

DEVELOPING A SOFT-SCAPE STANDARD FOR IMPROVING THE LANDSCAPE QUALITY IN MALAYSIA

ROZIYA IBRAHIM, NORDIN ABDUL RAHMAN AND OSMAN MOHD TAHIR
Universiti Putra Malaysia, Malaysia

ABSTRACT

The vision 'Towards a Garden Nation 2005' introduced by the Malaysian government in 1997 has boosted rapidly the landscape development throughout the country. The effort further continues with the vision towards 'The Most Beautiful Garden Nation' by the year 2020 mooted in 2006. The landscape industry has then grown quite significantly to cater for demands in soft-scape materials and often works without proper control lead to devastating compromise in the landscape quality. Currently, this issue is critical as there is no specific quality standard to monitor and control the quality of soft-scape materials and works in Malaysia. Therefore, this paper intends to explore the need to develop a soft-scape standard to regulate the quality of soft-scape materials and works in Malaysia. The issues and problems relating to quality standard of soft-scape in landscape construction will be analysed through literatures review, documents analysis and interviews with the local professionals and experts in landscape development. These are further supported by researcher observations at the local landscape nurseries and the landscape construction site. Finally, recommendations are given on the development of the soft-scape standard for the local landscape industry players as reference in their landscape practices. A proper enforcement of this standard will help improve the landscape quality towards sustainability in Malaysia.

Keyword: *Landscape Development, Landscape Industry, Quality Standard, Soft-scape Materials and Works, Landscape Quality*

1. INTRODUCTION

Quality standard is one of the important aspects to be looked into seriously in the landscape development as suggested by Badiru (1995) that it specifies the necessary requirement to produce a high quality product. Quality standard plays an important role in the construction industry. It serves as a communication tool between interested parties of technical requirements and procedures needed to ensure compliance (Atkinson, 1995). Besides that, Badiru and Ayeni (as cited in Badiru, 1995, p.2) stated that "quality standard provides a common basis to achieve product efficiency and compatibility". This will further enhance competition among the practitioners (Guasch et. al, 2007). Furthermore, it also protects the customer interest through specification of adequate and consistent standards of quality of materials and works (Atkinson, 1995). It may be concluded that quality standard is one of the ways to achieve quality in construction.

The landscape development can be considered as a unique form of construction which blends the inert materials with living plants, or known as hard-scape and soft-scape within the environment (Landphair and Klatt, 1999). In landscape construction particularly the soft-scape, a proper handling and care (before - during - after planting) are needed to ensure it remains in good quality. Although landscape construction is closely related to the building construction, however, this dissimilar characteristic distinguishes the two industries that require using different approach in achieving quality.

As landscape development progresses in Malaysia, it is increasingly difficult to ignore the importance of quality standard in regulating the soft-scape quality. Despite having a massive landscape development in this country, very little attention is given on the quality aspect of the soft-scape materials and works.

According to Thompson and Sorvig (2007, p. 127), “*landscape plant requires careful handling during the moving and planting as well as adequate maintenance*”. He also added that failing to achieve this requirement would cause high rate of stressed plant and tree death, incurred cost of remedial maintenance followed by failure in creating quality landscape environment.

The main objective of this paper is to discuss the issues and problems relating to the quality standard of soft-scape. This will further translate on the need for developing a soft-scape standard to help regulate and monitor the soft-scape quality in Malaysia. The issues and problems are identified through literatures review, document analysis and from the interviews with the local professionals and experts in landscape development in Malaysia. It further recommends some strategies for the development of soft-scape standard for Malaysia to help improve the soft-scape quality. This continuous improvement in the quality standard of soft-scape materials and works is necessary in order to ensure a high quality landscape and its sustainability.

2. DEFINITIONS OF QUALITY STANDARD

Many studies in the construction field have agreed with similar definitions of quality standard which is “*meeting the agreed requirements or conformance to requirement*” (Churchill, 1988; Antilla, 1992; Arditi and Gunaydin, 1997; Rounce, 1998; Hiyassat, 2000; Turk, 2006). Cliff and Richard (2003) suggested that quality in construction is achieved by meeting the customer’s requirements in the best possible way. Quality can also be achieved by “*conformance or compliance with the specification*” as suggested by Woodward (1997) and David (2007). This is because according to Spivak and Brenner (2001) a specification may be a standard, a part of standard or independent of standard. Thus, both standard and specification are a statement of quality that is agreeable by all related stakeholders in the constructions industry.

