compared with that in other sectors (Mastura, 2014). Diversification into property development will expose company to risks inherent in the sector. Non-property companies principally involved in their core business and have not been directly participating in property development business in the past will somehow be affected. Hence, the companies will face new challenges and risks arising from property development business in which the company does not have track record to ensure the success of the venture in property business (Risen et al. 2013). Besides that, smaller developer feels sidelined when it comes to bidding for attractive land parcels as compared to stronger bidders from larger financially sound property developers (Jo, 2011). Ultimately, failure in acquiring the right price of lands that offer competitive pricing may just cause the development project to be sluggish (Kobay, 2013). Moreover, one of the drawbacks of this property business is its requirement of a significant finance and time investment without a guaranteed return (Browman & Thompson, 2009;

Buttimer, Clark, & Read, 2008). In addition, majority of property developers use external finance to fund their projects as they could secure bridging loan from the bank (Ng, 2007). In order to obtain bridging finance from the bank, the developers must be able to sell 60% of the project; only then the bank will release bridging loan to the developers. Indeed, at times property developers find it hard to achieve more than 60% of the take-up rate of the units they offered for sales in the first twelve months after the official launch of the property project (Ng, 2007). Failure to secure financing means that the developer will be unable to undertake the development and higher cost of funding could hamper the return on investment or achieving the desired profit margin (Aizat, 2012).

With no track record and limited experience in the property sector, the newcomers will face challenges in the start up of the property division and to be on level terms with big property players like S P Setia Bhd, UEM Sunrise Bhd and Mah Sing Group Bhd. According to Liew (2013), latecomer needs to build up a strong brand name which takes time as compared to existing players already having an edge based on their established brand name and reputation in the industry. Besides that, most house buyers are encouraged to look out for large & established property developers with a better resource of technology and financial management, and nowadays home buyers have more options with the introduction of many small to medium developers (Wong, 2014, Liew, 2015). Inevitably this poses a challenge for newcomers to differ themselves from the property players by setting new benchmarks in terms of quality standards that can be applied by the industry to measure the quality of construction projects objectively (Phoon, 2009).

Risen (2013) also reported that newcomers to property could be facing challenging times due to increasing raw material prices. Any significant increase in the costs of raw building materials and fluctuation in prices would bring an adverse effect on the profit margin of the project or force the project to be sold at higher selling price which would eventually affect the project sell out rate (Kobay, 2013). Furthermore, what goes with the sale of property is also linked to risks and uncertainties. Risks will have a direct impact on the return in investment and purchase price as development usually spread over a considerable period of time hence is likely to affect stability of the property market (Aizat, 2012). An industry player reckons that some of the new players will naturally suffer in consequence to the slowdown in the property sector and the adverse effect that it has on the sale of property. Property development entails a lengthy process and involves an extensive start-up capital and may just work to the disadvantage of many not related to the industry (Risen et al. 2013).

3.0 Sampling And Data Collection

This research seeks to identify the reasons governing non-related property companies diversifying their business into property development and the challenges faced in the start-up of the property division. Qualitative research approach was being utilised in this research. Personal and email interviews were applied to obtain required responses to meet the objectives of this research. As property development are very subjective, personal interview approaches will be more responsive and flexible towards the interviewees' understanding, expression of opinions and also experiences with respect to the topic in question. Respondents will have the added opportunity to

Table 2: Duration of Interviews

Company	Core Business	The respondent's position in the company	Duration of interviews (m/s)
A	Higher-precision engineering	General Manager	1 h 40 m 57 s
B	Data collection and solutions	Group President	1 h 14 s
C	furniture webbing	Chief Finacial Officer	46 m 43 s
D	Wood base manufacturing	Group Financial Controller	Email interview
E	Construction	Senior Quantity Surveyor	1 h 3m 20s

Table 3: The purpose of diversification

Respondent	The purpose of diversification				
	Market growth	Decision of top executives	rise in local house prices	Enter new market	Concession agreement with Malaysia Government
A	√	√	X	√	X
B	√	√	√	√	X
C	√	√	√	√	X
D	√	√	X	√	X
E	√	√	X	√	√

respond more elaborately and in greater details with such approach. The presence of the interviewer has facilitated respondents in providing a more reflective and accurate answers to questions asked. Mp3 recordings and written notes were then made by the interviewer of the entire interviews. As an alternative to face-to-face interviews, e-mail approach had also been used in this study.

The targeted companies' respondents were identified from newspapers, online articles and online media such as Bursa Malaysia website. The sources of information on a particular company such as from a construction background diversifying into property development are sourced through these avenues. Altogether, the targeted sampling size was 15 interviews for this study. Interview questionnaires were based on the literature review of diversification into property development. Out of the 15 firms, only five responded while the rest declined and cited tight respond deadline being the main reason. The respondents (as per table 2 below) were represented by the Group President, General Manager, Chief Financial Officer, Group Financial Controller and Senior Quantity Surveyor. Interestingly, all the respondents were key persons directly involved in the diversification process and responses were indeed based on first-hand knowledge rather than hearsay.

4.0 Data Analysis

In yet another sign that the Malaysia's expanding property market is red-hot, a handful of small firms are venturing out of their core businesses to make big bets on real estate development. Based on the data extracted from the interviews (as per Table 3 above), all the companies agreed that property development business is a lucrative market and is very demanding where the companies would seize every opportunity to diversify into property development due to the market growth in this industry. As discussed in the literature review, property development can be a highly lucrative business and the available opportunities and desire to be part of the success story simply not to be missed by many. (Realedge, 2006). Henry Butcher Malaysia director, Lim Eng Chong reported that Malaysia as a growing nation, demands will increase over time and in tandem with the projected population growth. Supporting this, Risen (2013) reported that the housing industry should continue to improve over time. Ultimately, this caught the eye of developers who have not been in property before (Property Report, 2010). Besides that, decision of top executives also played a major part in the diversification into property business. Respondent C relayed the idea of diversifying into property development had always been the main priority with the aim of seizing any viable opportunities at a suitable time for business enhancement and sustainability. For the record, the company diversify in the year 2008. In this case, Nancy (1997) prior findings verified that top management makes the diversification decision in the context of considerable controversy over the relationship between firm performance and firm diversification. Moreover, the result appears to be consistent with the existing literature review from Aizat (2012) where the timing of the developments is crucial and is known to impact the real estate options.

