ABSTRACT

In the interest of fostering water conservation the authors conceptualized an idea of developing a “Commercial Automatic Flush Water Saver” which resembles a modified time based water closet and is administered by a dual flush mechanism: the system executes a full flush for 6L which is considerably under the defecating activity and 4.2L for reduced flush for urinating activity. The device is triggered by the photoelectric sensor which determines the presence/absence of a person and the system itself is operated by a solenoid valve which is the main controller of the water being dispensed. The said activity is dependent particularly on the observed time during peak hours at SM Dasmariñas to be specific since the application of the study is for commercial places. The device has undergone series of testing which complies with the standards being stated on the reports researched. The reference volume or weight of the Medias also complies with the process observed during interviews and plant visit. To be efficient the water closet should flush the specimen according to the standards set: for stool media it must flush the threshold weight of 250g as the average weight of stool for both men and women. While for urine media the average volume is 300mL. The flushing mechanism and the amount of water being dispensed were tested in order to determine if the study is reliable and if it conserves water.

The tested “Commercial Automatic Flush Water Saver” successfully flushed the stool media at 6L for 5secs and the urine media at 4.2L for 3 seconds. The test was done in open space wherein the source has 1 in. in diameter to comply with the solenoid valve with a pressure of 20 psi.

The study generated a savings in water usage of 29.656% compared to the conventional flash valve water closet which has a fixed amount of 6L.

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TABLE OF CONTENTS

Title Page

Approval Sheet i

Acknowledgement ii

Dedication iii

Abstract iv

Table of Contents vi

List of Tables ix

List of Plates x

List of Figures xii

List of Appendices xiii

CHAPTER I – THE PROBLEM AND ITS BACKGROUND 1

Introduction 1

Background of the Study 3

Conceptual Framework 5

Statement of the Problem 7

Significance of the Study 8

Scope and Limitation 9

Definition of Terms 11

CHAPTER II – REVIEW OF RELATED LITERATURE AND STUDIES 13

Foreign Literature 13

Local Literature 18

Foreign Studies 29
Local Studies 30
Relevance of the Present Study 36

CHAPTER III – METHODOLOGY 38
Research Methods and Procedures 38
Data Collection 38
Testing and Evaluation 39
Water Level Testing 39
Time-Based 43
Sampling Design 44
Block Diagram 47
Flow Chart 48
Wiring Diagram 49
Schematic Diagram 49
Electronic Materials 50
Mechanical Design 54
Program 58
Testing 63
Operation 63
System 64
Media 67

CHAPTER IV – RESULTS AND DISCUSSION 70

Data Analysis 70

CHAPTER V – SUMMARY, CONCLUSION AND RECOMMENDATIONS 81

Summary 81

Conclusion..... 83

Recommendation 83

Appendices 86

References 135

Curriculum Vitae

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LIST OF TABLES

Table 2.1. Classification assigned to different establishment or consumer 22

Table 2.2. Residential/Government 25

Table 2.3. Commercial/Industrial 25

Table 2.4. Commercial A 26

Table 2.5. Commercial B 27

Table 2.6. Commercial C 27

Table 2.7. Wholesale/Bulk 28

Table 2.8. No. of toilet bowls required per no. of workers 31

Table 3.1. Number of comfort rooms of 5 malls in Cavite 45

Table 3.2. Average Adult Height of Filipinos 45

Table 3.3. Target amount of water per flush 65

Table 3.4. Standard amount of sample media 67

Table 4.1. Mean result on samples based on Total Time (Minutes) that urine and stool are flushed 70

Table 4.2. Flushing Mechanism 73

Table 4.3. Reduced Flush 74

Table 4.4. Full Flush 74

Table 4.5. Urine (300mL) for Reduced Flush of 4.2L 75

Table 4.6. Stool for Full Flush of 6L 75

Table 4.7. Summary of Volume of Water 77

Table 4.8. Summary of Power Consumption 79

Table 4.9. Total saved water sales per year 80

LIST OF PLATES

Plate 3.1. Solid State Relay 50
Plate 3.2. Solenoid Valve 50
Plate 3.3. Dual Power Supply 51
Plate 3.4. Electrical Cord 51
Plate 3.5. Circuit Breaker 52
Plate 3.6. Components for the circuit 52
Plate 3.7. Photoelectric sensor 53
Plate 3.8. Constructing and assembling the circuit 53
Plate 3.9. Coupling 55
Plate 3.10. Pipe Nipple 55
Plate 3.11. Elbow 55
Plate 3.12. Hose 56
Plate 3.13. Connecting the Hose to water source. 56
Plate 3.14. Connecting the Hose to the Solenoid Valve 57
Plate 3.15. Water Source connected to the hose 57
Plate 3.16. Tightening the pipe connections to ensure that water will not leak ... 58
Plate 3.17. Testing of the sensor's effective range when the sample is a man. . 63
Plate 3.18. Testing the sensor's effective range when the sample is entering from the improvised door and if it is a woman 64
Plate 3.19. Image of the over-all system for testing of its flushing mechanism ... 64

Plate 3.20. Water Closet placed above the pail to measure the amount of water being dispensed 65
Plate 3.21. Setting the level for the desired dispensed amount of water from the system. 66
Plate 3.22. Testing and checking the amount of water delivered by the water closet 66
Plate 3.23. Media..... 67
Plate 3.24. Soy bean pastes are being measured to produce stool samples. 68
Plate 3.25. Food Dyes being mixed with the specified volume of water to produce urine samples. 68

LIST OF FIGURES

Figure 1.1. Research Paradigm 5

Figure 2.1. Standard media made from Soy bean paste 17

Figure 3.1. Commercial Automatic Water Flush Saver Block Diagram 47

Figure 3.2. Commercial Automatic Water Flush saver Flowchart 48

Figure 3.3. Commercial Automatic Water Flush saver Wiring Diagram 49

Figure 3.4. Schematic Diagram 49

Figure 3.5. Mechanical Design 54

Figure 4.1. The range of the sensing zone 72

Figure 4.2. The distance of the sensor from the ground 72

LIST OF APPENDICES

Appendix A Photoelectric Sensor 86
Appendix B Solid State Contractor 88
Appendix C Circuit / Safety Breaker 90
Appendix D Switching Power Supply....91
Appendix E Solenoid Valve 93
Appendix F Toilet Bowl....94
Appendix G Mechanical Parts 96
Appendix H PIC16F84A Data Sheet....97
Appendix I Example of SM Dasmariñas water sales....98
Appendix J Observations during peak hours....100
Appendix K Observations during off peak hours 116
Appendix L Computations of water being saved 120
Appendix M Computations of power consumption 124
Appendix N Computations of water sales 126
Appendix O Costing....128
Appendix P Gantt Chart....130
Appendix Q Certificate of Proof Reading and Editing....134