3. ISSUES AND PROBLEMS RELATING TO THE QUALITY STANDARD OF SOFT-SCAPE

Parallel with the rapid changes in landscape development, the concern and focus on quality standard issues in landscape construction continue to arise especially on the technical aspect of this development. The issues and problems relating to quality standard in landscape construction particularly the soft-scape are discussed as follow:

3.1 Low Quality Soft-scape Material and Work

In landscape construction, low quality landscape materials and bad implementation cause tree failure during and/ or after planting, that then lead to high maintenance after the project is completed. Hagen (2006) stated that most tree planting failures are caused by inadequate root ball size, poor follow up treatment, inappropriate timing, haste, and moving trees that are unhealthy, diseased or structurally unsound. Tree death due to low quality tree supplies or improper handling and planting will cause rework and delay in schedule. This becomes serious problem to soft-scape work as new cost will incur in handling or replacing the rejected or dead tree.

3.2 Lack of Acceptable Standards

Lack of acceptable standards lead the judgment on the soft-scape quality to rely on the experience of the landscape architect. Turk (2005) referring to Rounds and Chi’s (1985) study highlighted that there is no clear and uniform standard in evaluating overall construction quality, thus construction projects usually is evaluated subjectively. The landscape industry needs a legal document that not only tells the contractor what is intended but also the consequences of non-compliance to the requirements. Therefore, it is necessary to have a standard besides regulations to help relevant agencies and organizations to resolve problems in soft-scape work.

3.3 Variability of Soft-scape Specification

The issue on variability is one of the ‘unseen’ problems in soft-scape work. Without any control on the making or revising the soft-scape specification may lead to variability in terms of format and quality of its content. Woodward (1997) reported that specifications are susceptible to variation of interpretation by different people and have to be very carefully written.

3.4 Inadequate Specification

The specification is the document that defines quality standards for materials and workmanship (Emmit and Yeomans, 2001). However, they reported that very little attention has been given to it. A study by Rounce (1998) identified that among the causes of design faults are producing inadequate specifications, misinterpretation of client needs, poor communication between designers, using incorrect or outdated information and misinterpretation of design standards. (Hiyassat, 2000) expressed a similar view that inadequate or incorrect

specification in tender is one of the major problems that cause costly error in construction. It will lead to poor construction, cost differences and other difficulties during construction (Lewis, 1975).

3.5 Lack of Regulatory Requirement

Without any regulatory requirement, it is difficult to enforce the regulation on the nursery owner and other suppliers with regards to the supply of plant materials and other soft-scape works. It “describes the accepted good practice that indicates the higher standard of performance, whether adopted from the code of practice or derive from general consensus among the industry players” (Venables, 1994, p.97). Lack of regulatory requirements will lead to the nursery suppliers producing plants according to their own specification as well as controlling the market price. This event causes bad implication to the landscape industry if they produce low quality plant and inconsistent price.

3.6 Lack of Management and Maintenance

Professional management of quality is the most important challenge for organizations, and a comprehensive approach is needed (Antila, 1992). Lack of management in soft-scape work may include lack of knowledge and experience to produce, interpret and applying the soft-scape specification to the ground which eventually leads to discrepancies and error during construction. According to Sambasivam and Soon (2007), mistakes during construction can be due to inadequate planning or miscommunication between the parties which affect the progress of the project. Poor management (Clouston, 1984; Holden 1988; Greenhalgh and Worpole, 1995) and low standards of maintenance, with poor quality development plans (Reeves, 2000) will cause the landscape area to deteriorate over time (as cited in Osman, 2005, p.34)

3.7 Lack of Professional and Skilled Manpower

Despite having a good specification, the quality of landscape depends on those doing the on-site work and supervision. One of the major problems during implementation is caused by unskilled labour. According to Woodward (1997), quality of construction depends on the skilled labour and intensive supervision; however, most of the time both labour and supervisors are not well trained. Therefore, all the requirements of the implementation should be included in the specification to help supervisors monitor the work done by the labour on site.

