

SOFT-SCAPE QUALITY ISSUES IN LANDSCAPE CONSTRUCTION INDUSTRY: MALAYSIA

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ABSTRACT

Over the past decade, concerns have been expressed on the quality of construction products and processes. Massive developments experienced by the construction sector in Malaysia have led to a devastating compromise in quality. The problems in a construction project are mainly related to quality such as building does not comply with specifications, and sub-standard still exists. Attainment of an acceptable level of quality in construction has long been a problem. Landscape construction, in general, is part of the total construction and is not exempted from the same problem. In general, all of them refer to quality as conformance or compliance with the specification. Landscape construction can be part of an overall construction project or independent landscape project. Therefore, the objective of quality standard in landscape construction may not be different from the purpose of quality standard in total construction. Thus, this research aims to evaluate the softscape quality issues in Malaysia. This research is looking at the responses given by the relationship between status, types of organisations, groups of organisations and gender with the problems of quality of softscape construction work. The survey respondents were among Landscape Architects from various landscape organisations who were landscape consultants, landscape contractors, developers, government agencies, and educational institutions. The findings of the research are about the issue of landscape quality management in Malaysia in general. Majority of the respondents pointed out that the quality of the softscape construction in Malaysia was not properly controlled. Responses from the survey have shown the level of dissatisfaction of respondents on softscape quality in Malaysia.

Keywords: Landscape Construction, Softscape, Quality Issues

1. INTRODUCTION

Nowadays, landscape design determines the success of many projects. People who want to buy a house will look at the environment of the residential area. The greenery of a project will increase the market for it. It shows the importance of landscape design in how people will experience the site. Park, Sang-Jin and Cho, Se-Hwan (2016) found that the awareness of residents' values regarding landscape elements appeared to give "plantings" more value than "facilities". The finding suggests that the application of soft-scape in built-environment is crucial to be perceived as quality of development as a whole. Soft-scape contributes to the better quality of environment and the value of the surrounding in overall. The construction quality of soft-scape and design will determine the quality of the development that contribute to the user expectation and satisfaction.

The role of a landscape designer and a landscape contractor will determine the success of the landscape project. The landscape designer must be able to perceive a site's potential and graphically represent his ideas in visuals. Meanwhile, the landscape contractor must possess a wide range of tangible skills, including construction techniques, to interpret and implement the designer's plans. The outcome of every construction project will be determined by a landscape contractor. Landscape construction is the practice of landscape contracting that is commonly considered as the implementation of a design provided by a landscape designer, a landscape architect, or a landscape contracting business that exists as a design/build firm (The 2011 Florida Statutes). Landscape construction is part of the scope of work in Landscape Architecture field beside planning, designing and facilities operation (Motloch, 2000). A broad range of construction techniques and knowledge are needed for landscape construction (Sauter, 2011). Hazreena

et al. (2013) have listed in detail the scopes of landscape construction in their study on landscape construction course in landscape architectural programme. Landscape construction in total comprises two significant areas, i.e. hardscape and softscape. Ambrose and Brandow (1992) stated that softscape works consist of reshaping the ground surface, replacing some surface materials and introducing new plantings. In 2008, the National Landscape Guideline (NLG) has listed six types of softscape uses in landscape design which are trees, palms, shrubs, climbers, groundcover and turfs. On the other hand, the hardscape involves structures including walkway, shelter, playground, drainage, etc. An increase in the number of landscape contractors has brought about a significant change in the landscape construction industry. However, it will lead to many landscape construction issues due to not following the specifications or other rules. In order to proceed further on the landscape construction research, the quality level of landscape construction in Malaysia must be identified first. It is important to know the current condition of landscape construction especially softscape. Many studies have been done regarding the building and hardscape construction quality. However, there has not been any survey done yet regarding the issues of softscape quality in Malaysia. Therefore, this research intends to find out the softscape quality issues in Malaysia. It will help to identify the quality of landscape construction for softscape works.