For respondents B and C, the reason for diversification were attributable to the continuous rise in local house prices and this matches with the

literature review above (Liew, 2013). In recent years, rapid economic development has resulted in an increased demand for residential housing among urban areas in Malaysia. A review on the housing prices in Malaysia revealed that it has indeed appreciated significantly namely in the urban cities or outskirts of the town areas and it is very much dependent on the specific location (Tze, 2013). A prominent Group Executive Vice Chairman supported the fact that the price of properties will still continue to rise, unless when the country is facing internal or other problems (Hong, 2012). In fact, the trend of companies diversifying into property development is only good as long as property prices continue to rise, MIDF Research senior analyst, Syed Muhammed Kifni was quoted by Malaysia's Business Times Property Report (2010) as saying.

As observed, companies A, B, C and D have the same view and purpose on the benefits of entering a new market where opportunity to expand revenue sources and reducing reliance on existing core businesses could be achieved. Brostdn Kleiner (1995) prior findings verified that diversifying into other business can maintain the revenue or reduce risk for the company. According to respondent B, the company has been under a lot of pressure from its stakeholders to put the money to good use after paring down its stake in its Thai technology company. The company decided to use part of the cash it earned from the Thai technology company stake disposal to acquire a stake in a small developer firm to venture into property development business. The company expects their core business (IT sector) to enter a challenging phase that will last for the next two to three years. This statement can be enlightened by previous findings in the literature review above (Knop, 2007; Reed & Luffman, 1986; Welge& Al-Laham, 2007).

Respondent E, describes it was the Bukit Jalil National Sports Complex Malaysia as a breakthrough for the property division. The company was responsible for the construction of the national sports complex as a Contractor. Unfortunately, the construction project was delayed and slowed down due to the 1997 Asian financial crisis. The project was no longer bankable and it needed a massive infusion of internal funds from the Malaysian Government. As a solution, a concession agreement provided for the cost of the project to be recovered with property development was signed between the government and the company. As a result, the government alienated a total of 154 acre freehold land to the company for property development. That was the reason the company diversifies into property development.

4.2 Challenges that faced by the new property players when they diversify into property development

All the companies interviewed acknowledge that the property business is a highly challenging one. The main concern is the acquisition of prime land, which has become increasingly harder to find. According to Company B, land in Klang Valley has becoming scarce with more developments springing up in the Klang Valley. Thus when land is to be acquired for developments, the right type of land is hard to come by as the available land in the Klang Valley will diminish. There would be a loss of opportunity especially when the market is hot and the land is scarce. Whenever there is a good piece of land and whoever is able to provide a down payment stand to secure the land fast. This statement can be enlightened by previous findings. "Many developers were unable to replace their landbanks and carry on doing business. One reason was the shortage of available land near urban growth centres, which pushes prices beyond the reach of these developers," (MPI Report, 2011). Studies conducted by Abdul-Aziz and Ho (2006), Abdul-Aziz et al. (2006) and Ho (2006) reveal that location is the key indicator of a housing project's competitiveness as location is always important to attain the full potential of property investments (Business Today Magazine, 2014). For example, Company C mentioned that the major key considerations made by the company in the diversification decisions were the location of the proposed housing development, the type of houses to be developed and its pricing. The statement above appears to be consistent with the previous finding by Mastura et al. (2014) that related developers faced with the risks of re-starting their business in a new location and coupled with the rejection of the housing designs by the local community and uncertainty on the selling prices have indirectly affected the stability and prosperity of the firm.

For Company E, the main challenges faced in the start-up of the property division were dealing with challenging bank financing and interest rates, securing bridging finance for projects as well as getting new homebuyers to commit in such uncertain times. Further claimed that it was due to one of the bank requirements limiting the granting of the bridging loan at 60% of the property sold. It means that the developers have to find end financiers (house buyers) for the bank before they can obtain the bridging loans (Goh 1997) and this finding on bank's requirement is consistent with the existing literature review above (Ng, 2007). Company B rated financial capability of the company as the second important challenge as fortunately for the company, their financial footing was relatively strong after paring down its stake in its Thai unit and venture into

property development. Company C on the other hand noted that bigger firms will have a better financial resource management due to their in-depth knowledge of the property market and better diversified plans. Considering the circumstances, small size developers tend to be ignored by bankers. Without such funding, some of the smaller developers unable to acquire land unless they resort to borrowing. Hence, firms with better resources and strong financial background are normally more capable and have the competitive advantages (Ng, 2007).

According to Company A and E, one of their biggest challenges when the company diversifies into property development was public perception. Certain people perceive them as a new kid on the block with Company A being an IT solution provider while Company E principally a construction company. Moreover, Company B mentioned that the public would not know about the company if the company have no reputation in the property industry. The finding is consistent with the previous study of Mastura et al. (2014) where it indicates that the public tends to recognise only big names in the industry and ignores small and newly established companies. Company E further highlighted that most house buyers tend to have more confidence in pure property players with strong financial resources, experience and reputation as quality developers. Homebuyers are smarter now and will do background checks on the property developers before they buy a property. This statement provided support for the existing literature review above (Wong, 2014; Liew, 2013).

> Property development business is something very special because there would be no other similar piece of land for development in the same location

While property development is an interesting business, Company E finds it a challenge to get approvals from the time the land is procured till completion of the project as developers have to submit many applications just to get projects started. This process alone can take more than five years for a medium-size development and this makes property development a tedious process. A study conducted by Balen (2006) has concluded that "obtaining planning permission has always been a lengthy and bureaucratic process. Moreover, the statement given by Company E also matches the findings of the previous literature review (Sharen, 2014).

4.3 How the company cope with the challenges when they diversify into property development

Malaysia's expanding property markets have not just pushed existing property players to expand but also caught the eye of developers who haven't been in property before. To continue to do well and cope with the challenges in the property industry, the new property developers need to have readily accessible financial capital, apart from the loans provided by banks and finance companies to ensure the smooth running of their daily operations (Mastura et al. 2014). Company C are open to options on financing a particular project and consideration could be made from the capital market, financial banking institutions or other credit facilities. Whatever option that the company may decide, careful cash flow and taking on debt would remain to be their priority. Moreover, the Chief Financial Officer of Company C added this was the reason the company started off with joint ventures for its maiden property venture as it will save the cost of landownership rather than buy land while it waits for another upcycle in the property market. According to Company E, once the concession agreement was signed between the company and the government, the company quickly launched the low-cost housing development to reduce the holding costs of the land bank and allow for sufficient time to generate revenue from property development during the Asian economic crisis. This statement clearly matches the previous finding as it showed that positive cash flow is essential for a company to venture into property development as the property market is cyclical in nature and companies need to have the holding power to last through down cycles (Yang, 2009).