4. MATERIAL AND METHODS

A mixed methods approach with a combination of the qualitative and quantitative approach was engaged in the data collections. The review of the existing literatures and documents helps to explore and identify the issues and problems relating to quality standard of soft-scape. A semi-structured interview was conducted with forty respondents (refer Table 1), purposely selected among the local professionals and experts with experience in landscape development as “*it is essential that all participants experience the phenomenon being studied*” (Creswell, 1998, p.118). The interview questionnaire contains a mix of both open ended and closed ended questions for the purpose of triangulation as suggested by Creswell (1994). The site observation at the landscape nurseries and a landscape construction site served as evidence to validate the existence of the issues and problems relating to the quality of soft-scape on the actual ground.

Table 1: Respondents Grouping According to Type of Organization

GROUP	CODE	NUMBER	PERCENTAGE
Developer	DE	4	10.0%
Local authority landscape officers	LA	11	27.5%
Landscape consultant	CS	12	30.0%
Landscape contractor	CR	7	17.5%
Nursery supplier	NS	4	10.0%
Project manager	PM	2	5.0%
TOTAL		40	100%

5. RESULTS AND DISCUSSIONS

From the literatures and interviews, it is clear that quality standard is important in regulating the soft-scape quality in the landscape construction. Furthermore, it was found that the issues and problems from the literatures are also being experienced in Malaysia.

Table 2: Summary of Comparison of the Issues and Problems relating to the Quality Standard of Soft-scape Between the Literatures and the Interviews

ISSUES AND PROBLEMS	LITERATURES	INTERVIEWS
1. Low Quality Soft-scape Materials and Works	√	√
2. Lack of acceptable standard	√	√
3. Variability of soft-scape specification	√	√
4. Inadequate technical specification	√	√
5. Lack of regulatory requirement	√	√
6. Lack of management and maintenance	√	√
7. Lack of professional and skilled manpower	√	√
8. Quality of soft-scape involves higher cost		√
9. Poor plant selection		√
10. Lack of research on soft-scape		√
11. Lack of enforcement		√
12. Lack of cooperation among the industry players		√

Table 2 shows the comparison of the issues and problems relating to the quality standard of soft-scape between the literatures and the interviews. It is interesting to note that the results from the interviews with the selected local professionals and experts in the local landscape industry in Malaysia on the issues and problems relating to quality standard of soft-scape seem to be consistent with the literatures.

From the comparison, it can be synthesized that these issues are very much interrelated to each other. One of the highlighted issues and problems relating to the quality standard of soft-scape is the low quality soft-scape materials and works. Among the problems is lack of quality in plant materials due to lack of horticultural practice. Furthermore, the soft-scape work and nursery productions in this country are purely business oriented where priority is given to the profit margin and not on the quality aspect.

Low quality soft-scape materials and works are believed to be caused by other problems such as lack of acceptable standard and inadequate specifications. It is found that there is no appropriate soft-scape standard to monitor and control

the soft-scape quality in Malaysia. Therefore, quality is perceived differently by different parties in the industry as there is no specific reference for them to refer to during implementation. Besides that, it is also highlighted that there are several weaknesses in the current soft-scape specification such as the requirement is too general and impractical.

Another issue that influence the quality of soft-scape is lack of regulatory requirement. At the moment there is no specific law and regulation on soft-scape in Malaysia. Without the law and regulations, the local authorities develop their own guidelines that sometimes are not suitable to apply. Lack of management and maintenance such as poor supervision during the implementation and lack of proper maintenance after the project is completed make it more difficult to regulate the quality standard of soft-scape. The landscape industry is still considered new in Malaysia as the landscape development in our country only started in the middle of the 90s. There are few professionals and experts who manage the landscape works and maintenance. The improper supervision and by lack of skilled labour contribute to low quality landscape development.