2. UNDERSTANDING QUALITY IN CONSTRUCTION

The term quality originates from the Latin word ‘quails’ which means ‘such as the thing is’ (Dale, 2003). Line and Tone (2011) conducted a study specifically on the definition of quality. Their finding concluded that quality becomes a concept that does not yield to the ideal of precision and the demand for an essence. In previous years, Westerheijden et al. (2007) concluded that views on what is quality might differ among a group of people or the people in the same group. Luai J. et. al. (2016) found that the highest important factors affecting quality are: human resource management, customer satisfaction, and construction specific factors. Griffith (2003) stated that the American National Standard Institute defines quality in the ANSI/ASQ A3-1997 Quality System Terminology as entirely the features and characteristics of the products or services that carry on its ability to satisfy stated or implied needs now and in the future. ISO 9000:2000 defined quality as a degree to which a set of inherent characteristic fulfils the requirement. The degree of quality can measure the degree of the fulfilment of a condition. Figure 1 explains the concept of quality. The index of quality can be developed based on different levels of satisfaction of the requirement set by the customer. The needs of customers may vary from one to another and for various projects or situations.

The capability of a customer in preparing a set of requirement to be fulfilled will determine a set of quality index.

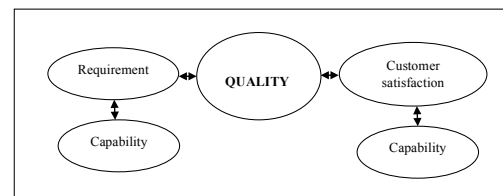


Figure 1: Concept related to quality
Source: MS ISO 9000:2000

2.1 Quality in Landscape Construction

Arditi and Gunaydin (1997) stated that Nagasaku and Oda (1965) described product quality as the quality of elements directly related to the physical product itself. On the other hand, the process quality is the quality of the process that causes the outcome to be either acceptable or not. This research focuses on quality assessment elements of tree planting works. About planting works, the quality of the part refers to the condition of plant materials and other materials. The quality of the process relates to the implementation process of planting works according to specifications. Mingxia Liang and Cheng Fei (2017) concluded that it is of great practical significance to ensure the quality of landscaping in the effective management of municipal landscape engineering.

3. METHODS

This research conducted a survey study collected from landscape architects within the landscape industry. The targeted respondents for this study were apparently those who were knowledgeable in the landscape architecture construction industry. The sample size of the survey was 225 respondents. ILAM corporate members were 104 while the non-ILAM corporate members were 121. The number of interviewees was sufficient based on a statistical formula by Yamanea’s formula with a confidence level of 95.0% and a margin of error (degree of accuracy) of 0.5% would be 265. The study used the Statistical Packaging for Social Science SPSS version 14.0 to analyse gathered data. Descriptive analysis was used to identify the response on softscape quality in Malaysia. Also, chi-square analysis was performed to find the significant level of relationship between the respondents from different types of status, types of organisations, groups of organisations and gender on the issues of quality of softscape construction work.

4. FINDINGS

The distribution of respondents was based on genders where 58.7% of respondents were male, and 41.3% were female. The distribution of respondents based on the types of organisations that reflect on the most landscape architect works are as follows: Out of the total survey participants, 47.6% were working at consultant firms, 22.7% of the participants were from government agencies, 16.4% of participants were from an educational institution, 9.8% were contractors while the other 3.6% came from the contractors.

4.1 Softscape Quality in Malaysia

The study has provided a set of questions that consists of (A) Have you ever directly involved with softscape construction work?; (B) Do you think softscape construction quality in Malaysia is well-controlled?; (C) Do you think softscape construction quality in Malaysia needs to be improved?; and (D) Do you think softscape construction work in Malaysia has successfully followed the specification requirements?

Table 1: Response to softscape quality in Malaysia

No.	Statements	Yes		No	
		n	%	n	%
a	Involved in softscape construction work	195	86.7	30	13.3
b	Thinks softscape construction quality in Malaysia is well-controlled	42	18.7	183	81.3
c	Thinks quality softscape construction in Malaysia needs to be improved	213	94.7	12	5.3
d	Thinks softscape construction work in Malaysia has successfully followed the specification requirements	45	20	180	80

Table 1 indicates that 195 of the respondents claimed they had been involved in softscape construction work. However, the majority of respondents pointed out that the quality of the softscape construction in Malaysia was not adequately controlled. Most of the respondents had suggested that the softscape construction in Malaysia necessitated rooms for improvement. 180 of the respondents also did not agree that the softscape construction work in this country had successfully complied with the specification requirements.