Based on the findings, the location and size of the owned land bank that one may have determined the success of a project and this explain why property developers differ from each other and why they hardly compete on equal terms (Ng, 2004). According to Company A, the property development business is something very special because there would be no other similar piece of land for development in the same location. The location can only fit in one project and it depends on the company luck whether the location is attractive

enough to attract the buyers to acquire their property. In regards to the size of land, unlike the big boys in the industry that often buy vast tracks of land to be developed over a long period; Company B is widely known for its pocket-sized land development that is well-designed where the company is trying to embark on the quest to become a niche property developer catering to the market needs and demands according to the Managing Director. The statement above is contrary with the findings of Realedge (2006) that the new entrants may be at a disadvantageous position compared with the more established players in terms of land resources which have had years to build up their land banks. In other words, small parcels of land can yield a quick returns (Yang, 2009) compared to huge land bank as nowadays the land is so expensive and it is not easy to acquire huge land bank to build townships.

As the property industry is a highly competitive market and poses a lot of challenges, new property beginners find themselves pitting against the more established developers by adopting and pursuing more aggressive marketing strategies and also to build up a company to take advantage of an expected opportunity (Yang, 2009). According to MARC (2012), for a property developer to be on a strong footing and able to command a premium in their launched products one may have to be creative and innovative in their housing projects (e.g. selling a lifestyle instead of mere selling houses). Based on the data analysis findings, Company C positioned itself as a niche property developer by looking at all aspects of the company's product offerings from product features to styling, design and layout to meet the needs of today's home-buyers. Company A emphasised the need to be innovative in all aspects of operations in order to be a successful property developer. Moreover, they are learning a thing or two from the major property players like S P Setia and Mah Sing. Factors such as how to produce products that can be considered as in a niche market by observing their property business strategy plan for one and two knowing how much they sell and what they give to the market which differ themselves from other property developers. As for Company D, focussing on building residential houses remain the main priority as the residential segment has a lower barrier of entry and it is not as specialised as office retail. This supports the findings of Yang (2009) where residential houses have lower capital requirements and lower risk levels.

One of the ways to cope with the challenges to increase the confidence of the prospective buyers and enhance the reputation of the company is to acquire a competent management team with the right track record, expertise and know how in the sector (Business Today Magazine, 2014). This further supported by the fact that housing development is speculative investment in nature and businessmen have to depend on a competent team of management to address the challenges (Mastura et al. 2014). For Company A, although property development may be unfamiliar and unexplored areas it remains in the company's agenda in the pursuit of property development. The General Manager of Company A further reiterated their seriousness where indication pointed towards their efforts in strengthening its competency in property development by engaging experienced management team to run the new activities.

5.0 Findings And Conclusion

This study is designated to study the diversification of public listed non-property related companies into property development. Having analysed the data, several findings have emerged which bears similarity or differ from the predicted circumstances.

This study provides the rationale behind the diversification moves. It is suggested that diversification into property development can be considered a good move in general as long as the companies view opportunities to venture into this profitable business. The finding from the data analysis indicates that the non-property players believe that the diversification of the group's business to include property development has an attractive growth prospects. Furthermore by doing so, it will significantly reduce the group's sole reliance on its core business for its growth as well as providing the group with another profit avenue and earnings growth in the future. In addition, the findings also revealed that majority of the companies believe there will be a long-term sustainable demand for its new business given the country's macro picture and demographics reveal a largely young population who will continue to fuel the sector.

Diversification into property development brings some barriers to the new property players especially when their original core business is of different background. Property development is a speculative investment in nature and the possibility of non-developers creating an oversupply of wrong products in the market is high. The failure in conducting due diligent study of the market and coupled with poor implementation or efficient execution ends up with bad investments. Hence, the new property developers

must rely upon a pool of knowledgeable consultants through hiring, and outsource expertise as well as having a competent management team with good track record, know-how in the sector to manage this new business.

To conclude, property development as it is may be an interesting business to venture into however property developers are finding this as a challenge, as the road to success has never been easy. Right from the planning and securing the necessary development approvals could take more than five years for a medium-size development. The emerging of these new property developers that claim to have the right strategy to be successful in the property development however it remains to be seen as to how many of them will be able to survive and succeed in this ever challenging times.

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IPO Of The Fourth Islamic REIT On Bursa Malaysia: Al-Salam REIT

The Al-Salam REIT prospectus was released on 4th September 2015. Al-Salam REIT is the fourth Islamic REIT after Al-'Aqar, KLCC and Axis REITs. Some salient information on Al-Salam REIT are summarised in Table 1.

The investment highlights of the new Islamic REIT stated in the prospectus are:

(a) strategic location of properties,
(b) diverse portfolio with high occupancy rate,
(c) unique exposure to the Retail and Food and Beverage services sector,
(d) reputable sponsor and experiences REIT manager.

Despite these positive claims in the prospectus, there are some weaknesses upon detailed analysis of the REIT property portfolio. These weaknesses are:

Table 1: Key information on Al-Salam REIT

Name Of REIT	Al-salam REIT
Sponsor	Johor Corporation
REIT Manager	Damansara REIT Managers Sdn Bhd
No Of Properties	31
Value Of Properties	RM903.14 Million
Gross Floor Area	1.91 Million Sq. Ft.
Net Lettable Area	1.52 Million Sq.ft
IPO Price (Per Unit)	RM 1.00
Distribution Rate	
-Year 2015	99.9%
- Year 2016	99.9%
Distribution Per Unit	
-Year 2015 (September - Dec 2015)	1.81 sen (Yield = 1.81%)
- Year 2016 (Jan - Dec2016)	6.41 sen (Yield = 6.41%)
NTA Per Unit	RM0.98
Listing On The Main Market Of Bursa Malaysia	29 September 2015

1. Lack of diversification

Table 2 shows that properties of the portfolio are over concentrated in Johor Bahru in terms of location, market value and percentage of net lettable area. Geographical diversifications are partially achieved through the rest of the 16 KFC and Pizza Hut outlets located throughout Peninsular Malaysia and the 5 industrial properties owned by QSR.

Table 2: Geographical concentration risk

No.	Properties	Location	Property type	% by market value	%by NLA
1	Komtar	JB	Retail	51	26
1	Menara Komtar	JB	Office	8	11
1	@Mart Kempes	JB	Hypermarket	7	6
1	KFCH College	JB	Education	3	6
6	QSR (KFC &	JB	Restaurant		
16	Pizza Hut outlets)	Pen. M'sia	Restaurant	31	51
5	QSR (Industrial)	Selangor, Penang Sabah	Industrial		

2. High Percentage Of Tenancies Expiring In 2017 For Komtar And @Mart Kempas

A high percentage of tenancies are found to be expiring in 2017 for Komtar and @ Mart Kempas. The potential impacts of the tenancies expiring in 1 January to 31 December 2017 on each of these two properties are shown in the Table 3.

