

**"SOLID WASTE MANAGEMENT"**

**PROJECT REPORT SUBMITTED**

**BY**

**STELLA NICOLAIDOU**

**To the Department of Civil Engineering  
of the Higher Technical Institute  
Nicosia Cyprus  
in partial fulfillment of the requirements  
for the diploma of  
TECHNICIAN ENGINEER**

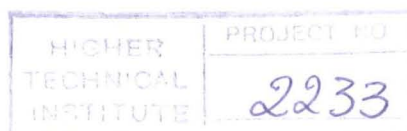
**in**

**CIVIL ENGINEERING**

**June 1990**

**Project Supervisor: N. Kathijotes  
Lecturer in Civil Engineering H.T.I.**

**Type of project: Individual Group**



## SUMMARY

The objective of this project is to bring together a wide body of knowledge concerning the rapidly changing and expanding field of solid waste management.

The major focus is to comment on types and properties of domestic wastes, to discuss methods of disposal of domestic wastes and to design a sanitary landfill.

The book is divided into four chapters analysing solid wastes landfill OPERATION, design of landfill and at the end some conclusions and recommendations based on the comments of the previous chapters.

To understand the overall field of solid waste management, it is important to know about the nature and generation of solid waste, which is in chapter 1. Furthermore in chapter 2 there is a complete introduction to landfilling and what are its functions, how it must be designed.

The actual design of a proposed sanitary landfill and specifically the area of Vadi in Limassol is calculated based on real measurement but not very accurate once since this is impossible. Finally at the last chapter conclusions and comments on the landfill, how problems which appear have to be dealt, closure plans and recommendations that can be made so disposal of solid wastes using the landfill method will be beneficial and successful.

# CONTENTS

	Page
<b>PREFACE</b>	1
<b>CHAPTER 1</b>	
1. Solid Wastes	
- Types of Solid Wastes	2
1.1 Properties of Solid Wastes	3
1.2 Solid Waste Management	6
1.3 Solid Wastes	
Estimation of Solid - Waste quantities	13
1.4 On site Handling, Storage and Processing	15
<b>CHAPTER 2</b>	
2.1 Ultimate Disposal	17
2.2 Landfilling with Solid Wastes	18
2.3 Site Selection - The Appropriate Landfill	19
2.4 Design Considerations of Wastes Landfills	21
2.5 Landfilling Methods and Operations	22
2.6 Permeability	24
2.7 Occurrence of Gases and Leachate in Landfills	26
<b>CHAPTER 3</b>	
3.1 Design and Operation of Landfills	33
3.2 Landfill Operation Plan	35
Design of Landfill	38
Design	
Determine the capacity of a disposal site	46
Solution	47
Estimation of the useful life of Landfill	49

## CHAPTER 4

	Conclusions	52
4.1	Management issues and concerns	52
4.2	Recovery of solid Wastes	53
4.3	Methods of Recovery	54
4.4	Plan Development Selection and Implementation	55
4.5	Closure Plans	57
	<b>REFERENCES</b>	60