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DEVELOPMENT OF ENVIRONMENTAL MANAGEMENT GUIDELINES FOR SRILANKAN GOLF COURSES

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ABSTRACT

Golf is a precision sport and it is expected that there will be a trend in increasing the number of golfers playing in Sri Lanka, and perhaps new Golf courses to cater to the increasing demand, particularly among tourists, with the major development drive maintained by the government.

Even though a golf course can contribute to the sustainability of the ecosystem, it may lead to many environmental risks associated with the activities of the golf courses, unless there are safeguards to protect the environment through proper environmental policies and practices, which can be adopted by all stakeholders, including the staff, clients and visitors of the Golf Course. To achieve the international standards while minimizing the environmental risks associated with them, it is necessary to have an environmental management system for golf courses. Even though the Government of Sri Lanka requires Environmental Impact Assessments to be carried out for new Golf Courses, there are no monitoring regulations for operation of Golf Courses. Interviews with management staff of the Colombo Golf Club revealed that there is no proper environmental guideline for the golf courses in Sri Lanka at present. It is imperative to develop an environmental guideline and self assessment method suitable for adoption for Golf Courses in Sri Lanka, to ensure proper practices during the operation of the courses before any further damage is done to the environment.

This study was carried out to develop an environmental guideline for Sri Lankan golf courses and a self assessment method in order to assist the management of the courses to evaluate their own operations against benchmarks and identify weak areas and take corrective actions where necessary.

Review of literature revealed that there are diverse methods adopted by golf courses in USA, UK, Canada and Australia in order to minimize environmental risks caused by Golf Course operations. Having understood the commitment to safeguard the environment in golf courses by the developed countries, it was decided to develop a questionnaire to assess the situation with respect to various aspects of the operation of golf courses relevant to Sri Lanka, and provide guidelines for improvement of the weak areas.

General information regarding the operations was collected by using a general questionnaire. After evaluating the methods used in the developed countries, it was decided that the most appropriate method suitable for adoption for the Sri Lankan situation was the Environmental Quotient Questionnaire method for self assessment used by the Unites States Air Force (USAF) and guidelines for preparation of a supporting document such as the Breckland Pines Golf Course Environmental Management Plan.

The model questionnaire was prepared with 50 questions in ten subcategories, based on the relevant environmental aspects. The aspects covered were: policy, planning, wildlife & wildlife habitats, clubhouse operations, pest control, pesticide use, fertilizer use, water quality & use, safety and education & awareness. Even though the USAF self assessment method used equal weightages for all environmental aspects, it was decided to factor-in the importance of the aspects of the overall environmental profile of the local situation by giving weights to each category.

Since all questions were of the type with three possible answers (yes/no/partial), the weights assigned to each aspect were reflected in the final total marks by varying the number of questions in each category. The number of questions was adjusted several times in order to achieve the intended purpose of capturing the importance as well as the status of environmental management of the golf courses. Thus, after several modifications, the model of the ECQ questionnaire was developed to a satisfactory level to be tested using field data. The final assessment of the Golf Course was obtained as a percentage of the possible 100% if all 50 questions yielded positive answers, as two results – the actual ECQ (only ‘yes’ answers) and potential ECQ (‘yes’ and ‘partial’ answers). This questionnaire was tested with the data of Royal Colombo Golf Course (RCGC) and after minor modifications based on the results of the test, it was used to assess the other golf courses in the country. Benchmark values were also proposed for the status of the Golf Course depending on the ECQ values as per the table below.

Total Yes or Partial response	Environmental compatibility Level
90% - 100%	Advance
70% - 89%	Showing Progress
40% - 69%	Getting Started
39% or Less	Urgent action needed

The results of the assessment were compared to the actual status of the Golf courses as perceived by the employees and users of the courses, and were found to be comparable, which showed that the ECQ provided a reliable assessment of the environmental status of the Golf Course, and helped to identify the weak areas that needed urgent attention as well as long term improvements.

Ten environmental best practice guidelines were prepared under the topics of policy, planning, wildlife & wildlife habitats, clubhouse operations, pest control, pesticide use, fertilizer use, water quality & use, safety and education & awareness, in order to help the Golf Course management to prepare their own Environmental Management Plans for present and future courses.

The final recommendation is to use the ECQ method to assess the current status of existing courses, prepare an environmental management plan for each golf course using the guidelines and to monitor the golf courses annually with the self assessment method, in order to continually improve the ECQ and thus enhance the environmental performance of the Golf Course.