4.2 Relationship between Status and the Issues of Quality of Softscape Construction Work

Table 2 shows that the status of respondents has a significant influence on questions A and C ($p < 0.05$). Majority of respondents had been directly involved with softscape construction work. With regards to the issues of softscape construction quality, the majority of the respondents were in the opinion that quality of softscape construction in Malaysia was not well-controlled. The views might be influenced by their observations on the failure of softscape construction work to comply with the specifications as shown in their responses to question D.

Table 2: Relationship between status and the issues of quality of softscape construction work – Chi-square

Questions	Yes		No		Sig.
	n	%	n	%	
Question A					
ICM	97	93.3	7	6.7	.007
NICM	98	81.0	23	19.0	
Question B					
ICM	18	17.3	86	82.7	.628
NICM	24	19.8	97	80.2	
Question C					
ICM	102	98.1	2	1.9	.035
NICM	111	91.7	10	8.3	
Question D					
ICM	22	21.2	82	78.8	.688
NICM	23	19.0	98	81.0	

4.3 Relationship between Types of Organizations and the Issues of Quality of Softscape Construction Work

This study seeks to investigate the relationship between respondents from different types of organisations and the issues of softscape construction quality. Table 3 shows that respondents from different types of organisations had a

significant influence on questions A and C ($p < 0.05$). Majority of respondents had been directly involved with softscape construction work. With regards to the issues of softscape construction quality, the majority of respondents were in the opinion that quality of softscape construction in Malaysia was not well-controlled. The views might be influenced by their observations on the failure of softscape construction work to comply with the specifications as shown in their responses to question D.

Table 3: Relationship between types of organizations and issues of quality of softscape construction work – Chi-square

Questions	Yes		No		Sig.
	n	%	N	%	
Question A					
Consultant	96	89.7	11	10.3	.044
Contractor	21	95.5	1	4.5	
Developer	8	100.0			
Government agency	43	84.3	8	15.7	
Educational institution	27	73.0	10	27.0	
Question B					
Consultant	22	20.6	85	79.4	.547
Contractor	6	27.3	16	72.7	
Developer	1	12.5	7	87.5	
Government agency	9	17.6	42	82.4	
Educational institution	4	10.8	33	89.2	
Question C					
Consultant	103	96.3	4	3.7	.002
Contractor	17	77.3	5	22.7	
Developer	7	87.5	1	12.5	
Government agency	51	100.0			
Educational institution	35	94.6	2	5.4	
Question D					
Consultant	23	21.5	84	78.5	.513
Contractor	7	31.8	15	68.2	
Developer	1	12.5	7	87.5	
Government agency	8	15.7	43	84.3	
Educational institution	6	16.2	31	83.8	

4.4 Relationship between Groups of Organizations and the Issues of Quality of Softscape Construction Work

The study has further investigated the relationship between respondents from different groups of organisations and the issues of softscape construction quality. Table 4 shows that respondents from different groups of organisations had a significant influence on question A ($p < 0.05$). Majority of respondents had been directly involved with softscape construction work. With regards to the issues of softscape construction quality, majority of the respondents were in the opinion that quality of softscape construction in Malaysia was not well-controlled. The views might be influenced by their observations on the failure of softscape construction work to comply with the specifications as shown in their responses for question D. 100% respondents from government agencies suggested that softscape construction quality in Malaysia needed to be improved.