3. Capped Rental Growth

Rental revisions of QSR properties are all subject to a cap of 5% of preceding base rental. Investors of the REIT will not be able to benefit from high turnover despite these F&B outlets i.e. KFC and Pizza Hut restaurants are located in middle income residential areas where F&B expenditure are expected to be high.

4. High Property Values

In view of the current capital market turbulence and slowdown in the economy and property market, there are indications that the market peak of both the economic cycle and property cycle are already over and a downturn phase has already commenced. This has implications on the REIT in several aspects.

Valuations of all the properties in the REIT portfolio are carried out between January to July 2014. This implies valuations are conducted during property market peak leading to high capital values which underpin the NTA of the REIT at RM0.98 sen.

5. Non-Competitive Yield

With the lower unit prices of existing listed REITS, some selected REITs on Bursa Malaysia currently offer a higher yield than Al-Salam REIT. These REITs may also provide capital returns when the capital market recovers in the future.

Table 3: Tenancy risk in KOMTAR and @Mart Kempas

Properties	No. of tenancies expiring	% of occupied NLA expiring	% of gross rental income expiring
Komtar, JB	87	47	78
@Mart Kempas	137	76	67

Low Allocation Of Units To Retail Investors

For the IPO, out of the 252.36 million units available for subscription, institutional offering already taken up 240.76 million units the remaining pittance of only 11.6 million units (4.6%) are available to retail investors. This defeats the purpose of setting up REIT to allow a wider participation of retail investors to own indirectly institutional grade properties.

Professor Sr Dr. Ting Kien Hwa

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CCRIS And The Creditworthiness Of Potential Property Buyers And Tenants

CCRIS stands for Central Credit Reference Information System. It is a system created by Bank Negara Malaysia (BNM) that provides standardised credit reports available to individuals and financial institutions e.g. banks. The reports synthesis credit information about a borrower or potential borrowers.

Financial institutions often use and rely on the information in CCRIS as a major source to help them establish a view of the credit history of potential or current borrowers – and determine their creditworthiness before offering them credit.

Where To Obtain The CCRIS Reports?

The CCRIS report is obtainable free of charge. There are two ways to obtain credit reports from CCRIS:

1. Direct From BNM's Customer Service Centre

An individual can obtain his/her CCRIS report from the Customer Service Centre, Laman Informasi Nasihat dan Khidmat BNM (LINK) at BNM Headquarters, Jalan Kuching, Kuala Lumpur. The CCRIS reports are also obtainable from BNM Regional Offices in Pulau Pinang, Johor Bahru, Kota Kinabalu, Kuching and Kuala Terengganu.

2. Request From The Nearest BNM Branch

An individual may request through e-mail (bnmtelelink@bnm.gov.my) or fax (03-2174 1515) his application in writing together with:

1. Credit Report Request Form;

2. Loan Declaration Form;

3. A clear copy of MyKad (front and back); and

4. Any combination of two other documents (with your name and address stated clearly on each copy), such as water bill, electricity bill, or telephone bill.

5. Alternative documents can be provided such as, bank account statement, credit card statement, or EPF statement.

How To Read The CCRIS Report?

The CCRIS report itself doesn't say whether an individual is in good or bad credit standing. It only shows repayment records of the last 12 months, after which the oldest data is erased accordingly. Whether the credit standing is good or bad is up to the person/entity reading it. Table 1 shows the type of credit information displayed in the CCRIS Report:

What Is The Significance Of The CCRIS Report?

The CCRIS Credit Report is used by the financial institutions as one of the ways to make assessment on the credit facility application from an individual. The credit history affects the eligibility of a borrower to apply for credit products, including credit cards and any kind of loans be it for housing, cars or personal loan purposes.

A CCRIS Report contains factual and historical information on the loan amount, interest and charges outstanding on each credit line such as housing loan, personal loan, hire purchase, credit card and overdraft. It also shows the amount of each monthly payment to be in arrears to the bank in the last 12 months. By having this Report, the financial institutions can assess an individual's credit rating by analysing each loan using the loan balance and payment record.

Banks typically look out for the following to determine the creditworthiness of a borrower:

Table 1: The type of credit information displayed in CCRIS Report

Item	Credits	Explanations
Item 1	Outstanding Credit(s)	All outstanding credit facility* obtained by the borrower under: • his own name; • a joint name with another person; • a name of a sole proprietorship; or • a partnership or a professional body. Example: Housing loans, hire purchase, credit cards, personal loans, and overdraft Includes information on outstanding amount, limits, payment behaviour, arrears and legal status if any. *This would exclude any accounts which have been fully settled.
Item 2	Special Attention Account(s)	All outstanding credit facility under close supervision by financial institutions. Usually accounts deemed Non-Performing Loan (NPL), or under special debt management schedules such as those negotiated by Credit Counselling and Debt Management Agency (AKPK).
Item 3	Application(s) for Credit	All applications in the previous 12 months for the borrower under: • his own name; • a joint name with another person; • a name of a sole proprietorship; or • a partnership or a professional body. Shows the amount of applications and their statuses – whether approved, rejected or deleted.

1 .Accounts under legal status (legal action being taken) or special attention accounts.

2. Missed or late repayments. The more arrears an individual has; the higher the chance loan providers will consider the borrower to have a bad credit rating and not offerred any further credit.

3. Utilisation of credit limits such as a high utilisation of credit card and overdraft limits are indicators of poor money management.

4. High Debt Servicing Ratio (DSR) which compares the total income against the total outstanding credit.

5. Multiple active loan or credit applications. The more applications an individual make, the more financially insecure the borrower seem to banks.

Typically, financial institutions will reject an application if there are two months in arrears of loan payment for each loan undertaken. However, some financial institutions will reject loan applications if there is a debt ratio of 60% or more. Ultimately, lending decisions depends on the risk evaluation and policies set by the individual financial institution. Using the same information from the credit report and other sources, one institution may approve an application while another may not.

Ways To Improve Creditworthiness

1. To Pay The Instalments Promptly

CCRIS keeps track of all payment record for 12 months. If a person does not service his loan, it will be displayed on the CCRIS report in numerical representation. For example, if an individual has three month's payment in arrear, the CCRIS report will have the number '3' printed in the column of that particular loan.

To rectify this situation, the individual will need to consistently pay on time for the next 12 months to clear his old record. The longer an individual keep paying diligently and on time; the better the credit standing on paper. A standing instruction with the bank will help a person to pay the monthly instalments promptly and may

worth the additional instruction fees to avoid having a bad credit status due to poor repayment records.