Keywords: environmental management guidelines, environmental compatibility quotient, environmental management plan

TABLE OF CONTENTS

	Page
Declaration, copyright statement and the Statement of the Supervisor	i
Acknowledgements	ii
Abstract	iii
Table of Contents	v
List of Figures	vii
List of Tables	viii
List of Abbreviations	ix
List of Appendices	x
Chapter 1 - Introduction	01
1.1 Basic Features of a golf course	01
1.2 Environmental Risks associated with Golf Courses	08
1.3 Problem Statement	08
1.4 Objective and the Scope of the Research	09
Chapter 2 - Literature Review	11
2.1 Golf Courses in the United States	12
2.1.1 Environmental principles for golf courses in United States	13
2.1.2 Standard environmental management practices by Audubon International	17
2.1.3 United States Air Force Golf Course Environmental Management Handbook	19
2.2 Golf Courses in Australia	21
2.2.1 Summary of key environmental principles and practices from some publications in Australia	21
2.2.2 Environmental Strategy for Australian Golf Courses	22
2.3 Golf Courses in the United Kingdom	23
2.3.1 Breckland Pines Golf Course Environmental Management Plan, RAF Lakenheath, England August 2007	23

2.4	Golf Courses in Canada	25
2.5	Golf Courses in Sri Lanka	27
2.5.1	Royal Colombo Golf Club	28
2.5.2	Eagles golf club in Trincomalee	30
2.5.3	Victoria golf club in Rajawella, Kandy	31
2.5.4	Golf club at Diyathalawa	32
2.5.5	Nuwara Eliya golf club in Nuwara Eliya	33
Chapter 3 - Study Methodology		34
Chapter 4 - Observations and Data Collection		37
4.1	Preparation of Model Questionnaire	37
4.2	Status of the environment of Royal Colombo Golf Club	39
4.3	Testing the model questionnaire	42
4.4	Assessment of other golf courses using the questionnaire	43
4.4.1	Diyathalawa Golf club	44
4.4.2	Victoria Golf club in Rajawella, Kandy	44
4.4.3	Eagle's golf club in Trincomalee	45
Chapter 5 - Results and Discussion		46
Chapter 6 - Recommended Environmental Guidelines for Sri Lankan Golf Courses		48
Chapter 7 - Conclusion and Recommendations		53
Reference List		55
Reference Websites		56
Appendix 1 : General Questionnaire		57
Appendix II : ECQ questionnaire for Sri Lankan golf courses		58
Appendix III:ECQ questionnaire for Royal Colombo Golf Club		62
Appendix IV:ECQ questionnaire for Diyathalawa golf club		66
Appendix V : ECQ questionnaire for Victoria golf club		70
Appendix VI:ECQ questionnaire for Eagle's golf club		74

LIST OF FIGURES

	Page	
Figure 1.1	General Arrangement of one hole	2
Figure 1.2	Teeing Ground	2
Figure 1.3	Hazard	3
Figure 1.4	Rough	3
Figure 1.5	Bunker	4
Figure 1.6	Water Hazard	4
Figure 1.7	Fairway	5
Figure 1.8	Putting Green	5
Figure 1.9	Flagstick	6
Figure 1.10	Hole	6
Figure 1.11	Casual Water	7
Figure 2.1	Layout plan of Royal Colombo Golf Club	28
Figure 2.2	Layout plan of Eagles golf club	30
Figure 3.1	Flow chart for Study Methodology	34
Figure 4.1	Dumping yard at Royal Colombo Golf Club	40
Figure 4.2	Shredding Machine	41
Figure 4.3	Washing Bay	42
Figure 5.1	Comparison of environmental status of golf rounds	46

LIST OF TABLES

Table 2.1	Distribution of Golf Courses in the world	11
Table 2.2	Environmental Compatibility Quotient scoring scale	21
Table 2.3	Environmental Compatibility Quotient scoring scale	24
Table 2.4	Details of golf ground	29
Table 2.5	Details of golf grounds	30
Table 2.6	Details of solid waste generated	31
Table 2.7	Details of golf courses	32
Table 2.8	Details of golf courses	33
Table 4.1	Weightages assigned for each category	37
Table 4.2	ECQ values for Sri Lankan Golf Courses	38
Table 4.3	Summary of environmental quotient questionnaire for Royal Colombo Golf Club	43
Table 4.4	Summary of environmental quotient questionnaire for Diyathalawa Golf Club	44
Table 4.5	Summary of environmental quotient questionnaire for Victoria Golf Club	45
Table 4.6	Summary of environmental quotient questionnaire for Eagles Golf Club	45
Table 5.1	ECQ levels for all the golf courses in Sri Lanka	46

LIST OF ABBREVIATIONS

Abbreviation	Description
ACSP	Audubon Cooperative Sanctuary Program for Golf Courses
BMP	Best Management Practices
CMC	Colombo Municipal Council
ECQ	Environmental Compatibility Quotient
EEG	Ethical Energy Group
EMP	Environmental Management Plan
GEM	Golf Course Environmental Management
IPM	Integrated Pest Management
MSDS	Material Safety Data Sheet
NEPA	National Environmental Policy Act
NSW	New South Wales
OSH	Occupational Safety and Health
RCGA	Royal Canadian Golf Association
RCGC	Royal Colombo Golf Club
TDA	Tennessee Department of Agriculture
TDEC	Department of Environment and conservation
TVA	Tennessee Valley Authority
USA	United States of America
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USGA	United States Golf Association



LIST OF APPENDICES

Appendix	Description	Page
Appendix I	General Questionnaire	57
Appendix II	Model Environmental quotient questionnaire	58
Appendix III	Environmental quotient questionnaire for RCGC	62
Appendix IV	Environmental quotient questionnaire for Diyathalawa golf club	66
Appendix V	Environmental quotient questionnaire for Eagles Golf club at Trincomalee	70
Appendix VI	Environmental quotient questionnaire for Victoria Golf club in Kandy	74



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