Table 4: Relationship between groups of organizations and the issues of quality of soft-scape construction work – Chi-square

Questions	Yes		No		Sig.
	n	%	n	%	
Question A					
government	42	84.0	8	16.0	.016
private	125	91.2	12	8.8	
educational	28	73.7	10	26.3	
Question B					
government	9	18.0	41	82.0	.327
private	29	21.2	108	78.8	
educational	4	10.5	34	89.5	
Question C					
government	50	100.0			.145
private	127	92.7	10	7.3	
educational	36	94.7	2	5.3	
Question D					
government	8	16.0	42	84.0	.648
private	30	21.9	107	78.1	
educational	7	18.4	31	81.6	

4.5 Relationship between Genders and the Issues of Softscape Construction Quality

The study has further investigated the relationship between genders and the issues of softscape construction quality. Table 5 shows that genders did not have a significant influence on the response to the issues of soft-scape construction quality. Majority of respondents had been directly involved with softscape construction work. With regards to the matters of soft-scape construction quality, majority of the respondents were in the opinion that quality of softscape construction in Malaysia was not well-controlled. The views might be influenced by their observations on the failure of softscape construction work to comply with the specifications as shown in their responses to question D.

Table 5: Relationship between genders and the issues of quality of softscape construction work – Chi-square

Questions	Yes		No		Sig.
	n	%	n	%	
Question A					
Male	118	89.4	14	10.6	.152
Female	77	82.8	16	17.2	
Question B					
Male	24	18.2	108	81.8	.824
Female	18	19.4	75	80.6	
Question C					
Male	124	93.9	8	6.1	.563
Female	89	95.7	4	4.3	
Question D					
Male	29	22.0	103	78.0	.379
Female	16	17.2	77	82.8	

5. CONCLUSION

In conclusion, responses from the survey have shown the level of dissatisfaction of respondents on softscape quality in Malaysia. Majority of the respondents have pointed out that the quality of the soft scape construction in Malaysia is not correctly controlled. The research has found that majority of the respondents are of the opinion that softscape construction quality in

Malaysia has not come up to a satisfactory level and requires improvement.

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REFERENCES

- Ambrose J. E. and Brandow P. (1992). *Simplified Site Design*. John Wiley & Sons.
- Arditi D., and Gunaydin H. M. (1997). Total Quality Management in the Construction Process. *International Journal of Project Management*. (pp. 235-243).
- Dale B.G. (2003). *Managing Quality*. Blackwell Publishing.
- Florida statutes (2011). The Florida Senate Official Website. Retrieved on Dec 1, 2017, from <http://www.ilamalaysia.org> <https://www.flsenate.gov/Laws/Statutes/2011>
- Griffith G. K. (2003). *The Quality Technician's Handbook*. Prentice Hall, Inc. McGraw Hill.
- Hazreena H., Shahida S. and Ozanul E. O. (2013). *Assessing Landscape Construction Course in Landscape Architectural Program*. School of Landscape Architecture, Faculty of Built Environment, Kuala Lumpur Metropolitan University College.
- ISO 9000. Retrieved December 25, 2017, from <http://www.iso.org>.
- Jasasikin A. S. (2015). *Developing Quality Assessment Elements for Tree Planting Works*. PhD Thesis. Universiti Teknologi Mara.
- Line W. & Tone K. (2011). On the Problems of Asking for a Definition of Quality in Education. *Scandinavian Journal of Educational Research*. Vol. 55(6). (pp. 671-684).
- Luai J. et. al (2016) Quality in construction management: an exploratory study. *International Journal of Quality & Reliability Management*. Vol. 33 No. 7, pp. 920-941
- Mingxia Liang and Cheng Fei (2017). Analysis on Key Points of Construction and Management of Municipal Landscape Engineering
- Motloch J. L. (2000). *Introduction to Landscape Design*. John Wiley & son.
- National Landscape Guideline (2008). National Landscape Department. NLD. Malaysia.
- Park, S.-J., & Cho, S.-H. (2016). Analysis of the Investment Suitability relative to the Landscape Elements Construction Costs within the Residents' Value Recognition in the Apartment - Focused on a Public Institutional Apartment Complex near the Capital Area. *Journal of the Korean Institute of Landscape Architecture*, 44(6), 177-187.

Westerheijden, Stansaker and Rosa (2007). Quality assurance in Higher Education: Trends in Regulation, Translation and Transformation. Springer Science & Business Media.