2. Realign The Repayment Timeframe

If there is a consistent string of number "1" in the repayment records, it shows that the individual is in arrears of one month behind his payments. However, this could be due to the fact that the payment due dates are earlier than one's pay day. This can be resolved by discussing the option of delaying his billing cycle with the bank.

3. Settle Off The Minor Credits

If an individual has high credit utilisation, pay off some of the minor credit lines, such as outstanding credit card payments or overdraft before submitting a loan application.

4. Be Diligent When Applying For Credit

Limit the amount of loan and credit applications. It is better to shop around first, do some homework beforehand and then selectively apply for the credit product that suits the best of the individual. Contrary to popular beliefs, too many loan or credit applications may actually hurt the chances of getting the best deals.

5. Have A Credit Record

A person without any visible credit history, will affect his credit score. For example if a person does not have loans, credit cards or overdraft facilities, in most cases, banks would not offer full margin of finance where a person's credit profile is blank. So it is good to have at least one active credit facility and pay on time.

Conclusion

To keep a healthy track of credit performance, it is advisable to obtain credit report from CCRIS at least once every three or six months. An individual will be able to keep track of his financial scores and will be able to remedy anything that may be amiss.

The CCRIS report is useful for an individual to measure and maintain his financial health, especially when planning to apply for a property loan in the near future.

Adapted from:

https://www.imoney.my/articles/how-to-read-your-ccris-report?utm_source=newsletter&utm_medium=email&utm_campaign=2015-09-11-how-to-read-your-ccris-report

Interview With Dato' Sr Hj Muhammad Nawawi Hj Arshad, Malaysian Surveyor of the Year 2014

An interview with Dato' Sr Hj Muhammad Nawawi Hj Mohd Arshad was conducted by Professor Sr Dr Ting Kien Hwa, the Editor of The Malaysian Surveyor on 3 August 2015 at Dato' Nawawi's office in Menara Citibank, Kuala Lumpur.

Q&A

Dato' Sr Hj Muhammad Nawawi Hj Mohd Arshad was born in Kampong Pantai Chenor, Temerloh, Pahang in 1939. His father Haji Mohd Arshad bin Abdul Karim was a Quran teacher and was the Imam of Masjid Kampung Machang Gelap.

Dato' Muhammad Nawawi started his education at the Malay medium school in Kampong Chenor and continued in Sekolah Inggeris Abu Bakar, Temerloh until Form Five and completed his HSC in Victoria Institution, Kuala Lumpur. Upon completion of HSC, he was awarded a *Pahang State* government scholarship to pursue his studies at the College of Estate Management, University of London and graduated with a degree in Estate Management.

Personal And Career History

Q Describe the career path you have taken.

A Upon graduation, I was offered a job as a valuation officer at the Valuation and Property Services Department, Ministry of Finance on 1st December 1966. I had served in various capacities in the department before being appointed Director General in 1990 which I held until my retirement in May 1996.

Q How did you come to work in the private sector?

A Upon retirement, I had joined CH Williams, Talhar & Wong, Sdn Bhd as a Director of the Consulting Department for two years. Then I opted to start my own valuation and property consultancy firm under the name of M. Nawawi & Co. and MNKoll Sdn Bhd.

In Dec 2000 I had teamed up with a leading global real estate group, DTZ International, under the style of DTZ Nawawi Tiw Leung Property Consultants Sd. Bhd.

Q How has your personal life (form the earliest day you can remember) influenced the decisions you have taken in your career choices?

A I am a self-starter. Since the earliest day I am determined to strive out on my own. I am not perturbed by the fact that I am from a kampong and the rural area. I choose my own pathway on my own intuition and I choose to be different.

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Q Who has the biggest influence on your personal and career lifespan?

A As far as my professional career is concerned, I think Tan Sri Dato' Abdul Rahim Abdul Rahman has the biggest influence. My impression of a real estate professional that I had learned from Tan Sri during those early days are that a professional is decisive, trustworthy and confident ; and of course excellent public relation.

Q For having being involved on both sides of the professional divide, the public and private sectors, what are your advice for those who plan to start their own practice?

A If I have to name a driving force to make me start a private practice upon my retirement from the government service, it is passion. A passion for what one knows and likes best.

It is my passion to share my knowledge and experience with young and budding surveyors. I felt it is my desire to inspire the inexperience surveyors.

> Professional practice of the future need to utilize and integrate more technology and to be able to provide enhanced services that could meet the clients' needs, requirements and expectations.

Q Other than passion are there any other drivers of success?

A After two years in private practice, I began to wonder what my ultimate destination was.

Then I realised that however passionate one has about something I would not find success through passion alone. I needed a clear direction that would direct me towards what looks and feels like to me.

So I started distilling myself on what I wanted to achieve because that could help me to focus my energy and actions in the right direction. The ultimate decision was to team up with an established international setup, under the style of DTZ Nawawi Tie Leung Property Consultants Malaysia Sdn Bhd. That I thought was the starting point of a personal and professional fulfillment.

Present Issues

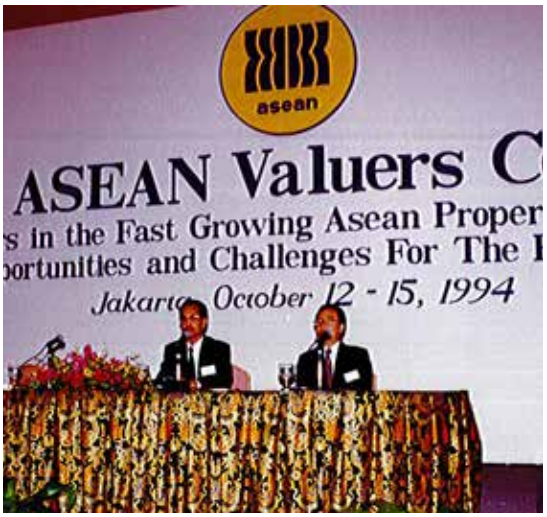
Q In your opinion, what are some of the present day issues that are confronting the real estate industry? Why are these critical?

A The Valuers, Appraisers and Estate Agents Act (Act 242) was enacted in 1981. 35 years have passed and the real estate industry and the property related professions have changed. Nevertheless the Act has provided the necessary provisions, guidelines and rules that had shaped and moulded the property profession today. To move forward, the Board of Valuers, Appraisers and Estate Agents should review the whole Act and to revise various sections of the Act in line with the progress of the professions. Work closely with members of the profession, members of other professions in the construction and property industry to further strengthen the roles and responsibilities of property professionals.

