

**EVALUATION OF PELIYAGODA INTEGRATED  
URBAN DEVELOPMENT PROJECT IN SRILANKA IN  
TERMS OF SUSTAINABLE URBAN DEVELOPMENT**

Kululavithanage Dona Sunethra Subashini Kukulavithana

(07/9610)



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

Degree of Master of Science

Department of Town & Country Planning

University of Moratuwa

Sri Lanka

March 2013

**EVALUATION OF PELIYAGODA INTEGRATED  
URBAN DEVELOPMENT PROJECT IN SRILANKA IN  
TERMS OF SUSTAINABLE URBAN DEVELOPMENT**

Kululavithanage Dona Sunethra Subashini Kukulavithana

07 / 9610



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

Dissertation submitted in partial fulfillment of the requirements for the degree Master  
of Science

Department of Town & Country Planning

University of Moratuwa  
Sri Lanka

March 2013

## DECLARATION

“I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

Also, I hereby grant to University of Moratuwa the non-exclusive right to reproduce and distribute my dissertation, in whole or in part in print, electronic or other medium. I retain the right to use this content in whole or part in future works (such as articles or books).

Signature :  University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations Date :  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

The above candidate has carried out research for the Masters dissertation under my supervision.

Signature of the supervisor :

Date :

## ABSTRACT

Peliyagoda area was identified by the Colombo Master Plan Team for development of Industries and Warehousing and was developed to a development project by Urban Development Authority. The Project was conceived as an integrated development project with not only industries and warehouses but also low income housing with related social facilities and infrastructure.

Sustainable development is truly about achieving a balance between several objectives. (environmental, economic and social) over dynamic time and spatial horizons. (Haimes, 1992; Hellstrom et al., 2000). Despite several decades of discussion, no perfect definition of sustainable development has emerged.

The concept of sustainable urban development directly addresses the social and environmental problems caused by urban development. The economic, social, and environmental planning practices embodying the concept of sustainable urban development. Urban sustainability can only be achieved through addressing the economic, environmental and social health of the city. Promoting sustainable cities will require planners and other urban authorities to focus on the impacts of urban development.

(UDA) is an organization engaged in urban planning and sustainable urban development in Sri Lanka. The research question was that whether planning initiatives have given due consideration for the sustainable urban development?



University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
www.lib.mrt.ac.lk

The objective of this research is to ascertain, extent to which integrated urban development approach is being implemented in the Peliyagoda integrated urban development project with an emphasis on sustainable development?

**Utilization driven evaluation** type proposed by Patton (1997) was used for the evaluation of the Project. Method involved assessing a project with set of criteria's in relation to sustainable indicators which were consist of literature review in this study according to the impacts of Economic, Environment or Social which were produced by after implementation of the Peliyagoda Project.

After evaluation of the Project author suggest that whole project was sustainable and it was less than expectations. In order to in practice, future urban development projects need to be prepared in respect to more emphasize on the concept of sustainable development.

## ACKNOWLEDGEMENTS

It is with great appreciation and pleasure that I wish to convey my gratitude to so many teachers and friends who helped me generously to carry out this exercise.

At the very outset I am deeply grateful to thank my principle Supervisor, Plnr K.D. Fernando, Senior Lecturer of the Department of Town and Country Planning, University of Moratuwa for this invaluable support, guidance and strong encouragement.

Special heartfelt thanks to Dr. Jagath Munasinghe , Head of the Department of Town and Country Planning , Prof. P.K.S. Mahanama , Dean , Faculty of Architecture and all other lecturers in the Department of Town and country planning, Moratuwa University, who made tremendous contribution to widen my knowledge through out the course.

I further extend my sincere thanks to Mr. N.D. Dickson , former Director General of Urban Development Authority, Mr. S.D. Wijeratne, Deputy Director (Planning) of Urban Development Authority and my friends Mrs. Renuka Tennakoon and Mr. H.H.Leelananda for their supportive Corporation and encouragement.

A special word of thanks goes to staff Members of the Department of Town and country planning of Moratuwa University.

Finally, I remember my dearest Husband Wasa , my son Suwin and my daughters of Visna and Nethya who shared my tensions very patiently at all the times and all other colleagues who helped me generously in many ways.



University of Moratuwa, Sri Lanka.

Electronic Theses & Dissertations

[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

## TABLE OF CONTENTS

	Page No.
I. Declaration	I
II. Abstract	II
III. Acknowledgements	III
IV. Table of Contents	IV
V. List of tables	VII
VI. List of figures	VIII
VII. Abbreviations	X
<b>1. INTRODUCTION</b>	
1.1 Study Area	01
1.2 Problem Definition	02
1.3 Research Objective	04
1.4 Methodology	04
1.5 Scope and Limitation of the Research	06
1.6 Expected Outcome	06
<b>2. LITERATURE REVIEW</b>	
2.1. Introduction	07
2.2. Sustainable Development, Urban Development, Sustainable Urban Development and Sustainable Urban Form	07
2.2.1. Sustainable Development	07
2.2.1.a. Sustainable Development Principles	09
2.2.2. Urban Development	09
2.2.2.a. Some definitions	10
2.2.2.b. Development and the Environment	12