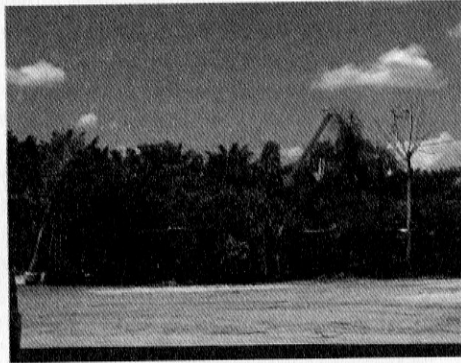
The interview results also discover other problems experienced in Malaysia such as lack of cooperation among the industry players. This is due to the fact that the landscape industry in this country is purely business and profit making based. Furthermore, poor enforcement by the local authority in regulating the quality of soft-scape eventually leads to poor quality soft-scape materials and works. The negative perception of the local landscape industry players that quality standard involves higher cost has become an excuse for neglecting the quality aspect in landscape construction. In Malaysia, there is also lack of research on soft-scape in plant production, exploration of new species and maintenance.

The findings from site observations further validate the existence of these issues and problems in actual landscape practice in Malaysia. The observation findings clearly indicate that the issues and problems relating to quality of soft-scape materials and work are actually happening on the ground.

Based on the issues and problems relating to the quality standard of soft-scape that has been discussed, majority of the respondents' had strongly agreed that there is a need for improvement in the quality standard of soft-scape materials (92.5%) and soft-scape work (97.5%) in this country as tabulated in Table 3.



a. Plants is structurally unsound



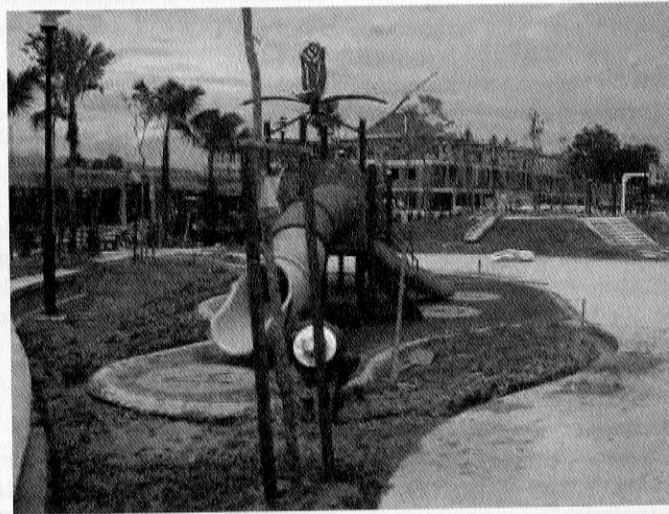
b. Unhealthy plants



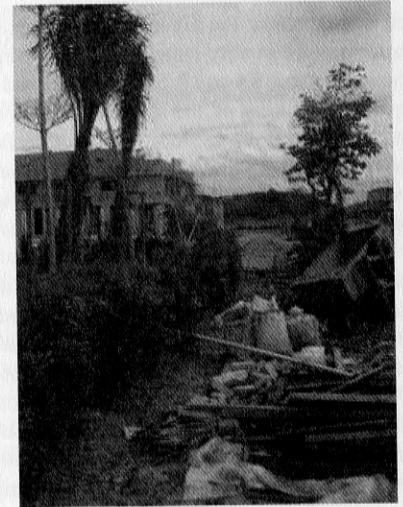
c. Poor plant handling



d. Shallow planting hole



e. Poor compaction on turf area



f. Poor site cleanliness

Figure 1: Photographs of some of the issues and problems relating to the quality standard of soft-scape observed in the landscape nursery and the landscape construction site (Source: Roziya, 2007).

Table 3: Respondents' Opinion on the Need for Improvement in Soft-Scape Material and Work in Malaysia

NEED FOR IMPROVEMENT	YES	NO	TOTAL
SOFT-SCAPE MATERIAL	37 (92.5%)	3 (7.5%)	40 (100%)
SOFT-SCAPE WORK	39 (97.5%)	1 (2.5%)	40 (100%)

The literature reviews, interviews and observations have proven that the issues and problems relating to quality standard of soft-scape experience by developed countries also exist in Malaysia. Therefore, there is a need to develop a soft-scape standard to regulate the quality of soft-scape materials and works in this country. This will help the local landscape industry in improving the landscape quality towards sustainability in Malaysia.

The experience of the USA and UK can become a reference for Malaysia in improving the quality standard of soft-scape in this country. The landscape practice in the USA and UK has established a specific body that is responsible for the monitoring of the specification development including the softscape which are the Construction Specification Institute (CSI) in the USA and the National Building Specification (NBS) in the UK. Both CSI and NBS have developed and published the Construction specification format known as CSI Format and the NBS Landscape which are widely used in both countries.