Future challenges

Q What, in you view, are the big issues of tomorrow?

A I think the sustainability agenda will continue to have a major impact on the construction and property industry in the years to come. Commercial and non-commercial buildings will be rated for energy efficiency and other green aspects. It is a trend supported by the developers, occupiers and investors.



Another issue is the continuous improvement of the computing power and the advancement of the information technology had led to the offering of automated valuation models (AVM). Whilst AVM offers a convenient way of obtaining some preliminary values by users who need a quick figure, it cannot overcome the need for a full property inspection which will provide information on the title of and, building condition, internal finishes etc.

The services of valuers are intact as lending institutions such as banks would practice responsible mortgage lending so that there is no undue risks in the banking sector.

Q What, in you view, should we be starting to think about or do to address these future challenges?

A Continuous lifelong learning is a must for all property surveyors. There are now many modes of learning which a professional can make use to enhance his knowledge e.g. CPDs, distance learning courses, seminars, etc.

The professional practice of the future need to utilize and integrate more technology and to be able to provide enhanced services that could meet the clients' needs, requirements and expectations.

Q What is your advice to young Surveyors?

A For the young newcomers into the profession, my advice is to train yourself to be an all-rounder and to have a rigorous understanding of the business you are in. As true professionals, we should always strive for excellence. If something is worth doing, do it your best ... or don't do it at all.

In addition, I would like to share some of these pertinent takeaways:

a) Working through others – no matter how engaging one's personality maybe, one will not advance far in business if one cannot work through others.

b) As J. Paul Getty put it …… "It doesn't make much difference how much other knowledge or experience an executive possesses, and if he is unable to achieve result through others he is worthless as an executive."

c) One must never make a commitment unless one is going to keep it, and go out
of the way to personify integrity in whatever one's undertaking is.

d) When it comes to professional fulfillment, one just cannot create a short cut, no matter how long one has been in the business.

RISM Councillors' Visit to Johor Branch Sept 4th – 6th, 2015

The General Council has decided to have its 2nd Council Meeting Session 2015/2016 at Johor Branch in conjunction with their Annual Gala Dinner 2015 which was held on Sept 4th, 2015. Some technical visits were arranged to ensure that the visit will be fruitful and educational.

Day 1:

Sept 4th, 2015

The Councillors assembled at the Secretariat at 12.45pm to board a chartered coach to embark on a journey to Johor Bahru at 1pm.

At 7.30pm, the Councillors attended the RISM Johor Branch's Annual Gala Dinner 2015 at Grand Ballroom, KSL Resort, Johor Bahru. RISM President, YBhg. Dato Sr K. Sri Kandan was the Guest of Honour for the night. He presented the Chain of Office Hand Over to the incoming Chairman, Sr Ezam Ariffin during the Chain of Office Hand Over Ceremony 2015/2016. The outgoing Chairman was Sr Dr. Hj. Zakaria Mohd Yusoff.

Day 2:

Sept 5th, 2015

At 9.30am, the Councillors had their 2nd General Council's Meeting at the Fakulti Alam Bina Meeting Room, Universiti Teknologi Malaysia. The Meeting ended at about 2pm and lunch was served by the Johore Branch.

The entourage then headed to Puteri Harbour Satellite Gallery at 3.45pm and was greeted by Mr Jeff Saw, the Senior General Manager of Puteri Harbour. He briefed the Councillors on a scale model of the whole UEM development in Nusajaya. He took the entourage to the top floor (Level 35) of Imperia to view Almas & Teega construction and also a view of Puteri Harbour and Singapore Island. There was a stop-over of 15 mins to see Estuari show units and a drive through of Kota Iskandar, East Ledang, NTP, SiLC. Nusa Bayu, AHP, Nusa Idaman and finally stopped at Horizon Hill to view more show units.

By 6.30pm, the entourage headed to the Johor Premium Outlet for a couple of hours of brief shopping before heading back to the hotel.

Day 3:

Sept 6th, 2015

At 9.20am, the Councillors visited IRDA (Iskandar Regional Development Authority) in Iskandar Information Centre (IMIC) at Danga Bay Convention Centre. A two-hour briefing was given by Sr Mohd Zam Mustamam, the Head of Project and PMO.

At 12.30pm, the entourage headed to Universiti Teknologi Malaysia, Skudai, to make a courtesy visit to the Vice Chancellor, YBhg. Datuk Ir. Dr. Wahid Omar. The Councillors had some dialogue with the VC on some interesting topics on education and industrial linkages and ended with the exchange of gifts and a photo session.

Lunch was again hosted by Johor Branch, at a very well-known restaurant in the vicinity of UTM itself.

After lunch, the Councillors had a stop at the Office of Johor Branch before departing back to Kuala Lumpur at about 3.15pm.

Among the guests was former Chief Minister Tan Sri Bernard Dompok (left), seen here with Datuk Seri Hj Hajiji Hj Noor.

RISM Sabah Branch 33rd Annual Dinner cum Installation Night

The State Ministry of Local Government and Housing has commissioned the Royal Institution of Surveyors Malaysia, Sabah Branch to carry out a research on Affordable Housing Policy for Sabah.

Announcing this, its Minister Datuk Seri Hj Hajiji Hj Noor described the assignment as "a very challenging task but I am sure with your learned expertise in the property sector, RISM will produce an impartial report and make sound recommendations to the State Government to move the Sabah property market forward."

Speaking at the RISM Sabah Branch 33rd Annual Dinner cum Installation Night here Friday, he also described the research as "yet another important assignment" for the institution. At the 32nd RISM Sabah dinner last year, the Minister had commissioned the professional body to undertake a research on the causes of the rising property prices in Sabah.

"They have submitted their findings to me in February this year. I am very pleased with the efforts that the surveyors

Farah Zatul (left) receiving her RISM Diploma from RISM deputy president Sr. Dato' Lau Wai Seang.

have contributed to the development of the property and construction industry and the impartial advice that they have given to the government," said Hajiji.

He added that the property and construction industry, like other industries, had experienced seasonal or cyclical fluctuations. Although today's market sentiment has not been as buoyant as it was two years ago, the Sabah property market remains resilient as there is a strong demand for properties, especially in the residential sector.

"The government is concerned that the increases of property prices over the past few years have made buying of properties beyond the reach of the average income earners. Many of the high-end condominiums now take longer to sell.

"Perhaps, this cooling-off period is good for the property market to make some adjustments after the very buoyant period in 2013 and 2014," he added.