2.2.2.c.	Paradigm Shifts	13
2.2.2.d.	Key Urban Development Elements	14
2.2.2.e.	The Urban Development Process	16
2.2.2.f.	How to Define Development in Urban Communities	16
2.2.3.	Sustainable Urban Development	17
2.2.3.a.	Some Definitions	17
2.2.3.b.	Principals for Sustaining Urban Development in the Twenty – first century	20
2.2.3.c.	Urban sustainability	21
2.2.3.d.	Local Agenda 21	24
2.2.3.e.	Differing views of Urban Sustainability	25
2.2.3.f.	Main directions of urban sustainability	26
2.2.3.g.	sustainability checklist, Applied to Neighbourhoods	27
2.2.3.h.	Sustainable Urban Development Network	29
2.2.4.	Sustainable Urban form	32
2.2.4.a.	Some definitions	32
2.2.4.b.	Principles of Sustainable Urban form	37
2.2.4.c.	Urban systems and sustainability	39
2.2.4.d.	urban development	40
2.2.4.e.	Sustainable urban development	42
2.2.4.f.	Sustainable Urban form in a city-region	44
2.2.4.g.	Research for Planning	46
2.2.4.h.	Four models of sustainable urban form	47
2.2.4.i.	Unsustainable Urban Forms - Sprawls and Ultra High Densities	50
2.3.	What is a sustainable city?	50

2.3.a.	Changes needed for future sustainable city	53
2.3.b.	The Un sustainability of Cities	53
2.4.	Sustainable development, quality of life and the new urban paradigms:	55
2.4.a.	The compact city and quality of life	56
2.5.	Political factors and sustainable development of third world cities	57
2.6.	Urban Planning and Urban Development Planning	58
2.7.	Integrated Planning	59
2.8.	Sustainable Urban Development in Sri Lankan Context	59
2.8.a.	Urban Development in Sri Lanka	59
2.8.b.	Urban Development Sector	60
2.8.c.	Urban Development Authority	60
2.9.	Conclusion	61
<b>3.</b>	<b>METHODOLOGY</b>	
3.1.	Introduction	64
3.2.	Method used to evaluate the urban development project	64
3.3.	Evaluation of Peliyagoda integrated urban development project	66
3.4.	Conclusion	72
<b>4.</b>	<b>EVALUATION</b>	
4.1.	Introduction	74
4.2.	Reviewing of Objectives of Peliyagoda Integrated Urban Development Project with Criteria's in relation to sustainable indicators	74
4.3.	Conclusion	103
<b>5.</b>	<b>CONCLUSION</b>	105



## LIST OF TABLES

Table No.		Page No.
4.1	Colombo Municipal area and immediate environs analysis of Warehouses – 1983	77
4.2	Percentage share of Land Use Distribution in City of Colombo (1977 – 2010)	79
4.3	The price of lands in 1981	88
4.4	Land use pattern of the project area before the project was undertaken	90
4.5	Development Activities for Stage I	101
4.6	Evaluation matrix.	104



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

## LIST OF FIGURES

Figure No.		Page No.
2.1	A representation of the relationship between the three pillars of sustainability suggesting that both economy and society are constrained by environmental limit	8
2.2	Scheme of sustainable development: at the confluence of three constituent parts	8
2.3	Urban systems	40
2.4	The city as a material processor	41
2.5	The city as an information processor	42
2.6	Urban form and development	43
2.7	General patterns for combinations of neighborhood units within urban grid	45
2.8	Possible urban forms for environmental investigation	46
4.1	Location of Container yards & Warehouses Colombo MC area – 1983	76
4.2	City of Colombo Land Use – 1996	78
4.3	Heavy vehicles are increased to loading and discharging	81
4.4	Heavy vehicles are increased to loading and discharging	81
4.5	Pump House of Peliyagoda	84
4.6	Pump House of Peliyagoda	84
4.7	Flood gate at Peliyagoda Junction	84
4.8	Outlets constructed across Negambo road	84
4.9	Canals are blocked with Aquatic plants	85

4.10	Canals are blocked with Aquatic plants	85
4.11	Drainage system blocked with Plants	86
4.12	Illegal occupants encroaching in to the marshy lands	86
4.13	Land use pattern of the project area – 2011	89
4.14	Living Environment	92
4.15	Housing Condition	92
4.16	Unauthorized construction	92
4.17	No proper Drainage lines	92
4.18	Engaged in Informal Jobs	94
4.19	Engaged in Informal Jobs	94
4.20	Children Park	97
4.21	Old School	97
4.22	Play ground	97
4.23	Physical condition of roads	99
4.24	Physical condition of roads	99
4.25	Present power supply network	100
4.26	Present power supply network	100
4.27	<i>Warehouses</i>	102
4.28	<i>Warehouses</i>	102
4.29	<i>CKE</i>	102
4.30	<i>Efficient infrastructure</i>	102



## ABBREVIATIONS

<b>PIUDP</b>	Peliyagoda Integrated Urban Development Project
<b>UDA</b>	Urban Development Authority
<b>UNCED</b>	United Nations Conference on Environmental & Development
<b>SGN</b>	Smart Growth Network
<b>EPA</b>	Environmental Protection Agency
<b>UNEP</b>	United Nations Environment Programme
<b>QoL</b>	Quality of Life
<b>NRTEE</b>	National Round Table on the Environment and the Economy
<b>CKE</b>	Colombo Katunayake Expressway



University of Moratuwa, Sri Lanka.

Electronic Theses & Dissertations

[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)