The development and enforcement of quality standard in the USA and UK is done through collaboration among the landscape industry players and other related industries. In the USA, this collaboration is led by American Nursery and Landscape Association (ANLA) and the British Association of Landscape Industries (BALI) in the UK. Furthermore, the enforcement of the soft-scape standard in both countries is at national level. Therefore, the soft-scape standard is referred to in the landscape development throughout these countries. Thus, learning from the experience of the USA and UK will guide Malaysia in the development and enforcement of the soft-scape standard to monitor and control the quality of soft-scape materials and works in this country.

5.1 The need to develop a soft-scape standard to improve the landscape quality in Malaysia.

From the study, it is clear that quality standard is an importance tool in regulating the quality of soft-scape materials and works. As Malaysia is moving towards "The Most Beautiful Garden Nation" by 2020, the landscape development contributes to this vision in terms of providing a quality environment. However, a soft-scape standard need to be developed to help the landscape industry players in regulating the quality of soft-scape materials and works in landscape development. This will help to overcome the issues and problems relating to quality standard of soft-scape and improving the landscape quality in Malaysia.

Malaysia should learn from the developed countries such as USA and UK as their experience will provide us with certain references and guidelines in identifying what need to be done in order to develop and regulate the soft-scape standard in Malaysia. The followings are some recommendations towards the development of soft-scape standards for Malaysia:

- i. To improve the soft-scape specification contents and to develop a specific format for the soft-scape specification development.
- ii. To develop a specific structure for the development of soft-scape standard
- iii. The National Landscape Department or *Jabatan Landskap Negara* (JLN) to support the development and enforcement of the soft-scape standard.
- iv. The landscape industry players to support in the development and enforcement of the soft-scape standard.
- v. To promote the research development on soft-scape to assist in the development of quality standard for soft-scape materials and works.

6. CONCLUSION

There is a great potential for the improvement of landscape quality particularly the soft-scape with the development of soft-scape standard in Malaysia. With this standard, the landscape industry will be able to control the quality of the soft-scape materials and works to ensure high quality landscape development. This standard shall become a reference to the soft-scape specification document of any landscape development projects, as a guidance to be understood and followed by all those involved. Furthermore, it will help the landscape industry in improving the landscape quality in Malaysia towards achieving the "Most Beautiful Garden Nation" by the year 2020.

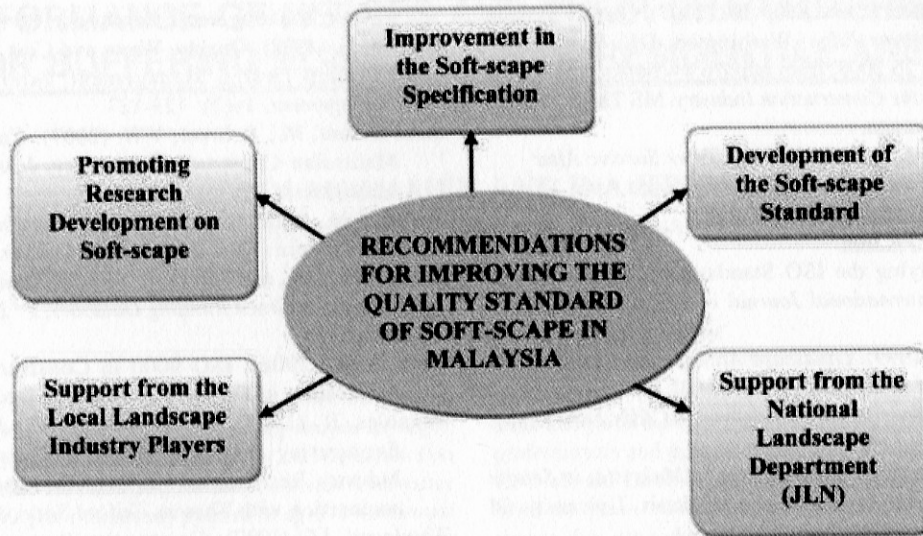


Figure 2: Summary of recommendations for improving the quality standard of soft-scape in Malaysia.

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