The installation saw Sr. Samuel Chong taking from Sr. Hj Safar Untong as Chairman of the RISM Sabah Branch. Other office bearers are Sr. Sunny Kelvin, Sr Peter Moh, Sr. Simon Chung, Sr. Dr William Moinin, Sr. Stephen Ng, Sr. Stephen Wong, Sr. Liaw Lam Thye, Sr. Pang Shueh Sheng, Sr. Maria Othman, Sr. Leong Pui Vun, Sr. Catherine Yen, and Sr. Hj Safar Untong.

The installation was witnessed by RISM national deputy president Dato' Sr. Lau Wai Seang. Also present was former Chief Minister Tan Sri Bernard Dompok who is a Registered Valuer. During the dinner Ministry of Local Government and Housing valuation officer Puan Farah Zatul Hj Dandan received her RISM Diploma from Dato' Sr, Lau Wai Seang.

Sr. Hj Safar Untong handing over the RISM Report on House Prices in Sabah to Hajiji. Looking on is Sr, Samuel Chong.

Hajiji (centre, front) in a group picture with the new RISM Sabah office bearers. On his left is Sr. Hj Safar Untong and, on his right, Sr. Samual Chong, second left is RISM deputy president, Dato' Sr. Lau Wai Seang.

QUANTITY SURVEYING

Member

Sr Muhamad Khairudin Mazlan
QS Associates

Sr Ooi Yiqing
Total QS Services

Sr Chok Wan Ying
Kontrak Infobena Sdn Bhd

Sr Farah Hanim Bt Ahmed Azhar Merican
Jurukur Bahan AAR

Sr Fatin Marsyita Bt Mohd Ali
Cyberview Sdn Bhd

Sr Nurbaiti Bt Kamil
W & K Perunding Ukur Bahan (Terengganu)

Sr Ratenah Bt Ismail
Markas Angkatan Tentera Malaysia

Sr Saari Bin Din
PDC Concultancy Sdn Bhd

Sr Yusuf Bin Hashim
Kedah Sato Sdn Bhd

Sr Asniah Bt Abidin
Bina Puri Sdn Bhd

Sr Kung Yen Chung
Takada Constrcution Sdn bhd

Sr Rohanis Bt Ab Ghani
Caw. Per. Aset Bersepadu JKR

Graduate

Amirah Bt Hasan
Kuantibina Sdn Bhd

Athirah Bt Hamid
Kuantibina Sdn Bhd

Gan Shui Ming
RL Bersepadu Sdn Bhd

Ibtisam Azwani Bt Mat Ya'acob
Kuantibina Sdn Bhd

Lawrence Yong Sie Tsung
SP Setia Bhd

Lee Chin Pang
JUBC Sdn Bhd

Lee Kuan Fei
Unitech QS Consultancy Sdn Bhd

Leong Chee Lip
Jurukur Bahan FPS Sdn Bhd

Leong Pui Teng
Jurukur Bahan FPS Sdn Bhd

Lim Lay Xian
Jurukur Bahan FPS Sdn Bhd

Lim Sing Ling
Jurukur Bahan FPS Sdn Bhd

Lim Wan Ling
AS2 Consult Sdn Bhd

Muizzuddin Bin Abd Rahim
Unitech QS Consultancy Sdn Bhd

Pham Boon Chie
Amprojek Constrcution Sdn Bhd

Shirley C Liyung
CSL QS Consult

Siti Khadijah Bt Sabar
Jurukur Bahan FPS Sdn Bhd

Tew Yen Ying
UTAR

Wan Wei Lynn
Ultimate Resrerves Sdn Bhd

Wong Chee Onn
Prasarana Malaysia Bhd

Yeoh Kai Xiang
RL Bersepadu Sdn Bhd

Abu Qasim Bin Mohamed Salleh
Majlis Perbandaran Klang

Aminuddin Bin Mat Haril
ASA-CM Jurukur Bahan Sdn Bhd

Chong Yee Hui
Yong Dan Mohamad Faiz

Choo Wan Jun
Unitech QS Consultancy Sdn Bhd

Chye Xiao Shan
RL Bersepadu Sdn Bhd

Ee Poh Ling
COS Quantity Surveyors Sdn Bhd

Esnor Akib Bin Saimin
AS2 Consult Sdn Bhd

Muhammad Abu Ubaidah Zaubir
Amer & Associates

Muhammad Hisyamuddin b. Mustapha

Phang Pui Mun
PCM Kos Perunding Sdn Bhd

Wan Suhana Bt Abdullah Saimi
Alam Sekitar Eco-Tech Sdn Bhd

Abdul Munzir Bin Zulkifli
Perunding DMA Sdn Bhd

Adibah Anis Bt Abdol Karim
NAZ Progressive Consultant & Services Sdn Bhd

Amir Fakhrullah Bin Abdullah
Perunding DMA Sdn Bhd

Calvin Chai Kim Fan
Langdon & Seah Singapore Pte Ltd

Esther Kam Yen Ru
Perunding Kos MKS Sdn Bhd

Hooi Mun Jun
JUBC Sdn Bhd

Khairunnisa Huda Bt Haris
FCH Quantity Surveyors Sdn Bhd

Kho Hui Teng
Langdon & Seah Singapore Pte Ltd

Khoo Swee Shung
JQS International Sdn Bhd

Koh Mei Yi
ELP Quantity Surveyors (Sarawak) Sdn Bhd

Lee Hong Jong
QS Permas

Lee Sui Hui
ELP Quantity Surveyors (Sarawak) Sdn Bhd

Ng Shi Hau
JQS International Sdn Bhd

Nur Mazlina Bt Mazuki
Perunding DMA Sdn Bhd

Nurul Aqilah Bt Ibrahim
Politeknik Kota Kinabalu

Nurul Izyan Bt Abdul Wahab
CKP Nizaruddin Jurukur Bahan

Patrick Ling Tai Kiat
Langdon & Seah Singapore Pte Ltd

Phang Yu
ELP Quantity Surveyors (Sarawak) Sdn Bhd

Rosman Bin Mohad Basir
Pengurusan Air Pahang Bhd

Sie Leeh Chyuan
JQS International Sdn Bhd

Siti Nor Shamshiha Bt Ismail
Perunding AT Sdn Bhd

Tan Shin Joo
Kuantibina Sdn Bhd

Probationer

Chau Woon Choon
Global Excel Prop

Wilson Tsen Tze Hau
-

Aaron Ho Hean Jin
C.A Lim Associates

Student

Aina bt. Mishan
Anis Nur Amirah bt. Amri
Anis Sabihah Halim
Chai Shim Kian
Chin Wen Qi
Chong Hwee Liong
Eaziyah Fatihah bt Zainal
Er Yeok Ying
Fadhilah bt Zainal
Faridah bt Razimi
Fazlia Natsha bt Mohammad
Gan Jie Hui
Heng Jia Jun
Hernani bt Herman
Izyan Nadhirah bt Ibrahim
Jessica Lim Bee Fung
Khairul Izwan b. Mohd Isa
Khairunnisa Najwa Buhari
Khaliesah Kamarudin
Lew Xin Me
Liew Jing Jun
Lim Guat Hoon
Lokman Al Hakim b. Ahmad
Mohamad Farhan b. Mesron
Muhammad Asyraf b. Ismail Adnen
Nadiah bt. Ismail
Naziratul Shazira bt. Sujak
Ng Ju Li
Nik Nur Adila bt. Nik Ibrahim
Noor Afiqah bt. Hambali
Noor Ezatul Shima bt. Aznan
Noor Fara Hanis bt. Mohd Nizam
Noor Hiddaya Aida Mohd Nizam
Noor Shahira bt. A Rahman
Noor Shahirah bt. Nordin
Nor Atirah bt. Othman

Nor Liyana Izzati bt. Mohd Fauzi
Nor Nabilah bt. Abdul Aris
Nor Shahirah bt. Yahya
Norafiqah bt. Mohammad Abas
Norashima bt. Rafini
Norasikin bt. Shahminan
Norasilah bt. Sawal
Norasyikin Mohd Noor
Norhafizah Rahmat
Norhidayah Yazid
Noriati bt. Aslan
Norliana bt. Hamadan
Norsuhaila Mohd Pauzei
Norsyafiqah bt. Osman
Norsyamimi Mohd Shokri
Nur Adzlyn Hamidon
Nur Afifah Azahar
Nur Aimi Khairina bt.Khairy
Nur Akhtar Amirah Ab. Rasab
Nur Amalina Sujak
Nur Amiza Hassan
Nur Asyikin Mohd Sairi
Nur Atiqah bt. Ab Shukor
Nur Azhwana Idris
Nur Fahtin Arafah bt.Che Wil
Nur Farhana bt. Ibrahim
Nur Hafizah bt. Rahman
Nur Hidayat bt. Arifin
Nur Ily Nadiah Mohd Rosli
Nur Izzah Mohd Ismuil
Nur Myra Nabilla bt. Mat Yahi
Nur Qiladah bt. Nordin
Nur Suhaibah bt. Supian
Nurathirah bt. Said
Nuratika Najwa bt. Nordin
Nuratikah bt. Zakaria
Nurfarhana bt. Kasmuri
Nurfatin Farhana Jamalludin
Nurhamiza Mohd Abd Hamid
Nurhaziqah bt. Othman
Nursehila Yo'cob@Ya'cob
Nursyuhadah bt. Mohammad Khir
Nurul Aini bt. Sharif
Nurul Amyra Ibrahim
Nurul Asyikin bt. Rosli
Nurul Asyura Mohd Noor
Nurul Atiqah Johari
Nurul Hanim bt. Samsudin
Nurul Idayu Mohd Zarami
Nurul Nazihah Anasuelim
Nurul Shafiqah bt. Amir Hamzah
Nurul Syafiqah Mat Sarif
Nurulain Shermiera bt. Zainuddin
Nurulnadia Atirah Bakri
Ong Ghee Cheang
Phung Sy Yuan
Pow Kuen Hoong
Puteri Norhasmiza bt. Norhasmi
Quek Ser Zoe
Saedah Napisah Abd Hamid
Sea Siu Hong
Siti Hajar bt. Baharol
Siti Najwa bt. Bakri
Siti Nor Alia bt. Soh Azmy
Siti Noradillah bt. Zainurin
Siti Nur Farhana Jaafar
Siti Nur Syafika Masnon
Siti Saharah Rizal
Sofia bt. Mahidin
Sri Farhasuzyane bt. Asahrori
Syed Muhammad Iskandar Putra b. Syed Abdul Fattah Sallahudin
Tan Boon Peng
Tan Hwee Kim
Tan Ooi Loon
Teo Jia Min
Tey Jia Chee
Wan Nur Syahidah bt. Wan Ishak
Yong Mei Chee
Ain Zurain bt. Rahim
Amin Azrin b. Zulkiflee
Fauziah Abdul Jamil
Koh Qi Sang
Lai Tze Khan
Mohamad Farhan b. Mohd Ali
Mohammad Najib b. Solahuddin
Mohd Akmal b. Mohd Ghani
Muhamad Azam b. Shaari
Muhammad Khairul Shafiq b. Hamidon
Muhammad Syamim b. Samsudin
Norazwani bt. Arsad
Norfatiha Ismail
Norliyana bt. Makson
Norul Shahiera Abd Kadir
Nurathika Abd Hamid Khan
Nurdiyana Abdul Aziz
Nurhasliza bt. Khamis
Nursyamin Lokman Hakim
Nurul Shafiqa Zainal
Rabiatuladawiah bt. Sandung
Salrina bt. Misni
Tay Ying Chien
Tengku Nor Hasyimah bt. Tengku Azmi
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Fatinazuawa Bt Mohd Faisal
Halef Hazrin B Harun
Hazrul Nizam B Ismail
Ku Sharil B Ku Din
Masrina Bt Ismail
Maureen Thiong Anak Thomas
Mohamad Adam Azizi B Ab Aziz
Mohamad Ariff B Yusoff
Mohamad Shafiq B Rahmad
Mohamad Taufiq B Abdullah
Mohd Azrin B Arifin
Mohd Izwan B Talib
Muhamad Ikmal Alif B Muhamad Halim
Muhamad Ikmal Alif B Muhamad Halim
Muhamad Shahrizal Bt Abd Rahman
Neowell Rauth Louis
Nor Amirah Bt Rosli
Norhidaya Binti Azrangi
Norzahirah Bt Suleiman
Nur Ain Syafiqah Bt Safiee
Nur Hayati Bt Ramdan
Nur Ikma Bt Ismail
Nur Izzati Bt Termizi
Nur Syahidatul Nabilah Bt Di
Nurdiyana Natasha Bt Ramlan
Nurhasliana Bt Ya'acob
Nurul Atikah Bt Ab Aziz
Nurul Nabihan Bt Dzulkifli
Seri Aiman Bt Nazri
Siti Nabilah Bt Mohd Razif
Soleha Bt Lasiow
Tisah a/p Semara
Wafiuddin B Abdul Karing/Karim

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Graduate

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Muhammad Khusairy B Rohimi
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Norazin Bt Mohd Kamarudzaman
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Probationer

Woo Boon Wee
Encorp Construct S/B